

**The Imitation Economy:
How AT&T's contestability doctrine
transformed the neoliberal project**

by **Caroline Kate Colton**

BA, Dip Lib, Cert Hort

Thesis submitted in fulfilment of the requirements for
the degree of

Doctor of Philosophy

under the supervision of Dr Jeremy Walker, Dr Jon Marshall and
Professor Thomas Faunce (external ANU)

University of Technology Sydney

School of Communication, Faculty of Arts and Social Sciences

September 2021

Certificate of original authorship

I, Caroline Kate Colton, declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the School of Communication, Faculty of Arts and Social Sciences at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

This research is supported by the Australian Government Research Training Program.

Signature:

Production Note:

Signature removed prior to publication.

Date: 27 September 2021

In loving memory of

Betty Ellen Colton (née Wiltshire) (1921–2000)

Thomas Alured Faunce (1958–2019)

Acknowledgments

I would like to thank my principal supervisor Dr Jeremy Walker and associate supervisor Dr Jon Marshall at the University of Technology Sydney (UTS) for their insightful discussions and chapter commentary, advice on navigating the system and good humour and patience in supporting this challenging project. I also thank Dr Rob Nicholls UTS for a project review.

Dr Anthony Ashbolt (1954-2021), my principal supervisor at the University of Wollongong, who taught me the importance of having a good library and Associate Professor Di Kelly (UOW) for her encouragement.

I was fortunate to have the opportunity to undertake a study tour of the United States in 2018 and express my gratitude for the warmth and hospitality I experienced during my stay. I wish to thank Emeritus Professor Philip Cerny, Rutgers University for his insights into global political economy. Staff of the David M. Rubenstein Rare Book and Manuscript Library, Duke University, the Hoover Institute, Stanford University and the AT&T Archives, Warren, New Jersey were unfailing in their professionalism and kindness in assisting me navigate the large repositories of resources they maintained. Professor Bruce Caldwell, Director of the Center for the History of Political Economy at Duke University met me for discussions and provided the opportunity to meet with scholars at CHPE. Professor Fredric Jameson, Duke University offered his insights on neoliberalism and encouraged my project. Emeritus Professor, Judge Guido Calabresi, New Haven CT contributed an insightful interview on his work in law and economics. Associate Professor Robert Van Horn, University of Rhode Island provided invaluable advice on tackling the Chicago School.

I also thank Professor Michael Barnsley for his insights on fractal mathematics which led me to consider how the ethical application of new mathematics held out hope to redress social imbalances. Professor Simon Eckermann for his encouragement and knowledge on health sector contestability and Emeritus Professor John Lawrence for his discussion on ethics. In the early stages of the project, Dr John Kaye MLA (1955-2016) encouraged me to speak publicly about the issues I was researching and understood the political importance of the work.

Many thanks are due to sociologist Mira Crouch, my undergraduate lecturer, tutor and mentor at the University of New South Wales whose kindness and support laid a strong foundation for my life and this postgraduate project.

I also wish to thank my wonderful family and friends for their faith in me and their welcome advice in how to stay the course, with special thanks to Jane Taylor and Jim Keski-Nummi and Professor Stephanie Short, University of Sydney.

I wish to thank Dr Anne Melano for copy editing and comments on drafts, and Dr Carol Priestley for her excellent proofreading. I have worked diligently to ensure this thesis is free from errors, but they will nonetheless appear, and for that I am entirely responsible.

Professor Thomas Faunce friend, mentor, co-author of journal articles and external supervisor without whom this extraordinary journey would never have begun and whose positive spirit drove me to new depths of discovery.

My partner Anne Melano for your love and support emotionally, intellectually and practically through all these many years of struggle tackling hidden truths and MS Word.

.

Preface

We need to stare their vision of the truth in the face and see what it really, really looks like ... and where it comes from.

Philip Mirowski (2017)

Standing with my gravely ill partner in the emergency room of our local Bulli Hospital being told that they would not even assess her condition and that I would have to drive to another hospital 15 minutes away was the slap that woke me. A short time after this incident, we both returned to Bulli Hospital to attend a community meeting about its future. We were told by the chairman of the local health board that a US style urgent care centre was being considered as a replacement for our hospital's emergency department (ED). That rang my alarm bells immediately. I knew that the US had the most expensive health care in the world and a much lower life expectancy rating than Australia. I also knew that I was witnessing one of those pretend consultations favoured by our state government – the ED at Bulli already existed in name only.

The result of this meeting was the formation of a community protest group and the beginning of my journey to discover what was happening. I started researching, firstly for the group as we prepared submissions to save our local service and then on the broader issues: the creeping privatisation of public assets and the ever-expanding finance sector that was benefiting hugely from the public asset grab. I realised just how ignorant I had become about my own country. I knew things were changing, but I knew nothing of the details. And I found that the changes were radical, widespread and connected across health, TAFE, transport, social security and universities. Indeed, the very fabric of Australia's social democracy, traditionally anchored in the mixed economy of public and private services, was being unravelled. My ignorance reflected the fact that I had *no choice* in these matters, whether at the ballot box or in public debate. I, as a citizen, had come to rely on information and democratic engagement provided by the public service, the parliament and independent media, but, like the emergency department, these institutions had become placeholders for something else of which we, the citizens were unaware.

My research took me from local to national to global contexts and to the politico-economic philosophy driving the policy changes. Economic rationalism, now called neoliberalism, was a philosophy that promoted itself with terms like free markets, competition, choice,

efficiency and small government. However, the roots of the philosophy and the motivations of its adherents remained elusive.

In July 2014, encouraged by Professor Thomas Faunce from the Australian National University (ANU), I enrolled in a PhD, and began the scholarly leg of my journey. A short time later I noticed the expression ‘competition and contestability’ in government policy literature. On finding out that contestability was an economic doctrine used to justify the monopoly takeover of public services I now reread those documents aware that a government’s wish to encourage both ‘competition and monopoly control’ is extremely contradictory. I explored further, and discovered that contestability theory was invented by the giant US telecommunications corporation AT&T at its research centre Bell Laboratories in the mid-1970s. Bell Labs was one of the great industrial labs of modern times. Bell Labs engineers invented transistors, satellites, microwave technology, mobile phones, JAVA script and information theory—all of which were major information technologies that ultimately supported our world of ignorance. I realised that I had found the terrain within which this thesis would be set; that is, neoliberal philosophy, contestability and ICT, three inextricably linked factors that profoundly affect the world in which we live.

Having completed this thesis, I have now peeled away some of the layers obscuring the mission behind the neoliberal doctrine. This political philosophy with its antecedents in the First World War, has sown the seed of what I call the ‘great upending’ of the social progress that was forged by the generations who fought the First and Second World Wars, endured the Great Depression and Cold War, and reclaimed the voice of the citizen against the Vietnam War. Ironically, as the Australian Department of Defence’s *One Defence* report (2015) attests, war, like everything else in the public domain, now has a “business model” based on contestability.

Publications:

Chapter 8, section 8.3 is drawn from my article:

Colton, Caroline. 2017. ‘Contestability ‘theory’, Its Links with Australia’s Competition Policy, and Recent International Trade and Investment Agreements. *Australian Journal of International Affairs* 71 (3): 315-334.

Other publications during the period of candidature are:

Colton, Caroline. 2015. "Professional Misconduct: The Case of the Medical Board of Australia v Tausif (Occupational Discipline)". *Journal of Law and Medicine*, 22(3): 534-544.

Colton, Caroline and Thomas Faunce. 2014. "Commissions of Audit in Australia: Health System Privatisation Directives and Civil Conscriptio Protection". *Journal of Law and Medicine*, 21(3): 561-571.

Colton, Caroline and Thomas Faunce. 2014. "The Health Legislation Amendment Act 2013 (Qld) and Queensland's Health Assets Privatisation Dispute". *Journal of Law and Medicine*, 22(1): 54-64.

Caroline Colton, September 2021

Contents

Acknowledgments	iv
Preface	vi
Contents	ix
Abstract	xi
1 Introduction	1
1.1 Overview	1
1.1 We need to talk about monopoly	7
1.2 Thesis structure	10
1.3 Methodology	13
1.4 Motivation and relevance of my study: a statistical snapshot of contemporary Australia	15
1.5 The protagonists	19
1.6 Themes	25
2 Neoliberalism: from competition to contestability; a critical approach	27
2.1 Introduction	27
2.2 <i>Catallaxy</i> and contestability: the emergence of 21st century monopoly	31
2.3 Hayek: the quiet monopolist	44
2.4 Foucault on neo-liberalism: insights and hopeful turns	60
2.5 Wherefore the state?	75
2.6 Conclusion	83
3 Hayek’s spontaneous order in the Computer Age	85
3.1 Introduction	85
3.2 The Hayek-Turing conjunction	87
3.3 The market as decision-maker	93
3.4 The certainty of a rule	113
3.5 Conclusion	134
4 The Socialist Calculation Debates and the launching of neoliberalism	137
4.1 Introduction	137
4.2 Industry planning and the ‘imitation’ of market competition	139
4.3 Innovation planning	149

4.4	Dispersed knowledge: Hayek’s ‘big bang’	154
4.5	And the winner is	157
4.6	Postscript to the debates	159
4.7	Conclusion.....	160
5	Planning social order post-war	163
5.1	Introduction.....	163
5.2	Hayek and AT&T: the clashing of social order models	167
5.3	AT&T: the leviathan in the debate.....	181
5.4	The politics of planning	187
5.5	Conclusion.....	197
6	Neoliberalism: building the pro-monopoly edifice in post-war America	199
6.1	Introduction.....	199
6.2	Liberalism: out with the old.....	201
6.3	New theoretical strategies: Chicago antitrust projects.....	209
6.4	Chicago and Bell: allies in efficiency	221
6.5	Conclusion.....	240
7	Contestability: the rise of the firm	243
7.1	Introduction.....	243
7.2	AT&T’s new mission.....	244
7.3	Engineering a monopoly theory	255
7.4	Taking the contestability road to the <i>catallaxy</i>	273
7.5	Conclusion.....	281
8	How the contestability doctrine privatises the state: an Australian case study	283
8.1	Introduction.....	283
8.2	Privatising the state	286
8.3	International road rules	299
8.4	Contestability and digital transformation	321
8.5	Conclusion.....	331
9	Conclusion.....	335
9.1	Historicising the rise of the neoliberal monopoly.....	340
9.2	Hayek’s epistemology: computer modelling society	347
9.3	Bridging the epistemological divide.....	350
9.4	Australian case study.....	356
9.5	Implications.....	359
	Appendices	367
	Bibliography	411

Abstract

During the 1930s neoliberals began a project to construct a global economic system, coordinated by ‘the’ market transmitting prices through telecommunications channels. The market they had conceived was an information processor, truth verifier and regulator of itself through competition, the dynamic system that constantly updated prices. As Mirowski identified, the constructed nature of the neoliberal market and its operation as an information system were central tenets of neoliberal thought.

This thesis argues that, contrary to neoliberal discourse extolling competition, the neoliberal movement developed an apparently contradictory, yet symbiotic relationship with monopoly capitalism. This can be traced back to the founding political philosophy of Friedrich Hayek, which was compatible with the formation of monopolistic industry structures based upon ICT networks. Alternatives to neoliberalism, such as various forms of liberalism and socialism were seen as incompatible with this ‘reconstruction’ of the market based on information. The synergies between neoliberalism and monopoly capitalism that would construct a data-driven market order were emergent in the 1930s, becoming more tangible in the 1970s following the invention of contestability theory by Bell Telephone Laboratories, the research arm of AT&T.

Contestability purported that the *imitation* of competition could be equivalent to actual competition under certain ‘free’ market conditions. Contestability was a network-based theory which converged with the neoliberal philosophy of the *catallaxy*, a term used by Hayek to describe a network of ‘economies’ coordinated by ‘the’ market. A historicised and hermeneutic analysis shows how contestability and the *catallaxy* taken together justified a new vision of global social order, one that would redefine ‘competition’ in ways which promoted both industry consolidation and global market expansion, whilst undermining public institutions through policies of deregulation and privatisation.

My analysis presents an original interpretation of Hayek’s positions on monopolies, and shows how the Chicago School, in which he became a central figure, would transform the theoretical basis of the US antitrust regime thereby legitimating an expanded role for monopolies as *planners* of the market order.

The thesis also traces the heretofore unexamined career of contestability from obscure theory to the legal architecture of international trade. This is further explored in a case study showing how contestability facilitated Australia's economic integration with the international economy. The thesis establishes the importance of contestability at the intersection between neoliberal political economy and the corporate control of digital information, manifest in the rise of 'platform monopolies' of which AT&T was an early example.

1 Introduction

1.1 Overview

Neoliberalism has become the dominant policy philosophy in the contemporary world. Some scholars have ascribed the ideological fervour in which it is held as having religious elements (Harberger and Levy 1999; Mirowski and Nik-Khah 2017, 72; Kotsko 2018; Whyte 2019) given the unquestioning zealotry with which neoliberal governments have embraced the justification for handing the reins of government to corporate control through privatisation of the public sector.

In this thesis I explore the mechanism that has underpinned government adoption of a privatisation and deregulation policy agenda that has allowed corporations to assume the provision of government services and performance of government functions even in the absence of a competitive market. That mechanism is contestability theory also referred to as contestable market theory, the contestability doctrine, contestable market hypothesis or simply contestability (Baumol, Panzar, and Willig 1982). Contestability is said to justify monopolies based on its theoretical claim that monopolies can *imitate* competitive pricing if they are operating under a threat of competition from potential competitors made possible by certain free market conditions (Baumol 1982b). The theory was invented by economists William Baumol, John Panzar, Robert Willig and Elizabeth E. Bailey working for Bell Telephone Laboratories (Bell Labs), the industrial research arm of US telecommunications giant AT&T.

This mechanism came to my attention as a contradiction appearing in Australian government policy documents. The phrase ‘competition and contestability’ was used in promoting the privatisation and deregulation of government services (Queensland Commission of Audit 2013; National Commission of Audit 2014). On researching the technical meaning of ‘contestability’, it became apparent that a theory that justified monopoly was being used to prosecute the neoliberal privatisation and deregulation agenda. Yet this theory was ostensibly antithetical to neoliberalism’s stated adherence to the liberal virtue of competition (Hayek 1960; 1976 [1949]). That is to say, what contestability brought

to light was neoliberalism's apparent contradiction: that on the one hand, this widely-embraced ideology promotes the primacy of market competition; and on the other, the era dominated by neoliberal policy has manifested greater industry concentration, monopoly power and inequality of business opportunity.

As I will show, neoliberalism has from its emergence in the 1930s attempted to accommodate monopoly theoretically into their competitive market order. The first indication that monopoly power might be harnessed by the neoliberals came in September 1945 when Hayek published his famous article 'The Use of Knowledge in Society' in the *American Economic Review*.¹ In it he asked the question "who is to do the planning[?]" of an efficient economic system (Hayek 1945, 520). He proposed three options:

Central planning—direction of the whole economic system according to one unified plan. Competition, on the other hand, means decentralized planning by many separate persons. The half-way house between the two, about which many people talk but which few like when they see it, is the delegation of planning to organized industries, or, in other words monopoly. (Hayek 1945, 521).

Since that time, Hayek and his colleagues in the neoliberal movement and their successors have claimed that market competition is the optimum planning device by which individuals can achieve prosperity and freedom (Friedman 1962) and through which facts are discovered and the truth is verified (Hayek 2002). Much of the critique of neoliberalism has taken at face value these claims of neoliberal authors and stated that neoliberals hold competition as being central to their ethos. Marxist historian David Harvey describes competition as their stated "primary virtue" (2007 [2005], 65) and Michel Foucault concluded that "for the neo-liberals, the most important thing about the market ... is competition" (2008, 118). As will be shown in this thesis, this came in part from the neoliberal identification with classical liberalism, which associated competition with multiple competitors. The inverse was monopoly power, which was seen to disrupt competition (Van Horn 2011, 1528). Another factor was probably Foucault's seminal analysis of the concern of German ordoliberalism with protecting small business and craft industries which he extrapolated as a neo-liberal virtue, and with the effect of extrapolating this insight to Chicago and other neoliberal coterie even where this was not necessarily the case (Foucault 2008, 240).

1 In 2011 this article was voted one of the top twenty most influential articles in the 100 years of the journal's publication (Arrow et al. 2011, 4).

Much of the critical literature associates adverse neoliberal impacts with competitive market societies which is then applied to such issues as environmental vandalism (Harvey 2005; Klein 2014), de-democratisation, and alienation of those who can't meet the market's needs (Dardot and Laval 2017 [2013]; Kotsko 2018; Brown 2019).

The statistics show market expansion and increased competition in the 1980s and 1990s correlating with the implementation of neoliberal privatisation and deregulation policies across many industrialised states. That statistical picture changed in the 21st century. An OECD study noted an increase in concentration internationally, with the US in particular showing significant increases in “mark-ups and profits” and a fall in the “rate of churn” (new players coming into the market) (2018, 3). In the US 75% of industries experienced increased concentration from the late 1990s (Grullon, Larkin, and Michaely 2019, 698)² with industry becoming increasingly oligopolistic (Furman and Orszag 2015, 12). There has also been a noted increase in economic rents and a shift in “rents away from labor and towards capital” (Furman and Orszag 2015, 1).³ This shift in economic rents is indicative of increasing levels of concentration and income inequality which has been extensively analysed in global studies by Thomas Piketty (2014) and Joseph Stiglitz (2013 [2012]).

In this thesis I explore the origins of the apparent contradiction between an ideology promoting market competition and trending increases in industry consolidation. I begin this exploration by questioning the internal logic of Hayek's influential assertion that market competition could realistically be considered ‘the’ planner *‘who’* would implement his conception of a rational economic order (Hayek 1945). The hypothesis I explore here is that, in fact, Hayek engaged in intellectual duplicity. Despite his nominal intellectual obeisance to free competition, he consistently collaborated with American capitalists to provide intellectual justifications for a world market order in which they would be the planners (see Chapter 6). This raises questions as to what role monopoly capitalists played in shaping the development of the neoliberal movement, and what were their visions (if any)

2 Concentration measured by the Herfindahl–Hirschman index (HHI) reached its lowest point in the US in 1996-97. The authors note that other concentration measures show the same results (Grullon, Larkin, and Michaely 2019, 701).

3 Economic rents are defined as “the return to a factor of production in excess of what would be needed to keep it in the market. Rents can accrue to any of the factors of production. For example, capital can extract rents by engaging in anti-competitive behavior to earn revenues well in excess of opportunity cost” (Furman and Orszag 2015, 2).

of a social order. In short, what were the synergies between monopoly capitalism and neoliberal ideology?

In researching this question, I explore how the computerisation of networks has driven industry consolidation and led to the rise of info-tech monopolies. I also appraise whether there are identifiable theoretical precepts in neoliberalism which render it compatible with the architecture that was to define the age—digital networks. What are the intellectual building blocks, the thought DNA if you will, of neoliberalism that enabled it to annex both epistemic and political power at the dawn of the Information Age?

I analyse relevant aspects of Hayek's contribution to the formation of the neoliberal movement, with regard to both his published corpus and his political activism alongside colleagues from the Austrian group. The latter includes his participation in the Socialist Calculation debates of the 1930s and early 1940s, and his significant input in organising the antitrust research projects with faculty and students at the University of Chicago (1946-1955).

I also examine the cross-fertilisation of ideas between Chicago School economists, notably Ronald Coase and Harold Demsetz and legal scholars Richard Posner and Robert Bork, and economists at AT&T Bell Labs working on economic theories applicable to information and communications networks. These economists, William Baumol, John Panzar, Robert Willig and Elizabeth Bailey who were the core members of what I call the 'Bell group' developed a theory of industrial organisation which incorporated the design of what they called a contestable market. Their theory purported to have found a solution to the problem of monopolistic pricing by ensuring monopolies would behave competitively without the use of regulation. That they used a market design to solve this problem was indicative of the influence of neoliberals who believed the market was a universal problem solver (Mirowski 2015 [2009]). Throughout the thesis I will show how contestability was in turn incorporated into neoliberal doctrine and used as a theoretical tool in support of the neoliberal vision to create a market-coordinated global network of economies Hayek called the *catallaxy* (Hayek 1976; 1978 [1968]b).

I set the analysis of contestability and neoliberal political philosophy into its historical context, starting at the Socialist Calculation debates wherein the neoliberals proffered an argument acknowledging that monopolies were a problem in a competitive market. However, they also argued that the state-controlled production monopoly model theorised by market socialists posed an even greater risk when it came to managing monopolies

(Mises 1935 [1920]; Hayek 2015 [1935]-a). It was a ‘lesser of two evils’ anti-government argument which lacked rigour and left Hayek and his colleagues at the London School of Economics and Political Science (LSE) looking for a contestability-like solution to monopoly pricing (Fowler 1934; Hayek 2015 [1935]-a).

Hayek also debated with Bell Labs president Frank Jewett who proposed a social order model based on Bell Labs organisational model using research methodologies from the natural sciences to structure societal decision-making. This corporate model was antithetical to Hayek’s free market model (Jewett and King 1940; Hayek 1941). Nonetheless, there were synergies between neoliberal philosophy and monopoly capitalism, including an anti-government sentiment and an interest in the market conditions needed for a new economic institution to emerge which was global in scope (Hayek 1939; Jewett and King 1940, 826). Hayek’s philosophy was centred around information and the telephone network which was regarded as essential business technology (Coase 1937; Hayek 1945), making it immensely important to the whole economy (Gleick 2011, 192).

Post-war Hayek and Coase took positions at the University of Chicago where there developed further intellectual cross currents between Chicago and Bell group, prosecuted through established academic channels like *The Bell Journal of Economics* where Chicago School neoliberals published, albeit not exclusively. Both groups theorised a radical shift in the approach to competition policy, antitrust regulation and regulation generally in the United States and globally as they separately envisaged the construction of a new economic system based on telecommunications networks and the new science of information transmission. The hypothesis I explore here is that Bell group devised a theory of industrial structure which incorporated the design of a contestable market that conceptually integrated a firm, a network and a market into a new organisational type I call the firm-controlled network hosting a market. This new formation closely reflects today’s digital platform business models that include platform monopoly. The network is deemed to be both a physical infrastructure (exchanges, poles and wires, satellites etc.), and the links between individuals and organisational entities made through that telecommunications network which can be harvested for data profiling users on the network.

This leads to my second hypothesis – that the neoliberal conception of the market-coordinated network of economies fused with the firm-controlled network hosting a market. That is the *catallaxy* is essentially a recursive formation of the firm-controlled network, as per its basic premise, that being a market that coordinates a network of economic activity which is controlled by a firm. The *catallaxy* therefore constitutes a

networked *social order* global in scale which is controlled and commanded by monopoly-oligopoly industry structures *substituting* for government. An exemplar of this substitution of the state by this corporate networked formation or corpocracy, is the Australian state whose sovereignty and people are threatened by its emergence, as it engages in the process of running government services and institutions thus integrating the Australian state with the *catallaxy*, innocuously referred to as the world economy.

In time the contestability doctrine was deployed by international governance institutions to enhance market access to national economies. And conversely, it was deployed by a number of national governments worldwide which I illustrate in the Australian case study showing how policy makers used contestability to rationalise the signature neoliberal policies of deregulation and privatisation, and set the policy agenda to creating the conditions for a globally integrated market-based social order.

That the vision of a globally networked market order could be realised through the right formulation of abstract economic theory, doctrine and rules set by international governance institutions committing nation states, wishing to participate in the global economy, to an unfettered market access regime, speaks to the synergy between the neoliberals and the monopolists that would serve their hegemonic rise in the late 20th century.

In making this sociological investigation of these new developments in economics and law from the Austro-Chicago and Bell group perspectives, I determine that contestability is a hitherto unidentified aspect of the neoliberal movement's political philosophy and socio-economic agenda. In making this connection I show how a theoretical case for monopolies was begun by Hayek and his colleagues in the 1930s, was brought to fruition by the theoretical work and advocacy of the Bell group in the 1970s and was consolidated as government policy in Australia from the 1990s.

The originality of this thesis is somewhat reflected in the dearth of secondary literature, concerning monopoly and contestability in the neoliberal era particularly the combined impacts of these three factors. The chief publication, *Contestable Markets and the Theory of Industry Structure* (Baumol, Panzar, and Willig 1982) received mixed reviews from economists (Perrakis 1982; Brock 1983; Schwartz and Reynolds 1983; Spence 1983; Weitzman 1983). These reviews were marked by a concern for the mechanics of the theory rather than for its broader economic implications. The latter was raised in only a small number of texts that examined the risk of using contestability as justification for government policy (Shepherd 1984; 1995) on US antitrust law (Rowe 1984) on network based monopolies including

AT&T (George, Joll, and Lynk 1992) on New Zealand's economy since the 1980s (Greer 1988) and on Australian competition law and the Trans-Pacific Partnership Agreement (Colton 2017).

On its part the critical neoliberal literature has paid sparse attention to the monopoly contradiction within neoliberalism with the exception of a small body of literature on the role of monopolies in the early history of US neoliberalism from the 1940s to the early 1960s (Van Horn 2015 [2009]). Hayek's positions on antitrust have been analysed by (Paul 2004; Kerin 2010; Kusunoki 2015) and there are brief explorations of how neoliberalism treats monopolies from (Barry 1979; Shearmur 1996). There is an absence of examination of the contestability doctrine within the critical neoliberal literature. Consequently, this analysis of contestability in this thesis within the context of the history and philosophy of neoliberalism makes a significant contribution to the literature in the hope of igniting a deeper critique of the socio-economic implications of the combined forces of neoliberalism and monopoly capital that are being exerted on global society.

1.1 We need to talk about monopoly

This thesis re-examines neoliberalism in the light of monopoly power. It contributes to a new understanding of neoliberalism, taking as a starting point the inverse of monopoly, competition. Competition was defined by Hayek as “a process of the formation of opinion: by spreading information, it creates that unity and coherence of the economic system which we presuppose when we think of it as one market” (Hayek 1949b, 106). This definition of competition is in stark contrast to its commonly understood meaning of many enterprises and individuals striving for market share – this being the accepted ideal of liberal economics and political theory.

For those scholars critiquing neoliberalism for whom Hayek's radical epistemic approach to competition becomes apparent, the market is understood as an “information processor” (Caldwell 2004; Mirowski 2013, 141) and neoliberal political economy as a network theory of economics and society (Birner 1996; Laïdi 2007). This identifies the shift by neoliberals away from neoclassical orthodoxy, a shift which became a source of contradictions that beset neoliberal political philosophy. We must open it up to scrutiny and comparison in order to discern the transformations that Foucault suggested could be found in the discourse (Foucault 1972, 151).

In this thesis I will show that neoliberalism's contradictions pivot on the inverse of competition, monopoly. Of concern is how Hayek's epistemic definition of competition is represented by its polar opposite conception. The question arising is what role does information and information and communication technologies (ICT) play in the formation of monopolies? In order to address this question, I defined 'monopoly' broadly to mean the power to dominate the market, with the chief criterion being the ability to set prices which neoliberals treat as coded information. Control over prices is a key element commonly used in definitions of monopoly (Baran and Sweezy 1966, 6; Birch 2017b, 105). I include oligopoly within the meaning of monopoly unless otherwise stipulated, because market domination is largely the outcome of a consolidation process driven by mergers and acquisitions concentrating industries into oligopoly and monopoly structures (Baran and Sweezy 1966; Hannaford 2007).

Neoliberal economist, Fritz Machlup observed "the term 'monopolistic practices' is often used to mean 'evil practices,' chiefly of 'big business'" (Machlup 1967 [1952], 3). The neoliberals thought some monopolies presented a problem to the economy, but they did not generally regard them as evil. To the contrary they came to regard them as beneficial (Hayek 1979a; 1988; Friedman 1999).

Monopolies have been met with opprobrium throughout history. In Tudor England the practice of creating monopolies by the issuance of royal patents was "widely condemned as an evil" (Sacks 1995, 274) because monopolies were said to threaten a man's ability to practice his craft and make a living. Monopolists were described as "Bloodsuckers of the Commonwealth" (Richard Martin (1570-1617) quoted in: Sacks 1995, 275). Two hundred years later Adam Smith (1723-1790) attacked monopolies as the "sole engine of the mercantile system" (Smith 2007 [1776], 407). Mercantilism had arisen in Britain at the end of Elizabeth I's reign. It was a form of private government paying dues to the sovereign for this privilege (Foucault 2008, 5). Britain's most famous monopoly, the East India Company (1600-1874), was more empire than government. A Royal-charter joint-stock company, this private concern brought much of India, South-East Asia, the Middle-east and China under "company rule" through control over trade, raw materials, shipping and its own militia which committed atrocities on the colonised populations through civic neglect and murderous force (Walker 2020, 112, 113).

The American Republic also succumbed to the power of monopolies and cartels, most notably during what Thorstein Veblen called the Gilded Age (1870-1900), a period, characterised by extreme levels of wealth, inequality and economic abuse by monopolies

that controlled industries like the railways, telecommunications and oil (Veblen 1899). The adverse impact on the economy spurred nationwide protest movements⁴ that crossed the political spectrum including the conservative mainstream. Republican John Sherman proposed antitrust legislation against “the great evil that now threatens us” leading to the enactment of the Sherman Act in 1890 (Congressional Record 1890, 2457). The Rockefeller-controlled Standard Oil Company was successfully prosecuted under the Act leading to the breakup of the oil trust in 1911 (Walker 2020, 27). It was not indicative, however, of a solution to the problem of monopoly power as the Great Depression (1929-1939), and the pushback against Roosevelt’s New Deal reforms in its wake attests. The problem of organising a response to the calamity against vested interests was felt in Australia and elsewhere. The general consensus amongst the public and economists globally held that banks and monopolies were responsible, at least in major part, for the collapse of the stock markets (Means 1935; Lange 1937; Hawley 1966; Van Horn 2011, 1527, 1528). The severity and length of the Great Depression, according to economic historian Ellis Hawley, led to a shift in how the “monopoly problem” was conceptualised in the US:

the classic evils of monopoly ... result in economic inefficiency, misallocation of resources, technical stagnation, and the exploitation of unorganized groups. ... The ‘problem,’ ... has been one of democratizing ‘big business,’ of finding some way to reconcile the tightly organized, stratified, and authoritarian institutions of modern industrialism with the democratic, individualistic, and libertarian ideals of an earlier era (Hawley 1966, 3, 4).

Hawley’s observation was prescient in respect to neoliberal sentiment regarding liberal and libertarian views on liberty and the right of monopolies to succeed competitively. The Socialist Calculation debates during the Great Depression forged the neoliberal position on monopolies through trading criticisms with socialists over economic models that were vexed by their shared belief that monopolies somehow had to be accommodated in the economic system. This was against the liberal virtue of competition which remained sacrosanct to classical liberal economists like Henry Simons and Jacob Viner of the First Chicago School who campaigned against monopolies believing they threatened economic stability and democracy (Van Horn 2011, 1527-1528).

⁴ This was exemplified by farmers’ galvanising their own Grange Movement into what became known as “The Farmers War Against Monopolies” (Martin 1874, 5). This led to the formation in 1891 of the Populist Party which called for the railways and telephone companies to be nationalised, fuelling concerns amongst liberals and others about extremist solutions finding favour with voters.

As recounted in this thesis, the neoliberals had a very different view of what constituted the monopoly problem, believing that the causes lay outside of monopoly itself and instead lay in the way governments and the law intervened in the markets. This accounts for their initial ‘lesser of two evils’ argument in the 1930s and the radical reengineering of the global economy, over time, to allow monopolies unfettered access to markets; predicated on an absolute faith in the power of markets to discipline the power of monopolies.

The contemporary iteration of monopoly is invested in the idea of self-regulation as signified by Google’s motto ‘Don’t be evil’. How it got to this point whereby many nations today have inadequate institutional protections and therefore rely on the whims of monopolies not to ravage the societies they dominate, is the story told in this thesis.

1.2 Thesis structure

Chapter 1: Introduction explains my methodology and my motivation for researching a thesis that counters the claim that neoliberalism is the optimal model for general prosperity. The main protagonists, Friedrich von Hayek, William Baumol and his Bell group, are introduced, showing their interpersonal links and shared intellectual lineage. Also, a brief overview is presented of AT&T and AT&T Bell Telephone Laboratories who financed and managed the invention of contestability.

Chapter 2: Critical Approach analyses Hayek’s sparse writings on monopoly, as well as the secondary literature that provides a critique of those writings, and offers a brief history of the second Chicago school during the period Hayek spent organising the Antitrust Projects (1946-1955). The analysis in this chapter forms the basis of my claim that by 1979 Hayek held a pro-monopoly position informed by the contestability doctrine. Foucault’s commentary on the economic-juridical institutional makeup of capitalism provides a framework from which I theorise the possibility that the neoliberal movement in the US, along with AT&T’s Bell group, forged a new form of capitalism. The extent to which the state continues to have presence is considered a test of my claims for emergence of this new capitalist formation.

Chapter 3: Hayek’s spontaneous order in the Computer Age considers the epistemology of Hayek’s corpus. I identify key theoretical precepts in Hayek’s writings on economics, law, political philosophy and psychology as he applies them across these disciplines, and discuss his integrated philosophy concerning how individuals and social orders process information. I draw out how Hayek’s conceptions would influence neoliberal theorists and lend coherence to neoliberal thought. This analysis is set within the historical context of emerging ideas,

notably of Alan Turing, in the mathematical logic upon which computers were based. The purpose of this chapter is to show how Hayek's insight into the critical importance of information to the economy informed his political philosophy influencing generations of economists and the political class (Mirowski 2002; Mirowski and Nik-Khah 2017). Further, I show how his political philosophy was compatible with the network architecture of the Information Revolution that would come to serve the interests of ICT monopolists.

Chapter 4: The Socialist Calculation Debates and the launching of neoliberalism focuses on how neoliberal thought was forged by the Socialist Calculation debates (1920-1941), between the Austrian group led by Hayek, and the market socialists from the Cowles Commission led by Oskar Lange. These debates focused attention on the problem of monopolies that afflicted both the socialist market position and the free market model of the Austrian group. From these debates, the chapter traces the emergence of neoliberalism as a discursive formation with its attendant objects and concepts such as markets and competition. It describes how the practical issues of data collection and calculation came to dominate the historical critique of the debates, to the neglect of the monopoly question. I contribute a fresh perspective regarding the ongoing influence the neoliberals derived by shaping the narrative from the debates.

Chapter 5: Hayek's planning of a new social order begins by examining the corporate social order model proposed by AT&T's Frank Jewett and Robert King in 1940. This model was based on the organisational model of Bell Telephone Laboratories. Whilst it is rarely referred to now, Jewett and King's vision of a post-democratic society run by technocrats in 'Engineering Progress and the Social Order' was taken seriously by Hayek (1941), who made a general criticism of scientists and engineers for considering methodologies used in the natural sciences to be applicable for social planning. I analyse this vision and Hayek's counter arguments for concentrating planning efforts on competition. This is set within the historical context of AT&T's organisational principles, corporate vision and influence. With the design of a contestable market by AT&T economists three decades later, the chapter examines both the synergies and the differences that appeared between Hayek and AT&T during the war and shows a continuum through to the present day.

Chapter 6: Neoliberalism and the building of the pro-monopoly edifice in post-war America begins with a critique of Hayek's attack on 19th century liberalism made through his paper 'Free Enterprise and the Competitive Order' presented at the inaugural meeting of the Mont Pèlerin Society (MPS) in April 1947. Hayek called for the substitution of laissez-faire with an entirely new competitive order. Supporting his recommendations were research projects

on industry concentration and antitrust that Hayek had already begun to organise at the University of Chicago (1946-1955). In examining the rise of Chicago law and economics I show how the “neoliberal thought collective” formed the goal of diminishing the Sherman Act, which was the key bulwark against monopoly power in America (Mirowski and Plehwe 2015 [2009]b). We examine how this work laid the foundation for legal scholars and judges in the 1970s thus paving the way for the legitimisation of contestability, an economic doctrine that justified monopoly.

Chapter 7: Contestability: the rise of the firm analyses the intellectual cross-currents between Chicago economists Ronald Coase and Harold Demsetz and the Bell group, including the work by Bell economist William Sharkey which redefined ‘natural’ monopolies.⁵ This chapter describes how neoliberal theory on the firm and markets contributed to the development of contestability and set the agenda for the privatisation of public sector enterprises and services. It examines how the technological structure of the Bell System influenced the development of Bell’s efficiency theory and places this in the context to the corporate needs of AT&T in the period from the 1960s to the 1980s.

Chapter 8: How the contestability doctrine privatises the state: an Australian case study illustrates the syncretism between neoliberalism and monopoly capitalism by examining the contribution of the contestability doctrine to the neoliberal project in Australia. Prominent policy documents from 1993 to 2020 are analysed. I also discuss the impact of contestability’s market access doctrine in free trade and investment agreements (FTAs) on Australian competition law and policy. The implications of the Australian government’s ongoing investment in the digital transformation of government functions are considered (Department of Finance 2018) along with the broader policy that seeks to assess all government functions for contestable market readiness (Department of Finance 2015b). The case study illuminates the transformation of Australia’s liberal democratic state from supporting a mixed economy to a privatised, deregulated state under the banner of the contestability doctrine.

Chapter 9: Conclusion addresses the implications of this transformation on the future relationship between monopolies and the neoliberal movement and the broader implications for Australian and global society.

5 Sharkey was not formally part of the Bell group work on contestability, but his work on natural monopolies was important to its development.

1.3 Methodology

My thesis began with the discovery of the contradictory phrase ‘competition and contestability’ found in a number of Australian government policy documents on the topic of privatisation of government services. Contestability, as we shall see, justifies monopoly industry structures. If we re-read these policy documents aware of the syncretic contradiction of ‘competition and monopoly’, the incompatibility between the terms ‘competition’ and ‘contestability’ is thrown into stark relief. As Foucault observed incompatibility between concepts impels researchers to search for a discourse’s underlying “principle of cohesion” (1972, 149). Why, I ask, is competition juxtaposed with monopoly in an explication of the neoliberal policy agenda? Where does this contradiction emanate from? What unites competition with monopoly? To answer these questions, we will examine the origins of the contestability doctrine, its political context and its application in neoliberalism and monopoly capitalism.

Contestability is seen here as a missing piece in the neoliberal puzzle with the potential to reset the course of research into neoliberalism. Solving puzzles was an approach encouraged by Marvin Kelly, who led the organisational restructuring of Bell Laboratories in the post-war period and instituted a highly integrated, research management approach using interdisciplinary groups who also interacted across the research lifecycle. His approach was described as “Locate the missing puzzle piece first. Then do the puzzle” and was regarded as “both difficult and counterintuitive” (Gertner 2012, 307). Bell group economist Elizabeth Bailey also framed the creative process as beginning with the “recognition of a puzzle or an apparent inconsistency in our analysis” (1982, xiii).

This thesis explores the interstitial spaces between neoliberalism, monopoly, contestability and information technology assisted by Foucault’s insights into the historical conditions for the emergence of discursive formations as well as new forms of capitalism.

Bruno Latour warns that a hail of criticism awaits those who dare a “sociotechnological network” that connects epistemology, social sciences and sciences texts (Latour 1993, 5). However, there is no salve in pretending the interstitial spaces are inconsequential.

Fredric Jameson calls on researchers to “search out the concealed ideological narratives at work in all seemingly non-narrative concepts, particularly when they are directed against narrative itself” (2012 [2002], 6). There are many examples of concealment in the target material of this study. The language of mathematical economics that contestability is couched in makes the theory difficult to access for non-economists. The appropriation by

Hayek of the generally understood legalistic phrase ‘rule of law’ is another example. Hayek reaps the benefit of association with something well accepted to promote his radical vision. This practice shrinks neoliberalism as a target for opposition (Mirowski 2014; Slobodian 2018). The obfuscations are many and Hayek’s and the Bell groups’ practice of them is well crafted.

Quinn Slobodian also calls for an approach suggesting that “[w]e need not choose between contingency, materialist forces, and the influence of ideas—the forms of explanation can and must work together” (2020, 91). This thesis takes account of both neoliberal ideas and their confluence with AT&T’s economic doctrine made manifest in the material world. It is grounded in the synthesis of Philip Mirowski and Dieter Plewhe who with a group of scholars produced *The Road from Mont Pèlerin* in 2009. In this book they encapsulate the neoliberal movement as a “thought collective” germinated by members of the Mont Pèlerin Society, in the first neoliberal thinktank, which was established in 1947. Their approach sets neoliberalism within the context of the Information Age and illuminates the multitudinous contradictions of neoliberalism. However, as noted by Foucault “it is on the basis of such a contradiction that discourse emerges, and it is in order both to translate it and to overcome it that discourse begins to speak” (1972, 151).

My methodology focuses on the ideas, how they were developed, for whom they were developed and the historical context for which they were developed. This led to the discovery that the neoliberals had attempted to devise a ‘contestability’ like solution to monopoly pricing in the 1930s. This research effort established an intellectual lineage from Lionel Robbins to his postgraduate student William Baumol, the lead theorist of contestability, thereby rendering what they claimed to be a ‘solution’ within one generation. This amongst other factors, which I will explore, denotes a point along the trajectory of neoliberalism in historical time that engenders the historical moment of emergence: information, is a creature of modernity, “a *cultural* phenomenon, stretching from the natural sciences to economics” (Mirowski and Nik-Khah 2017, 15). As will be shown here neoliberalism is also deeply rooted in the pragmatism of corporate power as monopolists financed research projects that served their material interests which included the network infrastructure of the knowledge economy that would leverage a new economic rationality capable of being deployed by governments.

Foucault (1926-1984) is generally regarded as the first theorist to articulate neoliberalism as a distinct philosophical movement (Mirowski 2013, 94). The movement had gained considerable political momentum by the late 1970s when he delivered his seminal lectures at the Collège

de France (1978-1979) (Mirowski 2013, 94). These lectures, later published as *The Birth of Biopolitics* (2008), provided a highly insightful and influential critique of neoliberalism that is drawn upon here to frame an analysis of the relationship between neoliberalism and the contestability doctrine. As Mitchell Dean observes “[b]io-politics is a politics concerning the administration of life, particularly as it appears at the level of populations” (2010, 118). This certainly is the level at which Hayek’s contentions about the individual and society were made. Several of Foucault’s contributions are of primary relevance to this thesis. His analysis of monopoly in ‘neo-liberalism’ from which he deduces the new economic-judicial institutions of neoliberalism, grounds my argument concerning the symbiotic relationship between monopoly capital and the neoliberal movement. Foucault’s theory of governmentality is also pertinent because it provides a theoretical basis for my argument concerning the emergence of the monopoly institutional construct within neoliberalism and the consequential retreat of the state, which Foucault sources back to the ordoliberals’ “revelation” concerning the inviolable link between government and totalitarianism (2008, 110).

Foucault analyses the historical formations and the contradictions that underlaid the revealing of neoliberalism as a new political ideology, rivalling Marxism and post WWII welfare-state social democracy. These contradictions can also be observed in Foucault’s own response to neoliberalism (Zamora 2016b, 1). His was a lived experience of the neoliberal project which began to take shape politically towards the end of his life, with the ascendancy to power of neoliberal inspired governments; Augusto Pinochet in Chile (1973), Margaret Thatcher in Britain (1979), Ronald Reagan in the United States (1981), François Mitterrand in France (1981) and Bob Hawke in Australia (1983). The importance of context of time and place to understanding is further noted by my own lived experience of neoliberalism which began in my early adult life in Thatcher’s Britain (1979-1980).

1.4 Motivation and relevance of my study: a statistical snapshot of contemporary Australia

I came to this research out of a desire to better understand social changes occurring in Australia that were detrimental in the experience of many people, including myself. To highlight the importance of understanding the forces driving social change in Australia, and for brevity’s sake, I have taken a statistical snapshot of Australia between 2015 and 2019, noting that this shows trends before the Covid-19 pandemic. The purpose of this section is to present in statistical form, a picture of the deteriorating conditions in Australia, as a way of noting both the adverse outcomes of neoliberal policy for the population as a whole, as well as

the benefits of policies accruing to transnational corporations and the super wealthy whereby “[t]he top richest 1% of Australians continue to own more wealth than the bottom 70% of Australians combined” (Hutchens 2018). These contradictions are stark and are evident in an increase in wealth production, decreased personal income and declining ecological conditions.

The year 2019 was Australia’s 28th year of uninterrupted economic growth (Australian Trade and Investment Commission 2019b, 3). Superannuation assets reached a total of \$3 trillion in December 2019 (ASFA 2020) making it the fourth largest superannuation assets pool in the world, in a country with a population of only 25.5 million. As of June 2018 Australia’s financial sector had an estimated \$8.5 trillion in assets with annual average growth rates since 1998 of 9.4%, which is 3.5% higher than nominal average GDP (Australian Trade and Investment Commission 2019b, 21).

The year 2018 was also the year that Foodbank recorded “more than one in five Australians (21%)” going hungry, with five million Australians experiencing food insecurity and a 22% increase in the number of people seeking food relief from charities in the 12 months to December 2018 (Foodbank 2019, 8).⁶

The annual increase in the income of citizens markedly slowed between 2007-08 and 2017-18 to 0.4% compared to 3.3% in the previous decade (2019, 6). The minimum wage in 2019 was \$704.80 (\$19.49 per hour) (Fair Work Commission 2019). As measured by average weekly earnings the fall in average annual growth in real wages between 2009 and 2018 was “around 71 per cent” (Gilfillan 2019, 23). Gross Domestic Product (GDP) is a measure of productivity linked to real wages growth. While wage growth rates have fallen, the annual growth rate of labour productivity was 1.6 percent between 2013 and 2017 (Treasury 2017, 12). In 2019 the Newstart unemployment allowance was a maximum of \$282.40 per week for a single adult, prompting the Australian Council of Social Services’ (ACOSS) campaign, ‘Raise the Rate’ to increase allowances that have not increased in real terms since 1994 (ACOSS, 2019, 7, 18). Although incomes are falling in real terms Australians continued to push productivity higher by working unpaid overtime, which in 2018 was equivalent to more than eight weeks’ work per worker (Henderson and Swann 2018, 15).⁷

6 Food insecurity is described as the experience of people who “have been in a situation where they have run out of food and have been unable to buy more. ... At least once a week, around half of these people skip a meal (55%) or cut down on the size of their meals to make their food go further (50%). At least once a week, three in ten food insecure Australians (30%) go a whole day without eating” (Foodbank 2019, 8).

7 Overtime is calculated to be those hours worked in excess of 38 hours per week.

Individual members of the community continued to fund the tertiary education and training of Australia’s workforce, with a reported 3.2 million Australians owing over \$66 billion in student loans⁸ (Australian Taxation Office 2019, 1). Government funding of vocational education and training (VET), primarily TAFE institutes, fell by “25 percent between 1999 and 2011” whilst “[f]unding growth to for-profit providers has more than doubled each year between 2009 and 2013” (Yu and Oliver 2015, 9, 16). This has led to a rapid expansion of private providers, bedevilling the sector with company collapses and corruption (Yu and Oliver 2015; Tomazin 2019).

The charity Homelessness Australia noted that “[o]n any given night in Australia 1 in 200 people are homeless.” (Homelessness Australia 2019). Housing affordability⁹ continued to decline and for young people¹⁰ on low incomes home-ownership plummeted by 40% between 1981 and 2016, even though ownership aspirations were still high (Daley and Coates 2018, 72). Housing stress¹¹ impacted 43% of low income households who were renting, an increase of 8.1% over the past decade (AIHW 2019, 5).

For non-human others the neoliberal era has seen the collapse of ecological systems that sustain them. The Great Barrier Reef, the largest living organism on Earth, has seen 50 percent of corals die since 2016 (Meyer 2018). Over two million fish perished in the de-oxygenated waters of the Murray-Darling, Australia’s largest river system, because of the oscillation in the rivers’ water market caused by an untenable mix of factors, including over extraction for the cotton industry in the upper reaches, drought and speculation (Jackson and Head 2020). The 2019-2020 bushfire season saw 19 million hectares burnt with well over *one billion* animals killed thus pushing many species towards extinction (Filkov et al. 2020). However, the forest products and housing markets did not register this catastrophe with logging continuing in 18 percent of the remaining unburnt forests (Perkins and Foley 2020) and the push to clear land for housing development continuing in remnant bushland (Clifford and Fernandez 2020).

Amidst this ecological collapse and rapidly rising poverty Australians stayed well connected with nine out of ten Australians owning a smart phone. Deloitte “estimate that by 2023

8 Student loan figures included the Higher Education Loan Program (HELP), Vocational Education & Training student loan (VSL) and Trade Support Loan (TSL) (Australian Taxation Office 2019)

9 Housing affordability is taken to be the ratio of housing expenditure to income.

10 ‘Young people’ refers to people between 25-34 years. This is also the peak period for starting a family.

11 Housing stress is defined as spending more than 30% of gross income on housing (Australian Institute of Health and Welfare 2019, 5)

mobile will be worth \$65 billion to the Australian economy (in 2016-17 dollars) – 3.1% of GDP. This is equivalent to approximately \$2,500 for every Australian. By way of comparison, this is larger than the entire contribution of the agricultural industry to Australia” (Deloitte Access Economics 2019, 1).

The chief beneficiaries of the wealth extracted from the living world are large corporations, many transnational corporations (TNCs), fuelled by energy resources like coal and gas, and corporations whose source of wealth and power is information and knowledge. A Reserve Bank of Australia study noted that in the financial year 2014-15 “over half of the industries in Australia are concentrated”, a statistic which excluded conglomerates like Westfarmers the owners of the Kmart, Target and Bunnings¹² brands (Hambur and Cava 2018, 3-4).¹³ The study applied the rule of thumb that “a market is concentrated if the largest four firms control one-third (or more) of total output”. Since 2007 “average market concentration” in Australia has been trending upwards (Bakhtiari 2019, 2).¹⁴ The trend towards concentration is international reflecting the dominance of TNCs in the global economy. Australia is exposed to TNCs through international trade and foreign direct investment (FDI). In 2018 foreign direct investment inwards was \$967.5 billion and accounting for 52 percent of GDP (Productivity Commission 2020, 4).

Up to a third of large corporations continued to avoid paying corporate tax, often through ‘loop hole’ legitimacy, with some of the largest transnationals operating in Australia paying 20 percent less tax than the prescribed tax rate in the 2018-19 financial year (Butler and Evershed 2020; Khadem 2020), putting pressure on local businesses and citizens to meet governments’ tax revenue targets.

The coalescence of Australia’s enormous wealth, soaring poverty, destruction of nature and economic dominance by transnational monopolies characterise the neoliberal era. These statistics tell a story of a formerly great social democracy, once thriving on a giant island wonderland, that no longer supports the flourishing of humans or ecologies. There is no flowering in this story, no future foretold or legacy secured. This is a story of grief, shame and awakening that has unfolded over my lifetime.

12 Monopoly stores like Bunnings and Officeworks are beginning to resemble Soviet era government outlets with many product lines now only represented by one manufacturer or the store’s own propriety brand.

13 Hambur and Cava “appl[ie]d a rule of thumb that a market is concentrated if the largest four firms control one-third (or more) of total output” (Hambur and Cava 2018, 3).

14 This study’s figures were calculated using the Hirschman–Herfindahl Index.

1.5 The protagonists

The London School of Economics and Political Science (LSE) was one of the key centres at the beginning of the neoliberal movement. In the 1930s and 1940s all our protagonists are connected to the LSE either directly or in a chain of close associations. Sir Lionel Robbins (1898-1984) later Lord Robbins of Clare Market, stands as the central figure. A physically tall man, he was described by William Baumol who was Robbins's PhD student (1947-1949), as one of the "giants of erudition" (Baumol and Krueger 2001, 214). Robbins was appointed to the Chair in Political Economy (1929-1961).¹⁵ He was credited with radically resetting the direction of the Department of Economics during the interwar period by adopting classical liberalism and forging from that a new liberal conception that would be closely identified with the Austrian School.

Friedrich von Hayek was invited by Robbins to guest lecture at LSE in 1931 and became the Tooke Professor of Economic Science and Statistics (1932-1949) (Hayek 1994, 76). He visited the United States¹⁶ a number of times from 1945 eventually taking an appointment in 1950 as a Professor on the Committee on Social Thought at the University of Chicago. Hayek had a reputation for being difficult to comprehend but was nonetheless noted for his vigorous debates with John Keynes from Cambridge University who would come to dominate economic thought up till the late 1970s. Amongst Hayek's students was David Rockefeller (1915-2017), who attended LSE in 1937. Rockefeller described Hayek as "[i]ndisputably brilliant ... [but] a dull lecturer ... [with whom I] was largely in agreement" (Rockefeller 2002, 83). David's father John D. Rockefeller Jr had given financial support to the School through direct funding and Rockefeller Foundation¹⁷ sponsorship of conferences, including the global economy conference of 1936, which Robbins convened. Hayek, in leading the Austrian perspective at LSE, influenced Ronald Coase (1910-2013) who was a student there (1929-1932) and faculty (1935-1951) when he published his now famous paper 'The Nature of the Firm' in 1937 (Thomas 2019, 1).¹⁸ Coase was supervised by Sir Arnold Plant (1898-1978) who was head of the business school.¹⁹ Along with lecturer

15 There was a break due to Robbins's war service 1940-1946.

16 Hayek first visited the United States from March 1923 to May 1924 working for Professor Jeremiah Jenks at New York University (Hayek 1994, 65).

17 The Rockefeller Foundation also sponsored Mises and Hayek's Austrian business cycle research in the late 1920s.

18 There was a break due to Coase's war service 1940-1946.

19 Keith Tribe describes Plant as an expert on modern business who propounded "simple free market principles" (Tribe 2015 [2009], 80). Tribe also noted that the LSE had "a strong normative belief that such

Sir Ronald F. Fowler (1910-1997), Robbins and Hayek they formed the core group of MPS members at LSE. Out of this group Hayek (1950-1962) and Coase (1964-2013) would take up appointments at the University of Chicago, the first centre of the “neoliberal thought collective” in the United States (Mirowski and Plehwe 2015 [2009]b).

1.1.1 Friedrich von Hayek (1899-1992)

Hayek was born into the Austrian lower aristocracy which he described as “upper-class bourgeoisie [sic]” (Hayek 1994, 39). His father August Elder von Hayek was a medical practitioner and later professor of botany at the University of Vienna; his mother Felicitas von Juraschek inherited a small fortune from her father Franz von Juraschek who was a senior government statistician. Philosopher Ludwig Wittgenstein was a cousin on his mother’s side. Hayek’s family were monied and resourced with expert knowledge in a lineage that had served the landed aristocracy in estate and factory management and government administration for generations as part of the educated and civil service elite of the Austro-Hungarian empire (Hayek 1994, 37-39).

Hayek served in the Austrian artillery during World War I as a telephone officer and in aerial surveillance before joining the Austrian air force weeks before war’s end (Hayek 1994, 46). He returned from the war determined to create a better world and studied economics and jurisprudence at the University of Vienna (1919-1921). He was supervised by Friedrich von Wieser and Nazi mystic philosopher Othmar Spann. He went on to work with another mentor, Ludwig von Mises, at the Business Cycle Research Institute in Vienna (Hayek 1994, 69). A self-described pragmatist with administrative flair, Hayek imagined a different future world that could be calculated for construction (Hayek 1994, 48, 53). Concerned by the threat posed by German Nazism in Europe, he left for London in 1931 to begin his peripatetic life as an academic (Hayek 1994, 76). In 1950 Hayek was appointed to the Committee on Social Thought, a special research centre at the University of Chicago. This position was funded for a decade by the private philanthropic Volker Fund. Hayek was never appointed to a faculty at the University of Chicago (Ebenstein 2015).

Hayek is central to this thesis. In order to understand the impact of the little known contestability doctrine on network economics in the neoliberal era, it is necessary to explore Hayek’s economic, legal and psychological thought with the aim of understanding how

classroom principles could be translated unmediated into economic argument and policy agendas” (Tribe 2015 [2009], 81).

neoliberalism and monopoly capitalism converged. Hayek was arguably the first economist to place the transmission of information at the centre of economic thought (Mirowski 2002; Mirowski and Nik-Khah 2017). Hayek’s theory of dispersed knowledge foregrounded his prescience concerning the importance of information networks in the utilisation of knowledge (Birner 1996; Laïdi 2007, 20). Hayek re-imagined networks as the *catallaxy*, where the plans of individuals, large enterprises and government entities were all coordinated by the price mechanism of ‘the’ market (Hayek 1945, 527).

Mirowski and Nik-Khah observed that Hayek was unique in discerning “the ways different formal models of information related to different roles of *knowledge* in the economy (Mirowski and Nik-Khah 2017, 153). These differences represent Hayek’s evolving perspective on information that I will show coincided with developments in ICT and artificial intelligence (AI). Hayek’s valuing of information at its most elemental, that is the formation of a decision in economic terms, would come to shape the economy and society. This is reflected in Hayek’s conception of neoliberalism as a political project to create a new *social order* that is global in dimension (Hayek 1967d, 150).

Politically astute and well connected to wealthy industrialists like the Rockefellers, Hayek invigorated the neoliberal movement as an organiser, promoter and inveterate interdisciplinary philosopher and networker. Hayek was a talented and energetic synthesiser and promoter of ideas rendered from mentors like Mises and Robbins. Although the economists he influenced were far more substantive in their theoretical works, Hayek’s writings offered neoliberalism a trove of ideas, connected to his concepts about dispersed knowledge and influenced by a socio-political lineage of influences that went back to the eighteenth century (Barry 1979, 5). This thesis describes Hayek’s far-reaching influence, achieved without the addendum of an *ism* to his name.

1.1.2 Baumol and his band of rebels

Baumol was the lead author of the seminal text, *Contestable Markets and the Theory of Industrial Structure* (1982) co-authored by John Panzar and Robert Willig.

Baumol (1922-2017) arrived at LSE in 1947. Admitted to a Master’s degree by sceptical academics because they had never heard of his undergraduate institution, the College of the City of New York, his career nonetheless took off like a Maserati. By his own account his fierce debating style at Robbins’s weekly seminar saw him admitted to a PhD within a fortnight and in another three weeks he was a member of faculty lecturing on economic dynamics and the American economy, the latter of which he admitted later to knowing very little about at the

time (Baumol and Krueger 2001, 214). He was described by Robbins as “an excellent expositor and a most charming man” (Robbins quoted in: Howson 2011, 653). Baumol orally presented his dissertation on the theory of government intervention and the notion of externalities (welfare economics). He and Robbins remained close lifelong friends (Howson 2011).

Baumol returned to the US in 1949 joining the Department of Economics at Princeton University gaining a professorship in 1954. In 1971 he was given a joint appointment as Professor of Economics at New York University. He remained at both institutions till the end of his career.

Baumol began working for AT&T in 1966 and over a period of three decades he undertook a number of roles for the company. He was an expert witness in a case with the Federal Communications Commission (FCC Docket No. 16258) (Baumol 1981, 3).²⁰ Baumol would represent AT&T as well as its subsidiaries on 31 cases and four government inquiries over three decades, most concerning antitrust (Baumol 1997 (circa)). He advised AT&T to establish the Council of Economic Advisers of which he was a founding member along with economists Alfred Kahn and Otto Eckstein (Baumol 1981, 4). Kahn was a controversial figure who oversaw the deregulation of the US airline industry. Otto Eckstein was a Harvard economics professor, adviser to President Johnson and cofounder of economic forecasting firm Data Resources Inc.²¹

Baumol was actively involved with the project at Bell Labs to develop contestability theory. His initial contributions to contestability theory related to the burden test he devised in 1970. This was a price-setting tool for multiproduct firms (Bailey 1982, xiii) which he used in his testimonies defending AT&T’s pricing strategies. According to Bailey this test combined with his original work in developing other cost functions formed the basis for the concept of subadditivity (1982, xv). This concept was to provide an efficiency test for monopoly pivotal to their new theory of industrial structure (Bailey 1982, xiii).

Baumol also served the interests of AT&T and other corporations through his advocacy for privatisation, deregulation and other industry policies designed to bring down market barriers, expand market access and accelerate the integration of domestic economies with the world economy (Baumol 1983b; 1997). A gifted speaker, as identified by Robbins, he used it to effect in spreading the contestability doctrine at home and abroad.

20 Baumol’s consultancy focused on the costs and pricing of the Bell System (Baumol 1981, 8).

21 Eckstein was a member of the US President’s Council of Economic Advisers 1964-1966.

Baumol was the leader of a group he referred to as his “tiny band of rebels”, comprising core Bell personnel Panzar, Willig and Bailey, as well as other Bell economists along with close collaborators from Princeton and New York University where he held professorial appointments (Baumol 1982b, 1). John Panzar spent a decade at Bell Labs (1974-1983) after which he had an academic career in economics with joint professorial appointments at Northwestern University, Illinois (1983-present) and the University of Auckland (2005-present and visiting position 1998-2004). After his time at Bell Labs Robert Willig was appointed Deputy Assistant Attorney General in the Antitrust Division of the Department of Justice (1989-1991) (Basañes, Uribe, and Willig 1999, viii).²² He went on to have a long career in economics at Princeton University, which included work on privatising public infrastructure and government enterprises including postal services (Willig 1980; Basañes, Uribe, and Willig 1999).

Elizabeth Bailey, along with Baumol, was one of the chief drivers of the contestability project as supervisor of Bell’s Economic Analysis Group (1973-1975) and head of their Economic Research Department (1975-1977) (Wharton School 2021). Bailey came to the notice of AT&T’s Council of Economic Advisers for her work on the economic cost of regulation. This resulted in her undertaking a PhD on the subject supervised by Baumol at Princeton.²³ She began work at Bell Labs in 1960, initially as a computer programmer, then in mathematics working for the Traffic Analysis Center at Bell (Peters and Woolley 1977). During the 1960s she was seconded to the Department of Defence to work on internal communications systems²⁴ and ballistic missile projects (Landau 2017).²⁵ In this military context a command-and-control centre that could monitor all the information traffic was a solution to one of the greatest problems that perplexed military planners, “people with information not knowing who needed it, people needing information not knowing who had it and there being no means for them to find each other” (Eric Ellingson quoted in:

22 Willig’s appointment coincided with the presidency of George Bush Snr who promoted deregulation of the economy leading to the diminishment of antitrust.

23 Bailey had a Masters degree in mathematics from the Stevens Institute of Technology and an undergraduate degree in economics from Radcliffe College.

24 The main defence communications system developed at that time was the early warning system of the North Atlantic Air Defense Command (NORAD). This was an air defence network that deployed a computerized command control system called SAGE an MIT system to which Bell Labs contributed (Edwards 1997 [1996], 97).

25 Bailey wrote a technical article in 1968 titled “A Procedure for Program Relay Savings at No. 5 Crossbar 4-Wire CONUS AUTOVON Switching Machines” about the Automatic Voice Network for the continental United States that was built for defence and commercial purposes. AT&T Archive No. TM68-3123-5, 39987.

Greenberg 2016 [2014], 129). Eventually this research was developed commercially as cloud computing. Bailey and her manager William O. Baker, then vice president and later president of Bell Labs (1955-1979), who served as a science advisor to five presidents from Truman to Reagan (Gertner 2012, 247), were privy to aspects of these developments long before they became commercially available. Bailey left Bell Laboratories to take up an appointment as Commissioner of the Civil Aeronautics Board (CAB) (1977-1983), alongside Alfred Khan who was chairman of CAB (1977-1978). Bailey and Khan were appointed by President Jimmy Carter. Tasked with the deregulation of the US airline industry, they utilised the contestability hypothesis to rationalise the formation of a free market (Wharton School 2021). Bailey became Dean of the Graduate School of Industrial Administration at Carnegie Mellon University (1983-1991) and Professor of Public Policy and Management at the Wharton Business School (1991-present) (Johnson 1984; Wharton School 2021). She held board memberships on a number of Fortune 500 companies including 1989 to present. Current appointments include CSX Corporation and Altria (formerly Philip Morris) (Wharton School 2021).

1.1.3 AT&T and Bell Laboratories

AT&T's research arm, Bell Telephone Laboratories (Bell Labs), incorporated in December 1924 (Danielian 1939, 26) was initially headquartered in New York, and then moved to several locations in New Jersey during the 1940s (Gertner 2012). AT&T's technological capability was immense. It included telephony research focused on building the capacity of the Bell System through to the full suite of ICT advanced technologies from fiber optics, microwave transmission, satellites, (Gertner 2012, 300) and the UNIX operating system (Rochlin 1997, 20; Campbell-Kelly 2004 [2003], 143). Western Electric, a company owned in equal share by AT&T and Bell Labs was the sole manufacturer of many of these technologies.

AT&T emerged as the parent company of the Bell System in 1899. It was formerly the American Telephone & Telegraph Company incorporated in 1885 (Danielian 1939, 12, 13). On 1 January 1984 AT&T divested its local telephone subsidiaries under an agreement with the federal government that broke up its telephone monopoly in return for unregulated access to IT markets. Prior to divestment the corporation had over 1 million employees and \$114 billion in assets "more than the combined assets of General Motors, Ford, General Electric, Chrysler, and IBM, and more than the gross national product of all but some twenty countries" (Kleinfield 1981, 3, 4). In the mid to late 1990s former AT&T subsidiaries began to reconsolidate through mergers eventually reforming AT&T's monopoly (Kushnick

2006). In 2018 AT&T had well over \$525 billion in assets and 268,220 employees (AT&T 2018a, 18), making it the largest telecommunications company in the world and one of the most diversified having acquired internet providers and content producers like Time-Warner (AT&T 2018b) (see AT&T charts in Appendix A).

1.6 Themes

At one level this thesis investigates how an American telecommunications monopoly, which was broken up by antitrust, came to successfully proffer an economic theory advocating monopoly as the preferred industry structure for globalised industries utilising ICT networks.

At another level, the thesis is about the coming together in the post-war era of two great epistemic networks to share what Mirowski called “*epistemic commitments* ... [a]round a specific vision of the role of knowledge in human affairs” (Mirowski 2015 [2009], 417). The neoliberal membership was made numerous by generational growth and geopolitical networking through thinktanks and simpatico functionaries within the academy—joining with technologists and capitalists from New Jersey to Wall Street and their global equivalents.

A crucial theme is that of substitution, whereby competition is replaced by the imitation of competition, precipitating a change in the neoliberal movement itself. Monopoly capitalism has exerted its power to appropriate and reinscribe the ideals, theoretical positions and realpolitik strategies cast by founding philosopher Friedrich von Hayek and the broader neoliberal movement. I suggest that this confluence has culminated in a fusion between neoliberalism and monopoly capitalism as society is transitioned to a fully digitised global network order. This is what Jameson describes as the coming of a “corporate state rather than the free market state in a sense, or the one fades into the other. I think a lot of the thirties had that; the New Deal, fascism as well, they all had a relationship to corporate ideology” (Jameson 2018).

The process of constructing ‘late capitalism’ could not yet be considered complete, however this thesis has aimed to reveal its trajectory. Still today, what is often described is the globalisation ‘process’ rather than a specific unified entity representing some sort of ultimate completion milestone for the project. This uncertainty as to its form was conveyed in Jameson’s description of late capitalism, in which he identifies a kind of ‘arrival’, that is “less

perceptible and dramatic, somehow, but more permanent precisely because more thorough going and all-pervasive”(Jameson 1992, xxi).

The thesis also makes an original examination of the origins and nature of contestability theory and how it has intersected the neoliberal trajectory. This is the ground upon which this thesis interrogates the challenge laid down by the inventors of contestability who stated: “[t]he power of the perfect-contestability hypothesis will prove to be enormous” (Baumol, Panzar, and Willig 1982, 24).

2 Neoliberalism: from competition to contestability; a critical approach

2.1 Introduction

This thesis investigates the relationship between the neoliberal movement and monopoly corporations in the ICT sector, through an examination of what I argue is their shared vision to integrate economics and information to create a globally networked economy. The emergence of an explicitly neoliberal approach to monopoly is evidenced by examining the shared intellectual influences and political aspirations, through a focus on the Chicago School and AT&T.

The purpose of this chapter is to present the research which comprises the ground from which I drew my hypotheses. I focus on Chicago because it was the first centre of neoliberalism in America as the nation at the forefront of the information revolution at the end of WWII. As the most prominent founding philosopher of neoliberalism, who had steadfastly promoted the revolutionary potential of linking economics with information, Hayek would come to position himself as an influencer and leader of the Chicago neoliberal thought collective and Mont Pèlerin Society. Hayek's critical positioning as the 'administrator' and advocate of the neoliberal political project makes it imperative to assess his viewpoints on monopoly even though his colleagues Fritz Machlup, George Stigler, Ronald Coase, Harold Demsetz and Arnold Harberger had done more substantial work on monopolies in terms of economic theory. What this thesis explores is the political economy of monopoly under neoliberalism and how that became a force when it conjoined with the economics of contestability. Indicative of the critical importance of political economy at Chicago was Hayek's determination to forge a new Chicago School, that would drop the mantle of classical liberalism for the *neo* liberal cause. By the end of the 1950s the academic economists and lawyers of the Chicago neoliberal thought collective would have laid new epistemological foundations for an economic-governance edifice that would support new self-regulatory business models designed to utilise the digital transmission of information.

In this chapter we examine the concepts of *catallaxy*, contestability and platform capitalism, which represent the 21st century materiality of neoliberal political philosophy, and argue that the neoliberal movement opted for “organized industries” to be the planners of the *catallaxy*, or network of economies (Hayek 1945, 521). The research, philosophy, mechanisms and history behind the neoliberal corporatist formation are investigated to discover the *unity* to be found underlying its contradictions (Foucault 1972, 149).

Philip Mirowski (2013) identifies a plethora of contradictions within neoliberalism which he interprets as a factor of the movement’s communications strategy whereby the public version of the philosophy contradicts the members-only version. Called the “double-truth” doctrine (Mirowski 2013, 68; 2015 [2009], 426), it alerts us to the dangers of critiquing neoliberalism using the orthodox definition of competition involving multiple striving competitors. William Davies observed that neoliberals encouraged this ‘striving’ perspective of competition through their use of analogies to everyday competitive activities like sport (2017, 41, 47). Competition according to Hayek’s actual definition is about asserting what the dominant ideas should be through controlling the distribution of information in what he calls “a process of the formation of opinion: by spreading information” (Hayek 1949b, 106). By keeping in mind this ‘competitive’ perspective on the utilisation of information, we can set our critique of the *catallaxy* within its historical context as a way of counteracting the popular liberatory versions of neoliberal philosophy and history that have developed around neoliberal discourses on free competitive markets.

In this chapter I discuss Hayek’s commentary on monopoly and antitrust and the critical literature that has analysed it as a way of establishing the basis of the monopoly question. Hayek produced a relatively small quantum of writing on monopoly. However he did offer a level of commentary that prescribed responses to the issue (Paul 2004, 168; Kerin 2010, 27, 28). One challenge has been the limited amount of critical literature concerning Hayek’s perspectives on monopoly. This in part reflects the slim commentary offered by Hayek himself (Kerin 2010, 29). Neoliberal thinkers grappled with the theoretical problem of how to get monopolies to price competitively without success during the 1930s (Fowler 1934; Hayek 2015 [1935]-b).

In subsequent decades, the tendency of competition to produce monopoly represented a heightened contradiction within neoliberalism because of the neoliberals’ role in the active diminishment of antitrust regulation (Birch 2017b, 103). Yet, as Birch observed, there has only been limited analysis in the neoliberal critical literature focused on monopoly (Birch 2017b). Noted scholars tackling this contradiction from differing perspectives are Philip

Mirowski and Dieter Plehwe (2015 [2009]b), Robert Van Horn (2015 [2009]), Mitchell Dean (2014), William Davies (2017), Kean Birch (2017b), and Colin Crouch, who framed the contradiction in terms of the ambiguity functions within neoliberalism (Crouch 2008, 484; 2011).

For Marx and Foucault the suppression of competition which resulted from the competitive success of monopolies was one of the core contradictions of capitalism itself (Marx 2001 [1887], 898-899; Foucault 2008). As a consequence, the critique of neoliberalism has often been subsumed into the broader critique of capitalism with some scholars claiming that creating a distinction between neoliberalism and capitalism is of limited theoretical value (for examples see Duménil and Lévy 2004; Harvey 2007 [2005]; Cahill 2014). This thesis engages with the uniqueness of neoliberalism as a way of understanding how capitalism has been moulded by what was new in the neoliberal era—the advent of computerisation. In the 1930s the founders of the neoliberal movement, Hayek, Mises and Robbins understood the potential of information processing for social ordering on a global scale (Hayek 1939; 2015 [1935]-b). Their vision, Slobodian contends, “of a new international economic order was a world of signals—a vast space of information transmitted in prices and laws” (2018, 224). Here it is argued that AT&T, along with other monopoly capitalists, were also actively involved in globalisation by constructing telecommunications infrastructure that would transmit the signals and by proffering their own model of corporate controlled ‘democracies’ which would “dictate and control the rules of the international game” (Jewett and King 1940, 826). The neoliberal era has been characterised by the ‘remote control’ of states through a labyrinth of international trade and investment agreements binding them to international rules which protect corporate profit-taking (Faunce 2015).

The critique of monopolism in neoliberalism has been strongest in historical analysis by authors such as Robert Van Horn, Philip Mirowski, Kim Phillips-Fein, Dieter Plehwe, Thomas Stapleford, and William Davies. These scholars have deepened our knowledge of the formation of the second Chicago school from the late 1940s, and how it was substantially influenced by Austrian economics and British liberalism through Hayek and Robbins at the LSE in the 1930s and 1940s (Mirowski and Plehwe 2015 [2009]b). Their ground breaking scholarship forms the basis of the “idealist” or history of economic thought approach to neoliberalism since these scholars identified the formation of the “neoliberal thought collective” (Mirowski and Plehwe 2009; Dean 2014; Birch 2017b) summarised in section 2.3.3.

Foucault (2008) made another major contribution to our understanding of the place of monopoly in neoliberalism. He described how neoliberalism as a capitalist formation is conditioned by historical events and circumstances and consequently has produced divergent forms, notably ordoliberalism in Germany and Chicago School neoliberalism. Foucault's analysis of ordoliberalism revealed the contradictions that were to beset the global neoliberal movement: the irreconcilability of the state with neoliberal ideology and the accommodation of monopolies within the neoliberal program juxtaposed with a discourse valorising competition and markets. Foucault's attention to American neoliberalism was focused on what he perceived as its "most radical" theorist, Gary Becker (Foucault 2008, 269). The defining contradiction in Becker's *Human Capital* (1964) was understood by Foucault to be a theory of human capitalisation that allowed human beings to be systematically ordered if they were allowed to behave as 'free to do' self-interested individuals (Foucault 2008, 270).

Foucault's analysis of the contrasting developments in Europe and the US provides the tools for navigating the *process of transformation* taking place. This change dynamic is also found in Van Horn and Mirowski's definition of neoliberalism:

'The Market' would not naturally conjure the conditions for its own continued flourishing, so neoliberalism is first and foremost a theory of how to reengineer the state in order to guarantee the success of the market and its most important participants, modern corporations (Van Horn and Mirowski 2015 [2009], 161).

This definition of neoliberalism clarifies our understanding of the evolving global neoliberal project.

Foucault's theorising took place during the period of neoliberalism's ascendancy in the late 1970s. It provides the theoretical basis from which I offer a new perspective, namely that monopoly power re-emerges from neoliberalism's market formation as the 'firm-controlled network hosting a market', exemplified by the platform monopoly. 'Platform capitalism' describes ICT monopoly business models that encapsulate the tripartite structure of the firm-controlled network hosting markets. I contend that this is a new form of what Foucault called an "economic-juridical order" (2008, 159), one that is not antithetical to neoliberalism but one that emerged from the work of the Chicago School and AT&T's Bell group.

The analysis leads to Bell Labs's contestability doctrine, invented in the 1970s, as a theory that has been utilised by the neoliberal movement to justify monopoly on the grounds of efficiency. The aim of this part of the analysis is to answer Jameson's challenge that we must bring into view the mechanisms or apparatuses of capitalism in their historical context to understand the trend toward "late capitalism" (Jameson 1983 [1981]; 1992).

It will be argued that the contestability doctrine was embraced by Hayek, and influenced in its development by Ronald Coase and Harold Demsetz, and that its fundamental claim that monopolies should be free of regulation was supported by Richard Posner and Robert Bork. The original literature on the contestability doctrine was small and the critical literature was sparse (Martin 2002), having been initially generally regarded by the economics academy as a theoretical curiosity which did not serve as a useful guide to reality (Perrakis 1982; Brock 1983; Schwartz and Reynolds 1983; Weitzman 1983; Holler 1985; Schwartz 1986). There were, however, notable exceptions including work by economists William Shepherd (1984; 1988; 1995), Douglas Greer (1988) and Marius Schwartz (1986), who were highly critical of the theory's propositions and warned against its use to formulate public policy. It was not possible to locate any source offering depth of analysis from the critical neoliberal literature, or sociology on contestability, apart from brief but insightful comments on contestability from William Davies (2017, 86), Sharon Beder (2006, 102) and Harrison White (2002, 255-256).

The final section encapsulates Hayek's views on the place of government in the neoliberal social order, analysed through the frame of Foucault's concept of governmentality. Here I examine how the logic of neoliberalism, which formed as a response to Nazism in Germany (1933-1945), combined with the contestability doctrine to form a new economic-governance ensemble, or new form of capitalism, which would seek to appropriate the functions of the state. The respective arguments in the retreat of the state debate, which has been a feature of the critique of neoliberalism, are considered and evaluated. The questions raised in this debate address the issue of the Australian state's future as it actively integrates with the global economy, a subject addressed in Chapter 8.

2.2 *Catallaxy* and contestability: the emergence of 21st century monopoly

This thesis suggests that Hayek's *catallaxy*, Bell Labs's network vision, neoliberalism's political project and the aspirations of AT&T and monopoly capitalists came together in a symbiotic relationship at the dawn of the Information Age. At the most fundamental level there was a shared understanding about information as the new source of economic and political power. Information, seen as an elemental force, became metaphorically construed by economists, corporatists and techno denizens as the new 'heat' driving the global knowledge economy (Toffler 1985; Mirowski 1989; Negroponte 1995; Castells 1996; 2010; Gleick 2011; Lanier 2014; Mirowski and Nik-Khah 2017).

The nascent form of a networked economy was considered by Hayek as early as 1928 (Birner 1996). Hayek understood that the optimal architecture for dealing with information in perpetual circulation was a network (Laidi 2007, 20). Hayek imagined this network as ‘the’ market which he likened to a “system of telecommunications” (Hayek 1945, 527). Thus informed by the primacy of information, he promoted the creation of a global network of economies politically anchored by an “interstate federation” and connected by the “common control of communications” (Hayek 1939, 131). To Hayek this was a political project destined to create a new *social order* that was global in dimension, not simply an economic order manifesting a new politics (Hayek 1967d, 150).

2.2.1 *Catallaxy: from network vision to platform reality*

Although Hayek began to develop his vision as early as the 1920s, he named it the *catallaxy*, for the first time in 1967.¹ This was considerably later than his mentor Mises’s use of the term “catallactics” in a similar context in *Human Action* (Mises 1998 [1949], 3). Hayek defines the *catallaxy* as “the order of the market which spontaneously forms itself” when competition functioning as a discovery procedure for prices is present (Hayek 1978 [1968]b, 90, 91). The *catallaxy* derives order from competition generating prices which guide the market towards efficiency defined as production at the “lowest possible costs” (Hayek 1978 [1968]b, 91). The ‘economy’ coordinated by this market order was conceptualised as a “structure of many interrelated economies” like “a household, an enterprise or any other organization including government” (Hayek 1978 [1968]b, 90). Foucault aptly referred to these ‘economies’ as “enterprise-units”, the smallest being the individual, the “entrepreneur of himself” (2008, 225, 226). “The ordered structure which the market produces [from coordinating these economies] is, however, not an organisation but a spontaneous order or cosmos” (Hayek 1978 [1968]b, 90). He asserted that this networked market order spontaneously arises from “equilibrium set up from within (or ‘endogenously’)” rather than from ‘authoritarian’ forces like militant trade unions acting from outside the network (exogenously) (Hayek 1973, 36). In *The Mirage of Social Justice* (1976) this indiscernible structure is contrived as a “wealth-producing game” which requires each player to gauge the prices they need to enter the “*contest [being] played*” (Hayek 1976, 115) (author’s italics). His claim was not that the market achieved equilibrium in the neoclassical economic sense, but

1 The mention came in a lecture titled ‘The Confusion of Language in Political Thought’ which he gave to the Walter Eucken Institute, Freiburg in 1967. It was later published as an Occasional Paper in 1968 by the Institute of Economic Affairs, London.

rather than the market as a self-equilibrating order² constantly cycling through information from transactions and thereby optimising the data market players had for making choices and meeting expectations.

This ideal was later expressed as “One World” where the network of market relations transmits “repercussions” that effect a general unification of market and non-economic networks contributing to global communication and stability (Hayek 1976, 112). Hayek relates the “*catallaxy*” to the Greek term ‘*katallattein*’ meaning “‘to exchange’ but also ‘to admit to the community’ and ‘to change from enemy into friend’” (Hayek 1976, 108).³ This vision of a globally integrated ‘community’ linked by telecommunications would see Hayek and the neoliberal movement promote international treaties and trade agreements intended to establish a neoliberal international governance framework to align national jurisdictions to international rules of trade and investment (Slobodian 2018). According to Jeremy Walker and Melinda Cooper this international legal order would make it increasingly difficult for communities to pursue goals like environmental sustainability if they were misaligned to corporatist goals (2011).

Hayek argued there is “not a single economy ... [and] no single scale or hierarchy of ends” (1976, 108) a view he had fostered since 1937 (1937). He believed that “[k]nowledge exists only as the knowledge of individuals” (1960, 24). Hayek frames this ‘separateness’ initially as the “*Division of Knowledge*” (Hayek 1937, 49), a concept developed by Mises to describe the infinite succession of knowledge sharing between individuals to create “nodes and networks” (Slobodian 2020, 74, 75). Hayek’s idea from the edge, which made him relevant to the Information Age, was his belief that the “*Division of Knowledge*” had surpassed the ‘division of labour’ in economic importance (Hayek 1937, 49). From this new perspective he framed the issue of demand being met by supply not in terms of reaching general equilibrium but in terms of *compatibility* between individuals’ plans, which could be achieved if knowledge of everyone’s plans was communicated and coordinated. In this way distribution of resources is brought about by meeting most expectations, as if “according to a single plan, although nobody has planned it” (Hayek 1937, 52).

2 Later Hayek adopted the terms “‘self-generating’ order or ‘self-organizing structures’” in reference to the influence of “cybernetics and ... information and systems theory” (Hayek 1979a, xii).

3 The term ‘catallaxy’ (catalaxy) has been used in network architecture as exemplified by “CATNET” software for autonomous self-organising layered networks. The authors linked the software name back to Hayek. (Mahmoudi, Müller-Schloer, and Hähner 2009, 122).

By 1945 his ‘division of knowledge’ had given way to ‘dispersed information’ held by individuals which Hayek theorised could be utilised through the price mechanism of the market. He compared this to a telecommunications network to which it was both analogous, and dependent, in order to transmit exchange information (Hayek 1945, 527, 528).

Over a period of two decades, Hayek philosophised the substitution of compatibility for equilibrium theory, proposed that the new mathematical logic of machine computation held the key to a transformative economics and deemed that the future for the economic system lay in constructing a networked social order that accounted for the efficient transmission of data by using the market and telecommunications infrastructure. He fused these key factors together in his 1945 article ‘The Uses of Knowledge in Society’ in essence laying the foundations of information economics and neoliberal political economy in readiness for the forthcoming revolution in ICT (Mirowski and Nik-Khah 2017, 55). This would come in 1948 at Bell Laboratories with the invention of information theory and the transistor making possible the convergence of telecommunications and computing as all transmissions became reducible to bits of information (Gertner 2012).

Hayek often used the terms ‘information’, ‘knowledge’ and ‘communication’ with ‘*transmission*’ when seeking to clarify his idea of the market sending price signals (Hayek 1960, 27; 1988, 88). He saw this as analogous to telephone networks transmitting messages (Hayek 1945, 527). The market and the telecommunication systems were both information transmission systems with the market facilitated by telecommunications as a tool to facilitate business (Hayek 1939, 131).

Hayek’s LSE colleague and fellow MPS member Coase also noted the economic importance of telecommunications as it “tend[ed] to reduce the cost of organising spatially”, meaning it was often less costly for a firm to do business over the phone rather than in situ. As a consequence of this technology a firm could grow in size (Coase 1937, 397). This observation was to have immense import when coupled with Coase’s insight that exchange transactions had a cost attached to them that should be accounted for like any other costs, for example, the cost of having a store front or negotiating a contract (Coase 1937). Coase, who later said he had been influenced by Hayek’s dispersed information theory, contended that transactions represented the transmission of price information (Coase and Wang 2010) and therefore there were comparative costs between the market processing information and the firm doing so. Coase was in effect proposing that there was competition between markets and firms as to which institution could process information for the least cost – in

other words do you even need a firm? Can the buyer bypass the firm and go straight to the market? When is it cost effective for a firm to sell on a market or sell direct to buyers?

This thesis argues that the *catallaxy* conception, which integrates the firm, network and market in a tripartite structure, manifests in the Information Age as a new institution which I call a ‘firm-controlled network hosting a market’. The firm-controlled network in this ICT era is essentially a ‘platform monopoly’ as defined by Nick Srnicek, who emphasises the strategic economic value of information:

Essential to all of these platform businesses – and indicative of a wider shift in capitalism – is the centrality of data. Data is the basic resource that drives these firms, and it is data that gives them their advantage over competitors. Platforms, in turn, are designed as a mechanism for extracting and using that data: by providing the infrastructure and intermediation between different groups, platforms place themselves in a position in which they can monitor and extract all the interactions between these groups. This positioning is the source of their economic and political power. (Srnicek 2017, 254).

A platform monopoly is characterised by the extraction of monopoly rents from transactions taking place vis-à-vis platform connectivity or what is also referred to as “circulations and accompanying data trails” (Langley and Leyshon 2017, 25). Platforms are thus designed to host ‘two-sided’ markets. Rochet and Tirole observed that “[t]wo-sided (or, more generally, multi-sided) markets are roughly defined as markets in which one or several platforms enable interactions between end-users and try to get the two (or multiple) sides ‘on board’ by appropriately charging each side.” (Rochet and Tirole 2003, 645). Uber (driver and riders) and Airbnb (hosts and guests) are examples.

A platform is also defined by its physical network infrastructure such that the term ‘platform’ variously describes browsers, telecommunication systems, web hosting and cloud computing.⁴ However, it is primarily the internet that enables the platform economy to flourish with its ultra-low transaction costs and (in most cases) freely accessible information downloadable onto devices.

The emphasis on data, markets and communications infrastructure in defining platforms parallels the fundamentals of Hayek’s thesis. Hayek redefined the economic problem not as resource allocation but as utilising the information generated by *relationships* between

⁴ Originally the term ‘platform’ was used by the computer industry. This began in the 1990s when Microsoft described its Windows 95 operating system as a ‘platform’ (Plantin et al. 2018, 296).

individuals and entities in an economic system, the components of which were firms, the market coordinating the network of economies (*catallaxy*) and his “one communications system” (telecommunications) (Hayek 1939, 131). This componentry would enable information to be transmitted in a timely manner to those who needed it to make choices and decisions. Hayek conceptualised ‘the’ market as a “powerful information processor” and believed all available economic and social activity could be passed through ‘the’ market for processing (Mirowski 2002, 238). The market was thus an all-purpose machine: it could coordinate the plans of individuals in society, steer supply and demand towards equilibrium, coordinate a network of economies, and verify the truthfulness of information upon which decisions were made. The market, however, was not the only processor of information in an economy. According to Coase firms also processed information, either using their own internal expertise or buying advice and knowledge when needed, a process facilitated by the telephone (Coase 1937). This general understanding by neoliberals of the economic function of information to facilitate choices and decisions also speaks to Robbins’s definition of neoliberal economics as “the science of human behaviour as a relationship between ends and scarce means which have alternative uses” (Robbins 1932, 15).

2.2.2 Monopoly redefined

In 21st century antitrust the size and structure of a firm no longer registers in the definition of monopoly although the press still favours descriptions like ‘superstar companies’, ‘titans’ and ‘behemoths’, often in reference to platform firms like Amazon, Uber and AT&T (The Economist 2016). In this new corporate landscape, networks and firms represent another tier of corporation, one that controls and commands ICT networks and the business relationships of those hosted on their platforms. Network firms as another tier of monopoly are now conceived as a form of ‘natural monopoly’ a term commonly used to define public utilities like telecommunications and electricity. Natural monopoly post-war came to be redefined by efficiency criteria measured as low production costs which Hayek used as the sole criteria for measuring the efficiency of the *catallaxy* (Hayek 1978 [1968]b, 91).

Measuring firm efficiency across total industry production meant that a firm could be defined as a natural monopoly purely on the basis of price. Gone were the definitions pertaining to industry structure or social value, such as economies of scale; sole access to a resource; monopolies conferred by patents; high fixed to variable cost ratio, or in the case of public utilities, the cost of duplicating plant and being a reliable provider of essential social services like water (Sharkey 1982, 16).

Other more conventional definitions of monopoly include: “a large-scale enterprise producing a significant share of the output of an industry, or even several industries, and able to control its prices, the volume of its production, and the types and amounts of its investments” (Baran and Sweezy 1966, 6); the “ability of a person or organization to either ignore and/or set market prices” (Birch 2017b, 105); and “a specific individual or enterprise has sufficient control over a particular product or service to determine ... access to it” (Friedman 1962, 120). Milton Friedman’s reference to access is a pertinent factor, as is controlling the price. Albeit apt in many respects, these definitions I would argue do not capture the infinite possibilities for growth that the efficiency paradigm allows. We must refresh our understanding of monopoly with an increasing emphasis on the utilisation of communications and networks. Hayek’s definition of monopoly as simply “organized industries” is somewhat vague (Hayek 1945, 521); however, it does capture the idea that monopolies *organise* whole industries. Hayek’s disavowal of monopolies was limited to state-owned enterprises, government functions and trade unions.

2.2.3 Contestability: the unidentified star of the *catallaxy*

What does it mean when the world’s largest private monopoly decides to invent an economic theory to justify itself? It essentially means that a corporate paradigm was set to change with profound impacts on societies, institutions and organisations. The theory that would set this shift in motion was contestability invented at AT&T Bell Labs in the 1970s. This theory would support AT&T’s forward vision to integrate a market, which would be under their control, using digital network technology which was the fundamental structure of platform capitalism. This section provides a brief introduction to contestability to orientate the reader to a theory which has received insufficient attention from either academics or parliaments.

Contestability is a theory of industry structure that incorporates a market design called a ‘contestable market’. It proposes that monopoly and oligopoly could be induced to price competitively even though the market may have no actual competitors because it was an open market allowing threats from potential competitors to arise. The purpose of the theory was to rationalise the *imitation* of competition as being equivalent to competition, thereby obviating the need for *actual* competition. In his presidential speech to the American Economic Association in December 1981, William Baumol, claimed contestability “aspires to provide no less than a unifying theory as a foundation for the analysis of industrial organization” (Baumol 1982b, 15).

The main text, *Contestable Markets and the Theory of Industry Structure*, published in 1982, was written by Baumol, Panzar and Willig with contributions from Elizabeth Bailey, Dietrich Fischer and Herman Quirnbach (Baumol, Panzar, and Willig 1982, viii). Their work on what became known as ‘contestable market theory’, was developed over eight years beginning with contributions from Baumol in 1970 on subadditivity, followed by multiauthor contributions on economies of scale and scope and sustainability, culminating in 1978 when Robert Willig contributed the “notion of contestability” (Bailey 1982, xix).

Contestability was fundamentally a new theory of industry efficiency, one that would position monopolies and oligopolies to dominate industries as ‘efficiency’ became the byword for economic growth and prosperity. It did so by applying two key theorems. Firstly, an efficiency test called ‘subadditivity’, whereby if “one firm can produce a given output more cheaply than any combination of many firms” then it should be allowed to take the market on the basis of optimising consumer ‘welfare’ which meant selling at the lowest possible price (Baumol, Panzar, and Willig 1982, 18). Put another way, if one firm could minimise total industry costs better than any other combination of firms the industry was defined as a *natural* monopoly (Baumol, Panzar, and Willig 1982, 18). Efficiency was to be calculated using cost function data supplied by firms (Baumol 1982, 6) which would be used to determine the marginal cost from which any industry structure could be deemed to be the most efficient (Baumol, Panzar, and Willig 1982, 26). This necessitated cost data being made available by every firm in an industry to make the calculations, a collection task recognised by the inventors as very difficult in practice. However, this calculation problem did not derail the inventors’ enthusiasm for the concept (Baumol, Panzar, and Willig 1982, 170). This costs-based approach to efficiency was also found in Hayek’s rationale for the competition discovery procedure (Hayek 1978 [1968]b, 91).

Secondly, the sustainability price theorem would be used to analyse market feedback on prices. The theorem which used Ramsey pricing a method of varying prices according to demand elasticities, was used to apply prices across a range of customers and products. The contestable market then performed a cost minimisation discovery process such that the market was constantly verifying that the industry incumbent was maintaining the lowest prices possible. If they were not, the theory held that the contestable market would trigger competitors to come into the market threatening the incumbent and taking a profit (Baumol, Panzar, and Willig 1982, 10).

Used together subadditivity and sustainability would match prices to costs so a firm would remain solvent whilst ensuring consumer welfare with low prices on average which was key to keeping competitors out of the market. These theorems were called the ‘weak invisible hand theorems’ because it was claimed they would discipline monopolies to price competitively. Its proponents held that the imitation of competition achieved through contestability would have similar results to that of multiple competitor markets described by perfect competition theory and where Adam Smith’s ‘invisible hand’ held sway (Baumol, Bailey, and Willig 1977).

According to the contestability theory, testing for natural monopoly can only happen where there is “frictionless free entry” to a market because the sustainability of a natural monopoly’s ‘competitive’ pricing requires competitors to ‘hover’ near the market ready to enter (Baumol, Panzar, and Willig 1982, 350, 351). This, according to the theorists, necessitated that all barriers on entering and exiting a market be removed, in what William Shepherd called “ultra-free entry, with a focus on exit” (1984, 575), meaning potential competitors could rapidly move into the market if an opportunity arose and then leave once that opportunity was expended (1984, 572). Baumol called it “hit-and-run entry” which was the “crucial feature of a contestable market” (1982b, 4).

The contestable market

The Bell group’s claim that contestability could impose price discipline, even on unregulated monopolies, was encapsulated in Bailey’s description of the mechanics of a contestable market in which she wove together precepts on threats from potential entry, market barriers and equivalence between actual and potential competitors (1982, xix):

A perfectly contestable market is defined as one in which entry and exit are easy and costless, which may or may not be characterized by economies of scale or scope, but which has no entry barriers, ... Potential entrants are assumed to face the same set of productive techniques and market demands as those available to incumbent firms. There are no legal restrictions on market entry or exit and no special costs that must be borne by an entrant that do not fall on incumbents as well. An entrepreneur will enter the market if he expects to obtain a positive profit by undercutting the incumbent’s price and serving the entire market demand at the new lower price. If the incumbent readjusts his price, reducing it beneath that of the entrant, then the new competitor can readily exit from the market without loss of investment. Thus, potential entrants are undeterred by prospects of retaliatory price cuts by incumbents and instead are deterred only when the existing market prices leave them no room for profitable entry. (Bailey 1982, xx).

The assumptions concerning the behaviour and resource capacity of incumbents and potential competitors made it easy to dismiss the theory as out of touch with reality, which was the consensus of academic economists who reviewed the book. Even those who praised its technical proficiency (Brock 1983), theoretical accomplishment (Shepherd 1984, 572) and power (Perrakis 1982, 776) thought the theory lacked robustness and realism, a view supported by other reviewers (Schwartz and Reynolds 1983; Spence 1983; Weitzman 1983; Holler 1985; Schwartz 1986; George, Joll, and Lynk 1992). Conditions did not exist such that entry into a market was “completely free, from which exit is costless, in which entrants and incumbents compete on completely symmetric terms, and entry is not impeded by fear of retaliatory price alterations” (Baumol, Panzar, and Willig 1982, 349). The reviewers noted that there are always unrecoverable business costs or sunk costs as the inventors called them, such as advertising, R&D, machinery and infrastructure.

There were also insurmountable issues related to contestability’s core condition, which is the possibility of a threat coming from a potential competitor. Threats from competitors are characteristic of most markets. A contestable market however, is designed to *prevent the threat from materialising*, that is the competitors can be imagined or latent, subject to there being a pool of credible entrants who face no barriers to entering or exiting the market (Baumol, Panzar, and Willig 1982, 350). This ‘state of threat’ which is contestability’s claim to theoretical sufficiency, is marked by a homily to monopolies “behaving virtuously” based on the notion that incumbents will engage in competitive practices because “every deviation from good behaviour instantly makes them vulnerable to hit-and-run entry” (Baumol 1982b, 14).

The presence of two distinct groups, incumbents and would-be competitors, suggests that contestable market design must ensure a pool of potential entrants is *permanently available*. Therefore, it is not only a question of ensuring open markets by abolishing barriers but also of systematically accommodating potential competitors who are in some way attached to the market to facilitate free movement in and out of the market. This is a critical difficulty not addressed by the inventors; the theory does not explain the space, potential competitors occupy while lurking “in the wings” in a ‘hit-and-run’ market (Baumol, Panzar, and Willig 1982, 350).

According to its advocates contestable market entry conditions must create an open, free market devoid of regulatory or trade barriers such as licensing, environmental laws or tariffs and ensure the fixed costs of entry are equivalent for all players coming into the market (Baumol, Panzar, and Willig 1982, 289, 350). Operating conditions must include no sunk

costs. There must be information symmetry between competitors, access to the same technology and consumers who are not beholden to brand loyalty. On leaving a market there must be no barriers such as exit fees, taxes or contractual penalties.

Again the reviewers roundly condemned these assertions as unrealistic (Perrakis 1982, 778; Schwartz and Reynolds 1983), citing “first” mover advantage (Brock 1983, 1061) and the improbability that a competitor would “prevail absolutely and displace the existing firm” with no damage to themselves (Shepherd 1984, 573).

The conditions for a contestable market were understood by Baumol to be unattainable, “that perfectly contestable markets do not populate the world of reality any more than perfectly competitive markets do” (1982b, 2). Instead he claimed a modest benchmarking function using degrees of contestability to identify the most efficient industrial organisation for a given industry (Baumol 1982b, 2). However, the comparison was deceptive because contestability lacked robustness; unlike perfect competition, any deviation from the prescribed conditions would make a contestable market inoperable which was not the case for a competitive market (Schwartz and Reynolds 1983, 489, Shepherd 1984b, 585, Schwartz 1986, 43, Greer 1988, 44). This was borne out by Baumol who never identified an actual contestable market, so all the assertions made by Bell group and their critics could not be verified. In an interview with Alan Krueger in 2001 Baumol spoke of contestable conditions in New Zealand telecommunications⁵ and in US railways, but never named an actual market (Baumol and Krueger 2001, 220). A study by transport economist, Jonathan Cowie found a small number of bus markets in Britain were contestable, post 1980s deregulation of the industry, but he concluded they were not sustainable in a free market even with regulatory protection, and recommended a franchising model instead (2011).

Conditions influencing industry structure

The audacious claim of the Bell group was that ‘a perfectly contestable market’ ... is, generally characterized by optimal behavior and yet applies to the full range of industry structures *including even monopoly and oligopoly*” (Baumol 1982b, 2) (author’s italics). This bald assertion that perfect competition can ‘exist’ in the absence of actual competition is the core paradox of contestability, which the inventors acknowledged they could not fully resolve. That is, irrespective of whether a market is a monopoly or populated with many firms, if the

5 “In 1990, New Zealand’s telecommunications infrastructure was sold to Bell Atlantic and Ameritech (34.2 percent each) along with local banks and businesses” (Hope 2017, 49).

conditions allow free and easy access and exit between the market with its dynamic exchanges and the pool of potential exchanges, the theory claimed that the market will price competitively. This on the face of it makes it appear as if the ‘threat’ which disciplines the market by imitating competition has no structural or institutional base.

One industry structure that assumes a proximity to contestable market conditions is however identified in this thesis. It is the platform monopoly or oligopoly, the latter of which will be illustrated in the Uber example in Chapter 7.

The academy has largely paid little attention to the contestable market hypothesis, dismissing it as somewhat interesting but of little practical use, hence its very limited coverage in university textbooks on microeconomics. However, economics as practiced in contrast, has been active in using the contestability doctrine to support policies on deregulation and privatisation in order to create the conditions for contestability. As Bailey argued, public policy can promote the contestability of markets, “which permits toleration of factors that make for natural monopoly” (Bailey 1981, 178).

By 1980 Bailey determined that the contestable market, which she categorised as an “idealized economic market” (Bailey 1982, xx), had been sufficiently formulated with the theory of industry organisation for service in public policy design, notably the deregulation of the US airline industry (Bailey 1982, xxi, xxii).

Shepherd noted that Baumol, Willig and Bailey had by 1986 admitted that contestability was best used for theoretical explorations rather than for real industry policy work (Shepherd 1995, 302). This followed their admission in 1984 that it was not compatible with the US airline industry even though it had been used to justify deregulation (Bailey and Baumol 1984), which was widely viewed as a failure (Boyer 1986; Dempsey and Goetz 1992; Peteraf and Reed 1994). Nevertheless, the criticism did not forestall its deployment in justifying government policy on privatisation and industry deregulation and as a defence of merger applications in antitrust (Alberro and Schwabe 2016). By the mid-1990s contestability was being used in countries with governments that were embracing neoliberal ideology and by international trade governance organisations promoting “international contestable markets”, thus obligating states, through trade agreements, to open up their domestic markets to monopolisation based on ‘competitive’ threats emanating from competitors ‘off-shore’.

2.2.4 Discourses obscured in plain sight

The Hayekian and contestable market both have broad outlines which remain largely unperceived by those outside the neoliberal thought collective and Bell group. While some aspects such as privatisation and deregulation are well-researched aspects of their programs involving networks have drawn little attention. It is argued here that this is because the neoliberals promoted discourses on competition and markets, rather than networks and monopolisation.

The Bell group's definitive text *Contestable Markets and the Theory of Industrial Structure* (1982, revised 1988) does not mention networks even though the contestable market was designed to function on a network. Some may regard this as a moot point given that markets function through networks of various kinds in any case (Chamberlin 1962 [1933]; White 2002). Neoliberals, in particular, 'took as read' the link between markets and networks. In Hayek's global catallactic vision the market coordinated the network of economies through the transmission of price signals with his theory predicated on there being one global communications system (Hayek 1939; 1976). However, the incongruity of contestability's *unstated* network context is striking because the Bell economists' work on a universally applicable economic theory was informed by transactional exchanges centred on ICT networks. To Bell Labs economists networks were the entities within which their endeavours were located and towards which their energies, along with those of the rest of the company, were necessarily directed (Sharkey 1982, 193; Bernstein 1984, 16).

Nor did the neoliberals establish their catallactic network as a discourse, even though it would have differentiated the neoliberal market conception from the neoclassical, which, as Harrison White noted, removes any "network relations" for the sake of modelling perfect competition (White 2002, 222). The new governmentality emerging vis-à-vis states integrating with the global market network (*catallaxy*), made possible by ICT and controlled by monopolies, is overshadowed by market discourse. We might even go so far as to assert that neoliberalism has elided its network structures so that a network discourse never emerges, even though the neoliberal vision is theoretically bound to catallactic network architectures in a fundamental way.

Philip Mirowski's "double truth" doctrine describes how the neoliberal communications strategy generates contradictions by censoring its messages to the public, how such a strategy produces "discordances" (2013, 68, 69) that obscure the plans and actions of the neoliberals and shroud their political agenda as a target of opposition (2014). In Foucauldian

terms, we might understand the ‘double-truth’ to be an ‘enunciative modality’ of neoliberal discourse (Foucault 1972). What can be said to whom becomes a critical part of the strategy in the progression of the neoliberal political agenda.

Mirowski’s concept of a hidden discourse is potentially applicable to the neoliberal endorsement of competitive markets in contradiction to their practical acquiescence to monopoly. As Foucault identified, a discourse marks an articulation which can bring forth a “regime of truth form[ing] an apparatus (*dispositif*) of knowledge-power that effectively marks out in reality that which does not exist and legitimately submits it to the division between true and false” (2008, 19). Neoliberalism asserts its market and competition discourses as true even as it dismantles antitrust legislation whose function it was to protect competition and markets from monopolies and cartels (see section 2.3.3 below). Indeed, neoliberalism has reversed what was formerly a ‘truth’ of antitrust law, so that markets and competition have to be protected from regulators (Bork 1978, 310, 311).

In effect, the neoliberals have proffered the discourses of markets and competition and absented various discourses which might have made neoliberalism a much clearer target for potential opposition. The market is presented as a politically neutral institution; the government’s role in controlling the market is rejected by the neoliberals as the source of the ‘monopoly problem’ (Hayek 1939, 135; Friedman 1962; Hayek 1979a, 88; Friedman 1999).

2.3 Hayek: the quiet monopolist

This section presents a brief textual analysis of Hayek’s leading perspectives on monopoly which evolved over the course of his career and which would come to directly influence the Chicago School’s pro-monopoly position. This is followed by a critique of the critical literature on Hayek’s accounts of monopoly. This analysis is drawn upon to argue that Hayek opted for corporate power and hence monopolies to plan the catallaxy because government planning was antithetical to his vehement stance against socialism (Hayek 2015 [1935]-a).

2.3.1 At the launch of contestability

By 1979 the contestability doctrine was being actively deployed by the Civil Aeronautics Board (CAB) in the deregulation of the US airlines industry. Under the leadership of former Bell Laboratories economists, Chairman Alfred Kahn and Commissioner Elizabeth Bailey, the Carter Administration’s *Airline Deregulation Act* (1978) was implemented and the CAB decommissioned (1934-1985) (Bailey and Panzar 1981; Bailey and Baumol 1984; Dempsey and Goetz 1992; Kahn 1998).

That same year Hayek published a revised position on monopoly in *The Political Order of a Free People* (1979) which showed his response to the contestability doctrine to be informed and positive. Although he does not use the term ‘contestability’, he describes all of its key precepts and strategies:

It is evidently neither desirable nor possible that every commodity or service that is significantly different from others should be produced by a large number of producers, or that there should always be a large number of producers capable of producing any particular thing at the same cost. As a rule there will exist at any one time not only an optimum size of the productive unit, below and above which costs will rise, but also special advantages of skill, location, traditions, etc. which only some but not all enterprises will possess. Frequently a few enterprises or perhaps only a single one will be able to supply as much of a particular commodity as can be sold at prices covering its costs which may be cheaper than those of any other firm. In this case a few firms (or the single firm) will not be under the necessity of bringing their prices down to the marginal costs, or of producing such a quantity of their product that they can be sold only at prices just covering its marginal costs. All that their interests will induce the firm to do will be to keep prices below the figure at which new producers would be tempted to enter the market. Within this range such firms (or such a firm) would indeed be free to act as monopolists or obligopolists [sic] and to fix their prices (or the quantities of good produced) at the level which would bring them the highest profits, limited only by the consideration that they must be low enough to keep out others.... (Hayek 1979a, 66-67).

Hayek had effectively shifted his position publicly from one where he had deemed monopolies to be benign under free market conditions (Van Horn 2011, 1538; 2015 [2009], 230) to accepting that oligopoly-monopoly industry structures were to be preferred in circumstances where they proved to be more efficient. This passage shows that Hayek recognised the achievement of contestability in coming up with a plausible ‘solution’ to the problem of how to induce monopolies to price competitively. This problem had vexed Hayek during the Socialist Calculation debates as he and fellow Austrian school economists, Mises and Robbins, argued for a competitive market system without having theoretically resolved monopoly pricing. An attempt to do so by MPS colleagues at LSE, Arnold Plant, Ronald Fowler and Ronald Coase, during the 1930s had according to Fowler and Hayek failed to produce a satisfactory result (Fowler 1934; Hayek 2015 [1935]-b, 228).

The Bell group advocated for the deregulation of industry and the removal of antitrust oversight, claiming that a contestable market would allow competitors to enter the market if monopolies became inefficient, therefore regulation was not needed to constrain monopoly.

Taking the Bell group's efficiency argument to its logical conclusion, monopolies are the preferred industry structure as long as they are open to competition, and if there is no active competition then their efficiency is proven. Further, they claimed that if monopoly is the 'natural' and 'efficient' outcome of 'competition', then preventing monopoly prevents competition:

There is a specter that haunts our antitrust institutions. Its threat is that, far from serving as the bulwark of competition, these institutions will become the most powerful instrument in the hands of those who wish to subvert it. More than that, it threatens to draw great quantities of resources into the struggle to prevent effective competition, thereby more than offsetting the contributions to economic efficiency promised by antitrust activities. (Baumol and Ordover 1985, 247).⁶

Hayek also proffers a similar logic noting that market opportunities are hard to discover "in a functioning *catallaxy*" where successful enterprises are both a product and a condition of competition (Hayek 1979a, 75). Hayek had voiced support for corporate monopolies several decades earlier in a presentation given at the *Management and Corporations, 1985* symposium to a very influential cross-disciplinary audience⁷ who would shape the future of resurgent monopoly power and the scientific management approach to business harnessing ICT. In this address he said:

Even the largest aggregation of potential power, the largest accumulation of resources under a single control, is comparatively innocuous so long as those who exercise such power are entitled to use it only for one specific purpose and have no right to use it for other aims, however desirable in themselves. I shall maintain, therefore, that the old-fashioned conception which regards management as the trustee of the stockholders and leaves to the individual stockholder the decision whether any of the proceeds of the activities of the corporation are to be used in the service of higher values is the most important safeguard against the acquisition of arbitrary and politically dangerous powers by corporations. (Hayek 1967 [1960], 301).

6 Janusz Ordover was Deputy Assistant Attorney General for Economics in the Antitrust Division of the U.S. Department of Justice under President George W. Bush .
<https://www.justice.gov/sites/default/files/atr/legacy/2006/10/30/218637.pdf>

7 Conference attendees included: Adolf Berle, J. K. Galbraith and the pioneer of artificial intelligence and computer science in economics, Herbert A. Simon. Simon was Dean of the Graduate School (1957-1973) which later became the Tepper School of Business, Carnegie Mellon University. Later Bailey became Dean (1983-1991).

This perspective on the nature of power assumes the discretionary fortitude of executives not to interfere in social policy or the political process. This is disingenuous given that Hayek and the neoliberal movement had been actively recruiting corporations to promote neoliberal ideology (Phillips-Fein 2015 [2009]; Van Horn 2015 [2009]). It also disregards the fact that usually only majority-holding stockholders can exercise such rights, and it says nothing about privately held corporations of which today Facebook is exemplary. However, for Hayek it was not so much a problem of corporate influence in social affairs as it was corporations circumventing or otherwise interfering with the market mechanism. Hayek's earlier writing suggests that planning by the corporation *for* the market was permissible. In *The Road to Serfdom* (1944), he stated that "the planning against which all our criticism is directed is solely the planning against competition" (Hayek 2007 [1944], 90). AT&T's development of the contestable market hypothesis as a strategy to engineer social and political conditions conducive to their aspirations was thus compatible with Hayek's perspective.

In 1944 Hayek was more concerned about the institutional entanglements between the state and natural monopolies like networked public utilities in telecommunications and electricity. He registered a preference for state regulation of monopolies, as exemplified by AT&T, over the state actually running utilities as state enterprises (Hayek 2007 [1944]). Bruce Caldwell notes that the British Labour Party developed a nationalisation agenda during the war (Caldwell 2007, 13) which Hayek thought would lead to totalitarianism (Hayek 2007 [1944], 171). Hayek scaled this concern to the international level contending that, "a system of comprehensive monopolies recognized by all of the national governments, but subject to none, would inevitably become the worst of all conceivable rackets" (Hayek 2007 [1944], 229). This according to Hayek, was essentially due to monopoly control over raw materials resulting in monopolies holding power over industries and countries (2007 [1944], 230). Later he decided that not even monopoly control over a "rare resource" could be impinged because that would threaten the "institution of private property" (Hayek 1979a, 72).

In *The Constitution of Liberty* (1960) Hayek referred to monopoly as one of a number of "Minor Problems", holding to the perspective that monopolies were innocuous as long as government policy and antitrust interventions did not serve to favour them by distorting the market (Hayek 1960, 265). Hayek at this stage appeared unwilling to attach either benefits or detriments to the presence of monopolies, preferring to leave them to the role of "whipping boy of economic policy" (1960, 265). As I will show in Chapter 6, this was quite a

disingenuous statement given that Hayek spent the 1950s advocating changes to antitrust that would liberate monopolies from government supervision.

Hayek's last comments on monopolies in *The Political Order of a Free People* (1979) stated that it was "desirable not only to tolerate monopolies but even to allow them to exploit their monopolistic position—so long as they maintain them solely by serving their customers better than anyone else, and not by preventing those who think they could do still better from trying to do so" (1979a, 73). Hayek praised the efficiency of the "giant corporation" which was diversified across industries as this led to an expanded 'pool' of competition such that monopolies in one industry were kept in check by monopolies in *related* industries which had the capacity to migrate and thereby acted as a potential threat (Hayek 1979a, 78). Amazon and Koch Industries are two examples that come to mind. In a reference to the networked nature of this integration Hayek wrote, "the giant corporation has made largely meaningless the conception of separate industries which one corporation ... can dominate" (Hayek 1979a, 78). This statement suggests that he was referencing horizontal integration which saw corporations grow in size most commonly through mergers and acquisitions. In Hayek's rationale "[s]ize has thus become the most effective antidote to the power of size: what will control the power of large aggregations of capital are other large aggregations of capital, and such control will be much more effective than any supervision by government" (Hayek 1979a, 78, 79). Hayek suggested that "potential competitors as watchdogs over the monopolist ... would seem a more promising check on such practices [as price discrimination] than to place enforcement in the hands of a supervising authority" (Hayek 1979a, 85).

Over his career, Hayek had consistently reiterated that corporate monopolies were integral to the competitive order. Monopolies caused problems but those problems were not seen as intrinsic to monopoly itself. That said, Hayek's summation of the 'monopoly problem' changed from his early concerns over monopolies interfering with the market mechanism (1976 [1949]), to thinking their effects were benign (1960), then twenty years later extolling the efficiency benefits of monopolies promoted by contestability (1979a). This change in attitude roughly follows AT&T as it goes from being a regulated monopoly to full competitive freedom. Hayek is charting the development of the spontaneous order of the *catallaxy* which functions like a telephone communications system with network and market, exchanges, signalling and compatibility. Technology changes but Hayek insists there must be a market and that the market is contestable – so his argument ultimately embraces Bell group's theory. Monopolies are seen as good for consumers and good for the economy.

Following in the footsteps of Mises, who wrote, “monopoly prices are the outgrowth of government interference with business. ... They are not products of capitalism” (Mises 1998 [1949], 677), Hayek proffered the view that monopolies were only a problem if they were the creation of government policy (Hayek 1939, 135; 1979a, 88). This idea was developed and formalised into the concept of ‘regulatory capture’ by other members of the Mont Pèlerin Society, notably Stigler (1971) and Becker (1983). They used this to support the contention that governments perpetuated monopolies, therefore antitrust law was counterproductive. Hayek and the neoliberals’ counter intuitive argument asserted that the more governments applied regulation the less governments were able to ‘safeguard’ society against corporate power – the role of disciplining the ‘giants’ was best left to other giants in the market.

Hayek’s political activism saw him address the issue of monopolies at the inaugural meeting of the Mont Pelèrin Society in 1947. In a discussion paper later published as “‘Free’ Enterprise and the Competitive Order’ in *Individualism and Economic Order* (1948) Hayek proposed three strategies to deal with what he perceived to be entrenched monopoly power, thus clearing the way for a new legal framework. Firstly, non-corporate monopolies, including government enterprises and trade unions, were to be abolished, a viewpoint Hayek held throughout his career (Hayek 1939, 137; 1979a, 89, 144). Secondly, government support for corporate monopolies had to cease. And thirdly, the dominant liberal order that was said to have protected monopolies had to be unseated to make way for the *neo* liberal competitive market order (Hayek 1976 [1949], 115). Hayek’s political philosophy supported the contestability theorists’ contention that public service provision by government constituted a market barrier. According to Hayek “there is no justification for any governmental agency possessing the exclusive right of supplying any particular service” (Hayek 1979a, 147). Where services were able to be provided by non-government entities, those providers should be allowed to do so. “[A]ll the so-called ‘public utilities’, the various ‘social’ insurances and, above all, the issue of money. Some of these services may well for the time being most efficiently be performed by a *de facto* monopoly; but we can neither insure improvement nor protect ourselves against extortion unless the possibility exists of somebody else offering better services of any of these kinds (Hayek 1979a, 147).

That a public service such as water supply was a monopoly was no longer a barrier to private provision if it was ‘contestable’. Neoliberal competition now included potential competition.

An addendum to this drive to favour non-government providers was the assertion that no one should pay tax for a service if they paid a private provider for the service. That applies to all those services like transport and communications where government may have a “legal monopoly” with the exception of law enforcement and national security services (Hayek 1979a, 147).

Hayek and the neoliberals favoured private sector monopolies to run former state enterprises and institutions. Efficiency would serve consumers and the problem of governments creating monopolies, which they believed inexorably led to corruption of the market, was dispelled. A private firm which operated a monopoly formerly operated by government was acceptable as their services were ‘contestable’.

This brief overview of Hayek’s stance on monopolies is presented to establish the basis for an argument for the close association between neoliberals and monopoly capitalists.

The thesis chapters present a detailed textual analysis of Hayek’s views on monopoly and of AT&T Bell’s development of the contestability doctrine, which is based on the imitation of competition rather than actual competition. I also analyse Hayek’s vision of a networked global order and how his theories on information disbursement and rationality are compatible with the contestability doctrine, and conversely, of contestability being compatible with general neoliberal philosophy. My analysis will lead me to conclude that monopolistic industry concentration is not a contradiction within neoliberalism’s alleged commitment to ‘free market competition’, and that free-market theory has been used to justify monopoly power.

2.3.2 The critique of Hayek’s antitrust-monopoly viewpoints

The critical literature on Hayek’s antitrust and monopoly viewpoints is sparse, reflecting the relative dearth of systematic commentary on the subject by Hayek himself (Kerin 2010, 29). Hayek mentions monopolies and cartels only intermittently across his corpus. Although trained in jurisprudence Hayek’s theorising on monopolies in the context of antitrust was appositely described as “inchoate” by Ellen Paul (Paul 2004, 177). In his 1939 article ‘The Economic Conditions of Interstate Federalism’, Hayek envisioned a global social order that included private monopolies free of government interference but with no trade union monopolies or government enterprise monopolies (Hayek 1939). Hayek made “passing” comments on monopolies and antitrust in *The Constitution of Liberty* (CL) published in 1960 (Paul 2004, 176).

His most prolific contribution to the discussion of antitrust appeared in the third volume of *Law, Legislation and Liberty: The Political Order of a Free People* (1979), published when he was 80 years old. Hayek's corpus was most notable for the omission of any theoretical or autobiographical insights referencing the two antitrust projects at Chicago. For a decade Hayek steered the research which would underpin the epistemological shift in antitrust law which would give monopolies free reign to expand and to establish themselves as governance institutions in their own right. Consequently, research solely based on a textual analysis of his views (Shearmur 1996; Paul 2004; Kerin 2010; Kusunoki 2015) is necessarily limited albeit still insightful.

Three papers chart the change in Hayek's position on antitrust. Ellen Paul (2004), Paul Kerin (2010) and Shigeki Kusunoki (2015) have examined the differences in Hayek's perspective on monopolies and cartels between *The Constitution of Liberty* (1960) and *The Political Order of a Free People* (1979) (LLL3). Paul and Kusunoki also comment briefly on *The Road to Serfdom* (1944) and Kerin and Kusunoki make brief comments on Hayek's 1947 discussion paper published in *Individualism and Economic Order* (1948) suggesting that Hayek and the MPS were poised to introduce radical change to the way monopolies and cartels were governed (Kerin 2010, 30; Kusunoki 2015, 57). The comparative analysis in these papers is supplemented by the scholarship of Norman Barry (1979) and Jeremy Shearmur (1996) who both examine Hayek's perspectives on monopoly within the context of his wider theorising on the principles of liberalism.

The Road to Serfdom is often cited as indicative of Hayek's opposition to the power of the monopolies because he dismisses laissez faire and minimalist state intervention in the economy (Paul 2004) and raises concern about the destructive power of monopolies in the field of intellectual property (Barry 1979; Kusunoki 2015). Hayek's focus is on creating the conditions for a competitive system which involves "legitimate governmental functions" to ensure unfettered access to 'the' market (Paul 2004, 169), as well as stable social conditions like "monetary policy and public works to combat the business cycle and waves of large-scale unemployment" (Paul 2004, 170). Paul's focus is on what government intervention Hayek will allow rather than focusing on the monopoly arguments Hayek put forward.

Paul argued that Hayek's position changed in the 19 years between *The Constitution of Liberty* (1960) (CL) and *The Political Order of a Free People* (1979) (LLL3). She contended that the state still had a legitimate role in regulating monopolies and preventing practices restraining trade (Paul 2004, 168) but that Hayek had shifted ground in terms of the nature of the functions government should perform.

In CL Hayek's focus was on the preservation of individual liberty which led him to question whether monopolies could coerce individuals and thereby infringe their liberty (Paul 2004, 174). Hayek concluded that in the case of the supply of essential services circumstances of monopoly coercion could arise but that it would be a "rare case" (Paul 2004, 174, 175). His remedy was, according to Paul, "modest" as it involved imposing a rule to outlaw price discrimination (Paul 2004, 175). Kerin suggested that forcing a monopolist to charge all customers the same price was aimed at preventing monopolists extending their monopoly. Monopolies were not considered a persistent threat to liberty by Hayek, even though it was significant when it arose (Kerin 2010, 31). The price discrimination issue was sidestepped by the Bell group who theorised contestability using Ramsey pricing,⁸ a revenue constraint option that typically charges consumers higher prices for products which are not discretionary, for which there is inelastic demand. Although acknowledged by Bell as price discrimination (Baumol, Panzar, and Willig 1982, 358), this did not appear to impact Hayek's embrace of contestability.

For Hayek the persistent problem was not monopolies but how governments in their attempts to constrain the size of firms, or control monopolies, were interfering in the competitive process and in effect causing monopolies to become more entrenched, through government protection of select monopolies (Hayek 1960, 266). The chief problems from Hayek's perspective were government erected barriers to market entry and antitrust enforcement (Paul 2004, 175; Kerin 2010, 31-32).

Kerin contended that Hayek espoused a positive view of enterprise monopolies in CL based on them operating in free market conditions which necessitated the removal of "artificial barriers to entry" which "anticipated the 'contestability theory'" (Kerin 2010, 30). 'Artificial' here refers to government made barriers like regulation and import duties. Hayek's vision for a global economy had always necessitated the removal of market barriers (Hayek 1939) in order to induce international competition which he believed would ensure monopolies would only ever be temporary (Paul 2004, 175; Kerin 2010, 31).

Antitrust enforcement, about which Hayek had become "increasingly skeptical" (Hayek 1960, 265), was also a form of market barrier as firms grappled with the uncertainty of their

8 The Bell group used Ramsey pricing in an attempt to address the increasing returns quandary. Described as the "surcharge above marginal cost" it was noted by the inventors as a form of price discrimination. Ramsey prices are still deemed to be lower than "profit-maximizing prices" (Baumol, Panzar, and Willig 1982, 358).

competitive actions in, for example, price cutting, which could result in an antitrust action (Paul 2004, 175). It was a discretionary enforcement system whose arbitrariness was, according to Hayek, doing “more harm than good” (Paul 2004, 176, 194; Kerin 2010, 32). Hayek’s solution was his version of the ‘Rule of law’ which would apply general rules of conduct to everyone, as in the case of price discrimination (Kerin 2010, 31). He noted a general consensus in the business community that it was “improper ... to restrict competition”, effectively imitating the Sherman Act (Hayek 1979a, 86). His proposal was to have rules that were clear and facilitated the flow of information through the market. Paul noted that Hayek wanted government to desist from trying “to create conditions that mimic competition” (Paul 2004, 175) – that was the job of the spontaneous order guided by legal rules (Kusunoki 2015, 57).⁹ In LLL3 the idea that government had no role to play in adjusting the market was developed further to the point where monopolies and oligopolies may be seen as the most “desirable result at a particular point in the competitive process” because they are serving customers (Paul 2004, 178). This is emblematic of Mirowski’s ninth tenet of neoliberalism which is “[c]orporations can do no wrong” (Mirowski 2015 [2009], 438).

In their analysis of LLL3 Paul, Kerin and Kusunoki detected a significant shift in Hayek’s position whereupon he called for the state to withdraw from antitrust enforcement and focus solely on rule-setting for the market. In other words, the state’s function was to devise rules of conduct but not enforce them. Enforcement would be left to the private sector primarily through wronged parties seeking redress through case law (Paul 2004, 180; Kerin 2010, 34). Paul and Kerin saw the prescribed change in function from antitrust enforcement to antitrust rule-setting, as Hayek called for more government action against harm caused to the market by monopolies (Kerin 2010, 32). This was a call for rules to be set. These harms were chiefly discrimination against customers and the thwarting of competition (Paul 2004, 179; Kerin 2010, 32) as in the case of predatory pricing (Kusunoki 2015, 61-62, 64,66).¹⁰

9 For an examination of Hayek’s legal philosophy see Chapter Three.

10 Predatory pricing.

Paul contends that curtailing these negative behaviours was for Hayek an “exercise in ambivalence” (Paul 2004, 176). Hayek decried what he called the “synthetic system of morals” (Hayek 1958, 237; 1960, 65) yet his harm principle had a moral dimension (Paul 2004, 178, 179). Hayek did accept that there were “moral principles of political action” like “individual freedom” which he attached to property rights as a value from which rules free of expediency could be formed (1960, 68). However, his was a narrow position, beyond which lay what he regarded as the immorality of socialism and distributive social justice. As Davies’s asserted, there is a “distan[c]ing from moral reasoning ... in neoliberal legal authority” (Davies 2017, 101). Hayek proposed that his rules would be based on conventions and customs which do not require “a belief in the superior powers of individual human reason” (1960, 65).

Kusunoki argues that Hayek was not negative about monopolies, because they were “one of the natural consequences of competition as a discovery procedure”(Kusunoki 2015, 58). Rather, the challenge faced by Hayek was the difficulty of establishing the legal rules for a spontaneous order (Kusunoki 2015, 60). This is an important insight as it suggests that the radical shift from governance *of* the market to governance *by* the market had logistical difficulties (Kusunoki 2015, 62). This problem was exemplified by the price discrimination rule which Hayek realised needed to be flexible because “[i]n such fields as transport and public utilities it is at least possible that some services could not be supplied at all at a profit if it were not for the possibility of discrimination such as monopoly confers” (Hayek 1979a, 85).

Kusunoki takes the position that Hayek’s jurisprudence was informed by his theory of dispersed information which appeared in his recommendations for a new legal framework in 1947 aimed at creating greater certainty within the legal system itself (Hayek 1976 [1949], 115; Kusunoki 2015, 59). Consequently, contracts restraining utilisation of knowledge and corporations claiming patent and other intellectual property (IP) rights were examples of restrictions or enterprise-made ‘barriers’ flagged by Hayek as concerns (Kusunoki 2015, 59) (see Chapter 6). For Hayek the legal framework of a competitive order had to first and foremost protect that competitive order, which was computationally dependent on the free flow of information. Also making the competitive market system more effective was the critical goal of antitrust, not protecting individuals and firms. However as Kusunoki observed, this put Hayek at odds with others among the Austrian school who were largely

antitrust abolitionists (Kusunoki 2015, 57, 59, 66).¹¹ Paul attested to this difficulty when she applied Hayek's two "harm principles" to the suite of cases brought by the US Department of Justice (DOJ) against Microsoft (1994-2003) (Paul 2004, 198). Hayek died in 1992 so Paul's use of these cases was a thought experiment. She concluded that Hayek's principles could form the basis of enforcement yet they "fail to provide a tenable theory of antitrust that leads to unambiguous criteria". As a result, Hayek failed his own 'rule of law' test for rules governing the market to be determinate so that it is clear when harm principles are being breached (Paul 2004, 200). Paul is uncertain as to whether Hayek would have supported the defendant and left Microsoft intact. She concluded that Hayek distrusted government intervention in the market yet he also held to a principle of equity in "preventing the monopolist from dictating terms to people" (Paul 2004, 203-204). Seen in the light of his unequivocal enthusiasm for corporate self-regulation as rationalised by the contestability doctrine however, we might expect Hayek would probably have left Microsoft's monopoly intact. Paul concluded that the "attractive" route for the information economy was to slip past the ambivalent Hayek and follow Milton Friedman¹² and others in the post-Hayekian "Austrian school", as she would do, and thus abandon antitrust altogether (Paul 2004, 168, 204).

Paul argues that this change in function for government, from enforcement to rule-setting, shows that Hayek was ambivalent about excluding government from market governance altogether. However, we might better regard Hayek's switch to government taking a rule-setting function only as part of the structural change process demanded by Hayek's call in 1947 for a new legal framework that would facilitate international trade (Hayek 1976 [1949], 113). Hayek wanted this framework to protect the market as much as possible from interference from governments, the non-market sector and corporate abuse of power (Hayek 1976 [1949]). His perspective, as Kusunoki contended, arose from his theory of dispersed information which had evolved to "dispersed and unsurveyable knowledge" in *The Fatal Conceit* (1988). Hayek claimed the market had the greater institutional capacity to coordinate dispersed information and diverse ends which meant that an extended order involving millions of people was possible and the nation-state's "striv[ing] for agreement on a unitary purpose" was no longer necessary (Hayek 1988, 15).

11 Such as Dominick Armentano.

12 Milton Friedman abandoned antitrust in the light of the Microsoft cases (Friedman 1999; Paul 2004, 193-4).

Kerin, who regarded Hayek and Friedman as heroes, supported much of Paul's analysis but his conclusion was diametrically opposed, because he believed Hayek did not ensure that government had a sufficient role to play in antitrust enforcement, and that today both antitrust and private enforcement were inadequate to the task (Kerin 2010, 37-38). New corporate barriers¹³ like network effects and virtuous circles had been thrown up by the knowledge economy and new forms of industrial organisations like platform monopolies had arisen from technological change. Kerin's proposed solution within the Australian context was to dismantle these new market barriers in the economy through government regulatory intervention, but using Hayek's "per se rules" approach. This was to avoid corporations being subject to discretionary enforcement by an antitrust regime (Kerin 2010, 39).

Hayek's focus on reducing antitrust to a rule-setting function coincided with his positive view of single firm markets on the grounds that they can deliver more *efficiently* than any other configuration. Hayek framed competition in the language of contestability as either "a large number of producers, or ... a large number of producers *capable* of producing any particular thing at the same cost" (Hayek 1979a, 66) (author's italics). Shearmur identifies Hayek's view that monopolies could be disciplined by the removal of barriers to market entry as contestability theory. Whilst noting that Hayek regarded industry concentration as unproblematic, Shearmur also emphasises that Hayek supported "actual competition and discovery" (Shearmur 1996, 74). Competition is used as a discovery procedure, according to Hayek, "only if we do not know beforehand who will do best" (Hayek 1979a, 67). This amounts to a shift from actual competition to the new contestability alternative to competition which suggests data from firms be used to determine outcomes.

Although the scholars cited above supported the view that Hayek believed in having some antitrust framework, Hayek's belief that general rules would bring about certainty as measured by "the cases that never come before the courts" suggests that antitrust was a 'mopping up' exercise for conflict the market could not resolve (Hayek 1960, 208).

13 The information networked economy had, as Kerin acknowledged, created new barriers to entry which emanated from enterprises. These barriers included, "learning effects, scope economics, network effects, virtuous circles and ... multi-period games" (Kerin 2010, 36).

2.3.3 Hayek's decade devoted to monopolies: the critical literature

Hayek arrived in America before he published 'The Uses of Knowledge in Society' in September 1945¹⁴ where he wrote about the need for the "delegation of planning" and noted people's dislike for monopolies (Hayek 1945, 521). Those perspectives coupled with his mistrust of government (Hayek 1939 [2012], 1960, 1979) posed a political problem for Hayek – how to plan a radically new market order in cooperation with large firms dominating the markets, and at the same time get governments to consider a new legal framework to legitimate the new order.

The critical literature that provides insight into these and other tensions in the Chicago School explores the history of the Mont Pèlerin Society (MPS) through historical and ontological enquiries into the ideas and plans of its members who were known as the 'neoliberal thought collective' (Van Horn, Mirowski, and Stapleford 2011; Mirowski 2013; Denord 2015 [2009]; Mirowski and Plehwe 2015 [2009]a; Mirowski and Nik-Khah 2017). This cosmopolitan group, whose initial meetings were largely funded by Swiss banks and insurance companies,¹⁵ consisted mainly of academics but included politicians and business people from Europe, Britain and America (Phillips-Fein 2015 [2009]; Mirowski and Plehwe 2015 [2009]a; Mirowski 2020). Led by Hayek, in the early years (1947-1961) the MPS focused on the monumental task of constructing a new social order or *catallaxy*. This entailed the construction of new epistemological foundations in law and economics in the United States (Davies 2010; Mirowski and Nik-Khah 2017) making it the epicentre for the resurgence of monopoly power (Birch 2017b, 105) and the epicentre of the information revolution. Such a deep level change necessitated an academic institutional base from which to coordinate research and build an international law and economics movement. The opportunity came from the University of Chicago, which offered Hayek a position on the Committee on Social Thought (1950-1962) (Ebenstein 2015). Hayek was organising cross-faculty research on antitrust even before he took up this official position. These projects were the Free Market Study (1946-1953) which "examined the legal foundations of capitalism" (Van Horn 2018, 478) and the Antitrust Project (1952-1955) which produced a "manifesto" for change to the US antitrust regime (Packer 1963, 55; Van Horn 2015 [2009], 222)¹⁶ that would have far reaching effects globally.

14 Hayek was on a publicity trip for his bestseller *The Road to Serfdom* (1944) a book that was part of the conservative reaction to the Soviet Union after the war. Hayek made the University of Chicago his US base for this and a 1946 trip (Caldwell 2020, 18) before his permanent appointment there in 1950.

15 Funding for the MPS came from "Credit Suisse, the United Bank of Switzerland (UBS), and the insurance companies Swiss Re and Zurich Assurances" (Mirowski 2020, 234).

16 Its importance was also shared by many other scholars: (Carstensen 1996).

Robert Van Horn has made the most extensive study of the problem of monopoly in the context of early Chicago school neoliberalism. He examined how under Hayek's leadership, the neoliberal thought collective came to assert that the force of competition in a free market would render monopoly power benign and temporary, and how corporations were actively influencing the direction of the antitrust projects through supervised funding (Van Horn 2011; 2015 [2009]; 2018). This marked a shift away from the liberal anti-monopoly stance, epitomised in Henry Simons's claim that "gigantic corporations" threatened democracy, towards accepting greater concentrations of corporate power (Simons quoted in: Van Horn 2018, 1530).¹⁷ Hayek effectively steered the Chicago School away from liberalism by promoting the benefits of the "giant corporation" (Hayek 1979a, 78). This shift tapped into conservative formations in US business which were prepared to fund, and in other ways support, free market ideology amongst the business community (Phillips-Fein 2015 [2009]).

The corporate funded pro-corporate position represented a shift within the Chicago School itself, from the liberal anti-monopoly perspective of the First Chicago School represented by Henry Simons, Jacob Viner and Frank Knight¹⁸ to the Second Chicago School made famous by the public utterances of Milton Friedman, and his wife Rose Friedman, on free trade and small government (Van Horn 2011, 1527 fn; Van Horn and Mirowski 2015 [2009]). There was both a generational shift from the older generation of Knight, Viner and Simons to the younger generation including key individuals like Aaron Director, Edward Levi and Milton Friedman. Influenced by Hayek, amongst others, they shifted their perspective from classical liberal to *neo* liberal mode by the 1950s and in doing so moulded neoliberalism from their positions in the schools of law, economics and business (Van Horn 2011; 2013; Van Horn and Emmett 2014; Van Horn 2015 [2009]; Van Horn and Mirowski 2015 [2009]). The shared work on the Free Market Study and the Antitrust Project by individuals attached to contributing faculties forged a neoliberal legal framework that would result in Chicago's reputation for integrating law into economics, and its emergence as the predominant school of jurisprudence in America (Davies 2010; Van Horn and Mirowski 2015 [2009]; Van Horn 2018, 479).

17 Simons, H. (1948). *Economic Policy for a Free Society*. Chicago, University of Chicago Press, p. 43.

18 Knight was one of five first vice presidents of the MPS appointed in 1947. The others were Walter Eucken, John Jewkes, William Rappard and Jacques Rueff (Caldwell 2020, 50).

This success of Chicago neoliberalism was in no small part due to Hayek's driving of the projects administratively and his guiding them philosophically. The ideas set out in *The Political Ideal of the Rule of Law* (1955) and *The Constitution of Liberty* (1960) can be discerned in Aaron Director and Edward Levi's summation of the antitrust projects' research outcomes in 'Law and the Future: Trade Regulation' (1956). In effect Hayek's texts have a subtle pro-monopoly subtext, for fellow neoliberals working on the projects and their corporate sponsors and supporters, which is not readily accessible to outsiders.

As Kim Phillips-Fein detected in *The Constitution of Liberty* (1960),¹⁹ Hayek very subtly showed gratitude for the support from "businessmen-activists" in the United States who during the 1950s invested their knowledge and money in projects committed to a free market future (Phillips-Fein 2015 [2009], 297). I emphasise 'subtly' because Hayek took care not to have his independence appear to be compromised by corporate interests (Van Horn 2018, 479).

To fully appreciate the achievement of Hayek and the neoliberals at Chicago in resetting the juridical levers in antitrust to favour industry consolidation is to grapple with the epistemological nature of the neoliberal project (Mirowski and Nik-Khah 2017) and how it came to embrace the contestability doctrine. However, the in-depth historical research on Chicago perspectives on monopoly by Van Horn, Mirowski and the idealist school currently only extends to the 1960s, thus the critical decades 1970s and 1980s encompassing the lead up to and development of contestability have yet to be comprehensively analysed.

The above analysis of Hayek's views on monopoly juxtaposed to our understanding of his activism at Chicago through the 'anti antitrust' projects should give us cause to question the centrality of competition in Hayek's philosophy. Furthermore, the contestability doctrine offers an alternate paradigm to orthodox competition which speaks to the disjunction between Hayek's written definition of competition and the great 'game', the 'contest' to which he invites people to participate. The central difficulty this poses, in analysing what I contend to be the neoliberal transition to contestability, is that it represents a move from competition to the imitation of competition. Hayek's ideal of competition dynamism as being driven by the price mechanism of the market was embedded conceptually in his notion of spontaneous order for which there are no theorems or proofs. The second difficulty is that the contestability alternative was never *named* as such by Hayek in his

19 Hayek, F. A. 1960. *The Constitution of Liberty*, p. 125.

publications, nor in the work of other neoliberal thought collective theorists I have cited here. Consequently, neoliberal theory asserts a discourse on competition and free markets which contradicts their activism in promoting contestability in US and contemporary Australian public policy. Their discourse runs counter to the growth of monopolies and increasing levels of industry concentration in the neoliberal era. Following Foucault, we will now seek to understand this contradiction through examining the historical conditions for neoliberalism's emergence and the role of neoliberal ideology in the resurgence of monopoly power.

2.4 Foucault on neo-liberalism: insights and hopeful turns

Foucault (1926-1984) first articulated neoliberalism as a distinct movement in lectures (1978-1979) that were later published as *The Birth of Biopolitics* (2008) (Mirowski 2013, 94). They provided a highly insightful and influential critique of neoliberalism which I draw upon to frame my analysis of the relationship between neoliberalism and the contestability doctrine.

The contestability doctrine had a long gestation of influences from the Austrian, LSE and Chicago schools, finally emerging in neoliberal discourse as 'competition and contestability' (Hayek 1935b, 228). In Foucault's analysis of neoliberalism, the term 'neoliberalism' is distinct from 'ordoliberalism' and the term 'neo-liberalism' is used when referring to both. To dispel the confusion implicit in this usage I will use the terms 'Chicago neoliberalism', 'ordoliberalism' and 'neo-liberalism' for both.

Foucault's analysis of monopoly in neo-liberalism and his discussion of the new economic-judicial institutions of ordoliberalism ground my argument concerning the symbiotic relationship between monopoly capital and the Chicago neoliberalism. His theory of governmentality provides a theoretical basis for my argument concerning the emergence of the monopoly institutional construct within neoliberalism and the consequential retreat of the state which Foucault sources back to the ordoliberals' belief in an inviolable link between government and totalitarianism (2008, 110).²⁰

20 Ordoliberalism is associated with the German Freiburg School, the Faculty of Economics at the University of Freiburg. Leading ordoliberals were Walter Eucken, considered the father of ordoliberalism, Wilhelm Röpke, Franz Böhm and Hans Großmann-Doerth (Ptak 2015 [2009]).

2.4.1 The struggle over theory

One of the essential features of Foucault's analysis of neo-liberalism was his observation of the struggle over theory. For those adhering to the pure logic of capitalism, like the Marxists and the Chicago neoliberals (whose version he also called "anarcho-liberalism" (Foucault 2008, 161), the contradiction in capitalism that produces monopoly was incontrovertible (Foucault 2008, 134). According to Foucault the Marxists believed that this and other contradictions would crush capitalism because the monopolisation of capitalist accumulation would eventually drain capitalism of a viable labour force, the source for new accumulations, making way for the alternative created by workers (2008, 164-166). Chicago neoliberals led by Hayek, promoted the view that monopoly would be ephemeral if a pure form of capitalism emerged, that is, if government controls and other barriers to the market were removed enabling the market to cycle back to competition without interference. They held that capitalism was for the good of the workers because it gave them the opportunity to become capitalists—"we are all entrepreneurs" wrote Hayek (1960, 81). To put this vision into practice they sought to diminish legal regimes governing corporations.

Foucault distinguished Chicago neoliberalism from German ordoliberalism. The ordoliberals' position on the monopoly contradiction reflected Foucault's understanding of capitalism as being institutionally derived, that is, there was no "single capitalism" describable by pure theory but diverse capitalisms emerging and subject to transformations in history, impacting upon the economic and the institutional that are political in nature (2008, 165). Any capitalism that is produced is not universally formed of a logic, but is rather "singular" in the sense of manifesting unique forms, derived from the interactions between "economic processes and institutional framework" (Foucault 2008, 164) and contextually situated in times, places and cultures.

2.4.2 Capitalism + regulation

Foucault, having considered the origins of the primacy of the market as a regulator of states under neo-liberalism, turned to an institutional analysis. He described the contention that the market revolved on competition as a "principle of formalization" (Foucault 2008, 118, 120). That is to say, it was not a natural phenomenon, or derived from a natural law which spontaneously arose, but was dependent on institutional settings that were historically conditioned (Foucault 2008, 121). This point is made clear by the chaos that ensued in some Eastern Bloc countries when they were expecting that once the communist regimes were gone markets would appear spontaneously (Simon 1996, 34; Hodgson 2002 [2001], 253). Hodgson criticises this idea that markets could grow without rules (Hodgson 2002 [2001],

254) and concurs with Coase when he said of the post-communist debacle, “without the appropriate institutions, no market of any significance is possible” (Coase quoted in: Hodgson 2002 [2001], 253).²¹

The ordoliberalists embraced the price mechanism of the market as the basis of economic rationality (Foucault 2008, 119) but unlike laissez faire liberals they believed that the benefits of competition, or what Foucault called its “essential economic logic”, could only be realised “under certain conditions which have to be carefully and artificially constructed” (2008, 120). These conditions were created by an anti-monopolistic legal regime with specific protections for small to medium sized enterprises and craft industries (Foucault 2008, 240). The ordoliberalists’ ‘framework’, Foucault contended, served as an “economic constitution” to which was applied the *Rechtsstaat* or Rule of Law, thus setting what was ostensibly economic policy into a legally constituted institutional structure (2008, 167-168). What set the ordoliberalists apart was their conception of *Gesellschaftspolitik*, which is commonly interpreted as “social policy”,²² but which Dardot and Laval insist should be translated as “policy of society” because it engenders the objective of societal wide institutional integration (Dardot and Laval 2017 [2013], 93). *Gesellschaftspolitik* recognised social processes and the existence of the “market mechanism within them” (Foucault 2008, 240). It was the function of the *Gesellschaftspolitik* to “nullify the possible anti-competitive mechanisms of society”, that is to ensure that the “absence of competition” did not arise (Foucault 2008, 160).

The protection of *actual* competition set the ordoliberalists apart from Chicago neoliberals because their idealism led them to favour a multiplicity of smaller enterprises, which Foucault described as the “formalization of society on the model of the enterprise” (2008, 160). Chicago’s Antitrust Projects (1946-1955) in contrast set about to dismantle the Sherman Act which legislators intended to protect small enterprises (Hawley 1966). This set the stage for the entrenchment of monopoly power in America as the monopolies stepped into the regulatory void left by the dismantling of antitrust.²³ Neoliberal ideology, which was promulgated globally through the Washington Consensus, trade agreements and deregulation in domestic and international jurisdictions, synergised with AT&T’s investment in the new economics of contestability.

21 Coase, R. 1992. ‘The Institutional Structure of Production’. *The American Economic Review*, 82:4, p 718.

22 Graham Burchill’s 2008 translation of Foucault’s *Birth of Biopolitics*.

23 Uber ride sharing’s rating system of drivers and riders is an example of a network using digital technology to regulate behaviour of market participants.

The ordoliberal multiple enterprise conception emphasised the importance of keeping monopolies at bay so as to fulfil the *Gesellschaftspolitik* ideal. It was conceived to acknowledge human agency over decisions and establish the conditions whereby a diverse network of enterprises contributed to the “social fabric” (Foucault 2008, 241). This was in stark contrast to Chicago neoliberalism which saw economic rationality derived from the market not human behaviour. What Foucault deduced in the ordoliberal position was that the market was perceived as “a general social and economic regulator” (2008, 140) with free market principles exclusively “legitimizing political institutions” (Dardot and Laval 2017 [2013], 212). The ordoliberal version of neo-liberalism, capitalism *plus* state regulation, was intended to suppress authoritarianism, constrain the drift towards industry concentration and secure for small enterprises protections if and when monopolies arose (Foucault 2008, 178-179).

Conscious economic law

The question Foucault asked concerning the emergence of any newly invented form of capitalism was, “where and by what route will this irruption of innovation be able to take place within capitalism? Clearly innovation will not come from the laws of the market, it will not take place in the market itself since economic theory shows that, by definition, the market must function in such a way that its pure mechanisms are in themselves regulative of the whole” (Foucault 2008, 167). Foucault noted that Eucken’s answer to this was to urge a “move on to a conscious economic law” (Eucken quoted in: Foucault 2008, 167)²⁴ by examining the relationships within the economic-judicial complex from an historical perspective as the basis for the *Rechtsstaat* (Rule of law) (Foucault 2008, 167-168). In neo-liberalism this amounted to “a set of regulated economic practices” (Foucault 2008, 166) that were not derived from changes to the market or to economics per se, but rather from making law endogenous to the economic system. This change in how law was conceptualised for the purposes of governing economic activity would have its greatest impact, not in local jurisdictions, but in creating the possibility that a unifying law such as international investment law could serve to coordinate global trade and investment and satisfy the “neoliberals in their quest to encase the world economy” (Slobodian 2018, 145).

24 Foucault’s full footnote: “It seems that this expression is taken from the following phrase in F. Bilger, *La Pensée économique libérale*, p. 65, with regard to the scientific politics recommended by Eucken on the basis of his economic morphology: ‘... after having refuted evolutionist philosophy, Eucken recalls that most groups in history are not formed from technical necessity, but thanks to the absence of a real conscious economic law’” (Foucault 2008, 181).

Foucault analysed French epistemologist Louis Rougier's belief that neo-liberalism denotes a "juridical ensemble" functioning *inside* the economic system (Foucault 2008, 166). Rougier imagines something like the liberal ideal of the Highway Code which does not impede travel (consumer) choices but is nonetheless a strict regime to ensure the smooth flow of traffic (market efficiency) (Foucault 2008, 162). Hayek also adopted the Highway Code ideal when illustrating his notion of the Rule of law as formal principles (Hayek 2007 [1944], 113-114; Foucault 2008, 172) not open to interpretation because of *mens rea* or other legal qualifiers that expose a rule to judgement.

The interpretation of economic law becomes a point of departure between the German ordoliberals and the version of neo-liberalism which went with Hayek and Coase to Chicago. Hayek's vision of a "legal framework" was much more in tune with the US industrialists' aversion to state interference than to ordoliberals' championing of small enterprises (Hayek 1976 [1949]). As Dardot and Laval conclude, the "economic law of competition" in ordoliberal Germany is formalised by an economic constitution written by the legislature, making it an institution of state (Dardot and Laval 2017 [2013], 84). Chicago neoliberalism gives itself over to the diminishment of the US antitrust regime without instituting an alternative derived from state legislature, leaving it to the market and corporations to produce competitive conditions.

2.4.3 Revelation and response

Foucault reached into the core contradiction of neo-liberalism by historicising the principle that emerged from the German ordoliberals' "revelation" about Nazism, overturning an earlier analysis that viewed it as a "natural development of capitalism" and instead attributed the rise of Nazism to the "intrinsic defects" of the state (2008, 110, 116). Their anti-state response to Nazism was to declare that "the market economy itself [is] to be the principle, not of the state's limitation, but of its [the state's] internal regulation from start to finish of its existence and action" (Foucault 2008, 116).

In Germany the ordoliberals traced the roots of 1930s National Socialism back to the 1840s when a "protectionist economic policy" was imposed in antipathy to liberal economic policy deemed by state economist Friedrich List to favour imperialist Britain in trade negotiations with German states (Foucault 2008, 107-108). This was followed by "Bismarkian state socialism" which unified the German states and bolstered their imperial ambitions, ultimately leading to the First World War and the Ministry of War's industry-based, planned economy model as instigated by industrialist Walter Rathenau (Foucault 2008, 108). From the war's end to 1933, Foucault suggests "Rathenau type planning ... was more or less re-

utilized in a Keynesian perspective at the end of the 1920s and in the 1930s” (2008, 108-109). That is to say, government used monetary levers and other measures in an attempt to control inflation and other economic crises. The ordoliberals saw these different forms of state intervention as contributing, in an elemental sense, “the necessary *system* of relations” which led to the rise of Nazism (Foucault 2008, 109) (emphasis added). Their response was to assume that any government intervention would lead to the growth of the state, resulting in more interventions which would inevitably produce systematic totalitarian control. They did not think this outcome was due to the unique constellation of factors in German history but rather perceived it as an economic inevitability which was anti-liberal in nature and generalisable across nation states (Foucault 2008, 110-111). Whether it was British welfarism, the New Deal or Soviet planning, neo-liberals believed each was driven by the same logic of state planning and power as Nazism (Foucault 2008, 110-111).

From this conclusion came the proposition that the market should replace state planning as the organising principle. The ordoliberals sought to reverse the regulatory principle, or in Foucault’s words “completely turn the formula around” so the market became the regulator of the state as well as itself (Foucault 2008, 116). The ordoliberals saw this as a way of resurrecting trust in the state, by legitimating it with a new formula which protected the market, and protected the state from its own totalitarian proclivities (Foucault 2008, 116-117).

Hayek concurred with several of the ordoliberal’s precepts. His proposed ‘spontaneous social order’ was a network coordinated by the market, from which the state should absent itself from any activity such as price controls (Hayek 1976 [1949], 110). Instead Hayek strategically advocated that the state “deliberately adopts competition, the market, and prices as its ordering principle” by creating a legal framework which submits state functions to the price mechanism (Hayek 1976 [1949], 110). Once marketisation occurs, the state is exposed to having its functions taken over by corporations. That is to say once a function has a price then that price can be contested by the market. The ‘sentiment’ shared by both ordoliberals and Chicago neoliberals was that liberalism could only endure if the switch was made to a market regulated state. In reality nothing perceptible of liberalism in law and economics seemed to endure the Chicago renovation of liberal legal precepts and laissez-faire.

The ordoliberals strayed from their seemingly resolute rhetoric about no state involvement and instead engaged state legislatures in the construction of a legal institutionalism in Germany to support a competitive market system which was widely adopted in Europe. This system was extant for several decades, until Chicago’s efficiency-based antitrust began making inroads in the 1990s (Gifford and Kudrle 2015, 14).

2.4.4 Chicago neoliberalism: from individual to cyborg

Foucault's analysis of Chicago's points of departure with post-war ordoliberalism focuses attention on the fundamentals of the Chicago school that enabled them to forge a radically different type of neo-liberalism, one compatible with American capitalism and its technological vision. Foucault's starting point was to show how Chicago neoliberal analysis differed from classical economics in its attention to the individual and the choices they make:

for the neo-liberals, economic analysis should not consist in the study of these mechanisms [those of production, —exchange and consumption],—but in the nature and consequences of what they call substitutable choices, that is ..., the way in which scarce means are allocated to competing ends ... between which we must choose (Foucault 2008, 222).

Here Foucault, referencing Robbins, identifies Hayek's conception of the economic problem as calculating allocation using marginal utility when the data needed is dispersed amongst individuals (Hayek 1945, 519). Individuals were the key because they had unique information, that if utilised would make the economic system more efficient (Hayek 1945, 521). Foucault articulated the neoliberal position as measuring the individual and distilled his analysis of American neoliberalism through a critique of Becker's *Human Capital* published in 1964. Becker, an economist, sociologist and NTC member at Chicago, showed how the analytical domain of *homo oeconomicus* could be extended through considering the capital investment in a human being from which their capacity to earn an income stream is derived, thereby changing what constitutes a worker and what constitutes an economic transaction (Foucault 2008, 219ff). Whereas Marx had identified labour as labour power (Foucault 2008, 221), Becker sees the worker as an "active economic subject" whose skill constitutes a "productive machine" or "abilities-machine" (Foucault 2008, 223-226). The analysis of human capital encompasses a human's lifecycle rather than just their productive years in the workforce. It also means that when people were not working, they were still *potential* ability-machines who could come back into the market as investors still looking to capitalise their investment in themselves. In this conception, Hayek's unitised individual is formulated such that they can be valued as an information asset. Thus nurturing children becomes an investment contributing to the formation of human capital (Foucault 2008, 229). This was neoliberalism's radical shift away from classical political economy which, had framed production as the combination of land, capital and labour but left labour a "blank sheet" (2008, 219). Labour value was just a factor of production reduced to time, with hours worked as its measure (Foucault 2008, 220). Becker also claimed that individuals' non-rational behaviour was still "susceptible to economic analysis", that is the market can

process any choice, irrespective of how well informed they are, as long as there is a computable pattern (Foucault 2008, 269).

Foucault concluded that “it is no longer the analysis of the historical logic of processes; it is the analysis of the internal rationality, the strategic programming of individuals’ activity” (2008, 223). Once the activities of individuals become the unit of economic evaluation the result is “an economy to be made at the level of transaction costs” (Foucault 2008, 245). Now it was a case of determining, as Coase posited, what the most efficient means of managing those transactions were, whether it be, for example, by the market or through short or long-term contracts made with firms or other entities. Coase also theorised that an employee could opt for a ‘freer’ work environment by becoming an “independent contractor”, that is entrepreneurs themselves (Coase 1937, 404). Workers’ data also has a utilisation value whether they are ‘idle’ or not because they are now first and foremost a capital asset.

Human capital effectively places a monetary value on human behaviour and relationships which Robbins argued was the basis of economic science (Robbins 1932; Foucault 2008, 222). It was also implicit to Hayek’s idea that exchange relationships were based on subjective knowledge being transmitted through individuals’ actions (Hayek 1937, 37) coordinated by prices coded with this knowledge (Hayek 1945, 526). Hayek’s individuals, or “enterprise-units” as Foucault called them (2008, 225), joined other units of enterprise like families, farms, firms and public institutions etc to form the network of economies, the *catallaxy* (Hayek 1973, 46). Austrian economist Fritz Machlup, who coined the expression ‘knowledge economy’, also shifted his conception of labour to information “offer[ing] a vision of the economy as a flat network, where work was synonymous with communication” (Slobodian 2020, 83).

Foucault observed that neoliberals also held that innovation is dependent on investment in human beings and therefore should be brought into the analysis of economic phenomena like economic growth (2008, 231). Baumol, for example, assessed that economic growth was linked to human capital investment in things like education but that free markets were also needed to take inventions to the innovation stage and thence to production (Baumol 2002, 247). It is precisely this positioning of “*man as capital*” in the *systemic* sense that the Foucauldian scholars Dardot and Laval observed in attempts by neoliberals to constitute free markets. That is, the “concept of ‘human capital’ ... had to assume material form through the establishment of multiple, diverse, simultaneous or successive apparatuses, which have enduringly moulded the conduct of subjects” (Dardot and Laval 2017 [2013], 168). This leads us to the new institutional apparatus in America.

2.4.5 America's irruption

The Second Chicago School's radical resetting of law and economics from the mid-1940s served to legitimately position monopolies like AT&T to exploit the revolution in ICT. This revolution burgeoned in the immediate post-war period (Edwards 1997 [1996]; Gertner 2012). To understand the new institutional ensemble that would emerge in America a cue can be taken from Caldwell who concluded that Hayek was "seeking that set of institutions that *least hinder* coordination" (2004, 349).

If we return to Foucault's key observation: that the market, is *not* in itself able to bring about change we are left with the question, what institution in America would "irrupt the innovation"?, that is evolve capitalism in response to the revolution in ICT (2008, 167).

According to neoliberal *discourse*, the institution regulating information flows through the economy was the market. It is widely acknowledged that markets are institutions even though there is agreement amongst many scholars that markets generally are not well understood and therefore their institutional character is not well defined (North 1977, 710; Coase 1988, 7; Callon 1998, 1; White 2002, 47; Hodgson 2002 [2001], 255; Kirman 2006, 248; Mirowski 2013, 55). Hayek, as Hodgson noted, saw the market both as a set of conditions that enabled individuals to coordinate their plans, and as an institution that evolves (Hodgson 1999, 106) and functions as an authority through which knowledge is discovered (Hayek 1978 [1968]a). For Coase the market's institutional quality was its function "facilitating exchange" by reducing the cost of exchange (Coase 1988, 7). Foucault characterised an institution in the general sense as possessing "its own rules, ... a body of knowledge and practice, ... [and] recogni[tion] by public opinion, the law, and government" (1972, 41-42).²⁵ For Foucault the market alone did not however amount to an economic-judicial institution. That form of institutional embodiment came, for example, when the market institution was constitutionalised by the law of the state as in Germany (Dardot and Laval 2017 [2013], 84).

Chicago neoliberals however rejected state intervention altogether including controls imposed by the liberal state on monopolies to curb their excesses and protect competition (Foucault 2008, 134). I argue that a new institution emerges that I classify as an 'economic-governance institution', noting that its regulatory function is not dependent on a state

25 These were the criteria Foucault used to describe medicine as an institution which I regarded to be generally applicable (Foucault 1972, 41-42).

juridical institution. That new institution is the firm-controlled network hosting markets which is formed from the integration of the firm and market on a network made possible by ICT. In chapters 4 to 7 I will show how this institution emerged from an assemblage of LSE and Chicago School economics and law, and AT&T's corporate aspirations, technology, industry theory and contestable market design.

The theoretical foundation of this ensemble is Coase's transaction cost theory (Coase 1937; 1960; 1988). Davies identifies this theory as a neo-classical "innovation" because it offered an empirical basis to "interrogate market *and non-market* structures side by side" (Davies 2017, 51). Coase characterised the economy as a "specialist exchange economy" whereby transaction costs on exchanges, be they in the market or contracts negotiated by firms, could be comparatively analysed for cost efficiency. As Davies put it, "[e]valuation by economics replaces evaluation by markets" (Davies 2017, 51). By imposing what is essentially cost benefit analysis on transaction exchanges, the relative efficiencies of the firm, market and network could be assessed. This would make it possible to design an integrated structure like a platform monopoly, which optimises transaction efficiencies across these three component institutions. The firm, or other alternatives organising economic relationships such as networks, can be seen as a substitute for the market (Coase 1937; North 1977, 711).²⁶

The new integrated institutional form of firm, market and network required the problem of monopoly to be reformulated. That is, the monopolisation of markets hosted on the network and the monopolisation of the new institutional form itself were differentiated. As Foucault observed the rationalisation of monopoly had to be compatible with the market internationalism that was implicit to neoliberalism. The conceptual banishment of monopoly as a problem was, Foucault argued, attributable to Mises who believed the global marketplace would shrink the problem of monopolies if barriers to trade and investment were removed (Foucault 2008, 135). The new integrated institutional form which is the basis of platform capitalism is also implicitly global with the expectation that low production costs and prices would characterise the 'friction-free global economy'.

26 In Hodgson's account of North's analysis, a network was also governed by a set of rules (Hodgson 2006, 10). Network infrastructure like the Bell System has also been viewed as 'institutional' because it is considered vital social infrastructure (Marchand 1998) as is the case with the internet which has spawned its own international governance institutions (Mueller 2010, 45).

Mises's influence was encapsulated in his belief that international markets would curb monopoly behaviour because higher prices signalled competitors to come into the market. That threat, he claimed, was sufficient to induce monopolists to charge competitively (Foucault 2008, 136). This embodiment of information in the price redefines the market as an information processor for the whole global economy and draws on the dynamic of Hayekian spontaneity. The regulatory structure must therefore protect the signalling mechanism. The structure of the competing entity was irrelevant, what mattered was how they were incorporated into the signalling network so monopolies could price "as if there were competition" (Foucault 2008, 137). This is the 'threat of entry' logic embraced by the contestable market hypothesis.

Contestability and rule making

The change in governmental style Foucault is signalling, engenders the characteristics of a transformation, one which presupposes structural change, the shape and proportions of which were unknown.

Contestability theorists established particular rules for the design of a contestable market, such as no regulatory barriers, friction free entry and exit, no sunk costs or cross-subsidisation, equal competitor access to information and technology and an absence of government providers who might distort the market. As a doctrine it also played a role in advocating for an approach to regulation that favoured the conditions for new forms of networked market to emerge. The doctrine sprang in part from regulatory economics with Bailey contending that regulation was causing global telecommunications company AT&T to be inefficient (Bailey 1973).²⁷ In an interview in 1981, Baumol did not claim that contestable markets existed, but rather that contestable conditions were being established. He stated:

We say perfect contestability is a theoretical construct which is not more realistic than perfect competition, but more useful as a guide to regulation. Increasing contestability is also a feasible policy to adopt by reducing regulatory barriers to entry, etc., etc., because that will drive you towards efficiency in markets. ...things like railroads, where the rules now in place explicitly are based on contestable markets, or in telephone regulation, where for example, in New Zealand they are explicitly based on contestable market theory (Baumol and Krueger 2001, 220).

²⁷ The book was derived from Bailey's 1972 thesis of the same title, *Economic Theory of Regulatory Constraint*. Baumol was her PhD advisor.

Baumol is claiming that, irrespective of the existence of actual contestable markets, the application of rules to an industry must be assessed for efficiency which is the key function of the contestability probe. In this way, hypothetical contestable markets are used as an instrument to supplant regulatory functions of government by establishing rules which in theory supported the efficiency paradigm of a contestable market. The contestable market is hypothetical in the case of traditional industries and merely offers a pretext for unfettered deregulation. It approaches actual market conditions in the case of markets hosted on ICT platforms.

The concept of market as regulator, which lies at the heart of neoliberal thought including contestable market analysis, was from the late 1970s increasingly supported by case law and an international regime of rules set out in trade agreements; this was the core of Hayek's vision for a new legal framework. Effectively, we have seen the (re)enablement of monopoly including the rise of the firm-controlled network hosting markets, an economic-governance institution supporting a new form of global capitalism—platform capitalism. In contrast to my claim that neoliberalism has served the interests of monopoly, neoliberal *discourse* however has valorised 'the' market and competition as the *raison d'état* of neoliberal society, effectively screening the construction of an international corpocracy designed to replace democratic, state-based juridical systems and international governance predicated on human rights and cooperation between nation states. As I will argue in this thesis, this is not a distortion of the neoliberal ideal but rather Hayek's catallactic vision materialising.

Amazon: the firm controlling a network and hosting markets

The prime example of this new integrated institutional form is e-retail platform Amazon which Lina Khan described "as central infrastructure for the internet economy" (Khan 2017, 754). Khan observed that agent relationships on Amazon are not just between Amazon and its customer base but between Amazon and the myriad of firms who access their customers using Amazon's platform. Amazon's control of these relationships is enhanced by its vertically integrated structure covering manufacturing to distribution. The institutionalism of platform monopolies is not just concerned with the nature of their business, but with how they control the distribution and utilisation of information on their platforms in ways that are very difficult to replicate. In effect Amazon is hegemonic in the Gramscian sense rather than being simply dominant in the market sense of suppressing rivals, because their economic and self-regulatory power over their vast networked domain orders these social relationships. As Khan concludes, "because online platforms serve as critical intermediaries, integrating across business lines positions these platforms to control

the essential infrastructure on which their rivals depend. This dual role also enables a platform to exploit information collected on companies using its services to undermine them as competitors” (Khan 2017, 710). Uber ride sharing is another example where the ‘regulation’ of a market through their platform gives them institutional power to bring about change in their favour. Large platform corporations have applied legal challenges and political pressure, as in the case of Uber, to local jurisdictions in a bid to internationalise their business models (Schechner, MacMillan, and Kostov 2016).

Neoliberals have diminished anti-trust provisions such that the juridical element of ‘the’ economic-juridical institution, while it still functions, is in a much reduced state (Rowe 1984). Most importantly US antitrust fails to constrain platform monopolies like Amazon and Uber because it does not account for the structure of markets just as Chicago School philosophy since the 1950s discounted the importance of industry structure (Khan 2017, 717-718). The corporate sector is largely regulated through case law and also increasingly by private governance apparatuses like investor-state dispute settlement (ISDS) treaties which “give exclusive rights to multinational corporations to challenge any national legislation that impacts on their profitmaking expectations, before corporate-friendly panels” (Faunce 2015, 596). Transnational corporations are now more-or-less self-governing, particularly when the corporate capture of the international regulatory process is factored in (Young 2012; Berman 2017).

2.4.6 Hopeful turns

Foucault’s attention to the ordoliberal’s “social market economy” was largely sympathetic but according to Michael Behrent did not extend to the “market fundamentalism” that emerged later following the oil shocks of the 1970s (Behrent 2016, 178). This reflected the difference between the legally structured role of the market in regulating the state and competition under ordoliberalism; and the Chicago-Bell approach which was to remove impediments on corporations so they could perform the ‘watchdogs’ role (Hayek 1979a, 85). For Foucault, who spent his formative teenage years living in Nazi occupied France, the possibility that the state could be constrained by a formerly constituted market, was a hopeful turn in the light of the state’s implosion during the war. It was also understandable given that ordoliberal influence held up the prospects for a stable Germany and single

market unity in Europe.²⁸ Foucault, who died in 1984, was writing before Chicago neoliberalism achieved its ascendancy. Foucault included under the umbrella term ‘neoliberal’ an analysis of competition which was in hindsight mainly applicable to early ordoliberalism, which made competition its cornerstone but not to Chicago neoliberalism which opted for a corporate economic-governance institution, the firm-controlled network hosting markets.

This understanding of Foucault’s sympathetic reading of neoliberalism affords us greater insights into neoliberalism’s appeal as a philosophy in terms of how it addressed the problems of state authoritarianism. It was seemingly calibrated to individual liberty and resonated with post-war optimism as something new which was not generally associated with the ideologies that culminated in World War II. Dean argues that Foucault shared neoliberals’ criticisms, as for example, against the welfare state, without critiquing the neoliberal alternative (2015).

It must be said that the full picture of neoliberalism’s alternative was not clearly visible until the information economy created a global network which could instantiate Becker’s vision of unitised individuals. This brings us back to the controversy raised by François Ewald’s claim that Foucault was an apologist for neoliberalism (Dean 2016, 89). As Dean contends, the controversy turns on “the ‘paradox’ of *Homo aeconomicus*” (2016, 98). With unerring accuracy Foucault had identified this figure and perceived its centrality to neoliberal thought. Further, he had identified that it was the very fact that *Homo aeconomicus* was autonomous that enabled them to be unitised and therefore systematically manipulated (Dean 2016, 98). In the years that followed isolate units of human capital would continue to be reimagined as self-managing and self-serving, but would be subject to being coordinated and mined for data through the internet.

Mirowski argued that “the otherwise prescient Foucault took a wrong turn, ... in too readily swallowing the basic neoliberal precept that the market was an information processor more powerful and encompassing than any human being or organization of humans. ... [such that] Foucault missed ... the critical notions of double truths” (Mirowski 2013, 98).

Mirowski further contended that the neoliberal contradiction concerned “[t]heir version of governmentality [which] elevates the market as a site of truth *for everyone but themselves?*”

28 The success of the German economy post-war garnered support in a wider European context which was reflected in the ordoliberals’ influence on the Treaty of Rome which led to the formation of the European Union with its comparably tighter rein on market dominance than the US (Gifford and Kudrle 2015, 11).

(Mirowski 2013, 98). Foucault perceived the neoliberal market as one which repudiated any “would-be central, totalizing bird’s-eye-view” of economic processes (Foucault 2008, 292). Foucault’s insight concerning neo-liberalism’s ontological immersion of the individual into economic reasoning identified the market as the citizen’s economic domain that could act as a foil to sovereign power (Foucault 2008, 292). “The principle of ‘free choice’ appears here not only as a principle of economic efficiency, but also as an antidote to any coercive drift on the part of the state” (Dardot and Laval 2017 [2013], 80). Mirowski refers to Foucault’s contention as “the autolimitation of state power” which Mirowski rightly rejected in view of the expansion of the state following the 2008 global financial crisis (GFC) and its “injection of neoliberal themes in everyday life” (Mirowski 2013, 101). Foucault’s early critique and focus on ordoliberalism influenced other scholars and ensured that subsequent critiques of neo-liberalism were largely focused on the market and the state, rather than the incorporation of markets into monopolistic structures.

The Chicago School’s idea that the market could supervise the state and itself, even though it could not ‘plan’ itself, was I argue, a contradiction which we are at liberty to interrogate for the purpose of discovering its underlying coherence (Foucault 1972, 151). To answer the question of “who is to plan the market?”, I hypothesise that the Chicago neoliberals chose monopolies to plan the market order. Doctrinally, for this anti-state group (Peck 2010, 17) there were no other options available because they regarded the defects of the state as absolute, as for the neo-liberals there was no form of government planning or intervention that was exempt from the logic of totalitarianism. Further, the defects of the monopolies were not ascribed to monopolies but to government treatment of monopolies (Hayek 1939, 135; 1941, 582). Chicago neoliberalism thus embodied a pure capitalistic form which was characterised by “privatized social policy” (Foucault 2008, 145). Foucault’s 1978-1979 lectures were delivered at the same time that the Bell group’s contestability doctrine was being rolled out in the US. The doctrine advocated an extreme form of privatisation and industry deregulation that would allow corporate monopolies to substitute for government wherever a government enterprise, service or function was contestable; that is, substitute for government without the need for an actual competitive market. This gives rise to the question, at what point and by what mechanism will the privatisation process cease? ‘In other words, what cannot be contested or what is the future of the state?’

2.5 Wherefore the state?

Neoliberalism has been accompanied by a concomitant decline in the power invested in state institutions and the size of the public sector (Strange 1996, 5). In order to interrogate the relationship between neoliberalism and the state in a global context it is important to note that Chicago neoliberalism became the dominant variant in Anglo-Saxon countries and those countries which have been under the influence of the Washington Consensus (Stiglitz 2002; Klein 2007).

In this thesis I argue that the neoliberal global market order requires nation states to relinquish power over their economies in order to integrate with the world economy (*catallaxy*). I contend that contestability adds another dimension to the analysis because it questions the idea that there are institutional functions that are unique to government. What emerges is the centrality of information as a condition and resource for both the contestable market network and the *catallaxy*, a perspective I share with Susan Strange who observed a “reversal of the state-market balance of power” for which technology was an important yet neglected factor in the shift (Strange 1996, 4, 7).

This ‘retreat of the state’ position, is however, contentious within critical neoliberal scholarship with various counter positions taken along a scale between two poles. From the position taken in this thesis the state is under threat to those who argue the state is expanding. The contribution to the scholarship in this section is an approach that tests the persistence of the state from an epistemic perspective. This establishes why the primacy of networked information in the context of the *catallaxy* and contestability produces a different perspective to arguments characterised by the use of competition and market discourses. Firstly, I give a brief overview of Hayek’s vision for the state which establishes the goals of what we might call the ‘absolutist’ neoliberal project.

2.5.1 Abolition of the liberal state conceived

Hayek’s conception of the *catallaxy*, or network of economies governed by a market order, was a global entity whose nascent form was first articulated on the eve of WWII. Hayek sought a solution to “war or civil strife” (Hayek 1939, 148), not through the fostering of shared ideals and values amongst diverse peoples but by making these, and moral sentiments, irrelevant to the functioning of a single federated market upon which all states would depend (Hayek 1939, 141). Although Hayek made reference to political union, it was nonetheless centred on creating an economic union dominated not by a political cooperative of nation states, but by the “impersonal forces of the market” (Hayek 1939,

145). Hayek was concerned that democratic states like Britain were drifting towards socialistic interference in the economy and that “democracy will only work if we do not *overload* it and if the majorities do not abuse their power of interfering with individual freedom” (Hayek 1939, 148) (author’s italics). Essentially democratic government should only engage in those matters where majority consensus could be achieved (Hayek 2012 [1939], 28). This shows Hayek to be unsympathetic to the democratic process which he complained produced political uncertainty (Hayek 1939, 141). Hayek was striving for the certainty of a network-based order which would host every enterprise unit. He believed the certainty of the market would be the optimum means of coordinating the economic system, within which governance would amount to the “common control of communications” (Hayek 1939, 131).

In 1945 Hayek wrote that government should not be the planner of the spontaneous market order (Hayek 1945). Nothing in his later works suggests a change of position on this question. Governments would implement a myriad of plans through changes to policies and laws but they would not *be* the overall planners of the spontaneous market order—that task was the preserve of industry. The spontaneous order was conceived to “exist without government” (Hayek 1973, 47). Conversely corporations were engaged by Chicago neoliberals as advisors (Van Horn 2018; Van Horn and Nik-Khah 2018). This distinction between the planners and plan implementers underlied the extremely difficult course Hayek had to navigate. The state was needed to facilitate the planning process for a market order but it could not direct the order’s objectives nor be the beneficiary of that process. The state was initially called upon to “retask” and constrain itself (Peck 2010, 52) but under the contestability doctrine it was called upon to cannibalise itself to form the new global economic-order through policy and legislation to drive privatisation and deregulation.²⁹ According to Hayek, once operational it was indeed “conceivable that the spontaneous order which we call society may exist without government” (Hayek 1973, 47). This would occur *if* “the minimum of rules required for the formation of such an order is observed without an organized apparatus for their enforcement” (Hayek 1973, 47). Hayek considered such a circumstance unlikely and that government, which he perceived to be a special kind of organisation, would ensure the “machinery”, that being the price mechanism of the

29 A clear example of a government regulatory agency being abolished following the deregulation process was the US Civil Aeronautics Board (CAB) (1938-1985) which folded as part of the process of deregulating the airline industry from 1978 to 1985. Alfred Kahn and Bailey, who were head commissioners of CAB used contestable market analysis as a tool in this process (Bailey, Graham, and Kaplan 1985; Dempsey and Goetz 1992; Kahn 1998).

market, was kept functioning at all times (Hayek 1973, 47). The other function of government enforcement revolved around activities that lay “*outside the market*” such as the provision for the “unemployed and unemployable poor” with the goal of ensuring this sector had minimal impact on the market (Hayek 1976 [1949], 112). With the advent of the contestability doctrine in the late 1970s, marketisation of public services accelerated producing a “multiplicity of markets” (Mirowski and Nik-Khah 2017, 147) which included private enforcement such as prisons and self-regulation of the construction industry.

By the 1970s Hayek had evolved a position that determined the market to be a knowledge discovery tool which was deployable wherever knowledge was needed (Hayek 1978 [1968]a). This included, for example, an international private currency market to break up government monopoly over the issuance of currency and hence their control over monetary policy (Hayek 1990 [1976]) an idea that was an articulation of his earlier vision for an internationally “uniform monetary system” (Hayek 1939, 131).

2.5.2 The leaching of the knowledge state

Dean has suggested that the “adjective ‘neoliberal’ [be restricted] to a certain regime of government and not to a specific form of state itself” in order to maintain a “robust conception of the state” (Dean 2014, 155, 156). I concur with Dean’s perspective because neoliberal discourse has been as much a strategy for disappearing sites of opposition or restraint as it has been for redefining the dominant discourses of political economy.

In this discussion of the state, I adopt Dean’s definition of a “relatively unified set of institutions that are the source of political power and through which political authority is exercised within a particular territory” (Dean 2010, 33-34) and which claims a monopoly over the legitimate use of violence within its borders (Strange 1988, 45; Dean 2010, 34). The state is characterised as having authority vested in its institutional autonomy.

Hayek makes it clear that he conceives the market and not the state as the social regulator. In his view only the market has the computational capacity to process and verify information. His market is a *mechanism*, one which whether replicated by corporations or governments should be based on his idiosyncratic version of the “Rule of law” (see Chapter 3). Foucault in his observations on governmentality describes the emergence of “raison d’État”, the concept that “[w]hat government has to do must be identified with what the state should be” through the fixing of rules and rationalisation of government activities according to objectives for the state (Foucault 2008, 4). Hayek, who assigns only a limited role to government, cites the existence of the market mechanism that would enable the

monopolies to absorb the identity of the state if monopoly power were to be embodied as the state's objective. "The machinery of monopoly becomes identical with the machinery of the state, and the state itself becomes more and more identified with the interests of those who run things than with the interests of the people in general" (Hayek 2007 [1944], 207). In this Hayek sees the state and private monopolies as being both rivalrous and equivalent, because one was capable of having its interests being absorbed by the other (Hayek 2007 [1944]).

Dean, referencing Crouch, calls this "the clarifying distinction between regime of government and form of state" (Dean 2014, 151). This distinction is encapsulated by Hayek's contention that government was in a pivotal position to implement, through policy and legislation, the competitive market order (Hayek 1976 [1949], 110). This heralded a move towards private sector management of the functions of the state as ensuring liberty for the individual (Hayek 1960, 125). Therefore the "purposes for which this [market] machinery is currently used will be determined by those who operate its parts and in the last resort by those who buy its products" (Hayek 1973, 47). Influencing the 'regime[s] of government' in order to reinscribe the state's objectives as implementing the spontaneous order, with the intention of relinquishing all but its enforcement role when complete, was critical to the planning of the market order (Hayek 1973, 47).

As Dean identifies in Foucault's conception of government, the state has its own rationality which necessities and generates its own body of knowledge about how to govern itself and society (Dean 2010, 104). However, a loss of government knowledge results from processes like marketisation, privatisation and outsourcing which serve to shrink the state's role, hinder the work of public policy formulation and administration, and diminish the state's authority (Tingle 2015, Crouch 2016, Cerny and Prichard 2017). Knowledge of societal governance is increasingly "shared with other loci or sources of authority" (Strange 1996, 82).

In her 1988 work *States and Markets*, political economist Susan Strange propounded a structural theory of power in which the "authority of the state, [is] legitimated by the knowledge structure" (Strange 1988, 123). She contended that alternatives could challenge the established knowledge structure even though it was reinforced by coercive and legal authority (Strange 1988, 124). This was exemplified by the shift from the medieval Church's monopoly over knowledge (Mannheim 1949 [1936], 9; Strange 1988, 120) to the power of knowledge being invested in the "scientific state" which instituted structures like professional licensing to control the production and distribution of technical knowledge

(Strange 1988, 121, 124). Epistemic shifts like this are paradigmatic because they give rise to new epistemologies and power elites. Hayek makes reference to his own epistemic insights in terms of a shift to the transmission of information, which also speaks to the ICT revolution:

Comprehending the role played by the transmission of information (or of factual knowledge) opens the door to understanding the extended order. Yet these issues are highly abstract, and are particularly hard to grasp for those schooled in the mechanistic, scientific, constructivist canons of rationality that dominate our educational systems (Hayek 1988, 88).

Neoliberalism challenged the scientific state by problematising “scientific knowledge” created by experts as a poor substitute for the market (Hayek 1941; 1945, 521). Hayek’s attack on specialist knowledge and specialists was a generalised assault against all intentionally constructed human knowledge systems, which he claimed were hindered by the dispersion of knowledge amongst experts (Hayek 1935b, 210). From this vantage point the neoliberals assaulted social institutions on a wide front, from universities (Brown 2015), to the judiciary (Lopatka 1996) through the economisation of legal epistemology beginning with US antitrust (Davies 2010; Mirowski and Nik-Khah 2017, 147) and expert knowledge³⁰ across discipline areas including economics (Mirowski and Nik-Khah 2017, 62; Slobodian 2018, 22) whose practices and archives come to embody the unique functions of institutions. Hayek’s market paradigm saw market data eclipse in value all other information modalities.

Materially Hayek conceived of the market order as manifest in telecommunication networks transmitting information (Hayek 1945, 527, 528). This technological infrastructure, vital to the economies of the *catallaxy*, was accompanied by a shift in authority from “governments of state to the corporate management of firms” beginning in the 1980s with the privatisation of national telecoms and the deregulation of AT&T (Strange 1996, 100, 104).

Manuel Castells, a sociologist influenced by Parsonian positivism and Marxism, coined the term *informational capitalism* (Castells 1996, 18) in the 1990s to describe the process of global economic integration made possible by ICT networks. In *The Rise of the Network Society*

30 In an ironic twist Hayek used the term ‘knowledge’ for most of his career to reference his theory of transmitted information, reverting in his last publication *The Fatal Conceit* (1988, 88) to using the term ‘information’ again. It was a late reversion from 1945 when he used both terms, which was a hiatus not without political value, as Hayek had argued the market was a discovery tool in competition with institutions like government which were heavily vested in expert knowledge.

Castells identifies the emerging pattern of organisation as the network enterprise³¹ (Castells 1996, 193) which would only grow in consequence because “information itself ... [had] become the product of the production process” (Castells 1996, 67). Castells identified multinational corporations as vested in technology, concluding that “globalization of competition dissolves the large corporation in a web of multidirectional networks that become the actual operating unit” (Castells 1996, 193). However, it has become evident that power, rather than being ‘dissolved by the matrix’, is accumulated by a shrinking pool of corporations who wield control over information and networks through policing of network behaviour (Drahos and Braithwaite 2002; Mueller 2010; Srnicek 2016; Galloway 2017; Taplin 2017).³² Government decision-making has become compatible with corporations (Strange 1988, 25; Crouch 2016), in part resulting from governments rolling out IT systems designed by and for the corporate sector to manage government functions (Andersen 1999). Economist Jacques Attali³³ forecasted that, “[t]he State won’t exercise its powers otherwise as through the control of network. And so the impossibility to exercise control over the network will weaken the political institutions irreversibly.” (Attali quoted in: Bauman 2000, 167).³⁴

This movement towards the subsumption of the state within the corporate paradigm was described by Laïdi as “[t]his ‘connexionist capitalism’, to use Boltanski’s expression, [which] sweeps away any pretension on the part of the state to monopolize information, except perhaps in the fields associated with resort to force” (Laïdi 2007, 21). Neoliberalism thus dissolves the state into the topography of ‘the’ network, which itself “tend[s] towards modifying the topography of social relations, which pass from a pyramidal to a networked structure” (Laïdi 2007, 20). The implications of this are profound, with networks driving the integration between information and economics as markets go online. One effect of this

31 ‘Network enterprise’ was defined as “that specific form of enterprise whose system of means is constituted by the intersection of segments of autonomous systems of goals. Thus, the components of the network are both autonomous and dependent *vis-à-vis* the network, and may be a part of other networks, and therefore of other systems of means aimed at other goals” (Castells 1996, 171).

32 In 2018 the five largest companies by capitalisation in the world were Apple, Alphabet (Google), Amazon, Microsoft and Facebook (Galloway 2017, 7).

33 French economist, Jacques Attali is an advisor to Nokia Bell Labs and the World Economic Forum (Davos), former advisor to President François Mitterrand (1981-1991) and head of the European Bank of Reconstruction and Development (1991-1993). He suggested to Marcus Weldon, the current President of Bell Labs, that the commodity value of time is comparable to water and food and that this will influence economics in the future (Weldon 2016). “All time spent on anything but consuming—or on accumulating consumer objects in a different way—will be considered lost.” (Attali 2009 [2006], 186).

34 Attali, J. (1998). *Chemins de Sagesse: Traité du Labyrinthe*. p. 84.

process is to obscure the distinction between the market and the state (Laidi 2007, 6) which relates to the fading distinction between corporation and market (Crouch 2011, 49; 2013, 12). The state and society no longer have “separate logics” from the market because they are subject to economic value and therefore the evaluative process of the market (Davies 2017, 22). The loss of “structural differentiation” amounts to the undercutting of a Weberian pillar which defines the modern state (Cerny and Prichard 2017, 379, 380).

2.5.3 The market state’s transition to nowhere

Dardot and Laval are among those theorists who regard the reconfiguration of government as more a “re-deployment” of the state, than a retreat (Dardot and Laval 2017 [2013], 148). The state’s new role was to supervise and fund market expansion through privatisation and deregulation, engage with the private sector in the design of markets for government services, and officiate over the development of competition rules in what was deemed “an unofficial collusion with major oligopolies” (Dardot and Laval 2017 [2013], 148), notably the big four transnational accountancy-law consultancies (Crouch 2011).³⁵ They describe the introduction of these changes in the 1980s as “The Great Turn” (Dardot and Laval 2017 [2013], 147).

Cerny used the term “competition state” to define the transformation of the nation State by neoliberalism’s globalisation project (Cerny 1997, 251), finding that in time “the state itself has become a globalising agent – a ‘competition state’, promoting its own disaggregation” (Cerny and Prichard 2017, 384). Strange describes globalisation and financialisation as factors driving the shift in authority towards markets and transnational corporations (TNCs) and away from states (Strange 1996, 43). The revolution in ICT and private ITC corporations drove global financialisation (Castells 1996, 52; Strange 1996, 104; Hutton 2002, 204). Financialisation was a critical factor which Dardot and Laval described as inducing “subordination” of the state to a new global financial rationality (Dardot and Laval 2017 [2013], 148).

The intent of neoliberals to create a ‘market state’ was heralded by David Osborne and Ted Gaebler in *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector* (1992), a book most remembered for its advice to government to become entrepreneurial by ‘steering not rowing’ or as they actually put it, “divest rowing from steering” (1993 [1992],

35 Deloitte, EY, PWC, and KPMG.

35).³⁶ This book offered a script that governments and bureaucracies could follow to sell the structural changes that had already taken place since the 1970s, more staidly referred to as “public sector reform” (Heeks 1999, 9). Governments were to modify their traditional economic role of promoting trade and regulating markets and competition, instead providing the “*social construction*” of a rational economy (Pusey 1991, 10).

In the 1980s governments had begun to restructure their public sectors to better accommodate ‘the’ market within the sector and within the economy (Strange 1988; Pusey 1991; Bell and Hindmoor 2009). In 1975 The Report to the Trilateral Commission³⁷ had set out the Hayekian message that democratic governments were no longer coping with the complexity of modern administration (Hayek 1939, 148; Dardot and Laval 2017 [2013], 151). This was framed as an “‘overload’ problem”; the message was that governments were “in deep trouble” and lacked the capabilities to administer their democracies (Osborne and Gaebler 1993 [1992], xv). The view that too much democracy was threatening the viability of democratic societies became “internationally popular and stereotypical” (Pusey 1991, 197, 198). Paradoxically, governments were called upon to “remake all social institutions in accordance with the self-organizing dynamic of the market” necessitating an enormous capacity for social transformation which produced differences amongst nation states regarding the style and degree to which they applied authoritarianism to achieve change (Walker and Cooper 2011, 150). This capacity and the expenditure that has accompanied it has been interpreted by some scholars as the state expanding. This theoretical perspective tends to see neoliberalism as being “conditioned” by state institutions constructing market conditions (Cahill 2014, 119; 2020, 38). This is supported by macroeconomic data (Cahill 2012, 113; Mikler 2012; Cahill 2014, 17), which however, does not indicate what the expenditure is on, for example IT systems in preparation for privatisation (Heeks and Davies 1999, 23). The expansionist argument also points to increased government regulation (Levi-Faur 2005, Cahill 2012, 113, Mikler 2012) as indicative of the state’s power. Observations of neoliberalism, however, reveal a process of de-regulation and re-regulation signified by a proliferation of state regulatory bodies concerned with regulating newly

36 The expression was originally “government is to steer, not to row” by E. S. Savas who wrote extensively on the perceived benefits of privatisation. He is a member of the US neoliberal thinktank the Heartland Institute. Quote from: Savas, E. S. 1991. ‘It’s Time to Privatise’. *Fordham Urban Law Journal*, 19(3): 794.

37 The official sounding Trilateral Commission was a group of powerful private citizens led by David Rockefeller, Chairman of Chase Manhattan Bank and Peter G. Peterson, Chairman of Lehman Brothers, and later co-founder of the Blackstone group and chief sponsor of the neoliberal thinktank the Peterson Institute for International Economics (Crozier, Huntington, and Watanuki 1975; Peterson Institute for International Economics 2021).

privatised industries (Cahill and Beder 2005; Chester 2012). Theorists such as Stephen Bell and Andrew Hindmoor who count the market as a governance institution, observed that the totality of governance in society had grown. They concluded that “the exercise of state authority remains central to most governance strategies” (Bell and Hindmoor 2009, 1, 92).

It is also important to note that Hayek insisted that the market order could only be accommodated by a new legal framework which necessitated complex ongoing structural changes for many decades (Hayek 1976 [1949]). As I will show in the Australian case study (Chapter 8), state institutions are being radically transformed by the corporate takeover of government information undermining its core functions, that being to maintain its sovereign identity and secure citizens’ data.

2.6 Conclusion

This chapter presents a preliminary analysis concerning the neoliberal movement’s synergies with monopoly capitalism through a focus on Hayek’s political philosophy and AT&T Bell Laboratories invention of contestability. It provided an introduction to contestability, canvassed the critical neoliberal literature on Hayek’s engagement with monopoly issues and considered the development of the neoliberal concept of a market-based social order centred on the Chicago School, thus providing the evidential and contextual bases for the hypotheses this thesis will explore. There is also a summation of the outcomes of the changes wrought by this philosophy on the state, as governments manoeuvre corporations into position to take over state functions.

My purpose has been to establish whether there is sufficient evidence to postulate hypotheses pointing to the demise of the state. The hypotheses are, firstly, that the change mechanism which brought about neoliberalism as a new form of capitalism, or what Foucault called the “irruption”, emerged from AT&T Bell Laboratories whose Economics Research Center focused on integrating economics with ICT from its inception in 1968 (Bernstein 1984; Foucault 2008, 167). That is, they perceived that their economics for the efficient management of telecommunications infrastructure was scalable to a networked global economy (Sharkey 1982; 1995). Ultimately, the direction they set would arrive at a proximate of a platform monopoly. Secondly, that Hayek and the neoliberal movement had, from the 1930s, looked for ways to legitimate monopolies as the planners of the catallactic market order. I conclude that these hypotheses are sound in and of themselves, but that a great deal more research must be presented to prove them.

To examine the main body of evidence for these hypotheses, we now focus on Hayek's epistemology in Chapter 3 and in following chapters on his political activism within the historical context of AT&T's organisational history and their development of the contestability doctrine. Examination of the autonomy of states in the neoliberal era and the threats to the state posed by corporations controlling information and communications is explored in the Australian case study which shows the practical effects of neoliberal policy and corporatisation of the public sector. This approach forms the substance of my argument that monopolistic industry concentration is not a contradiction within neoliberalism's alleged commitment to 'free market competition', as free market theory has been used to justify monopoly power.

3 Hayek's spontaneous order in the Computer Age

Frederick Kempe: Paul Samuelson once said if you had your way you would lead the world back to the nineteenth-century days of limited Whig government. How do you respond?

Hayek: That is most certainly the case.

(Hayek and Kempe 1979, 68)

There is no adequate term other than 'order' by which we can describe it, although 'system', 'structure', or 'pattern' may occasionally serve instead.

(Hayek 1973, 35)

3.1 Introduction

In making the argument that Hayek was a key figure in the Chicago School's positioning of monopolies to be the planners of the *catallaxy*, it is necessary to explore how he constituted the componentry of the *catallaxy*. As we have seen, Hayek only provided a brief description of the *catallaxy*. It was an "ordered structure" (1978 [1968]b, 90) which was nonetheless indiscernible; it comprised a kind of kinetic abstraction in perpetual motion as the source of the market's data (Hayek 1976, 109). Chapter 2 showed evidence from Hayek's writings and political activism in Chicago that suggests he came to eschew competition orthodoxy and embrace contestability. In this chapter we will consider striking evidence that Hayek settled on the monopolies to be the controllers of the *catallaxy* arising from his epistemology and characterised by a concern for the efficient utilisation of information in network environments.

This chapter explores the fundamental question, in what aspects and by what means was Hayek's theoretical work compatible with the knowledge society that formed after World War II? I consider how Hayek's economic precepts, his concepts of the mind and his legal philosophy, underpinned his idea of the *catallaxy*. As Jack Birner identified, Hayek applied a

network conception to economics from which he conceived of the market as a whole-of-society regulatory mechanism (Birner 1996). We explore how Hayekian epistemology contributed to what Mirowski identified as the fusion between the philosophy of science and political economy (Mirowski 2004, 72, 74) and which characterises the information architecture of neoliberalism. Hayek's belief in a fundamental computational network structure found in the human brain was applied recursively to social formations (Hayek 1967b, 74; 1976 [1952]). It is suggested here that the three concepts, compatibility, efficiency and homeostasis,¹ are implicit to his concept of dispersed information. Although lacking theoretical depth, this concept would substitute for general equilibrium theory in economics and human-centred law. And informed Hayek's epistemology across his corpus, influencing the conceptual development of his catallactic network along similar lines to telecommunications and computer networks.

By looking at the epistemological grounding of neoliberalism, as expressed in Hayek's corpus from the 1930s, we can reconstruct a picture of the emergent *catallaxy* before Hayek publishes the term for the first time in 1967 (Hayek 1978 [1968]b, 90). The importance of this perspective is to understand its generative intent. That is to say, Hayek was not simply endeavouring to strike a blow against socialism over equilibrium theory (Caldwell 1988, 515; Krašovec 2013, 68) or to undermine Marxism by jettisoning the Enlightenment (Krašovec 2013, 68) or along with Becker to abandon the concept of labour power (Foucault 2008, 221). Rather, Hayek was methodologically developing alternatives to these paradigms.

The chapter begins by outlining the historical conjunction between neoliberalism and machine computation in 1936, a year which represents the incubation point of the new paradigms that Hayek created in economics and Alan Turing conceived in mathematics. This serves as our entry point to neoliberalism's arc through the Information Age by redefining the nature of economics, law and the human subject and reinscribing what it means to be an individual in a neoliberal exchange-based society.

The chapter is then divided into two key sections addressing economics and law consecutively, which follows Hayek's own discipline shift from economics to law in the 1940s (Caldwell 1988). For economics we will consider Hayek's paper 'Economics and Knowledge' (1937) in conjunction with the precepts concerning the design of the universal machine which Turing expounded on in, 'Computable Numbers with an Application to the

1 Homeostasis refers to a system state with predictably low entropy.

Entscheidungsproblem: A Correction' (1936). This analysis establishes the cross fertilisation between mathematics and economics, and between political economy and Hayek's theory of the brain, which informed his epistemology and his concept of dispersed knowledge.

Hayek's epistemology of law draws on his machine conception of the market order and a cyborg conception of the individual agent functioning inside the market machine in what Slobodian calls "cybernetic legalism" (2018, 224). Hayek envisaged a unitised individual within a globally conceived system of programmable rules (Slobodian 2018, 224). He claimed that his theory of law protected individual liberty but examination shows that his concern was for protecting the market.

It is argued here that Hayek's theories developed a political philosophy that would underpin the positioning of the corporate monopolies to be the planners of the market-coordinated *catallaxy*. This contributes a new perspective on Hayek's influence on the political construction of a new economic-governance institution, the firm-controlled network hosting markets supported by global ICT.

3.2 The Hayek-Turing conjunction

On 10 November 1936, Hayek delivered his presidential address to the London Economic Club, titled 'Economics and Knowledge'. He sought to establish that the relationship between choice and the acquisition and communication of knowledge was central to economics (Hayek 1937). Two days later at Princeton University, Alan Turing (1912-1954) presented his paper theorising a programmable universal machine, which established the conceptual mathematical logic upon which computers could be programmed to make choices (Turing 1936). These papers showed how economics and mathematics were both poised for a paradigmatic shift related to the birth of the Information Age and computerisation. The new ways of thinking that Hayek's and Turing's propositions engendered would lead to radical changes in their respective fields, each field influencing the other epistemologically, in what Mirowski called the "structural resemblances of thought across disciplines" (1989, 4).

3.2.1 Hayek's problem with equilibrium

Hayek's reflections on knowledge led him to explore the limitations of equilibrium analysis and perfect competition modelling which, since Adam Smith, had been the dominant paradigm in economics (Coats 1993, 60). He questioned the conceptualisation of knowledge in conventional neoclassical economic analysis by asking, "to what extent formal economic analysis conveys knowledge of the real world" (Hayek 1937, 33).

Hayek's critical focus was on Walrasian general equilibrium, a theoretical pillar of the Marginalist Revolution,² to which his Austrian school under its founder Carl Menger made significant contributions. Léon Walras (1834-1910) claimed that the choice process was guided by the price system, rather than the cost of production, leading neoclassical economists to define equilibrium as the price that clears the market (Mirowski 1989, 282). Hayek contended that Walrasian choice, or the "Pure Logic of Choice", was only meaningful in the determination of the equilibrium state of a single individual – that is, the met expectations of one economic agent could not be automatically extrapolated to other agents with whom they had interacted (Hayek 1937, 35).

Hayek defined the choices and plans made by individuals as "subjective knowledge" because they were subject to a person's own perceptions. Generally speaking, an individual was in equilibrium if they perceived that their plans had met their expectations. This was defined as perfect knowledge. Hayek argued that neoclassical economists failed to admit the obvious point that it was possible for individuals' perceptions to become misaligned with reality. Consequently, as Hayek expressed it, the "Pure Logic of Choice" could not hold because individuals in this instance could have "wrong assumptions concerning the external facts" (Hayek 1937, 37). Hayek also argued that the time interval between formulating a plan and its expectations being met, created a gap between planning and fulfilment which could also impact individual equilibrium. Thus, subjective knowledge that was prone to false assumptions and incompleteness could bring about a change in an individual's plan which could impact competitive conditions (Hayek 1937, 37).

Hayek perceived that knowing an individual was in equilibrium was of insufficient informational value for calculating economy-wide equilibrium³ which lies in the actions

2 Marginalism is claimed to have elevated the economics discipline established by Adam Smith (1703-1790) to a science (Coats 1993). Smith, a key figure of the Scottish Enlightenment, and David Ricardo (1772-1823), who were immersed in the Enlightenment project along with contemporaries Thomas Malthus and James Mill, embraced the rationalist, science-based empiricism and classical liberalism of the Age, in the epistemological foundation of what was then called, political economy. The discipline had a dichotomist demand and supply structure, which did not lend itself to a monolithic paradigm, and a foundational theory, which challenged economists who wanted the status of scientists (Coats 1993). Smith's systematic analysis of pin production was the burgeoning of scientism, which really took hold from the 1870s through the work of the marginal utility theorists who had training in the natural sciences. Léon Walras (1834-1910) and Vilfredo Pareto (1848-1923), co-founders of the Lausanne school, and Briton, William Jevons (1835-1882). Carl Menger (1840-1921), another key marginalist, did not explicate his theories using mathematics which later became characteristic of the Austrian school he founded. Mirowski describes these figures as the "progenitors of neoclassical economic theory" (Mirowski 1989, 3) and microeconomics.

3 Caldwell calls it "societal equilibrium" (Caldwell 1988, 526) and Birner, "interactive equilibrium" (Birner 1996, 7), because Hayek didn't specify a term for the equilibrium of social interactions.

between individuals. An analysis of interactions introduces “a new element of altogether different character” (Hayek 1937, 35). He later scaled this idea to interactions *between* organisations in the *catallaxy*, which he believed would address the deficiency in equilibrium analysis: “[I]t seems that if only this process is carried far enough it carries its own remedy with it.” (Hayek 1937, 35).

Further, the *coordination* of economic activity could not be analysed using the tautological propositions of equilibrium (Hayek 1937, 34). Consequently, Hayek found little informational value to be gleaned from predictions about prices and values based on past assumptions which excluded factors such as time and social relations (Hayek 1937, 36). Economists generally conceded that the past was a poor predictor of the future (Mirowski and Nik-Khah 2017, 78). Hayek deduced that relationships of exchange generated the data needed for analysis and that ignoring how data was accumulated and transmitted undermined the purpose and theoretical integrity of the analytical apparatus itself (Boettke 2002, 267).

Hayek saw problems arising in equilibrium analysis because subjective knowledge (with its possible errors) becomes aggregated into “objective data” given to others, including economists, from which they make decisions (choices and plans) (Hayek 1937, 39, 47). Hayek’s response to this problem was to shift away from the ideal of perfect knowledge being held by all agents, to the acceptance of possible error (Caldwell 1988, 528; 2004, 212).⁴ Hayek, in making manifest the error problem in data transmission within the economy, paralleled a solution to the signalling problem in telecommunications which would come a decade later from Claude Shannon in the fields of mathematics and electrical engineering, which as we will see Hayek analogised. The selective repetition of the transmission of objective data or messages until they were clearly received theorised by Shannon, resembles Hayek’s view of the problem of connecting the “bits of information” needed by individuals operating in the market (Hayek 1937, 49). For individuals’ plans to be executed, knowledge of prices needs to be confirmed and for plans to change prices need to be updated (Hayek 1937, 51). In other words, for plans and “successive alterations” to be coordinated in the economy verification by constantly updating prices was essential.

4 Caldwell notes that Hayek’s substitution of the perfect knowledge assumption with the dispersed subjectively-held knowledge assumption is not simply grounded in a technical explanation of equilibrium theory, but rather the reason is to be found in Hayek’s attack on central planning (Caldwell 1988, 515). See chapter 4 on the Socialist Calculation debates.

Hayek claimed that a more realistic definition of equilibrium would take account of social relations and time based on the *compatibility* between the plans of different individuals. His reasoning was simple – plans that were compatible were plans that were fulfilled, which in its simplest form translates into the concept of supply meeting demand:

since some of the ‘data’ on which any one person will base his plans will be the expectation that other people will act in a particular way, it is essential for the compatibility of the different plans that the plans of the one contain exactly those actions which form the data for the plans of the other. (Hayek 1937, 38).

In this account of equilibrium, subjective data corresponds with objective data in a kind of ‘shared reality’ making the coordination of economic actions possible. Hayek described this as “dynamic equilibrium” whereby subjective data (including expectations) was continually revised to meet changing circumstances. Time, however, was still an interceding factor which inhibited the possibility of reaching general equilibrium. In 1928 Hayek proposed a solution to static equilibrium using intertemporal pricing which only received a footnote in his 1937 paper (Hayek 1937, 41). However, the principle was established that:

equilibrium is a relationship between actions, and since the actions of one person must necessarily take place successively in time, it is obvious that the passage of time is essential to give the concept of equilibrium any meaning (Hayek 1937, 36).

Hayek dealt with this issue through his concept of “correct foresight” which stated that if the adjustments needed to induce greater compatibility (agreement with others) were foreseen because the economic facts were “truly *a priori*” (Hayek 1937, 35) then “correct foresight ... [was] the “defining *characteristic* of a state of equilibrium” (Hayek 1937, 41-42) (author’s italics). The more an agent could predict the outcome of their choices the more likely their expectations would be fulfilled—but they were not guaranteed to be fulfilled or seen to be fulfilled. The conclusion Hayek drew in 1936 was that there could only be a “tendency towards equilibrium” and that the point at which this was empirically verifiable was ultimately elusive because economic data constantly changes over time (Hayek 1937, 53).

3.2.2 Turing’s universal machine

In 1936 Turing was answering a similar fundamental question from his own discipline, initially posed by German mathematician David Hilbert in 1900. Hilbert asked whether mathematics could determine whether any assertion was either true or false. In other words, could mathematics be used to make any correct decision – was it decidable? Turing concluded that Hilbert’s challenge, known as the Hilbertian Entscheidungsproblem

(decision problem), “can have no solution” (1936, 231). He argued that in time solutions might be found to problems that in the moment could not be solved, but that those discoveries ‘to come’ were not ascertainable.

In arriving at this conclusion, Turing had considered what a machine could do. He determined that by using symbols and computable numbers⁵ and precise rules of operation, that is, a set of instructions for each operation running in sequential order, a machine could arrive at a mathematical proof. In other words, the machine was programmable because of the *certainty of a rule*. He concluded that a single machine could process any query (“computable sequence”) if the rules could be changed, that is, “taken out and exchanged for others” (Turing 1936, 242). This was the basis of his “universal machine” (1936, 241) which was compatible with any machine or human computer capable of executing a set of instructions to perform specific tasks (1936, 252). However, such a universal machine, even if it could be constructed and even if it was mechanically precise, did not sway Turing from his conclusion. The Entscheidungsproblem had no solution, because there was no “general process for determining” whether a given formula was provable, so the ‘decisions’ a computer made, although usually correct, were not guaranteed to be correct (Turing 1936, 259).

Turing’s success in concluding the decidability question was shared by Princeton mathematician Alonzo Church, whose concept of “effective calculability” Turing regarded to be equivalent to his own “computability” even though it was defined differently (231). Church in turn acknowledged Turing by naming the universal machine the “*Turing machine*” (Dyson 2012, 250). Turing and Church’s intellectual achievement was consistent with the flourishing in mathematics focused around Hilbert’s ‘decision’ challenge, notably Kurt Gödel’s incompleteness theorems stating that there were limitations to axiomatic or formal systems and Georg Cantor’s infinity proposition (Mirowski 2002, 79, 80, 83). This work drew attention to what Don Lavoie called the “necessary limits of articulability” (1986, 1 fn) which he contends was the likely source of influence on Hayek, who would later acknowledge his theory of unarticulated rules as drawing upon Gödel’s theorem (Hayek 1967c, 62).

5 These numbers were defined by Turing as those numbers whose “decimal can be written down by a machine”, which is a large class of numbers (1936, 230).

Hayek and Turing had both been challenged by philosophical propositions concerning the boundaries of rational decision making. They had resolved principles by which computational devices, such as markets and computers, could perform decision functions governed by a logically derived acceptance that markets and machines, although not error free, were close enough to being correct, and therefore they were sufficiently reliable data processors. Hayek and Turing, within the context of advances in their respective fields, had thus reset the boundaries of their disciplines based on what was achievable.⁶

This philosophical alignment between economics and the new science of computing represented a realignment with a new machine age, a potential which Hayek was the first to articulate, well before Claude Shannon's theoretical breakthrough on the transmission of information in 1948. Hayek revised the neoclassical approach to information which, as Mirowski and Nik-Khah show, he treated as a 'thing' used in an exchange process (Mirowski and Nik-Khah 2017, 102). Hayek saw information as an electrical current, both in transmission and symbolically, in a way that was not dissimilar to how money was a symbolic representation of goods or investments. To Hayek the value of information was initially in its stored value, that is, skills, experience and knowledge of local conditions and opportunities which individuals accrued (Hayek 1937, 50 fn). By the 1980s the market was seen as transcendent, processing knowledge that human beings did not know existed (Mirowski and Nik-Khah 2017, 152). This perception coincided with the increasing sophistication of data analytics, mining data from people who were linking to each other on networks.

In the wake of this philosophical shift from the theoretic search for perfection to the valid utilisation of imperfect knowledge came important theories that leveraged calculable limitations. The concept of heuristic problem solving using experientially established "rules of thumb" is one example. Other examples which embraced achievability in economics are the application of the Pareto Principle (80:20 rule)⁷ in production and management and Herbert Simon's theory of bounded rationality which cast economic agents as "satisficer[s]", people who do not strive for perfect knowledge but accept what is "good enough" (Simon

6 Mirowski notes that economist Oskar Morgenstern also delved into the problems of foresight and prediction and concluded that there was "an essential indeterminacy in most economic endeavours" (Morgenstern quoted in: Mirowski 2002, 236).

7 This principle was conceived by Joseph Juran (1904-2008) in the 1940s. He named it in honour of Vilfredo Pareto, who like Juran, was an engineer and economist. Juran worked for Western Electric and Bell Laboratories and specialised in quality management.

1996, 29). These theories all set limits on the amount of information needed to make a choice, in other words they set parameters to determine whether expectations are met. These theories align not only to limits imposed by human agents but also to those of computer systems in navigating real-world complexity.

Hayek, however, took a different tack to these theorists by championing the market as the unassailable processor of information. He claimed that the market had the capacity to draw simultaneously on all available information through the price mechanism – and it did so whether or not economic agents behaved rationally (Hayek 1979a, 75). This view was adopted by neoliberal theorists such as Becker, who formulated the theory of human capital based on the idea that rationality was not necessary for predicting agent behaviour (Becker 1975).

3.3 The market as decision-maker

Hayek's approach to achievability was to develop the concept of 'the' market as a universal decision-making machine which functions as an institution governed by its own rules. Mirowski captures both the essence and the purpose of Hayek's market ideal, describing it as a "specialized piece of software, which both calculates and acts upon inputs, comprised of an integrated set of algorithms" (Mirowski 2007, 211). It functions as an automaton, computationally processing market data, and as a discoverer of subjective knowledge for aggregation which creates the 'truths' for the guidance of decisions. According to Hayek the market will, over time, follow its own abstractions, so it can self-regulate and process both information and truths sufficient to maintain its mechanism and navigate the spontaneous order it creates (Hayek 1978 [1968]a). The market out-performs the human being cognitively as it evolves into a super-processor which the human being cannot possibly transcend (Hayek 1973, 54). Mirowski and Nik-Khah cogently point out that "Hayek came to portray knowledge as completely disengaged from the consciousness of the knower." (Mirowski and Nik-Khah 2017, 152) leaving humankind dependent on the negative feedback loop of the self-organising market (Hayek 1978 [1968]a, 184).

According to Hayek, the market-machine, with its rules and procedures driving its competitive dynamic, produces an "ordered structure" he calls the spontaneous order or "game of catallaxy" (Hayek 1976, 119). The question remains, what were the specifics of the market mechanism conceived as information technology, that transforms itself, and the economy into the *catallaxy*?

In his early formation of the *catallaxy* idea in the 1930s, during the Great Depression, we find Hayek coming to question the efficacy of equilibrium analysis because of its “vexed ... assumptions about foresight” which contribute to the discipline’s poor predictive capacity (Hayek 1937, 34). His new approach was to regard subjective knowledge as dispersed amongst individuals, with their interactions informing prices (Hayek 1937, 35). This, he later argued, is the market’s price discovery procedure, which serves to maximise total production at the “lowest possible costs”, and such efficiency was the “modest aim” of competition (Hayek 1978 [1968]b, 91). This same aim, focused on efficiency, exists under contestability where it justifies the substitution of the imitation of competition for actual competition.

3.3.1 Cause and effect in Hayekian economics

Hayek’s paper ‘Economics and Knowledge (1937) presents his nascent ideas on causes and effects which he believed to be empirical and therefore verifiable, related to the dynamic of information processing. He styled his paper as a series of logical propositions but without the rigour of supplementary mathematical proofs that Turing provided in his analysis:

the empirical element in economic theory—the only part which is concerned, not merely with implications but with causes and effects, and which leads therefore to conclusions which, at any rate in principle, are capable of verification—consists of propositions about the acquisition of knowledge. (Hayek 1937, 33).

Although Hayek did not articulate his subject matter with the same elegance as Turing, ‘Economics and Knowledge’ does address several of the logical paradoxes besetting economics. Chief amongst these was the “[t]extbook” (neoclassical) definition of competition as a state where competitive activity has ceased (Boettke 2002, 266). Hayek would claim decades later that even the threat of competition when allowed to function in a market free of interference accomplished the best results⁸ of any system, and therefore the market should be allowed to expand unencumbered by “an unachievable standard of ‘perfection’”, such as found in perfect competition theory (Hayek 1979a, 75). This I contend was a veiled statement which countenanced monopolies by dropping the idea of market failure. In its stead Hayek applied an internal consistency test, determining, for example, that even a *limited* number of business opportunities in the *catallaxy* indicates that the competitive system works (Hayek 1979a, 75). How this result is distinguished from there

8 The results are that everything will be produced that can be, at prices cheaper than alternatives, and sold at a profit (Hayek 1979a, 74).

being no opportunities because competition has been stifled or is unavailable, as in a 'natural' monopoly industry, is not discussed. The success of the neoliberal market order is defined, as in neoclassicalism, by the *absence* of competition which is the logic underpinning the contestability doctrine and its justification of monopoly, albeit not in the same terms.

Hayek's propositions in 'Economics and Knowledge' were set out in two parts. In the first part, he defined the conditions of a market. In the second, he proposed how the price system would process data. For Hayek this became a question of which data in what sequence would be computed. In this sense the *rules and conditions* of the market were its basic componentry. His propositions were set out in structure and register much like Turing's for his imaginary machine, Hayek, however, gave no examples or details to support his propositions, merely contending that it was *possible* to "fill those formal propositions with definite statements about how knowledge is acquired and communicated" (Hayek 1937, 33). That is, he asserts that his formal propositions could be expanded to result in verifiable conclusions about real world economic phenomena including the non-static state of competition (Hayek 1937, 33).

Hayek's chief contention was that there should be separate treatment of a priori and empirical data when devising propositional statements about how knowledge is acquired. This was the point of difference Hayek had with Mises. "[H]e [Mises] asserted that the market theory was a priori, he was wrong; that what was a priori was only the logic of individual action, but the moment that you passed from this to the interaction of many people, you entered into the empirical field" (Hayek 1994, 72). Hayek's views would continue to coalesce⁹ around this insight. By the 1960s he was coming to see the market as a discovery process utilising the subjective interactions of agents (Mirowski 2013, 141; Birch 2017a, 46; Dardot and Laval 2017 [2013], 103). He would argue that the market in *revealing* value also served as the discoverer of economic opportunities from whence future wealth could be created (Hayek 1978 [1968]b, 91).

In 1937 Hayek, was grappling with the theoretical problems which this informational dynamic posed.¹⁰ The difficulty for Hayek was that he claimed he was "in the dark" concerning the "*conditions*", that is, the market configurations needed to tend towards

9 Hayek's discusses this in a 1968 lecture titled, "The Primacy of the Abstract"(Hayek 1978c).

10 Caldwell signposted this by noting how Hayek had "linked the notion of a spontaneous order which forms when agents follow (often simple) rules with the idea of complex systems in the 1950s" (Caldwell 2004, 361).

equilibrium, and the “*process*” that would convert subjective knowledge to prices (Hayek 1937, 44). In other words, how does the price mechanism work in coding subjective values into prices (computable numbers), and what are the market conditions which induce that process, thus informing the subjective economic behaviour of agents?

At this point Hayek could have attempted an explication of his reasoning. But instead he resiles from proofs and specifications, a pattern of behaviour he would display throughout his professional career, which Keynes disparaged as “shirking the practical issue” (Keynes quoted in: Jones 2012, 67).¹¹ Michael Polanyi was also a critic who disparaged Hayek for failing “to describe the interplay between the inarticulate and rationalizable aspects of practice, ... he had effectively reneged on the promise to theorize the role of knowledge in economics” (Mirowski 2004, 79).

In effect Hayek settles for the price system without due analysis of *how* the price mechanism actually worked to coordinate individuals’ actions within the market, which was the very problem he had identified himself (Desai 1994; Birner 1996).

3.3.2 Spontaneous order

Instead of providing specifications as to how his price mechanism would coordinate the market, Hayek resorted to an embryonic conception of “spontaneous order” which rephrased the problem epistemically to one of coordinating each individual’s knowledge as part of the total knowledge held in society:

To show that in this sense the spontaneous actions of individuals will under conditions which we can define bring about a distribution of resources which can be understood as if it were made according to a single plan, although nobody has planned it, seems to me indeed an answer to the problem which has sometimes been metaphorically described as that of the “social mind”. (Hayek 1937, 52).

Hayek’s spontaneous order theory introduces the notion of the “social mind”, to describe social phenomena. By asserting that the social mind is not planned, although it emerges as if planned, he sets aside the problems associated with predicting social phenomena. Therefore, according to Hayek it was information about transactions in the market that was the driver of the economy.¹²

11 Keynes to Hayek, 28 June 1944, Hayek Papers.

12 Coase, the same year, introduced the proposition that the firm was also a site for the processing transactional information (Coase 1937).

His concept of the “social mind” is similar to his concept of the individual human mind which was of an isolate classifier and processor of stimuli and sensations – the churn of data to which humans respond and adapt (Hayek 1976 [1952]). Hayek’s theory of sensory order, which gestated from the 1920s but was not finally published as *The Sensory Order* until 1952, sees minds *en masse* transmuted into the “social mind”, functioning as a spontaneous, self-ordering network of individual minds which share information, but do not concentrate information. The “social mind” is thus a relational network but not yet a database.

Hayek’s social order, like his market order, was founded on a concept of compatibility which involved a kind of spontaneous connectivity between individuals’ plans, which come together as an economic system functioning in a coordinated way as if by a “single plan” (Hayek 1937, 52).

3.3.3 Sensory order and the origins of the catallactic individual

The basis of Hayek’s understanding of the economically motivated interactions between individuals from which the ‘social mind’ is formed, is found in *The Sensory Order* (1952) which details his schema for how the brain works and sets out a theory of human cognition. Hayek makes the argument that human beings are limited in their capacity to process available data from the physical environment. On the basis of this, he posits a cybernetic argument that a machine is “capable of ‘explaining’ what the mind is incapable of explaining without its [the machine’s] help” (Hayek 1976 [1952], 189). The ‘machine’ that was most helpful to human beings in this regard was the market, or more precisely the price mechanism which could process information from all available sources and could guide its own rule-making such that a market could evaluate its own performance (Mirowski and Nik-Khah 2017, 57).

Hayek’s central premise, which informs his whole corpus, is that mental processing is not “sufficient to ‘unify’ all our knowledge” (Hayek 1976 [1952], 179); therefore it is the spontaneous order of ‘the’ market that coordinates all available knowledge without which the individual “would have no cognizance” (Hayek 1976, 115). In other words, his theory of sensory order is a theory of human limitations, which necessitates that human beings engage with the catallactic market on the basis that the market’s price mechanism is the efficient aggregation of knowledge from all members of the spontaneous order (*catallaxy*) (Hayek 1978 [1968]a, 183).

Hayek gestated his theory in the 1920s when a student in Vienna and it informed his lifelong intellectual development (Caldwell 2004, 137). Although framed as cognitive psychology the work is in effect a theory of social organisation, which Hayek acknowledged as his purpose in the preface (Hayek 1976 [1952], v).

The Sensory Order is regarded as foundational to his corpus (Gray 1984, Streit 1993, Horwitz 2000, Mirowski 2002, Caldwell 2004) although to some this is an “overemphasis” (D’Amico and Boettke 2010, 366). Be that as it may, *The Sensory Order* would establish an abstruse theoretical basis for rationalising his “spontaneous order” based on the “unsurpassable limits to understanding the mind’s mode of function” (Beck 2018, 56) that relegated human agency and human expertise to the margins wherever a market was operating.

Hayek’s epistemology was imbued with the idea that society was organised on fundamentally the same principles and architecture as the brain, although he also claimed that “society is not a brain” (Hayek 1967b, 74). Notably, he described the brain’s physiology as a communications network, the connexions of which are the perpetually growing network of synapses which transmit impulses (Hayek 1976 [1952], 52, 57). Birner claimed that Hayek’s sensory order was the basis of an attempt to theorise communication, which Hayek never completed (Birner 2014, 64).¹³

Hayek’s theory was concerned with how the human nervous system transmitted signals along neural pathways that were functionally arranged by an elaborate system of classification. The bulk of the signals were responsible for running the body’s organs unconsciously. The conscious or ‘knowing’ part of the system he called the “mental or phenomenal order” was associated with the analysing brain that modelled responses to help the organism adapt to its environment (Hayek 1976 [1952], 39). This conscious self, however, was limited because the mapping of stimuli could not deal with the complexity of the process, so much of what humans learnt through experiencing (learning by doing) was learnt without comprehensive articulation – making it possible to ride a bicycle without knowing the physics of velocity or the physiology of pedalling muscles.¹⁴ This meant that the act of riding a bike could not be fully explained by the rider. It was called tacit knowledge by its prominent theorists Michael Polanyi, and Gilbert Ryle, who also referred to it as “know how” as opposed to “know that” (Lavoie 1986, 2). For Hayek, most expertise was “tacit”, that is, in a partially unarticulated state, the “very attribute that would thwart ‘information’ from being centrally managed and controlled” because it is ‘unavailable’ for collection (Mirowski 2002, 239).

13 His unpublished paper titled, “Within Systems and about Systems” if it had been finished, might have filled a gap in Hayek’s theoretical work as he believed the market to be an information communication system but was never able to fully explain its mechanism (Hayek 1945, 526; Birner 2014, 64).

14 The bike example was called tacit knowledge, the prominent theorists of which were Michael Polanyi and Gilbert Ryle.

This argument became the makings of Hayek's cyborg individual suited to an existence inside the market machine and also established the relationship in Hayek's epistemology between the "individual and social", which Mirowski notes in reference to Hayek's discourse on knowledge in *The Counter-Revolution of Science* (1952) (Mirowski 2004, 74).

Hayek used the sensory order to argue that human beings were increasingly challenged by the growing complexity created by increased knowledge, technology and societal change. Humans needed machines because "the human brain can never explain its own operations", that is, it cannot write the internal rules, because it is limited in its ability to classify (or explain) an object more complex than itself (Hayek 1976 [1952], 185).

3.3.4 Imitation: overcoming limitations

Hayek believed that the mind-brain system had its own answer to its limitations in large part through its ability to imitate behaviour, which he contended was more towards "imprinting" than actual "learning" (Hayek 1978b, 291). As Naomi Beck observes "Hayek's theory of 'intelligibility' provided the cognitive basis for his portrayal of social learning as predominantly a nonrational process based on imitation" (Beck 2018, 69). Hayek wrote: "Much of what we can do rests on skills or aptitudes or propensities acquired by following examples, and selected because they proved successful, but not deliberately chosen for a purpose" (Hayek 1978b, 292).

To support this idea Hayek gives the example of rule selection whereby individuals and groups can achieve evolutionary success by imitating behaviours that lead to success. This amounts to the "selection by imitation of successful institutions and habits" (Hayek 1960, 59). Here Hayek is proposing a system of connectivity between people that deemphasises social collectiveness as well as agency, intention, purpose and will. Hayek sets neoliberalism on a course of denying that free agents might choose to act in concert with others, such that they would design or form anything remotely social or institutional that would cut across the spontaneous market order:

[Such] current notions as that society 'acts' or that it 'treats', 'rewards', or 'remunerates' persons, or that it 'values' or 'owns' or 'controls' objects or services, or is 'responsible for' or 'guilty of' something, or that it has a 'will' or 'purpose', can be 'just' or 'unjust', or that the economy 'distributes' or 'allocates' resources, all suggest a false intentionalist or constructivist interpretation of words ... which almost inevitably lead the user to illegitimate conclusions (Hayek 1973, 28).

Cultural evolution according to Hayek was not the outcome of human reason but rather “the capacity to imitate and to pass on what he had learned” (Hayek 1979a, 157). From this perspective it is far more important for the individual to follow rules than it is for them to possess knowledge. To be compatible, to be able to join a network, to be computational and computable, necessitates the habit of conformity and the imitation of successful rules and groups. Imitation is thus set within a prescribed band of behaviours that incentivises the individual into imitating the established order. In the *catallaxy*, like any network, compatibility also leads to positive feedback. It is the individual who is possessed of the habit of conformity and the imitation of the successful rules that marks the established order.

Jean-Pierre Dupuy interprets Hayek’s theory of mind as countering the idea of consciousness which flows onto his theory of cultural evolution which is directed by patterns of behaviour guided by rules which individuals follow without purposeful articulation. “The imitation of rules of conduct is fundamentally blind” (Dupuy 2004, 287). “Most people, wrote Hayek, can, after all, recognise and adapt themselves to several different patterns of conduct without being able to explain or describe them” (Hayek 1988, 78). Beck, cites scholars who point out that Hayek ignored the negative problems of blind imitation (Beck 2018, 71) or what Geoffrey Hodgson contended to be “spontaneous disorder” (Hodgson quoted in: Beck 2018, 128).

For Hayek there was “perfectibility of society” (Beck 2018, 128) which, however, did not emanate from humans because “[t]o Hayek imitative learning was incompatible with the exercise of rationality” (Beck 2018, 70).

Hayek’s ideas are reminiscent of Gabriel Tarde (1843-1904) whom he praised as a “great French sociologist” (Hayek 1937, 42 fn). Tarde argued that all complex social phenomena were reducible to forms of either imitation or invention and that these processes were integrated with one constantly imbricating the other (Tarde 1903, 3). “The characteristic of society, then, is imitation, transmitting and spreading individual initiatives.” (Davis 1968, 87). Tarde, whose ideas were in opposition to those of Emile Durkheim, with whom he debated, did not countenance the idea of social organism or collective but considered society to be simply “an association” (Tarde 1903, 69), that is to say it is “simply a number of *similar minds that interact*” (Davis 1968, 86). Tarde differentiated society from the nation, which he deemed to be “a kind of super-organic organism made up of co-operative castes and classes and professions” (Tarde 1903, 65).

Hayek shares with Tarde both the idea of a feedback loop creating a circular dynamic of imitation-invention and methodological individualism, that is, they both start their accounts by establishing the position of the individual. Hayek was poor at referencing his influences, so I can offer no certainty about Hayek's response to Tarde beyond the similarities of their perspectives and Hayek's approbation of Tarde in his 1937 article (Hayek 1937, 42 fn). Hayek also referred to his "system of democracy" as an "invention" (Hayek quoted in: Caldwell 2004, 206), thus identifying himself as having produced something new.

Once invention is coupled with imitation as part of the same system of interpersonal interactions, then the incongruities that exist between imitation and market processes are reduced because invention, which is a dynamic of renewal dependent on knowledge, is made accessible by the spontaneous market order. It is one of Hayek's recursive ideas – individuals chose proven successful skills and aptitudes which feedbacks as cultural evolution, a form of natural selection, which in turn evolves to complex systems like the "self-maintaining" spontaneous order (Hayek 1978b, 292; 1979a, 158).

Dupuy observed that imitation and market processes rely on opposite mechanisms to gather information. Hayek's "advocacy of the free market's capacity for self-organization stands in radical contradiction to the role assigned to imitation in bringing about this spontaneous order" (Beck 2018, 71). Hayek portrays the free market as an adaption to "the 'necessary' and 'irremediable' ignorance that characterizes the human mind" (Beck 2018, 72).¹⁵ But in 'Economics and Knowledge' (1937) the solution to the problem of limited human capacity had to account for collective utilisation through *compatibility* between individuals' available data for decision-making cycling between individuals in the economy. Hayek's concept of compatibility implies a kind of spontaneous connectivity between individuals' plans which then becomes an economic order functioning in a coordinated way as if by a "single plan" (Hayek 1937, 52). In other words, the market can coordinate individuals as long as the individuals adapt to the market (Beck 2018, 73-74):

The condition for the efficiency of cultural evolution is therefore not that those who imitate another tradition are aware of what they are doing—it is that those who, by chance, stumble onto the 'right' tradition will persevere with it and stop imitating others. It is therefore not those who imitate, but those who do not imitate, who embody the consciousness of evolution. (Dupuy 2004, 287).

15 See (Hayek 1988, 15).

As I will show in Section 3.4.2, Hayek's social stratification schema overcomes these contradictions by separating the group who according to Hayek were able to invent, from the rest of the population who were doomed to blind imitation.

3.3.5 Market: overcoming human limitations

Within the *catallaxy* the individual's status was that of a data source. This is apparent in Hayek's article 'The Use of Knowledge in Society' (1945) which discussed the relationship between individuals' adaptive responses to change registered by the price mechanism (Hayek 1945). According to Oliver Williamson, Hayek saw "adaption" as the "main problem of economic organization" and had argued that adaption was "realized spontaneously through the price system ... by individual actors" (Williamson 1998, 29).

Hayek's focus on market information displaced human agents, by removing their role in managing the market-based network or indeed any form of social organisation. This was justified in abstruse psychological terms based on the propositions that humans cannot access sufficient information in their own minds or explain the higher complexities of their own minds (Hayek 1976 [1952], 185). In other words, humans can construct models from their interactions with the world but they cannot construct models of their own processes. A machine on the other hand, and therefore by implication the market-machine, could explain the model itself (Hayek 1976 [1952], 166). Hayek asserts that paradoxically there is the possibility that humans could "build a machine fully reproducing the action of the brain and capable of predicting how the brain will act in different circumstances" (Hayek 1976 [1952], 189).

The idea that one would take a reductive perspective concerning the mind-brain, which is the source of all metaphysical questioning yet was little understood physiologically, speaks more to Hayek's indefatigability, when it came to fulfilling his mission to create a catallactic order from an 'intellectual' base, than it does to his commitment to applied science. Mirowski and Nik-Khah describe his ideas as based on the "discredited associationist psychology of the late eighteenth and early nineteenth century" (2017, 68). Hayek's was a determinist view of the brain, which he used firstly to model the imposition of a cybernetic inspired hierarchical order on humans who would be relegated to the second tier after machines, and secondly to justify his social stratification schema which divided populations into groups according to the uniformity of their cognitive abilities (Hayek 1973, 83) (see 3.4.2 below).

3.3.6 Mind as machine

Juxtaposing spontaneous order with Hayekian ‘markets as information processors’ brings into focus the ‘mind as machine’ metaphor underlying Hayek’s statements on informational compatibility between individuals’ plans (Simon 1996; Mirowski and Nik-Khah 2017, 18)

Hayek in *The Sensory Order* (1952) compares the human mind to various ICT technologies to explain his ideas on sensory classification, which he saw as a form of network mapping. In brief, Hayek’s three examples were a simple computational machine configured to select and classify (Hayek 1976 [1952], 48), a “simplified telephone exchange”, which selects signal pathways, and a computing punch card system (Hayek 1976 [1952], 49, 50).

Hayek explains the ability of the machine to create groupings or classes as resembling the neural system of the brain in the process of discriminating between stimuli (Hayek 1976 [1952], 48). Thus, according to Hayek, different events producing the same effect can be assigned by the brain to the same class, just like signals sent through different wires are classified by a telephone exchange (Hayek 1976 [1952], 49).

Hayek was influenced by cybernetics, particularly the work of Ross Ashby,¹⁶ a British psychiatrist and cyberneticist who impacted the field of organisational theory. Hayek draws on Ashby’s idea that a machine, within which he included an organisation, was like a living organism working in sync with its environment to form itself as a complete system; that is, a machine through the process of cause and effect could come to a whole-of-system equilibrium (Ashby 1947, 56), a state Ashby called *homeostasis*. For Ashby, “[t]he brain is not a thinking machine, it is an *acting* machine” (Ashby quoted in: Rid 2016, 63).¹⁷ According to Rid, Ashby, like an engineer, saw information as inputs processed by the brain, and actions as outputs, suggestive of the brain being an information processor (Rid 2016, 63). In other words, any human system, such as a market, can be organised mechanistically because the brain is functionally attuned to such an approach. Hayek embraces Ashby’s idea that organisms and machines are integrated to form the one system.

Hayek’s conception of mind includes components similar to information processors, data transmitters and data storage devices. Birner contended that “there are no fundamental differences between computers and human minds [according to] Hayek’s physicalist identity

16 Hayek references Ross Ashby in *The Sensory Order*, and includes a number of Ashby’s works in the bibliography. Note: his name is misspelt ‘Ashley’ in the index to the 1976 edition.

17 Ashby, W. Ross. (1952). *Design for the Brain*. London: Butler & Tanner, p. 379.

theory” (Birner 2014, 69).¹⁸ Birner describes this in ontological terms as the lack of distinction between the brain and the mind (Birner 2014, 62). Hayek thought a Turing test machine, one that was indistinguishable from a person, could eventually be built (Oğuz 2010; Van den Hauwe 2011, 388). Hayek states his belief in the “logical possibility that the ... principle on which the brain operates might enable us to build a machine” (Hayek 1976 [1952], 189), a point reminiscent of Turing’s famous question posed two years earlier in 1950, “Can machines think?” which Turing declared was “absurd” (Turing 1950, 433).¹⁹ For Turing, the best expression of the problem was described as “the imitation game”; can you tell if a machine or a person is answering a question (Turing 1950, 433).

This is not to suggest that Hayek had no concept of biological agency. He referred to “purposive functioning” which he describes as a combination of physiological functioning and behavioural response to external stimuli stimulated by the body’s nervous system (Hayek 1976 [1952], 82-83). This perspective was derived from Ashby who saw the nervous system as a physical machine, the function of which was to teach the organism to reflexively adapt to its environment (Ashby 1947). What is of concern is the adoption of behaviouralist tropes to rationalise a mechanistic social order, which amounted to the subordination of the human mind to a market machine. By claiming that “any apparatus of classification must possess a structure of a higher degree of complexity than is possessed by the objects which it classifies” Hayek argued that humans could not construct models of their own processes (Hayek 1976 [1952], 185). The corollary to this was that a market was set to understand people better than people. Human-centred concerns and human creativity were to be subordinated to market-machines which operated like ICT processors. A similar posthumanism is evident in Hayek’s concept of the *catallaxy*. Although his market construction parallels a computer network, his *catallaxy* corresponds to his forays into complexity theory, where Hayek finds, according to Cooper, “irrefutable proof that the spontaneous order of natural systems could be neither regulated nor foreseen with any precision” (Cooper 2011, 376). Warren Weaver, who was a referee for Hayek’s article ‘Degrees of Explanations’ (Hayek 1967 [1955]), sets Hayek straight on the advances in complexity theory (Caldwell 2014, 15). This was a turnabout from his attack on scientism in *The Counter Revolution of Science* (1952) (Mirowski 2018, 902).

18 Hayek was clearly referring to computers in general terms but his chief analogy was not a computer, it was a calculating machine (Hayek 1976 [1952], 188).

19 The perception that Turing believed computers could become equivalent to humans came when he proffered the idea whether computers could *imitate* a human being, a question he turned into a game he called the ‘imitation game’ where person A had to discern whether B was a person or a computer.

Telephone system metaphors

Hayek's most oft-used metaphor, the telephone system, appears in his descriptions of both the "connected network of fibres" transmitting brain impulses (Hayek 1976 [1952], 180) and of the price mechanism of the market (Hayek 1945, 527). This metaphor was also played in reverse by Marvin Kelly, Bell Laboratories's president (1951-1959), who described the telephone system as "more like the biological systems of man's brain and nervous system", an analogy made in defence of AT&T's goal of universal connectivity in telecommunications and monopoly over that network (Kelly quoted in: Gertner 2012, 127). Kelly's predecessor Frank Jewett (1925-1940) had described AT&T's goal in a similar vein as "providing society with a complete nervous system" (Jewett 1936, 11). In these metaphors, pulses (impulses) are transmitted through wired networks (the brain) multiplying through the "connected network of fibres" (neural networks). The telecommunications system represented Hayek's vision of a connected federated world (Hayek 1939, 131) and was thus the material manifestation of Hayek's ideas concerning the "social mind". Hayek also described the price mechanism as a telecommunications system, saying that it was "more than a metaphor" (Hayek 1945, 527). He saw it as an actual representation of how his spontaneous order would be coordinated by the price mechanism of 'the' market:

In abbreviated form, by a kind of symbol, only the most essential information is passed on, and passed on only to those concerned. It is more than a metaphor to describe the price system as a kind of machinery for registering change, or a system of telecommunications which enables individual producers to watch merely the movement of a few pointers, as an engineer might watch the hands of a few dials, in order to adjust their activities to changes of which they may never know more than is reflected in the price movement. (Hayek 1945, 527)

Hayek's use of telecommunications as a network model and his interchangeable machine and biological metaphors fosters a belief in what Walker and Cooper described as neoliberalism's perpetuation of the idea that it is a philosophy "capable of unifying nature and society under a single set of all-encompassing concepts" (Walker and Cooper 2011, 147).

The core problem for Hayek, the coordination of information dispersed amongst individuals, was one of transmission. The basis of his cybernetic response was that a human's neural system was like a telephone network and that this network could model a communications solution for the economy and society generally. By 1967 he was referring to this as the *catallaxy* (Hayek 1978 [1968]b, 90-92). The telephone network as a model

would also later underlie the contestability doctrine (see Chapter 7). Both theories represent a mechanistic, utilitarian response to designing a system that has profound implications for individuals and societies. Both included concepts of the market which drew on the cyborg to understand human behaviour. For Hayek it was the capacity of information networks to induce compatibility between individuals' plans, and for the Bell group it was systems analysis across the market and network. Hayek's human agent was adaptive to systems and the Bell group modelled their entrepreneurial agents' behaviour (incumbents and potential entrants) using game theoretics.

The question these machine comparators raise is whether a self-organising market 'machine' could substitute the imitation of competition for actual competition. According to Hayek imitation is the very process that computers perform because their forte is recognising patterns (Caldwell 2004, 307). This, I would argue, is fundamentally what the Bell group claimed for the contestable market, that with the right configurations and rule settings a contestable market will deliver an optimally efficient market economy without actual competition and irrespective of whether agent behaviour followed the 'rules of the contestable market game'. Ensuring that the economic agent did fit the model became Hayek's focus both of his general philosophy concerning the limitations of human cognition and in rule-setting for the *catallaxy*.

The separation between Hayek and Turing

Hayek's contribution to society was overshadowed by Turing in the popular imagination. Turing identified that a machine could be compatible with a human being, if they used the same configurations to compute. This, however, was a simple extrapolation of the tasks performed by a human computer and a machine – Turing was not suggesting that a human being was machine-like but merely that human beings performed computations (Turing 1936, 250). Turing drew on human computation for a working definition of machine computation embodied in the term algorithm (Bernhardt 2016). An epochal story sums up Turing's hopes for the machine:

Alan was holding forth on the possibilities of a 'thinking machine.' ... "No, I'm not interested in developing a *powerful* brain. All I'm after is just a *mediocre* brain, something like the President of American Telephone and Telegraph Company." The room was paralyzed while Alan nonchalantly continued to explain how he imagined feeding in facts on prices of

commodities and stocks, and asking the machine the question 'Do I buy or sell?' (Story quoted in: Mirowski 2002, 81).²⁰

Philosophically, Turing was engaged with human creativity, whereas Hayek promoted his human limitations thesis. Their respective forms of modelling were foundational to ICT and neoliberalism both of which had their development historically situated during the halcyon days of the cybernetics movement in the 1950s and 1960s when mind-machine discourse was flourishing (Kline 2015):

The basic analogy of cybernetics—that all organisms use information-feedback paths to adapt to their environment—is reduced to the adjective *cyber*. The scientific concept of information is reduced to digitized data (Kline 2015, 7).

The wide array of mind metaphors being applied to both 'the' market and to computer networks would in time have a profound adverse impact on the status and agency of human beings as they became connected to these systems.

Hayek saw in the machine the opportunity to organise society free of human imperfections, and a world free of nationalistic conflicts (Hayek 1939). He believed a market machine would make morally neutral decisions, which were nonetheless totally in tune with individuals' intentions to the point of optimising their "non-economic ends" (Hayek 1976, 113). However, there are no non-economic ends if it is the market that is processing them, which is why Hayek's most developed conception of intentionality was individuals reduced to "acquiescing in the market's signals" (Mirowski and Nik-Khah 2017, 152).

Hayek contended that the human mind was adaptive on a corrective "feed-back principle" (Hayek 1976 [1952], 95). Entrepreneurs would adjust their behaviour through the price mechanism "the cybernetic principle of negative feedback [which] operates to maintain the order of the market" (Hayek 1976, 94). This became the basis of his compatibility argument which he offered as a substitute for equilibrium theory (see 3.2.1 above).

In 1941 Hayek published *The Pure Theory of Capital* his last work of technical economics. In 1928 he had described his previous work to improve on equilibrium theory as only partially useful because it ignored "features of space and time" (Hayek 1984 [1928], 73). In *The Pure Theory of Capital* he attempted to devise a dynamic equilibrium construct, as opposed to a stationary state which he described as "fictitious" (Hayek 1962 [1941], 18). His

²⁰ This incident took place in a staff dining room at Bell Labs in 1943. The incident was originally related in: Hodges, A. (1983) *The Enigma*. New York: Simon & Schuster, p. 251.

“intertemporal equilibrium” was to be a means of analysing the future and hence the compatibility between individuals’ plans (Milgate 1979; Caldwell 1988). In his 1937 paper, Hayek claimed that intertemporal price relationships were subject to equilibrium analysis only on the basis that “compatibility exists between the different plans which the individuals composing it have made for action in time” (Hayek 1937, 41). Compatibility in this instance assumes shared foresight (Hayek 1937, 41). The link between compatibility and intertemporal pricing results from the step taken in 1928 to include commodities along with capital and interest, the hitherto accepted applications (Milgate 1979). In this sense, Hayek was positing a generic price mechanism which induces compatibility within a network because it provides the necessary data to make all the adjustments across the whole network – stated as the “necessity and significance of relative levels of prices at successive points in time” (Hayek 1984 [1928], 72). Birner identified the emergent network model in Hayek’s 1928 paper²¹ on intertemporal general equilibrium, describing his analysis of time-based price relativity as “revolutionary” (Birner 1996, 3). Hayek wrote that it was the “necessity for an intertemporal price system to exist [that was] incompatible with the widespread conception that the intertemporal constancy of prices constitutes a precondition for an undisturbed self-reproduction of the economy” (Hayek 1984 [1928], 74). Hayek was attacking Walrasian general equilibrium theory for its intertemporal pretention (Milgate 1979, 5) and its perspective that equilibrium is intertemporal in nature, that is, the relationship between individuals’ actions is sequenced in time (Birner 1996, 4). This concept was critical to contestability which concluded that “contestable markets eliminate some of the difficulties associated with intertemporal phenomena that are normally considered sources of efficiency problems. Learning by doing is such a phenomenon” (Baumol, Panzar, and Willig 1982, 473).

Hayek’s insight into successive pricing for commodities was connected to the importance of localised information flowing between individuals in the supply and demand loop. The concept appeared in practice in ICT network infrastructure when ninety years later it was applied by Uber in an app using localised GPS data to provide time sequenced prices.

21 ‘Das Intertemporale Gleichgewichtssystem der Preise und die Bewegungen des "Geldwertes"’. *Weltw.Arch.* (1928) [Translated: “The Intertemporal Equilibrium System of Prices and Movements of the "Monetary Value””] was republished in as ‘Intertemporal Price Equilibrium and Movements in the Value of Money’ in *Money, Capital, and Fluctuations: Early Essays* published in 1984.

Hayek's shift from equilibrium to compatibility analysis²² was hinted at in his earlier work (Hayek 1937, fn 34). But it was only in *The Pure Theory of Capital* (1941) that he expanded on this approach and its implications for causal relations:

What we find here is not mutual interdependence between all phenomena but a unilateral dependence of the succeeding event on the preceding one. This kind of causal explanation of the process in time is of course the ultimate goal of all economic analysis, and equilibrium analysis is significant only in so far as it is preparatory to this main task. (Hayek 1962 [1941], 17).

In 1937 Hayek had discussed the information feedback loop between subjective knowledge held by individuals and the objective data *variously* available to agents. He conceptualised compatibility between individuals' plans as a form of "circular reasoning",²³ that is, "one person's decisions are the other person's data" or put another way, prices induce agreements and decisions on value (Hayek 1937, 38). Hayek regarded the circulation of information, coded into prices, as a source of both empirical and a priori data and so the basis of both compatibility and correct foresight. "There would ... be no reason why the subjective data of different people should ever correspond unless they were due to the experience of the same objective facts" (Hayek 1937, 43). A *discovery process* implicit to transference between these two types of data would reduce errors (frictions) in planning.²⁴ Agreement between knowledge and intentions would be optimised, and hence "the expectations of the people and particularly of the entrepreneurs will become more and more correct" (Hayek 1937, 44). It is this circular, 'in transmission' process governed by the price system, that Hayek believed generated the "tendency towards equilibrium" (Hayek 1937, 44). Additionally, it is this assertion from which he concludes "that economics ceases to be an exercise in pure logic and becomes an empirical science" (Hayek 1937, 44).

Hayek was raising the possibility that like a computing machine the market could be configured to control its own behaviour, that is, it could run in perpetual motion until it was turned off or otherwise halted. Hayek had begun to deal with what Turing described as automatic, that is, when all a machine's motions at every stage are configured (Turing 1936,

22 Compatibility analysis shadowing Turing's machine logics on sequencing was hinted at in his 1937 paper in a reference to Hans Mayer's stance on using a "causal-genetic" approach as an alternative to "functional" equilibrium (Hayek 1937, fn 34).

23 This is not to be confused with circular logic fallacy. Iterative reasoning or successive approximation would, I conclude, have been more accurate terms to describe Hayek's idea.

24 Hayek followed Frank Knight in using this term whose variant 'friction-free' would become synonymous with the online economy (Hayek 1937, fn: 51).

232).²⁵ Five years later, in 1941, Hayek conceived the market to be an automatic, self-correcting societal instrument for processing information which like a machine provides “a few gauges and in simple figures, the relevant results of everything that happens in the system” (Hayek 1941, 581).

Three decades later he would conceptualise the field in which everything happens as the *catallaxy*, “a system of numerous interrelated economies which constitute the market order” (Hayek 1976, 108).

3.3.7 *Catallaxy: the imitation game*

Hayek’s *catallaxy* was “the special kind of spontaneous order produced by the market” making ‘catallaxy’ and ‘spontaneous order’ fundamentally interchangeable terms (1976, 109). According to Hayek there is an assemblage of orders which as neoliberalism matures will constitute a fully integrated, self-organising formation he called the “spontaneous overall order” (1973, 47). This represented Hayek’s core vision for the rebirth of a free society which he called the Great Society, in reverence to Adam Smith’s usage of the term and to nineteenth century British conservatism (Hayek 1973, 47). There were two main orders in an assemblage of numerous orders that appear throughout his corpus. Spontaneous order (*kosmos*²⁶) also called ‘grown’ or endogenous order, and under the influence of cybernetics as self-generating or self-organising (Hayek 1973, 37); and its opposite, made order (*taxis*), which he described as, “an exogenous order or an arrangement [which] may again be described as a construction, an artificial order or, especially where we have to deal with a directed social order, as an *organization*” (Hayek 1973, 37).

With the concept of *catallaxy*, the market order comprising a network of economies, came an ideological switch from denoting ‘the economy’ in the singular to denoting the market in the singular and economies in the plural. Hayek even referred to the “cosmos of the market” (Hayek 1976, 108). The market’s price signalling mechanism was considered the device that made coordination of multiple economies possible. Thus, coordination was framed by Hayek as “the order brought about by the mutual adjustment of many individual economies in a market” (Hayek 1976, 108-109). Beyond that loose aggregation the *catallaxy* was said to have no form but was rather a “wealth-creating game” dependent on price

25 Turing describes circular machines and circle-free machines built into the one universal machine, with the circular machine processing a finite number of symbols (which can be extrapolated to variables) and the circle-free machine which contained the configuration controlling the machine itself (Turing 1936, 241)

26 *Kosmos* meant originally “a right order in a state or a community” (Hayek 1973, 37).

signalling from the market for the requisite information which pertains to the 'players' needs and conditions of play which enables them to contribute or otherwise benefit (Hayek 1976, 115).

For Hayek, the *catallaxy* was the only true conception of a "social" or "national economy" in all its plurality (Hayek 1976, 108). He followed Carl Menger,²⁷ who considered the concept of a national economy to be a misnomer as there was really no such thing as a singular economy, "no such single order of ends" (Hayek 1976, 107). The market only stimulates the means to achieve ends by functioning as a platform for price transmission in which any particular pattern of distribution may result from the market process (Hayek 1976, 85). Hayek asserted that the market distributes resources within the network according to Pareto modelling, not deliberate policy design, and does so more efficiently than any other system and without recourse to moral judgements about fairness (1976, 119).

We can deduce, from this that the *catallaxy* as a new social order provided no space for liberal institutions like the social contract, social justice or human rights. As Hayek made clear, "the old civil rights [of the liberal order] and the new social and economic rights [under the spontaneous order] cannot be achieved at the same time but are in fact incompatible" (1976, 103). In their place, Hayek offered the cheapest possible access to goods and labour, "no need is served at the cost of withdrawing a greater amount of means from the use for other needs than is necessary to satisfy it" (1976, 113).

Hayek had noted the "authoritarian connotation" of the term order, but claimed that its negative association came "entirely from the belief that order can be created only by forces outside the system (or 'exogenously')" stating further that it did "not apply to an equilibrium set up from within (or 'endogenously')" (1973, 36). A contra perspective which sees value in organising across society was not dealt with by Hayek in terms of how such coordination works compared to his schema. Instead, he dismissed it with an assertion that any competing modalities to price competition would likely end in totalitarian control (2007 [1944], 94-95). Beyond this, he does not articulate what makes organisations like government and trade unions oppositional and enterprise monopolies and firms integral to his overall spontaneous order.

27 "National economy' is not a phenomenon analogous to the singular economies in the nation to which also the economy of finance belongs." (C. Menger quoted in: Hayek 1976, 185).

In a similar vein, an opposition between exogenous and endogenous order was made explicit, and pricing was given primacy, in the contestable market hypothesis which contended that:

In the older theory, the nature of the industry structure was *not* normally explained by the analysis. It was, in effect, taken to be given exogenously, with the fates ... In our analysis, ... an industry's structure is determined explicitly, endogenously, and simultaneously with the pricing, output, advertising, and other decisions of the firms of which it is constituted. This, perhaps, is one of the prime contributions of the new theoretical analyses. (Baumol 1982b, 3).

Economist and computer scientist Herbert Simon asked the question, “what determines the boundary between organizations and markets; when will one be used, and when the other, to organize economic activity?” (1996, 40). Hayek, albeit basing his theory of social order on just such a distinction, never answered this question theoretically. This was despite Coase having addressed it in 1937 with his theory of the exchange transactions. In other words, somewhat ironically, it was Hayek's price mechanism that provided the cost data, so as to determine whether the market or the firm would transact most efficiently.

It is sobering to note, suggested Simon, that “[r]oughly eighty percent of the human economic activity in the American economy, usually regarded as almost the epitome of a ‘market’ economy, takes place in the internal environments of business and other organizations and not in the external, between-organization environments of markets”. He also noted that “hierarchic organizations, some of enormous size, ... make almost negligible use of markets in their internal functioning” (Simon 1996, 31). What Simon is alluding to is that planned, designed and constructed economic activities within corporations and other organisations like government, with obvious external impacts, were far in excess of market activities which to Hayek came under the rubric of the spontaneous order.

This brings us back to Hayek's fundamental proposition that information, not resources, is elemental to economics. However, Hayek's model fails to acknowledge the concentration of corporate power that is implicit to its architecture. Network infrastructure can be configured according to the designs of those who have the power to make those decisions. Although Hayek paints his *catallaxy* as amorphous, a loose aggregation of economies held together by the rules of the game, I argue that the *catallaxy* is a private institutional edifice undergoing planning and construction. It features sub-institutions like the internet, online markets, platform monopolies, ICT monopolies, telecommunications networks, trade and investment agreements and private governance apparatuses like ISDS tribunals. An ICT network may

be plastic in its potential configurations, but in its actual implementation it is highly patterned. An ICT network architecture hosting a market, for example Uber or Amazon, is subject to modification by those who own or control it. The marketisation of the public sector through privatisation and deregulation has expanded the market sector leaving no counter to monopoly power anchored in an institutionally powerful non-market sector.

Despite Hayek's difficulty in articulating the interstitial spaces between the orders, and the unresolved ambiguities and contradictions of his concepts, he nonetheless was able to go so far as to consider the legal framework for his vision. Although again devoid of details, his ideas about rules and laws showed greater clarity of thought than either his economics or psycho-organisational theory. What surfaced was a pragmatism concerning legal frameworks which would see various programmatic responses to his ideas implemented and his vision of catalytic order realised through a system of international trade and investment governance.

3.4 The certainty of a rule

[Hayek] he's a great, great thinker. ... But when he wanted the law to be certain I think he wasn't understanding how law in fact operates.

Professor Guido Calabresi
New Haven, CT 15 November 2018

In this section I examine the fundamental precepts that informed Hayek's legal epistemology. Hayek sought a "legal framework" to replace the system of law in western democracies. He actively pursued this aim in forums like the League of Nations and he influenced the General Agreement on Tariffs and Trade (GATT) (Slobodian 2018, 23, 240). His work in this area was furthered by the Geneva School, a neoliberal enclave that influenced international governance institutions like the World Trade Organisation (WTO) (Slobodian 2018, 8).

Hayek was an internationalist whose goal was certainty, not for individuals or nations per se, but for those elites who created and directed the global market 'machine'. Administrative law played a critical role in Hayek's conception of an entirely endogenous, computational catalytic system. As Dardot and Laval observed, "the originality of neo-liberalism is precisely its creation of a new set of rules defining not only a *different* 'regime of accumulation', but, more broadly, a *different* society" (Dardot and Laval 2017 [2013], 10).

Hayek's search for certainty led him to renounce 'public law', by which he meant statute law. He described legislation as being made by the will of the legislator which he deemed "dangerous power" (1973, 72). He held that statute law was invented law, in contrast to the law itself "which has never been invented" but rather evolved from the dawn of time such that "law is older than law-making" (1973, 72-73). According to Hayek real law was "something to be discovered, not made" and resulted in what he called the "rules of just conduct" (1973, 83). Historically, the closest to his ideal of rules was "English common law" also called judge made or case law (1973, 83). Hayek wanted judges to arrive at decisions using a "given cosmos of rules" which has grown spontaneously over time, and further, to deliberately perfect this order through their intellectual efforts without recourse to "emotions or personal preferences" (1973, 101). In the game of *catallaxy*, judges were urged to make decisions for "contestants" based on the system of rules, without regard to their "plight ... [or] objective" (Hayek 1973, 101). This suggests that Hayek was not accepting of those aspects of case law which were concerned with questions of detriment, impact on vulnerable parties or inequities. Hayek sought rules more akin to a "Rule of the Road" to offer certainty and "a means for people to use in making their own plans". He held this model up as one which prevented the arbitrariness of government agencies enforcing law (2007 [1944], 113, 114).

Hayek's stated preference for common law over statute was aligned to "classical liberalism" in a long-standing debate²⁸ about the relative merits of both systems (Tamanaha 2008, 520). Tamanaha noted that, "[d]efenders of the common law considered legislation a disruption of the logical structure and integrity of the common law, subject to capture and abuse by passion and special interests" (2008, 526). Since the Second Industrial Revolution legislation was generally seen as more responsive to the needs of a technologically-accelerated society than the slow unpredictable movement of change induced by judges in courts. Hayek agreed with this line of argument, but it did not dissuade him from advocating for an evolutionary approach to law creation (1973, 88).

The growth of the spontaneous order of the *catallaxy*, upon which Hayek's market depended, is brought into view through Hayek's ontological conception of law. Law is said to manifest in evolutionary terms based on groups and their individual members prevailing, because they successfully act according to rules which efficiently induce order (Hayek 1973, 74). According to Hayek, this spontaneous order was produced from "purpose-independent

²⁸ This debate had its origins in commentary on English common law in the 1600s (Tamanaha 2008, 525).

rules of conduct”, that began in pre-human societies and appears in various epochs as law “given independently of human will” (1973, 81, 83). Hayek conceived of law not as a “product of anyone’s will, but rather as a barrier to all power” (Hayek 1973, 85).

Hayek was influenced by Anglo-Dutch philosopher Bernard de Mandeville (1670-1733) who thought the growth of law was from a process of trial and error such that law along with other institutions evolved over generations. Hayek quotes Mandeville on how an evolutionary process leads to laws which “are brought to as much perfection, as art and human wisdom can carry them, the whole machinery can be made to play of itself, with as little skill, as is required to wind up a clock” (Mandeville quoted in: Hayek 1978a, 261). Hayek’s schema of social order is conceived as the outcome of such an evolutionary process, and he cites with approval the English philosophers who “find the origin of institutions, not in contrivance or design, but in the survival of the successful” (1960, 57). Hayek claimed his evolutionary rule-making was not “Social Darwinism” which he disparaged as a “misunderstanding” (1973, 23). We however, concur with Mirowski and Nik-Khah that his was a “harsh version of social Darwinism”, (2017, 69), because it implicitly condoned the concentration of power which any such system will inevitably produce (Crane 2020). Hayek attempts to depoliticise his concept of evolutionary selection being played between contestants by failing to register power or conflict. To the contrary, he argued that no powerful class could emerge, nor could the “deliberate and unfettered will of the ruler” determine the rules of the game (1973, 84).

Hayek’s legal philosophy conceived rules as “existing independently of human will” (Hayek 1973, 73). Therefore, in his re-construction of the legal framework Hayek decouples social ends from his legal process so that it consists mainly of rules and commands:

Law in its ideal form might be described as a ‘once-and-for-all’ command that is directed to unknown people and that is abstracted from all particular circumstances of time and place and refers only to such conditions as may occur anywhere and at any time (Hayek 1960, 149).

By disavowing intentionality associated with legislation, Hayek was not attacking intentionality itself but the attachment of social goals to legislation, which he conflated with socialism. Hayek’s argument was poorly made, given that the judge’s endeavour is often to nuance principles and consider everyone’s circumstances, whereas statute law is an attempt to set out clear rules for all. Calabresi has described legal judgments as the effort to “make changes which bring the law up to date, while at the same time treating people’s expectations so that they weren’t misled in making their plans” (Calabresi 2018, 7).

However, at the core of Hayek's rule-based legal framework is the desire to have the market dictate social norms and values. Hayek sought to expel alternatives to the market, and the legislative process represented such an alternative. Hayek's difficulty in this instance was to convince public authorities of his theory, that general rules would evolve and time consuming case law would be all that was needed to mop up any residual disputes left unresolved by the self-governing market system (1960, 208).

Hayek proposed to severely curtail statute law and limit the common law, so that human-centred law would be replaced with "universal rules of conduct" (Hayek 1973, 82). Like the rules that made Turing's machine universally connectable, these were conceived to enable the connection of a global catallactic network of economies coordinated by the market. His *catallaxy* would have a built-in hierarchy of rules under the command of central coordinating institutions like markets and networks. Those firms which controlled markets would also rely on rules and commands (Hayek 1973, 48). Hayek proposed creating a global system of coordination using one governance modality amongst transnational corporations:

Rules of organization are ... filling in the gaps left by commands. Such rules will be different for the different members of the organization according to the different roles ... interpreted in the light of purposes determined by the commands. (Hayek 1973, 49).

Although rules can apply differently within organisations, a system of "true law" that sees "all coercive action of government is confined to the execution of general abstract rules" which was essentially the enforcement of contracts (Hayek 1960, 153, 154). That is contracts were the instrument of choice used under the "reign of ... rules which are the same for all" (Hayek 1960, 154).

3.4.1 Hayek's catallactic alternative: a rule-based system

Hayek's approach to devising a new legal framework for the *catallaxy* had two pillars. The first was his 'Rule' of law concept which he deemed a new "system of democracy" (Hayek quoted in: Caldwell 2004, 206) (see below). The second pillar was his adoption of international customary law upon which he conceptualised a global system of rules governing trade which would eventually materialise as the GATT framework (Slobodian 2018, 240). In essence these two pillars were his justifications for proposing to overturn the established systems of law which in time neoliberals would bring to fruition with the development of trade and investment agreements. These set out rules whereby autonomous international agencies would effect changes to national law as nation states committed to the regime of rules governing those agreements.

Hayek's version of the 'Rule' of law

The basis of Hayek's theory of law was his concept of the 'Rule' of law, which he conceived as a "meta-legal doctrine" about what the law should be (1955, 33). His use of the term was not the common usage but was bespoke to his theories. Hayek's concept was described by Hamowy as, "not itself the body of laws by which society is governed, but a higher order rule determining the formal structure of laws, consistency with which is the criterion for securing individual freedom in society" (Hamowy 1978, 291). Hayek held "that the laws must be general, equal, and certain" (Hayek 1955, 34). By this he did not mean equal protection under law in the Lockean sense, but equal application of rules to different types of entity. All were conceptualised as 'economies', and each would in theory function as compatible units inside the catallactic market-network guided by the same rules. Therefore in Hayek's conception laws would not be 'general' just in the sense of "apply[ing] to all people" (Shearmur 1996, 54) but also in the sense that they would apply equally to individuals and organisational entities like firms and government agencies (Dardot and Laval 2017 [2013], 133). Consistency of application would also protect entities like monopolies from being specifically targeted, as Hayek condemned laws targeting special groups (Hayek 1960, 266; Hamowy 1978, 291).

Government presented a special case for Hayek. He viewed the over-reach of government authority as distorting the market, and its enterprises as contrived and presenting market barriers. Government had to validate itself in the face of "market criticism" (Foucault 2008, 246) by applying such analytical tools as cost benefit analysis to its functions. Dardot and Laval note that Hayek wanted a "general principle of legitimacy" to test whether government interference in economic matters was legitimate rather than leaving it as a matter of expediency (Dardot and Laval 2017 [2013], 132). The issue of expediency was often expressed as a complaint by neoliberals against what they saw as arbitrary rules or arbitrary authority (Coase 1959, 18; Hayek 1960, 153). Hayek wanted government to prove that its activities were "compatible with a free system" (1960, 221). All rules had to meet the "universalizability" principle imposed to ensure new rules were compatible with the market system (Hayek 1976, 28). Submitting proposed regulations to cost benefit analysis is an example of a tool used to comply with the principle. Dardot and Laval observe that the core principles of his 'Rule of Law' found at the "*meta-legal* level" limits the power of government at the "*legal* level proper, which is that of legislation" and the "*governmental* level" where regulation is promulgated (2017 [2013], 135).

His general rules were fundamentally economic rather than social or environmental. This was to ensure that rules did not intercede in the economy on behalf of any group but were to ‘calibrate’ the market ensuring certainty within the spontaneous order (Dardot and Laval 2017 [2013], 137).

Hayek theorised that regardless of whether and how monopoly and privilege might be created, or persons discriminated against, his ‘Rule’ of law should not be an instrument for either the acknowledgement or disavowal of that privilege or discrimination (1955, 48). Economic privilege was immutably linked by Hayek to property which he believed was objectively tied to the freedom of the individual (1955, 48). Whereas the absence or loss of economic privilege and the possession of little or no property, were arbitrary and only subjectively laid cause for loss of freedom. Individuals were free to rail against the poverty of their circumstances, but the law was not to be concerned with “distributive justice” (Hayek 1973, 108), only the justice that comes from having the violation of one’s property redressed (Hayek 1973, 109).

There was no theory of rights embodied in or supplementing Hayek’s ‘Rule’ of law per se (Hamowy 1978, 287; Gray 1984, 62). This accords with Foucault’s description of a “radical utilitarian approach” wherein there is no “juridical conception of freedom” just the “independence of the governed with regard to government” (Foucault 2008, 41, 42). This I would argue is the outcome of Hayek’s belief that markets, unlike humans, could write the rules for their own internal operations. As Walker has observed, “Hayek places the immanent laws of market freedom prior to those of the state as an international law-making power. ... [in which] he recognises that the global order of market freedom has yet to be fully realised.” (Walker 2020, 324).

Hayek determined that if his ‘Rule’ of law protected the dynamism of the market-coordinated system, which was based on “the cybernetic principle of negative feedback” (1976, 94), then the fact that “some expectations are systematically disappointed” would be resolved by the market such that “we can maximize the fulfilment of expectations as a whole” (Hayek 1973, 102, 103). Protecting expectations became, as Birch observed, the preserve of contract law where “the whole network of rights created by contracts is as important a part of our own protected sphere, as much the basis of our plans, as any property of our own” (Hayek quoted in: Birch 2017b, 165).²⁹ Thus, making contracts was

29 Hayek, F. *The Constitution of Liberty*. Chicago: Chicago University Press, p. 208.

the key apparatus of the neoliberal order (Birch 2017b, 156). On the basis of this system, Hayek predicted that the need for the conventional apparatuses of law would fall away such that there would be little demand for case law (1960, 208).

Philosophically, Hayek's 'Rule' of law was concerned with the integrity of the system. The conduct of individuals was of concern, but not the needs of the individual. Instead, he claimed the market would optimise conditions so that individuals could indulge their preferences and seize opportunities (1979a, 169). He claimed his spontaneous order would obviate the need for alternative systems³⁰ of social ordering. Its integrity was to be assured by governance institutions which included the market itself, case law and private institutions like investor-state dispute settlement (ISDS) tribunals and government enforcement.

Hayek's three layers of rules

Slobodian notes the importance of "Hayek's tripartite stratification of the rules of conduct" (2018, 238), which we can visualise as a pyramidal structure. At the very top is rule design – specifying highly articulated *normative rules* that run the system or, as Hayek vaguely stated, are "deliberately adopted or modified [rules] to serve known purposes" (Hayek 1979a, 160). The next layer are *customary rules* of conduct born of custom and tradition which people follow without necessarily articulating the nature or reason for the rule. These rules function to induce exchange and social cooperation (Hayek 1979a, 160). The base layer of *unarticulated rules* is formed of what Slobodian summarises as the "unconscious, and relatively constant, instinctive rules of physiology" (2018, 238), such that they form identifiable behavioural traits. From these two bottom layers comes the bulk constitution of the "universal rules of conduct", which Hayek conjectured may have evolved from the first act of bartering (1973, 82).

Normative rules

Normative rules are the articulated rules that essentially 'program' the spontaneous market order. These "descriptive rules which assert the regular recurrence of certain sequences of events (including human actions) ... stat[ing] that such sequences 'ought' to take place" (Hayek 1973, 79). Various occurrences are 'programmed', resulting in premises that generate further rules (Hayek 1973, 80). This produces an integrated system of rules analogous to

30 The exception is the non-market sector of society which is deemed to be proportionally much smaller than the market, providing services the spontaneous order cannot provide and serving people who cannot participate for whatever reason in the market. (Hayek 1973, 48).

sets of instructions used in computer programming, that are difficult and costly to change, resulting in lock-in to standards that become entrenched (Lanier 2010, 8). This delivers a degree of longevity and therefore certainty concerning the system, but a loss of flexibility and diversity, especially when amplified by network lock-in. These rules are essentially running instructions for the market mechanism so it functions as an information processor devoting some of that processing capacity to self-organising and self-regulating. In other words, these rules or instructions drive the market's equivalent of a CPU, bringing certainty to market functionality by enabling each 'economy' or 'enterprise-unit on the network to interact effectively by inducing the compatibility of the system.

Hayek works this contention through his discourse on generality in *The Mirage of Social Justice* (1976) which sees him ruminate on how the consistency and compatibility of rules makes for a system of "generalization or universalization" (Hayek 1976, 28). The systems of rules and values should, he believed, be governed by tests of internal consistency or compatibility (Hayek 1976, 28), which he described in programmatic terms, not inconsistent with Turing's universal machine:

[T]he test of 'universalizability' applied to any one rule will amount to a test of compatibility with the whole system of accepted rules—a test which, as we have seen, may either lead to a clear 'yes' or 'no' answer or may show that, if the system of rules is to give definite guidance, some of the rules will have to be modified, or so arranged into a hierarchy of greater or lesser importance (or superiority and inferiority), that in case of conflict we know which is to prevail and which is to give. (Hayek 1976, 28).

Hayek's focus was on the rules that made it possible for one legal jurisdiction to talk to another jurisdiction, essentially removing jurisdictional diversity. These rules were concerned with ensuring that the market formed a coordinated network that was both economically and informationally efficient. This necessitated a radical change in the approach to competition and antitrust, where principles of fairness and the constraint of monopoly power were replaced by efficiency as the sole concern. His initial planning of this vision for a paradigmatic shift in law occurred during the antitrust projects he organised at the University of Chicago's Law School (1946-1955) a period covered in Chapter 6.

Customary rules and rules from precedent

The rules governing the behaviour of individuals and organisational entities which collectively formed the network of economies were, according to Hayek, customary rules; that is, rules imbued with tradition and formulated through precedent over time. The model he used for these rules was international customary law which he referred to as "the *ius*

gentium, the law merchant, and the practices of the ports and fairs” (Hayek 1973, 82). These general rules governing international commerce, which according to Hayek had evolved over hundreds of years, held the promise of an evolved law for “an open society” (1973, 82). *Jus gentium*, as it was more commonly called, was associated with mercantilism, a system of international trade which saw the rise of the business class to political power in the 17th century. According to Foucault, the objective of *jus gentium* was to enrich the sovereign (Laidi 2007, 13; Dean 2010, 113) because it was “a form of government ... not an economic doctrine” (Foucault 2008, 5). Its state institutions were directed towards industrialising ‘regulation’, that is, the suppression of the poor by establishing workhouses and labour-colonies like Australia and by lowering wages. In Britain monopolists like the East India Company reflected this class membership (Dean 2010, 113, 114).

Hayek was criticised by Herman Finer for adopting a view that the state should be limited to serving businessmen, by taking as his precedent “British and American mercantilists” (1946 [1945], 52). However, it was a fitting model for an internationalist like Hayek who wanted a return to Whig rule and who saw international merchantmen and the trade rules that governed their activities as the mechanism by which to dispel the “monolithic state” (Hayek 1979a, 149). The connection between Hayek and modern trade law has been made by Slobodian’s (2018) ground breaking research on the Geneva School, a neoliberal enclave active in international trade circles whose members influenced the development of the GATT. This framework on trade liberalisation was established after World War II and later came under the auspices of the World Trade Organisation (WTO) established in 1995. Such a framework is agreed after long negotiations and creates normative rules from which there is little deviation. The GATT set a precedent for the subsequent General Agreement on Trade in Services (GATS) which devised rule setting for international contestable markets, the thrust of which was market access based on a “negative list approach to trade liberalization” (Sauvé 1996, 47).³¹ This reflects Hayek’s “principle that all supreme power must be confined to essentially negative tasks – powers to say no – and that all positive powers must be confined to agencies which have to operate under rules they cannot alter, must have far-reaching applications to international organization” (Hayek 1979a, 149). Key to Hayek’s perspective on “international order” according to Slobodian was the recurring

31 The negative list approach necessitated that states had to engage in a complex administrative process if they wished to extract themselves from particular “obligations and disciplines” which were framed as default positions. Sauvé observed that this was “viewed as administratively burdensome, particularly by developing countries” (Sauvé 1996, 47).

cybernetic theme of self-regulation so that “[t]he reform of the GATT would become, in part, a laboratory for Hayekian system design at the scale of the world.” (2018, 240).

Unarticulated rules

In local jurisdictions Hayek primarily saw customary law as rules which governed transactions, pecuniary or otherwise, between individuals. These comprised expectations around standards of behaviour. Hayek described these rules as “necessarily abstract” because people followed them without necessarily articulating or even being conscious of them (Hayek 1973, 86). Unarticulated rules changed when unmet expectations found their way to court, and common law judges then considered the cases using *precedents*. Judges could discover new principles to be articulated for future cases, but the rules themselves were “purpose-independent” because they didn’t direct behaviour or actions but defined “protected domains” which enabled individuals to plan their actions, primarily transactions (Hayek 1973, 81, 85).

The change process in case law was necessarily slow because it was restricted to individuals and entities willing and able to engage with the dispute system. According to Hayek, it was a process that was defined by winners who effected changes to the rules in their favour, serving as a form of evolutionary selection (1973, 99). This case law approach would become a factor in the resurgence of monopolies in the late 20th century as significant battles were fought and won by corporations, particularly in the US where antitrust was considerably weakened by corporate success in the courts. This was exemplified by the failed attempts to break up IBM in *United States v. IBM* (Rowe 1984) and Microsoft in *United States v. Microsoft* (Paul 2004). The antitrust regime was unable to keep pace and institute appropriate constraints on monopolies and oligopolies modelling their businesses on global ICT. Corporations were able to plan new business models like global online platforms without adequate antitrust scrutiny (Khan 2017). Brown cites *AT&T Mobility LLC v. Concepcion* (2011) decided by the US Supreme Court, which “permitted corporations to end-run class-action suits, forcing disgruntled consumers to enter into individual arbitration” (Brown 2015, 152). As Brown observed class-action suits were “crucial instruments” in the fight against corporate maleficence (2015, 152). This ruling against US class-actions changed the customary approach to negotiations and brought the all-important *certainty* for the monopoly planners of the *catallaxy* as they are now less restrained. This was Hayek’s chief intention as he worked to create a new epistemological base to facilitate free market access across local and international jurisdictions.

3.4.2 Stratification in the catalactic order

Hayek's planning vision always embraced the idea of global social order which would coordinate populations within the market network (Dean 2010, 118). Dardot and Laval observe that the "population is now perceived merely as a 'resource' for enterprises, in a cost-benefit analysis" (Dardot and Laval 2017 [2013], 225). What Foucault identified "as a *population* that a government must manage" (Foucault 2008, 328) became the management concern of corporations and neoliberals as the government sector was progressively privatised. The government was still engaged in population management but "as *partner* of oligopolistic interests", as reflected in policy which "aims to *maximize the population's utility*, by increasing 'employability' and productivity and reducing its costs" (Dardot and Laval 2017 [2013], 225).

A planning group and other stratified groups within the population were part of Hayek's "system of ideas" linking cognitive psychology and law to social modelling (Gray 1984, 2; Slobodian 2018, 238).

Hayek's *The Road to Serfdom* (1944) divided the population into three distinct groups categorised according to the degree to which individuals held uniform values, views and tastes and then sub-categorised these according to moral standards. The least uniform and smallest group was the one whose members' source of diversity was their intelligence and education.³² This group, to which Hayek belonged, consisted of the *elites* who occupied business and senior positions across social institutions, from bureaucracies to universities (2007 [1944], 160). The second largest group was noted for its members flexibility, so they could be rendered uniform because they "have no strong convictions of their own but are prepared to accept a ready-made system of values" (2007 [1944], 160). The members of this group were characteristically "docile and gullible", which made them *malleable* to the needs of the system (2007 [1944], 160). The members of Hayek's third and largest group had a "high degree of uniformity and similarity of outlook, [for which] we have to descend to the regions of lower moral and intellectual standards where the more primitive and 'common' instincts and tastes prevail" (2007 [1944], 160). Disdained as "the mass" this part of the population was dubbed "the lowest common denominator which unites the largest number of people" (2007 [1944], 160). This attribute, which Hayek described within the context of

32 Among the elites there is great diversity. The "*beaux esprits*", intellectuals who disparage commerce and financing or are swayed towards socialism on account of moral pangs about money (Hayek 1988, 104) and entrepreneurs who understand trade and economics (Hayek 1988, 100).

wartime, made this group particularly vulnerable to totalitarianism (2007 [1944], 160).

Uniformity, was also, I contend, seen as a positive attribute by the neoliberals as this made the *masses* highly coordinative and therefore suited to an existence within a self-organising market system.

These three groups, the *elites*, '*malleables*' and *masses* each play a defined role in Hayek's schema of rules. There are no surprises concerning which group was favoured by Hayek's stratification of rules. Those developing and maintaining the system were the educated elites who Hayek dubbed the "law-breakers who were to be the path-breakers", referring to those of independent mind who were able to break with 'customary' rules for the sake of advancing their own prosperity (Hayek 1979a, 161). Uber's assault on the law in various jurisdictions worldwide illustrates this mindset (Schechner, MacMillan, and Kostov 2016), which Hayek deemed to be a marker of evolutionary success along with the ability to adapt to successful rules. Hayek identifies with the 'law-breakers' by calling his "system of democracy" an "invention" (Hayek quoted in: Caldwell 2004, 206). The functional divide in neoliberal society was between the elites who were free to invent and the malleables and masses who were condemned to imitate rules and cultural morays without question even when it was against their own interests. Karl Mannheim, a contemporary of Hayek's at LSE, noted that the intellectual elites "enjoyed a monopolistic control" over the dominant strata's world-view as well as "over either the reconstruction or the reconciliation of the differences in the naively formed world-views of the other strata"(Mannheim 1949 [1936], 9).

Neoliberal ideology was developed within the academy and think tanks. Much as Mannheim observed of formerly dominant classes, neoliberalism was able to create a narrative that would "sanction the ontology and epistemology implicit ... [to its] mode of thought" (Mannheim 1949 [1936], 9). Neoliberals purposefully find justifications for their opposition to government and to making 'freedom' their undefined mission.

Hayek's schema was hostile to egalitarianism, which he thought was a fallacy, given that "we value people differently according to the morality of their manifest conduct" (1979a, 172). He considered the masses to be of low moral standing, fated to be separated from the other groups and "sanction[ed]" for any "disregard for accepted moral rules" (Hayek 1979a, 171). It is difficult to avoid the conclusion that Hayek's schema displayed the prejudices of his class, the Austrian lower aristocracy.

Hayek postulated that individuals can function successfully in society and remain ignorant of the rules which form the basis of the system. Indeed their ignorance is an adaption, because their ability to cooperate with the system is guided by their experiences, which

unknown to them, exists in their “schemata of thought” (Hayek 1973, 31). How the rules individuals unconsciously follow come into being was a problem Hayek sought to explain in terms of the “manipulation of rules” (1967c, 62). Caldwell notes Hayek’s concern for “the genetic (and ... cultural) *transmission* of rules of conduct tak[ing] place *from individual to individual*, while what may be called natural *selection* of rules will operate on the basis of the greater or lesser efficiency of the resulting *order of the group*” (Hayek 1967b, 67), which Caldwell regards as “Hayek’s first articulation of the notion that group selection might find an application in the evolution of human societies” (Caldwell 2004, 309). A hierarchical “group selection” is strongly apparent in Hayek’s class schema where the power to select rules becomes the preserve of the dominant group, which if it were to continue unchecked would lead, I would argue, to absolute power. In Hayek’s view the educated elites occupied this schema in a very conscious way, such that they could, for example, follow their own self-interests by planning the catallactic order. It was this privileged group that would choose the rules to implement and have their expectations of the rule making system met. It would be their customs which become customary, and it would be the most successful of this group who would control the networks. Hayek’s was an elitist vision:

There will often be a nucleus, or several nuclei, of more closely related individuals occupying a central position in a more loosely connected but more extensive order. Such particular societies with the Great Society may arise as the result of spatial proximity, [like Silicon Valley or the City of London] or of some other special circumstance [like golf] which produce closer relations among their members. (Hayek 1973, 47).

The elite class that Hayek conceived was thus both global and networked. The network nature of overlapping groups speaks to the possibility of networks of power concentrating special interests and wealth.

Uniformity

Hayek’s ideas about other classes were regressive. Despite this, his theories have been influential, due to their compatibility with a cybernetic era. Each class is simplistically conceived; that is, it has a uniformity, the kind a computational machine would naturally work with. The overall schema also has a uniformity, derived from all agents being ‘entrepreneurs’. Because the elite are a small group it is said to stabilise power at the top, reducing uncertainty. His ‘knowing who will’ consorts with a computer system’s restricted levels of access to make changes to system settings. Rules are designed by the elites, who according to Hayek’s schema are responsible for system change. For other classes there is no individualism, merely unitisation, a necessary system feature that has allowed the mass

production of human generated data essential to data analytics through the use of unique userIDs.

Despite Hayek's stated intention of preventing totalitarianism, his stratification schema published during WWII, had all the hallmarks of a rationale for imposing top down control on a population (Hayek 2007 [1944], 160), and it has been utilised to transition nation states to the neoliberal market-network system.³³ In Chile during the 1970s an individual's compatibility with the system was seen as paramount to its functioning (Hayek and Levin 1980; Hayek and El Mercurio 1981).

Hayek's social schema creates stratified groups together with rules which serve to define and contain their system functions. His rules schema, like his stratification schema, is said to have been influenced by the crude profiling of associationist psychology, adopted by Whig philosophers Edmund Burke (1729-1797) and Jeremy Bentham (1748-1832) to justify economic management of the masses (Polanyi 2001 [1944], 121, 125). This particular utilitarian perspective on social engineering was famously drawn as surveillance architecture with Bentham's design of the Panopticon. Dardot and Laval assessed Bentham's particular purchase on utilitarianism to be about "manufacturing *efficient man*", the worker and consumer (2017 [2013], 259).

Hayek's retrogressive social stratification combines with an emerging cyborg conception of human society to create a new episteme or way of ordering in the Foucauldian sense of developing new systems of knowledge and power. Hayek was always looking for ways to automate human knowledge processes, to create a system that was free of human judgement and therefore, in his view, dispassionate and unbiased (1973, 102, 103). However, in Hayek's disparaging attitudes towards other classes, and his exclusion of their agency, it becomes clear that the idea that one would accept the vicissitudes of the market was nothing more than a call from the 'old school' elite to the lower orders to accept their place. Neoliberalism appears to be 'modern' because information science is modern, but alas, it has not produced a more evolved global society befitting of that science but instead repression through a virtual Panopticon.

33 Evidence of Hayek proposing to use totalitarian methods to force through the shift from a civil society to a corporate controlled market order include his El Mercurio interview and a letter from Margaret Thatcher to Hayek informing him that although she supported his theories, she would not succumb to his urging for her to use similar tactics in Britain as Pinochet used in Chile.

3.4.3 Human cyborgs: the Microsoft of species

Hayek's commitment to uniformity, stratification and rules carried a payload of implications from the ICT network perspective. Once the term 'compatibility' is substituted for 'uniformity' his categories convert into a cybernetic metaphor, caricaturing humans as the 'Microsoft of species'.

The plans of Hayek's "masses" were by dint of their lesser diversity, simpler and more economical to fulfill than those of other classes. They were less likely to have the means to make choices, making them highly compatible. The "malleable" group also ranked high for compatibility because they were prone to propaganda, marketing and instruction, and therefore could be nudged to fit with prevailing market conditions given persistent messaging (Hayek 2007 [1944], 160). Mirowski and Nik-Khah considered that "perhaps the marketplace itself should be treated as one vast Turing Machine, with agents simply plug-compatible peripherals of rather diminished capacities?" (2017, 119).

In his early theorising Hayek lauded individual market participants whom he characterised as knowledge-armed opportunity seekers – epistemic extensions, if you will, of Adam Smith's self-interested man with the where-with-all to become a market player (Hayek 1937).³⁴ As Mirowski and Nik-Khah observed, the neoliberal agent was an entrepreneur who became objectified as componentry like a "cog in the grand market mechanism" (2017, 239) or as "the node" in the market process (Röpke quoted in: Slobodian 2018, 234). The economics profession "came to hold that its task was to build markets in such a way that agent cognition should be irrelevant to their successful operation" (Mirowski and Nik-Khah 2017, 238). The impact of this mindset, I contend, has been realised in the modern economy. Former professionals who had agency within organisations have become contractors who function as exchangeable parts. Consumers too have lost sovereignty, with their feedback and complaints received and processed by bots. Hayek's cybernetic sensibilities biased his concern, not towards the agent, but towards the catallactic machine.³⁵

34 This references Hayek's notion that individuals hold the "knowledge of alternative possibilities ... [broadly speaking the] capacity to predict" (Hayek 1937, 50) which later developed into the concept of entrepreneurs of the self as people who go beyond offering their skills to employers, to proactively looking for opportunities to serve the market themselves (Hayek 1960, 81).

35 As I will show in Chapter 3 the machine wasn't just the market. It was the computer transmitted market as well as ICT generally making the global market possible that influenced Hayek and the neoliberal movement.

This tilt towards ‘machine’ compatibility based on the uniformity of most agents in a given population can be construed as ignorance about how they serve the institution of the market. Hayek, far from disparaging ignorance, valued ignorance or what he called “non-rational character” because it reduced friction in the economy (1973, 30). This was a cryptic way of setting the population apart from the very institution that was designed to protect their interests and respond to social change (Hayek 1973, 73). Hayek believed that only some agents need act rationally, and the rest will “emulate them”—and that in fact “rational behaviour is not a premise of economic theory [it’s just] presented as such” (Hayek 1979a, 75). Ignorance, in other words, could be widespread without interfering with the price mechanism—as long as all agents submitted to ‘the’ idea of market primacy.

Slobodian uses the term “cybernetic legalism” to suggest that Hayek’s unitisation of the individual inside the “self-regulating system” harboured the neoliberal conception of order and law that influenced the Geneva School’s formulation of the GATT (2018, 224). Hayek’s cybernetic system was, according to Caldwell, influenced by Ashby’s concept of “homeostatic control”³⁶ which induced a form of equilibrium reached by a machine in concert with its environment because of its capacity to learn (Caldwell 2004, 309). For Ashby “[t]he homeostat is the whole thing, organism *and* environment” (Ashby quoted in: Rid 2016, 59).

Such a system is just one system that is consistent with Hayek’s imagining of “One World”, which he believed was possible only in the market order because it made the “peaceful reconciliation of the divergent purposes possible” (1976, 112). That Hayek contemplated this outcome as being solely the achievement of the market and not by other possible networks of relations, which he believed existed (Hayek 1976, 112), was a purely ideological construct that was influenced by cybernetics and his views on human limitations.

Slobodian’s term “cybernetic legalism” further captures the singularity of the system envisaged as “a world economy of signals—a vast space of information transmitted in prices and laws” (2018, 224). The law was invested with the role of communicating control through the ontological ‘construction’ of law as consisting mainly of “purpose-independent rules of conduct’ (Hayek 1973, 81).

36 Ashby built a machine based on magnets. He called it a homeostat and likened it to a brain because it responded to disruption by returning to its previous state. This is similar to the way the body does this in controlling its temperature (Rid 2016, 54).

This was fitting for a global ‘homeostat’, which Norbert Wiener observed was philosophically premised on being an “*unpurposeful random mechanism* which seeks for its own purpose through a process of learning” (Weiner quoted in: Rid 2016, 62). According to Hayek, learning produced change through a process of adjustment or adaptation. A rule set would produce a structure that displayed homeostatic control in an environment in which the rules of conduct had adapted. Any change meant the rules had to follow suit in order that ongoing adaptation occur. To Hayek this change was an evolutionary process that ensured that the whole persisted in the new environment even though particular groups might not (1967b, 71). However, from a programming perspective this is the logics of machine sequencing, not the evolutionary filter of choices and counter choices producing a nuanced selection. In this sense the law is unknowable in the same way that Slobodian observed the “unknowability of the economy” (2018, 224). These so-called ‘evolved’ rules would offer “universal rules of conduct” (Hayek 1973, 82), which like the rules that made Turing’s machine universally connectable, were conceived to connect economies into a new global order with a high degree of automaticity.

Hayek characteristically failed to pursue what he described as a “formal model of a causal system capable not only of recognizing rules in the observed events ... but also able to communicate its perceptions and actions to another system” (1967b, 62). This leaves a vacuum of theoretical understanding from the Hayekian perspective as to how a legal order encased inside a machine metaphor would actually bring about a competitive market order.

3.4.4 Certainty in Hayek’s corpocracy

Although Hayek attested that justice was the “indispensable foundation and limitation of all law”, he dismisses social justice and distributive justice as exemplars of “primitive thinking” (1976, 62). According to Hayek, social justice is nothing more than “superstition” and “hollow incantation” (1976, xii). He denounced the United Nation’s Declaration of Human Rights which he described as perpetuating “illusions” concerning the universality of rights (1976, 106).

The protection of an individual’s freedom and liberty was, according to Hayek, the substance of his legal philosophy expressed in *The Constitution of Liberty* (1960) (*Constitution*) and *The Political Ideal of the Rule of Law* (1955). The latter was a lecture series he presented to the Bank of Cairo in 1955 which formed the basis of his writing in *Constitution*. *Constitution* is considered by some scholars to be his most developed treatise on his liberalism (Caldwell

2004). In it he claims to create a new “evolutionary” theory of law (Gray 1984; Shearmur 1996), an idea he calls “the Rule of law”, as discussed above, and what he called “my system of democracy” (Hayek quoted in: Caldwell 2004, 206).³⁷

After spending a decade contributing to the transformation of antitrust law in America (see Chapter 6), Hayek’s purported theory of law claimed that law cannot be intended, it can only grow. Hayek’s lampooning of law as “rationalist folly”, even as he devoted energies to influencing its direction (Whyte 2019, 170), was indicative of what Mannheim described as “the ideological mentality based on conscious deception, where ideology is to be interpreted as a purposeful lie” (Mannheim 1949 [1936], 176). Hayek’s mission (1976 [1949]) had always been to *make* a new legal framework such that “laws that are sought under the new paradigm are laws of the markets, *not* laws of human nature” (Mirowski 2007, 209).

Thomas Faunce, in reference to Alasdair MacIntyre’s claim in *After Virtue* (1981) that there had been a shift away from the moral philosophy laid down by the ‘Enlightenment Project’, writes: “by the late 20th century, human beings in Western democracies no longer believed that individuals, or people collectively in societies, could march inexorably towards perfectibility, self-fulfilment or enlightenment based on rational thought” (Faunce 2007, 53). Hayek who believed the “prescriptive science of ethics has no place” constructed a ‘Rule of law’ that in its prescriptions disdained the Enlightenment project (1976, 24):

The whole conception of man already endowed with a mind capable of conceiving civilization setting out to create it is fundamentally false. (Hayek 1960, 23).

Dardot and Laval observed:

at stake in neo-liberalism is nothing more, nor less, than the *form of our existence* – the way in which we are led to conduct ourselves, to relate to others and to ourselves. Neoliberalism defines a certain existential norm in western societies and, far beyond them ... [which] has presided over public policy, governed global economic relations, transformed society, and reshaped subjectivity (Dardot and Laval 2017 [2013], 3).

³⁷ This should not to be confused with the usual meaning of that term, the gravitas of which Hayek appropriates to describe his ideas.

Hayek begins *The Constitution of Liberty* with a definitive statement about ‘individual freedom’ or ‘personal freedom’ being the “state in which a man is not subject to coercion by the arbitrary will of another or others” (1960, 11). Under actual existing neoliberalism, individuals were to be imperceptibly decoupled from the bedrock protection of their own agency by precarious social and working conditions which was the outcome of what Hayek was proposing.

As Ronald Hamowy, historian and *Constitution's* editor, points out, the use of such terms as ‘liberty’ and ‘freedom’ has been prevalent in liberal thought since the nineteenth century (1978, 287). Hamowy notes that the definition for liberty Hayek gives takes the negative approach, establishing that the problem is one of interference with liberty. Hamowy argues that this is a valid approach but only if it is accompanied by a positive conception such as a notion of rights which Hayek omits (Hamowy 1978, 287).

I argue that Hayek’s positive proposition was not about giving individuals protection from the state but giving the market protection from individuals and government, noting that these were afforded equivalent treatment by Hayek under his general and equal rules:

We all owe the benefits we receive from the operation of this structure not to anyone’s intention to confer them on us, but to the members of society generally obeying certain rules in the pursuit of their interests, rules which include the rule that nobody is to coerce others in order to secure for himself (or for third persons) a particular income. This imposes upon us the obligation to abide by the results of the market also when it turns against us. (Hayek 1976, 95).

Hayek makes clear that there is no recourse against the market. This strongly suggests that Hayek’s aim is to ensure that the individual and other entities co-operate with the market-based order. The passage also suggests that there will be no protections available to those who are not successful in the market, for example, no minimum wage, which is the dystopian undertow in neoliberalism. The neoliberal mantra ‘there is no alternative’, made famous by Margaret Thatcher, might even be described as totalitarian; Birch identifies the contradiction at its heart, that is, the inability in a supposedly free society to escape the market (Birch 2017b, 109).

Neoliberal discourse portrays the market as regulating itself, when in fact the market is a rules-based system that regulates the population. Hayek in effect “defines liberty as conformity with the rule of law” (Gray 1984, 67).

3.4.5 Democracy's curtain call

Caldwell points out that *Constitution* engages with the recurring theme of “how to coordinate dispersed knowledge” expressed in terms of access to knowledge and the increasing dependency of individuals on other people's knowledge (2004, 290):

Since coercion is the control of the essential data of an individual's action by another, it can be prevented only by enabling the individual to secure for himself some private sphere where he is protected against such interference. (Hayek 1960, 139).

Again, the key protection, which in this case is general rules denoting what constitutes the private sphere, is inadequately described. It includes property but not specifically intellectual property, or data privacy. The meaning of coercion is dependent on a subjective interpretation of what is to constitute an individual's private sphere which could only be addressed systematically on a case-by-case basis. In other words, there is no consideration of a system protecting individual rights. This issue is made especially pertinent, given the neoliberal definition of competition is to dominate the information space by utilising opinions and controlling the distribution of information (Hayek 1949b, 106).

Coercion of consumers by monopolies is touched upon by Hayek in *The Constitution of Liberty*. He advocates controlling anti-competitive behaviour for life's essentials, but not otherwise:

So long as the services of a particular person are not crucial to my existence or the preservation of what I most value, the conditions he exacts, for rendering these services cannot properly be called 'coercion'. (Hayek 1960, 136).

Further to that, Hayek opens up the possibility of the onus being on the individual to avoid coercive situations, so the threat of coercion can be avoided:

Provided that I know beforehand that if I place myself in a particular position, I shall be coerced and provided that I can avoid putting myself in such a position, I need never be coerced [i.e. I need never have my freedom curtailed]. (Hayek quoted in: Hamowy 1978, 290).

Hamowy analyses this to mean that “[t]he threatened party is no *less* free than he was before the threat was made *if* he can avoid the threatener's action. The threat itself is non-coercive; additionally, if the threat prohibits my acting in a certain way when it is within my power not to so act, I am not being coerced by the prohibition” (Hamowy 1978, 290).

One can conclude that for Hayek monopolistic behaviour would be judged unacceptable only in very rare cases, because in his view coercion doesn't consist of oppressive terms of trade but rather occurs when an "indispensable supply" is withheld (1960, 136).

According to Hayek, the only adjunct to the market dispensing the law as the sphere of 'social purpose', was law attached to the coercive function of government. He believed that a government's role was to establish an effective "permanent legal framework structure" of unambiguous rules of conduct for preserving the conditions for spontaneous order in the market and to enforce these. This is law modelled on the Highway Code, which Foucault noted was often cited by neoliberals, including Hayek, to explain their legal philosophy of universal, "equal" rules being applied to ensure the efficient, coordinated flow of exchanges in society, which everyone could follow, like the road rules, knowing the outcomes of any transgressions (Hayek 2007 [1944], 113-114, Foucault 2008, 162, 172). This approach claimed to optimise the freedom of individuals to plan and "reduces human uncertainty" (Hayek 1960, 222):

The conception of freedom under the law ... rests on the contention that when we obey laws, in the sense of general abstract rules laid down irrespective of their application to us, we are not subject to another man's will and are therefore free. (Hayek 1960, 153).

If it cannot be said that someone's freedom is taken from them unless they are being coerced, and they cannot be said to be coerced unless onerous terms are placed on those things which are vital for life, then the impartiality with which the "purpose-independent rules of conduct" are applied becomes the only gauge by which freedom in neoliberal society is measured (Hayek 1973, 81). This idea is made more chilling by the advent of self-replicating machines and algorithms or machine-ordering processes, because it stands to intensify the associated risks. Hayek's law conceives the individual whose behaviour is confined by abstract rules primarily as part of the "abstract overall order" (Hayek 1967a, 92).

Hayek asserted that this new system was the invention of a new democracy which Brown sees as being distinguished from known democracy by its "economic register" (Brown 2015, 152). This she claims makes for "neoliberal juridical reason [which] recasts political rights, citizenship, and democracy itself ... [and] in doing so, disintegrates the very idea of the demos" (2015, 151). One might even suggest that it creates the perfect conditions for totalitarianism.

3.5 Conclusion

The purpose of this chapter has been to show that Hayek's epistemology was attuned to creating a network-based social order that was fundamentally monopolistic in character. Firstly, human endeavour and the diversity and augmentation of systems that come from that was eschewed by Hayek in favour of an elite group who were given licence to program the rules and manage the *catallaxy's* operating functions based on their capacity for invention. Secondly, Hayek believed that with the correct settings the market would become spontaneous – that is machine-like in its capacity to self-regulate and self-organise. That in turn necessitated a simplified system, for the more complex a system the less compatible it becomes. Compatibility, efficiency and homeostasis were core characteristics of the spontaneous order induced by stable, less dynamic, endogenous homeostatic systems. I also argued that less complexity translates to less competition because the more competition increases the greater the amount of data to be analysed. As 'competitive' in perfect competitive market means perfect knowledge, the logic of the *catallaxy* points to monopolistic industries. Democracy was deemed to 'overload' governments with complexity and was earmarked by radical diminishment. This was indicated by Hayek in a TV interview with Bernard Levin in 1981 when Hayek suggested that parliaments were superfluous in a functioning market society (Hayek and Levin 1980). Hayek's "One World" (1976, 112-113) and "one market" (1949b, 106) was the discourse of unity and monopoly threatening diversity and the capacity of individuals and societies to renew themselves, as the one system inexorably hurtled towards a global monoculture.

Hayek did not provide specifications for this unified market system, calling instead on people to have faith in the market (Mirowski and Nik-Khah 2017, 72; Whyte 2019, 173, 174). Key intellectual figures, as noted above, who were deeply familiar with Hayek's work and in many cases knew him personally, criticised his failure to fully theorise his ideas or to comprehend the fundamentals of economics and law and other fields he touched upon, such as complexity theory. Hayek preferred to take his and others insights and advance them through policy rather than theory. He believed in what he was proposing, having dedicated himself to map intellectually the features of a new social order and plan for its implementation, which was a considerable intellectual achievement. But he knowingly withheld those plans to avert opposition to the imposition of them, which given his support for General Pinochet, could be construed to be at any cost (Hayek and El Mercurio 1981).

In this chapter I have shown that Hayek drew upon ideas about machine computation to develop a political philosophy that would guide the neoliberal movement to bring about the *catallaxy* which he envisaged to be a “special kind of spontaneous order produced by the market through people acting within the rules of the law of property, tort and contract” (Hayek 1976, 109). His undermining of individuals’ agency and the creeping corporatisation of state institutions like the law, go some way to explaining what are regarded as the two key impacts of neoliberalism, it “*thoroughly revises what it means to be a human person*” and “*has thoroughly revised law*” (Mirowski and Nik-Khah 2017, 55, 58).

Hayek disparaged human rationality and intentionality, the very basis of the Enlightenment and other movements for social change. By subscribing to Hayek’s philosophy, neoliberalism has effected a change in the course of human history by diminishing our social institutions and how we see ourselves and others.

Hayek was concerned with order and hierarchy, which is reflected in his hierarchical orders and schemas the foundation of which was the sensory order, which he admitted to being a “ghost from the 19th century” (1982, 287). British liberalism of old rationalises the quarantining of power elites from the conformity and precarity of life under neoliberalism, by bestowing on them all the privileges of power that comes from being in control and command of the means of production.

In the 21st century that position is taken by ICT monopolists who control the flow of information through the global economy, an economy which is being systematically transformed into the *catallaxy* by means of technology and authoritarianism. In Hayek’s new system only elites are allowed to invent, because only elites are considered to possess the mental attributes to “embody the consciousness of evolution” under neoliberalism (Dupuy 2004, 288). At the moment in history when people globally began to embrace universal connectivity through digital networks and the World Wide Web, Hayek was preaching the virtues of inequality and the ills of “unlimited democracy” (1973, 172).

Hayek’s realisation in the 1930s that information was elemental to economics resulted in an unfortunate confluence that brought Turing’s universal machine together with Hayek’s realisation that it was possible to program the economy and by extension the social order. This realisation was incongruously attached to a backward yearning for Whig conservatism and elitism that only gave power and respect to men of property (Hayek 1960).

Hayek's epistemic breakthroughs would set the stage for the politics playing out in the 1930s at the Socialist Calculation debates (1920-1941). These are examined in the next chapter as they infused Hayek's work in economics with a political urgency as conservatives and socialists of various hues set the intellectual battlelines for tackling the monopoly problem that would prescribe the political ideologies competing for hegemony after World War II (WWII).

4 The Socialist Calculation Debates and the launching of neoliberalism

4.1 Introduction

In this chapter I locate the beginning of the neoliberal trajectory in the Socialist Calculation debates (1921-1941). These debates were considered a defining event in “comparative economics” (Lavoie 1985b, 1) and a “catalyst in the development and articulation of the modern Austrian view of the market as a competitive-entrepreneurial process of discovery” (Kirzner 1988, 1). This view is supported by Caldwell (2004, 217) and also by Mirowski and Nik-Khah (2017, 60) who attribute the origin of the economics of information to these debates.

The debates were between academics, mainly economists and political philosophers, representing schools of thought from Marxism to liberalism. The debates, which span the Great Depression (1929-1939), produced competing proposals for a new economic system, with each promising to prevent a repeat of the unconscionable economic disaster they were living through. Scholars thrashed out their theoretical positions at meetings in Vienna and elsewhere and through published articles and responses in the academic press. Two prominent groups pertinent to this thesis were the Austrian School economists, Hayek, Mises and Robbins, and the market socialists, notably mathematical economist Oskar Lange from the Cowles Commission,¹ fellow American economist Fred M. Taylor, and English associates, Henry Dickinson from the University of Leeds and Abba Lerner from LSE.

Whilst these debates became best known for the issue of how to extract timely economic data from industry for calculation purposes, the core problem both the Austrian group and market socialists grappled with was how to accommodate monopolies. With monopolies commonly seen as firms with economies of scale and advanced technologies, a key question

¹ This private research institute founded in Colorado Springs (1932-1938), moved to the University of Chicago (1939-1955) and then from 1955 to Yale University.

addressed by the debates was how to deal with adverse impacts of concentrated monopoly power. Monopolies and cartels were widely blamed for causing the Great Depression (1929-1939). And for making it far more intense and protracted than otherwise expected (Means 1935; Hawley 1966; Lee and Samuels 1992, 81). Research on monopolies was extensive, with economists like Henry Simons (1948 [1934]), Jacob Viner (Van Horn 2011, 1528) and Oskar Lange (1937) warning of their growing menace to economic stability and democracy. Joan Robinson (1933) and Edward Chamberlin (1933) theorised the extent of monopoly, and empirical studies by Arthur Burns (1936), Adolf Berle and Gardiner Means (1932) showed trending increases in concentration. As to the cause of their formation, Marxist theorists adhered to the dictum that under capitalism competition would always give way to the concentration of capital (Marx 2001 [1887], 898-899). This was not the view of the Austrian group or later neoliberals who blamed government responses to the 1929 stock market crash for the depth of the downturn (Robbins 1934; Friedman 1962, 38). Nevertheless, as economists, they too were under pressure to find remedies for the boom-and-bust cycle which destabilised national economies.

This chapter examines several arguments over monopoly which arose during the Socialist Calculation debates, specifically monopoly pricing, the relationship between technological development and large firms and the political problems attending monopoly power. My examination is guided by two key questions: how did each side tease out the relationship between monopolies and technology? How did that relationship inform the development of neoliberal political economy?

In 1935 the Austrian group opened up a new front in the debates by claiming that socialist planning could not process the necessary information for economic decision-making, a position which scholars generally came to see as dominating the debates in favour of the Austrian group (Halm 1935; Hayek 2015 [1935]-b) I discuss how the system requirements for solving the calculation problem were very similar, but that the solutions devised by each group were distinctly different. As Lange expressed it the “*formal* principles are the same, but the *actual* distribution [of resources] may be a quite different one” (1937, 123). The scholarship on the socialist calculation debates reveals the struggle by each side to differentiate their approach. The Austrian group claimed that practical issues of economic calculation negated the socialist’s model (Lavoie 1985b, 48; Caldwell 2004, 216)

This chapter offers a fresh interpretation of these two core issues of monopoly and economic calculation, with particular regard to how these were incorporated into the epistemology of Hayek.

My assessment of Hayek's contribution to the debates is drawn through a textual analysis of Hayek's writings during the Socialist Calculation debates focusing on *Collectivist Economic Planning* (1935), a compilation of papers from Hayek, N. G. Pierson, Ludwig von Mises and Georg Halm. Hayek included Enrico Barone's 1908 paper which applied the work of Pareto to collectivist regimes (Barone 1935; Lippincott 1964 [1938], 7). Barone had demonstrated to Hayek and Robbins that socialism's economic solutions could be based on the same formal principles and determine the same economic values as a capitalist competitive economy (Hayek 1940, 127; 2015 [1935]-a, 28). Hayek's chapters in this volume titled, 'The Nature and History of the Problem' and 'The State of the Debate' summarise the development of the Austrians group's argument that socialist economic planning was bound to fail because it could not calculate prices efficiently and conversely, its argument as to why market capitalism had the propensity to succeed, despite the vexed issue of monopolies, because the market could calculate prices.

The chapter will move through the arguments presented in this debate in chronological order to show how Hayek's thinking metamorphosed under the pressure of the market socialists' arguments. This historicising is important because it shows how the market socialists fortified their core arguments by analysing their model through the lens of Walrasian equilibrium theory, the neoclassical economic orthodoxy, and conversely, how the Austrians shifted their position on equilibrium and moved to an epistemic argument to form a strategy with which to dominate the debates.

4.2 Industry planning and the 'imitation' of market competition

In 1935 Hayek extrapolated the key concern of what would become contestable market analysis:

The problem how, in the absence of real competition, the effects of competition could be simulated and the monopolistic bodies be made to charge prices equivalent to competitive prices (Hayek 1935b, 228).

The problem of calculating value in the absence of competition went to the heart of the Austrian group's problem with monopolies, and it will be argued here that it was the same dilemma for which the Bell group offered their contestability solution.

Neoclassical economic theory claimed to demonstrate that in an idealised setting of pure competition amongst individual economic actors, where none was more powerful than the others, a set of equilibrium prices could be calculated that demonstrated an ‘optimal’ allocation of labour and capital. However, early 20th century writers, both socialist and liberal, were keenly aware of the power of monopoly capital and proposed different political solutions (for example, nationalisation, unfettered markets, antitrust and revolution) to solve the problem of resource allocation.

The first calculation debate was sparked by Mises’s claim in 1920 that the calculation of value in money terms was impossible in a socialist economy in which the collectively owned means of production replaced private property (Von Mises 1935 [1920], 92. Mises’s essential point, which he clarified in 1922,² was that a competitive market system that signalled resource scarcity through price adjustments was the only rational way of calculating value and hence of giving the economy its fix on the marginal utility rate for determining supply and demand. He also argued that socialist models adopting various policies on price setting and controls were prone to disequilibrium and the attendant economic wastage of resources.

The problem Hayek flagged in 1935 was that Mises’s theoretical assertions, which were used to attack socialist planned economies, were also applicable to capitalist economies where markets were controlled by monopolistic bodies, for example, public utilities which Hayek wanted to see privatised (2007 [1944], 207).

The case which we have therefore to consider next is that of completely integrated industries standing under a central direction but competing with other industries for the custom of the consumer and for the factors of production. This case is of some importance beyond the problems of socialism ... since it is by means of creating such monopolies for particular products that those who advocate planning within the framework of capitalism hope to ‘rationalize the so-called chaos of free competition. This raises the general problem, whether it is ever in the general interest to plan or rationalize individual industries where this is only possible through the creation of a monopoly, or whether, on the contrary, we must not assume that this will lead to an uneconomic use of resources and that the supposed economies are really diseconomies from the point of view of society. (Hayek 1935b, 220)

2 Mises, L. von. 1922. *Die Gemeinwirtschaft: Untersuchungen über den Sozialismus*. Jena: Gustav Fischer Verlag. First English translation by J. Kahane. 1936. *Socialism: An Economic and Sociological Analysis*. London: Jonathan Cape.

On their part, the market socialists, who adhered to neoclassical orthodoxy and therefore could appeal to the economic establishment, were also grappling with the same problem of how to get monopolies to “imitate perfectly competitive markets” (Persky 1991, 230). That is to say, how does a socialist planning regime ensure monopoly industries under its control achieve similar results as if they were operating in a competitive market denoted by Walrasian general equilibrium?

Mises’ simplistic response to monopolies was to blame government for creating them by erecting all manner of barriers to market entry. If those barriers were removed, entrepreneurs chasing profits would enter and compete with the incumbent (Mises 2013 [1933]). However, those private firm monopolies that resulted from control over scarce resources, and which were taking supranormal profits as a result of withholding those resources, were dismissed by Mises as unimportant (Kirzner 2018, 58). Mises regarded excessive profit as simply “extra rent” which is to say that “[e]ntrepreneurial profit has nothing to do with monopoly” (Mises quoted in: Kirzner 2018, 58).

Hayek, in following Mises, had developed an ideologically purist line whereby he perceived that *any* deviation from price competition would cause the whole competitive system to falter (2015 [1935]-b, 213, 241). He also accepted Mises proposition that most monopolies were the creation of government intervention (1941, 582). Hayek’s hard line on price competition cut him off from the possibility of exceptions to his stance, leaving him with the problem of how to integrate monopolistic bodies like public utilities into the ‘competitive’ order which was later visioned to extend to all government monopolistic enterprises and functions, with the exception of enforcement, defence and revenue collection (Hayek 1973, 47).

Hayek, unlike Mises, did explore the issue of public utility regulation, albeit briefly (2015 [1935]-b, 228). Public utilities were generally regarded as a special sub-category of natural monopoly. They were generally single product and industry-based with a network infrastructure defining the bounds of their market. Utilities such as electricity, telecommunications, postal services, water, gas and transportation provide essential public services with specialised and highly capitalised network infrastructures based on cables, wires, transmission towers, canals, pipelines, and rail and road networks. Although there can be competition from substitutes, as in the case of electricity competing with gas, the network itself connotes an industry with a monopoly status (Hayek 2007 [1944], 206).

Hayek made no close study comparing the differing scale of public control over utilities such as telephony and railways. These institutions had various ownership-management models from wholly state-owned entities to private corporations. At the time of the debates, for example, in Australia and Britain telephone networks were under the control of the Postmaster-General's Department (PMG) and General Post Office (GPO) respectively, whereas the US telephony industry was a regulated monopoly controlled by AT&T, a publicly listed holding company. Railways also followed a similar pattern with largely private monopolies in the US regulated by the Interstate Commerce Commission, whereas in Australia, and in Britain where Hayek was based, they were controlled by government.

According to Berle and Means, of the 200 largest non-banking corporations in the US economy in 1930, 44 were public utilities and 42 were railroad corporations, with a combined gross asset value of over \$US49 billion which represented 63% of the total asset value, as against the remaining 114 corporations valued at nearly \$US29 billion representing 37% of the total (Berle and Means 1968 [1932], 20-27).³ These network-based industries dominated the economy in both numbers and value. Hayek later called for all state owned public utilities and other state monopolies to be privatised based on his market principle (2007 [1944], 207). Privatisation however, did not solve the intractable nature of the 'natural' monopoly problem, for it was not so much the controlling entity that impacted competition, but rather the difficulty of introducing competition into such industries structured as a scaled network enterprise.

Hayek's colleagues at LSE, Arnold Plant, Ronald Fowler and Ronald Coase, were cognisant of the significance of natural monopolies and had tried to propose a solution to the problem without success. The hurdle they encountered was the issue of fixed costs on infrastructure and plant-like telephone exchanges or railway stock. These were significant costs which influenced pricing decisions in lieu of market information which had to be second guessed before depreciation and interest costs were calculated (Fowler 1934; Hayek 1935b, 228) Calculating depreciation is critical to setting consumer prices in order to recover the capital outlay on equipment, plant and infrastructure and the interest on capital borrowings for such investments. To avoid sharp increases in prices, depreciation is

3 In the top 200 US corporations listed in 1930 the public utilities were classified as communications with asset values of just over \$US5 billion and electricity and gas were valued at just over \$US19 billion. Railroads were valued at nearly \$US25 billion. The communications corporations represented 6.62% of the total list. This would change dramatically with the advent of computerisation. The percentage figures were derived by the author from tables of asset values (Berle and Means 1968 [1932], 22-27).

calculated over a time period, the end of which is usually marked by the predicted obsolescence of the plant etc, when replacements have to be made. Thus, cost recovery is achieved before a new round of investment begins. Simultaneously calculating depreciation and obsolescence is difficult, particularly as technological change accelerates and new technologies promise more efficient production. The same problem vexed the Bell group (see Chapter 6). Hayek conceded that prices can be set by marginal costs. However, without costs being refracted through a competitive market, it was almost impossible to derive ‘competitive’ prices. These in turn precluded the costs of production, which included depreciation and interest, being precisely calculated:

To make a monopolist charge the price that would rule under competition, or a price that is equal to the necessary cost, is impossible, because the competitive or necessary cost cannot be known unless there is competition. (Hayek 1935b, 229).

Anticipating the counter arguments of the market socialists, Hayek claimed that it was not only the difficulty of determining the costs of production, but also the problem of firms calculating the obsolescence of plant, machinery and production processes (2015 [1935]-b, 223, 229) Arnold Plant had raised this issue in a paper which concluded that state intervention in utilities had led to “waste through obsolescence” whereby monopolistic public utility corporations were focused more on extracting value from capital sunk into older technologies than risking their capital on “new inventions and processes” (Plant 1932, 59, 60). This problem had also been associated with large capitalist enterprises (Schumpeter 1947 [1943], 81; Veblen 1965 [1921], 37, 46).

Hayek wondered how, in the absence of competition, monopolistic entities could calculate the cost benefits of innovation (1935b, 223). It was a vexed question given the pace of technological change and the costs of new technologies weighted against investment right-offs for redundant technologies. In an argument which reiterated his claim for the primacy of the market, he proffered that “obsolescence due to technical progress” could be calculated if it was linked to the opportunity cost of plant redundancy and competitive pricing (Hayek 1935b, 229). Hayek concluded that “the value [of production instruments such as plant, machinery or production processes] can only be determined if the real or potential competition of the other possible methods of producing the same product is allowed to influence price” (Hayek 1935b, 228). In other words, Hayek believed that the price mechanism could provide better data on production methods than the expertise of engineers.

For Hayek monopolists could not be made to charge prices as if determined by real competition or a price equal to marginal cost. Consequently, there would be no indicative price to signal when innovation would be economic. This put long-term profitability at risk (Hayek 1935b, 229). Hayek also argued that, in this regard, the socialist system was no better off because what may be lost in excess monopoly profits under capitalism is lost as economic waste under socialism. This was because there was “no way of testing the economic advantages of one method of production as compared with another”(1935b, 229-230). In other words, *planned* monopolistic industries, whether capitalist or socialist, which only competed with other industries and not on an intra-industry level were stifling technical progress, therefore curtailing the possibilities of more efficient production methods and lower production costs.

Oskar Lange countered Hayek’s conclusions in his two-part defence of socialism titled ‘On the Economic Theory of Socialism’, published between 1936 and 1937, in which he declared “[t]he real issue is *whether the further maintenance of the capitalist system is compatible with economic progress*” (Lange 1937, 128). For Lange the industrial conquest of nature through innovations in production had delivered the “unprecedented economic progress of the last 200 years”. However, progress could no longer be supported by capitalist institutions like private property and private enterprise – that they would “turn, from being promoters, into becoming shackles of further advance” (Lange 1937, 128)

Progress would come instead from raising general living standards, a feature of which was social welfare on the basis of income distribution (Lange 1937, 123). He sought to harness industrial scale production without capitalist concentrations of wealth and power, which caused societal impoverishment and in turn diminished economic progress. Lange attacked the Austrian School’s pure competitive market model, arguing that free competition could only be achieved if large enterprises were split up, but that this would result in the relinquishment of large-scale mass production:

A return to free competition could be accomplished only by splitting up the large-scale business units to destroy their economic and political power. ... Such an artificially maintained system of free competition would have to prohibit the use of advanced technology (Lange 1937, 132).

According to Lange this was unfeasible because the loss of scale production benefits would in effect “prohibit the use of advanced technology” (1937, 132) Instead, Lange argued that socialism could support monopolistic production industries that maintained economies of scale and the associated benefits of technological innovation and economic progress, while

adhering to the goals of societal-wide benefits and welfare. Lange, in contrast to Hayek, believed in the calculability of marginal costs and therefore a Central Planning Board could imitate competitive pricing, mitigating the drift towards monopoly pricing. Lange's model allowed for highly competitive, small-scale manufacturing and agriculture as long as efficiencies in these industries did not drop below those achievable by large-scale production (1937, 133) Lange argued that whilst ever there was profit motivation, free competition would not endure due to the drive to consolidate profits (1937, 131) Government attempts to control corporations would fail, resulting in corporate "planning for monopoly and restrictionism", the opposite of what was intended for competitive markets. The fear was that "corporations and big banks could use their economic power to defy the government authorities" which would destabilise the economy (Lange 1937, 132). In Lange's proposed socialist market model only large-scale production industries like steel would be state controlled monopolies, leaving trade and workforce requirements to be prosecuted through consumer and labour markets (Lange 1937)

Hayek, however, thought "it would not really help to get a satisfactory solution to go only half-way. ... competition [needed to be] not only *between* but also *within* the different industries" (2015 [1935]-b, 231) Although Hayek alludes to the "halfway house" option, he does not classify the market socialists' model as such. He leaves that category assigned to the not too dissimilar model influenced by German industrialist and politician Walter Rathenau, which Hayek noted was "individual socialized industries in an otherwise competitive system" (2015 [1935]-a, 31, 32). Hayek detected that Lange was striving to impose socialist control over the whole economy through "the *socialisation* of industries and banks" in what Lange called a "policy of transition" (1937, 133). This position of Lange's was analysed by Hayek in terms of central price fixing and the failure to fully engage the price mechanism (Hayek 1940, 129). Hayek would claim in later publications that in such a model "the planner will be forced to extend his controls until they become all-comprehensive" (2007 [1944], 137), which according to the controversial 'inevitability thesis' leads irrevocably to totalitarianism (Caldwell 2007, 28; Farrant and McPhail 2009).

Lange thought capitalism a poor curator of technical progress, theorising that private enterprise was motivated by profitability and therefore would not countenance capital losses on old investments for the sake of new technologies. Lange referred to studies by Arthur Burns (1936) and Berle and Means (1932) that showed increasing concentrations of

corporate power,⁴ arguing that socialist controlled production monopolies would extract the benefits of industrial consolidation driven by technology, and the socialist markets would ensure workers and consumers had free choice in occupations, goods and services (Lange 1937, 139).

Hayek perceived that a new generation of socialists would concede that central planning was inferior to a competitive system, and correctly predicted they would not forfeit their belief in public ownership, leading them to strive for “a more or less successful imitation of competition?” (1935b, 238). Hayek had surmised correctly that the market socialists’ model was ultimately still a central planning model with an authority or bureaucracy determining resource allocation and the distribution of capital investment amongst business units or firms. Lange’s call for the nationalisation of banks and industry (1937, 133) confirmed Hayek’s claim. For Hayek competition under socialism could not be real; “at best [it will] be a system of quasi-competition” (1935b, 237). Hayek’s supporting arguments however, did not revolve around the market socialists’ use of consumer markets but rather he saw the problem as agents’ responses to hierarchical decision-making processes, that left “entrepreneurs” seeking approval for decisions rather than making decisions themselves (1935b, 237). Without the benefits of a profit and loss system linked to personal gain and responsibilities, the entrepreneurs would not be incentivised to take risks – a case of ‘nothing gained, nothing ventured’, resulting in missed opportunities for innovation (Hayek 1935b, 235). Lange came back with similar arguments regarding problems of incentivisation under capitalism when ownership of enterprises is separated from managerial control. Lack of competitive efficiency due to the ‘agency problem’ was compounded by the problem of political interference in the regulation of monopolies by big corporations and financiers in what became known as regulatory capture – arguments which Hayek concurred with in his analysis of monopolies (Hayek 1935b, 225; Lange 1937, 129) Entrepreneurs it would seem, be they working for corporate enterprises, state regulated public utilities or socialist governments, were liable to be poorly motivated, a view criticised by Schumpeter as “secular sabotage”⁵ (Schumpeter 1947 [1943], 81).

4 “[T]he 200 largest non-banking corporations [in the US] controlled somewhere between 45 and 53 percent of the assets of all non-banking corporations, with 49.2 per cent the actual crude estimate. ... The 100 largest manufacturing corporations increased their proportion of all manufacturing corporation assets from approximately 40 per cent in 1929 to approximately 49 per cent in 1962, while their net proportion of net capital assets increased from 44 per cent in 1929 to 58 per cent in 1962.” (Berle and Means 1968 [1932], xxix-xxx).

5 Thorstein Veblen also used the concept of sabotage of industrial progress (Veblen 1965 [1921]).

The consumer markets in Lange's model were critical to the socialist's claim of superiority, for apart from enabling consumer choice they also functioned as a mechanism to gauge whether monopoly was causing "social loss" (Lerner 1934, 157-158). According to Abba Lerner, the market price could test for Pareto optimality and therefore detect whether a production monopoly was allocating resources efficiently (Lerner 1934, 162).

In Lange's model, prices would be set to equal the resources-cost using a trial and error system, such as that proposed by Fred Taylor in his 1928 presidential address to the American Economic Association, to deal with the imputation problem (Lavoie 1985b, 86). Taylor suggested that the prices of all the input factors in production could be calculated using factor-valuation tables against which values would be adjusted (1929, 7). In this way business managers performed the necessary computations to assign prices to each input factor contributing to the final commodity price consumers paid (Taylor 1929, 6). Lange defended Taylor's model showing that it achieved equilibrium prices with a shorter sequence of trial and error than a competitive market because the Central Planning Board is guided by rules to determine consumers' preferences (Lange 1936, 56-57; Lippincott 1964 [1938], 23). This would add to their knowledge of the whole economy more than an entrepreneur (Lange 1936, 62, 67). The critical difference for the market socialists was that they tied equilibrium to the marginal utility of income. Lange understood that income guarantees in the form of labour disutility rates⁶ were not strictly a component of the neoclassical equilibrium equation (Lange 1937, 124). However, he argued that the rates were a valid component in terms of facilitating an equilibrium outcome (Lange 1936, 57; Lippincott 1964 [1938], 21). Lange's defence of trial and error, using neoclassical equilibrium theory, effectively turned economic orthodoxy into a tool for socialist central planning. With this, Lange declared, the "achievements of free competition" could be realised under a socialist economy (1937, 127).

Hayek's and Lange's arguments both offered the market as the foil to economic and political power. Their divergence, however, centred on the question of technical progress, with Lange opting for the planned approach necessitating scaled industry organisation and Hayek tying innovation decision-making to an equilibrium position based on price signals, thus leaving the market to process obsolescence and invention.

6 This was the application of a disutility payment that represented the opportunity cost of performing occupations more onerous than others, so "leisure, safety and agreeableness of work [were factored] into the utility scales" (Lippincott 1964 [1938], 20-21).

Hayek attacked Lange's idea of technology being conceived in the social interest, which he correctly attributed to Arthur Pigou's (1877-1959) influence on Lange (Hayek 1935b, 222). Pigou, in taking a welfare economics perspective, assumed a whole-of-economy approach to innovation by which firms were encouraged to adopt new processes and technologies as a way of driving competition within innovation itself (Pigou 1960 [1932], 190). According to Lange and Pigou, although increased profitability from innovation came with the costs of devaluing old technology, those costs were mitigated by the social benefit to consumers in lower prices (Lange 1937, 129; Pigou 1960 [1932], 188). Hayek, in contrast, took a retrogressive position—if the cost of labour to plough a field was still cheaper than the cost of manufacturing a tractor then the Soviet tractor factory is not an asset (1935b, 204). This 'cost accounting' approach to the economic management of new technology amounts to an incoherent and contradictory argument, whereby Hayek identifies the need to calculate costs associated with technology and the problem of doing so for monopoly industries. Hayek's attempt to defray this fact by trying to define what an asset is, belies the fact that he and his colleagues had not solved the problem of monopolistic pricing, nor the problem of calculating the long-term costs of rapid technological change. The difficulties for Hayek and his arguments, were not only the absence of a theoretical solution for assimilating network-based monopolies into a competitive market using the price mechanism but the perception that capitalist planning had the same intractable problems as planning monopolistic industries under socialism (Hayek 1935b, 226).

His approach did not address the technology issues Lange raised, nor did it align with the intellectual currents of the time. Schumpeter, a leading figure in innovation economics, applied an evolutionary perspective to change within capitalism that he called "Creative Destruction", arguing that it was the "process of industrial mutation ... that incessantly revolutionizes the economic structure *from within*, incessantly destroying the old one, incessantly creating a new one. ... and there is no point in appraising the performance of that process *ex visu* of a given point of time; we must judge its performance over ... decades or centuries" (Schumpeter 1947 [1943], 83). The 1930s was characterised by the 'performance' of invention and innovation steered by engineer-entrepreneurs. These currents and counter-currents and their implications for economic modelling are the subject of the next section.

4.3 Innovation planning

Thorsten Veblen, once described as having “a Darwinian eye, ... for the coevolution of corporations, financial instruments, and machines” (Dyson 2012, 19) had argued a decade earlier that business people did not seek to optimise industrial capacity. Instead, they curtailed output in order to maintain higher prices. This was a form of “sabotage” he called the “conscientious withdrawal of efficiency,” of which under-investment in new technology was an example (Veblen 1965 [1921], 10, 37, 46).⁷

In 1919 Veblen noted a change coming from the growing influence of production engineers and investment bankers whom he described as forming “the two pillars of the house of corporate business enterprise” (1965 [1921], 45) Making a veiled reference to J. P. Morgan who financed the modernisation of US Steel and AT&T, Veblen was drawing attention to the greater stability in prices, efficiencies, and business capitalisation in large enterprises resulting from this professionalised management of technology and corporate finance (1965 [1921], 46, 47).

Lange referred to the changing corporate landscape as “*financial capitalism*” characterised by the separation of shareholder ownership from entrepreneurial management (1937, 129). Frank Jewett, the first president of Bell Telephone Laboratories (1925-1940), epitomised Veblen’s engineer-scientist-business manager and became one of the drivers of the trend towards integrating knowledge and economics in commercial decision-making and at the highest levels of government policy making. In this case, the knowledge was primarily scientific and engineering derived from industrial research, or what Veblen called the “industrial arts” (1965 [1921], 27). Jewett’s vision went beyond the Bell corporation, which at the time of his retirement in 1940 was the “largest research organization in the world”⁸ (Braverman 1974, 164) Jewett devised a national plan for industrial research which included state-supported fundamental science research in select universities⁹ and commercial

7 Also (Lange 1937, 130; Finer 1946 [1945], 6).

8 In 1940, Bell Laboratories employed over 5,000 people. To put this in perspective, according to Braverman, “corporations ... with a net worth exceeding a billion dollars averaged research staffs of 1,250” (Braverman 1974, 164).

9 The establishment of the Institute of Advanced Studies at Princeton University in 1932, under the directorship of mathematician Oswald Veblen (nephew of Thorstein Veblen), was indicative of the impact of World War I and influencers like Jewett who had advocated for government and corporate support of research endeavours; and Thorstein Veblen who called for “a freely endowed central establishment” for academic pursuits by a US and international community of scholars (Veblen quoted in: Dyson 2012, 36). The Institute benefited from the Nazi purge of Germany’s universities with the arrival of Albert Einstein, John von Neumann and other exiled scholars from 1933, and it would play a leading role in fundamental

industrial research, much of which would be carried out by the “great centralized industries”, telecommunications, electrical manufacturing, steel, oil etc (Jewett 1919, 12). Jewett, Veblen and Lange foresaw an integrated industrial system in the United States and elsewhere, such that capitalist entrepreneurialism would adapt to the demands of modern industrial technological processes and research through new methodologies like scientific management (Taylorism).¹⁰ They contended that business and/or governments would plan that integration cognisant of the various models being proposed. A planning ethos was already in place, brought about by economic mobilisation during World War I (Lavoie 1985a, 220). In 1916 the US established the National Research Council (NRC) to coordinate science across all sectors for the war effort, and this support was continued after the war (Jewett 1919, 9). According to the historian Robert Sobel, “[w]hat was involved in 1919 was nothing less than the creation of ... ‘the military–industrial complex,’ the first element of which was to be a national wireless corporation” (Sobel quoted in: Headrick 1991, 181).¹¹ Economist and former US Secretary of Labor¹² Robert Reich described World War I as having “shaped the superstructures of industrial management” reflected in the New Deal administration and institutional responses to World War II and the Cold War (Reich 1984 [1983], 93). During the latter President Eisenhower phrased the term ‘military-industrial complex’ as a warning against the power vested in the close relationship between government and corporations over defence contracting.¹³

research for nuclear weapons and computer science. The Rockefeller Foundation and the US Federal Government funded the Institute (Dyson 2012). Also established at Princeton in 1942 was RCA Laboratories which conducted military research and came to be regarded as one of the centres of computing research in the US (Dyson 2012, 69).

- 10 Scientific management was also referred to as Taylorism, after Frederick Winslow Taylor who wrote ‘The Principles of Scientific Management’ in 1911. The principles were each concerned with how to make workers and managers more efficient at their prescribed tasks.
- 11 Sobel is referring to the establishment of the Radio Corporation of America (RCA) in October 1919 following negotiations between the US Navy, American Marconi, and its parent company in Britain. Marconi was ditched in favour of a fully US controlled private corporation which was seen as a security asset. RCA was majority owned by General Electric (GE), Westinghouse and United Fruit (Spar 2001, 151). AT&T-Western Electric also held a portfolio of shares 1920-1923 which they used to leverage policies on patents and equipment, and tying arrangements aimed at monopolising radio broadcasting (Danielian 1939, 123). RCA had a monopoly in international communications.
- 12 Labor Secretary under President Clinton (1993-1997).
- 13 In President Eisenhower’s farewell speech to the nation on 17 January 1961 he stated: “[W]e must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military–industrial complex. ... Only an alert and knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals, so that security and liberty may prosper together.” Transcript from speech given in the Oval Office, White House, Washington D. C.

What was perceived by Jewett as a planning imperative between industry and government to foster industrial technology and economic security was also seen to reflect the consolidation of corporate power in the US. Lavoie for example, concludes that “the real forefathers of contemporary proposals for national economic planning were not intellectuals of the Left but the big businessmen, bankers, and industrialists who sought to use planning agencies [War Industries Board, Industrial Preparedness Committee, War Finance Corporation] as weapons against competition, and found the war and the Great Depression convenient chances to wield those weapons” (Lavoie 1985a, 227). Such corporate interests were exemplified by AT&T’s \$20 million war loan¹⁴ to the British government in 1916 at the insistence of their financiers J. P. Morgan (Danielian 1939, 77). AT&T came under the direct control of government between 1 August 1918 and 31 July 1919, along with other wire communications companies, an incursion for which the company was generously compensated by government (Danielian 1939, 243). The First World War accelerated industrial consolidation in the US and shifted the locus of world economic power from Britain to America, signified, after the war, by US telecommunications companies establishing for the first time direct cable communications with Britain’s dominions, including Australia (Headrick 1991, 266).

In the face of these changes and trends within industrialised countries, Hayek’s call for competition to be fully reintroduced could easily be mistaken for hubris (1935b, 220). Lange, on the other hand, thought it was impossible to return to free competition because of the structural changes forged by conflict and technology that he cited as “the growth in large-scale industry, centralisation of financial control [and] the pursuit of maximum profit” (Lange 1937, 131) – drivers which Lange, in foreshadowing Eisenhower, believed resulted in concentrations of power that posed a threat to the democratic state:

The great economic power of corporations and banks being what it is, it would be rather they who would control the public planning authorities rather than the reverse. (Lange 1937, 132).

Lange, in concluding that large corporations would take control of the economy, was in part commensurate with Hayek’s argument, that monopolistic bodies would hang on to old investments, which Lange, like Veblen, defined as a form of economic sabotage (Lange

¹⁴ Danielian notes that the US Ambassador to Britain, Walter Hines Page, was a former J. P. Morgan partner who was trying to convince President Wilson to enter the war. The equivalent of \$20 million today is approximately \$488 million (Danielian 1939, 77).

1937, 134). Governments, Lange said, would be forced to take punitive action against corporations to ensure the supply of socially beneficial goods and services that would have to be made at the expense of higher profits, a proposition that Lange believed would invariably lead to public ownership of institutions like the banks (1937, 132).

Schumpeter conceded that big business was prominent in driving technological change and economic growth, but he did not have the same concerns as Lange, believing that “radical innovation” would lead to constant turnover, so that monopolies simply would not last, as they would be overtaken by new innovative players in the market (Ayres 1994, 155).

Schumpeter downplayed the traditional conception of competition focused on structure and production, seeing genuinely impactful competition coming “from the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control for instance)” (Schumpeter 1947 [1943], 84).

Jewett’s national research plan, which was envisioned to ensure US industry sharpened its competitive edge and paid dividends. He later remarked that the early 20th century had “seen the growth of great industrial laboratories which in many instances have come to be the central nucleus about which the whole commercial machine revolves” (Jewett 1928, 463). The number of company laboratories increased 722% between 1920 and 1946, particularly through World War II which saw a 680% increase in laboratory personnel between 1940 and 1946 (National Research Council 1946, ii-iii).¹⁵ What Jewett called the “utilitarian goal” of commercial research complemented by the universities (1928, 463), would further deepen with the advent of the digital revolution post-war and then onwards to Silicon Valley.¹⁶

We can only conjecture what the engineer-scientists who formed the ‘corps’ of researchers working for large industrial laboratories and universities must have thought of Hayek’s ruminations against planning and his targeting of industrial engineers for being blind to the spontaneous economic solutions offered by competition (Hayek 1935a, 4). According to his own assessment, the economist was considered an “odious individual who sits back in his

15 The NRC’s directory of commercial industrial laboratories listed 297 companies in the 1st edition (1920); in the 8th edition (1946) there were 2443 companies listed. In 1940 there were 17,500 laboratory personnel and approximately 133,515 in 1946 (National Research Council 1946, i-iii, 345).

16 For a listing of universities and colleges offering research services to industry in 1946 see (National Research Council 1946, 349-355). Exemplars of industry and university cooperation were the RCA research facilities at Princeton established in 1942 and IBM’s James Watson Research Laboratories which were established in 1945 initially as the Watson Scientific Computing Laboratory at Columbia University.

armchair and explains why the well-meaning efforts of [engineer-scientists] are frustrated” (Hayek 1935a, 8). Hayek’s views on engineers, as he later revealed in greater detail in *The Counter-Revolution of Science* (1952), were a response to Saint-Simon and Friedrich Engels who idealised engineers as the heroic builders of a socialist society modelled on the factory;¹⁷ for Hayek, socialist political economists used engineering synonymously with “‘political engineering’ and ‘social engineering’” (Hayek 1979 [1952], 166).

Although Veblen and Lange engaged with the realities of trending industry concentration and technology, they too were looking back to a past ideal. Veblen wanted the engineers to revolt and called for “a soviet of technicians” to overthrow capitalist “Vested Interests” which sabotaged capacity building in the industrial system, even though he had ‘spied’ the new alliance between technologists and investors (Veblen 1965 [1921], 138). Lange also contemplated the possibility that technicians would be “quite sympathetic to the idea of transfer of the industry into public ownership”, which was at least plausible if the government itself opted to nationalise industry (Lange 1937, 134).

America took a different pathway to the Soviets during the inter-war years, following a broad based, integrated plan for industrial and pure research promoted by Jewett which positioned corporate America within the control and command centre of technological and economic change. This development, contended Harry Braverman, signified “the beginnings of the era of monopoly capitalism” (1974, 163). Along with Jewett’s own AT&T Bell Telephone Laboratories established in 1925, industrial research would play a vital role in the institutional development of the military-industrial complex.

Hayek in contrast made a play to reintroduce competition but he failed to articulate the relationship between competition, monopoly and technology, delivering an incoherent, contradictory argument at the centre of which was the problem of technological change and capitalist public utilities like AT&T’s Bell System.

17 Hayek wrote: “In the one great factory which France will become, a new kind of freedom will exist: with the formula which Friedrich Engels was later to make famous, we are promised that under the new and definite organization, which is the final destiny of mankind, the governmental or military organization will be replaced by the administrative or industrial.” (Hayek 1979 [1952], 251).

4.4 Dispersed knowledge: Hayek's 'big bang'

Lange and the market socialists thought they had won the second debate and thanked the opposition for helping them galvanise their winning arguments, with Lange calling Mises the “great *advocatus diaboli*” (Lange 1936, 53). The market socialists believed they had advanced their position by applying Walrasian general equilibrium theory as a guide to allocative efficiency which in their view addressed Hayek’s complaint that monopolised industries were lacking a “determinate equilibrium” and could not promote optimum resource use (Hayek 1935b, 220). It has been argued that the Austrian’s perspective was misunderstood by Schumpeter and Knight and their epigones, who were interpreting the arguments from the neoclassical paradigm (Lavoie 1985b, 2) and that the socialists, for the same reason, did not understand what Hayek and Mises “really meant”, when addressing the discovery function of market prices, possibly because they themselves were struggling with articulation (Kirzner 2018, 121). Hayek’s ultimate response was to reject Walrasian equilibrium for his concept of compatibility. This dissolved the relevance of the socialist equilibrium argument for the neoliberals (Cooper 2011, 375). It also gave the Austrian group a way to move past their own faltering position, as the equilibrium framework could not support a solution in the case of public utility monopolies which undermined the rationale of Hayek’s argument for the full reintroduction of competition.

As noted in section 3.3.6 Hayek’s solution was to abandon neoclassical equilibrium theory by redefining it dynamically as “a relation among actions” (Birner 1996, 4). Birner makes the astute observation that in 1928 Hayek “generalize[d] general equilibrium theory into an intertemporal theory” that accounted for time (Birner 1996, 4). But Hayek leaves unanswered the question of how intertemporal equilibrium comes about, with the price mechanism left to assume the role of market coordinator (Birner 1996, 4).¹⁸ That a public utility’s market could be defined by its network infrastructure and not the price mechanism remained a serious impediment to theorising a fully competitive solution. Later, an even greater irony would emerge as Hayek’s *catallaxy*, the network of economies coordinated by the price mechanism, would under the contestability doctrine have prices set by monopolies. This situation would arise in part because a network, as Hayek recognised, was an endogenous system (1973, 36). Addressing the problem by devising a theory of industrial organisation, including a new market type, as AT&T did with contestability, took the

18 As Hayek notes it is the *between* that matters and ultimately that is explained somewhat obtusely by his concept of spontaneous order.

‘imitation of competition’ approach. Hayek dismissed this as untenable in socialist modelling calling it “pseudo-competition” and claiming it would eventually fall away leading to full nationalisation of the economy (2015 [1935]-b, 217). It is no surprise that the corporation’s contestability version should elicit a similar response. As sociologist Harrison White would later deftly note on contestability, “[t]here is an eerie overtone of planned economy, a sort of stateless socialism, about the Baumol, Panzar, and Willig dreamworld” (White 2002, 256).

This practical exigency led Hayek and Robbins to shift their attack on the socialist model. They conceded that the central planning model was theoretically plausible but practically impossible to implement (Lange 1936; Schumpeter 1947 [1943]; Caldwell 2004) In this new offensive, the Austrians set aside the issues of monopoly and technological progress and concentrated instead on the efficacy of production and consumption data underwriting socialist calculation. As noted by Lavoie, the purpose of calculation according to Mises, was in part to deal with “the innumerable possibilities of technologically feasible but uneconomic production processes” (Lavoie 1985b, 57). Hayek raised this point in 1935 when positing his dispersed knowledge theory and he addressed it directly in 1940. That Mises and Hayek had theorised the information problem early in the debates was important to the debating process, which was said to have honed the concept of the market as a functional discovery device, a point Kirzner and Lavoie agree upon (Kirzner 1988, 1).

In 1935 Hayek extended Mises’s claim that calculation under socialism was impossible by attacking the assumption in the equilibrium analysis of perfect knowledge. He questioned the utility of “given” knowledge, in this case ‘perfect’ technical knowledge concerning properties of commodities used for calculating production (Hayek 1935b, 210). Hayek claimed that engineers were only concerned with the market price of commodities and technological outcomes rather than in “find[ing] the most economical method” of production (Hayek 1935a, 5). This was in contrast to economists who knew how to harness “spontaneous forces” for problem solving (Hayek 1935a, 8). Hayek argued that technical knowledge concerning commodities was *dispersed* amongst engineers, and that it was impossible to *access* all the thoughts of all the engineers all the time; to predict what engineers might think in the future; or to choose from amongst them those with the best methodologies, or what Hayek called “technique of thought” (1935b, 210). Added to this was the “human” impossibility of *assembling* all the consumer data they needed to make their calculations and for “work[ing] out the concrete decisions which it [the data] implies” (Hayek 1935b, 211-212).

This attack, ostensibly on socialist central planning, was broadly speaking an attack on industrial engineers and the role of human knowledge and knowledge systems, such as the methodologies and epistemologies used in solving economic problems and problems in general (Mirowski and Nik-Khah 2017, 62; Slobodian 2018, 22). Hayek further developed these thoughts later in ‘Socialist Calculation: The Competitive “Solution”’ (1940) to refute Lange’s arguments. In that work, he set out the conceptual underpinnings of a new dynamic conception of ‘the’ market as an information processor, a discovery mechanism for knowledge and a prediction device (Lavoie 1985b; 1986; Kirzner 1988; Mirowski and Nik-Khah 2017).¹⁹ According to Lavoie, the Austrian School differentiated their position based on the perception of competition as dynamic, as in rivalrous, in marked contrast to the neoclassical principle of market harmony that was “nonrivalrous, static, competitive equilibrium” (1985b, 22). Lavoie further contended that the rivalry argument was epistemic in nature because it was that dynamic that drove the knowledge discovery process of the market (1985b, 26).

The idea that *dispersed information* caused human knowledge systems to be sub-optimal because those systems could not process *all* the knowledge (tacit and known) educed along the ‘information lifecycle’ from pre-revealed to post-redundant, was politically charged—because it dismissed the efficacy of socio-economic planning, socialist or *otherwise*, even when planners utilised market prices. For Hayek it was ‘the’ market that made the ‘concrete decisions’, not human beings—an idea that stamped Austrian School economics as a cyborg science (Mirowski 2002, 236). As Herbert Simon noted the ultimate argument against calculation, which was core to planning, was “the computational limits of human beings” (Hayek (1945) quoted in: Simon 1996, 34).²⁰ Hayek raised the impracticality of calculation, that is, the work of collecting the latest production data and churning enormous amounts of it through millions of calculations in order to find values (1935b, 208). It was “unworkable”, a point Robbins made to Lange (Lange 1936, 56), and which Hayek reiterated in 1940, citing Pareto’s claim that even if you “triumphed over all difficulties in finding the data of the problem” an incalculable number of equations would have to be made (Pareto quoted in: Hayek 1940, 125). Hayek was not so much striving for a competitive system as a *wholly* competitive order, because the price mechanism of the market, in his view, was the only mechanism that could *aggregate* and *process* all the dispersed information relevant to the

19 Hayek framed prediction in terms of business opportunities; however markets have also been designed to predict election outcomes and disease outbreaks (Polgreen, Nelson, and Neumann 2007).

20 Hayek, F. A. 1945. ‘The Uses of Knowledge in Society’ *The American Economic Review*, 35(4): 520.

economy – a task that central planning “could not sustain” even with computers (Simon 1996, 34). As Lavoie argued, this enabled Hayek and the neoliberals to maintain the primacy of the market as a computational mechanism in the face of advancing mathematical economics and computerisation (1985b, 95). Simon and Lavoie contended that the market was a unique computational mechanism that was not rendered obsolete by computers. Lange, on the other hand, took the converse position when he later wrote about the capacity of computers versus markets:

Let us put the simultaneous equations on an electronic computer and we shall obtain the solution in less than a second. The market process with its cumbersome tatonnements appears old-fashioned. Indeed, it may be considered a computing device of the pre-electronic age. (Lange quoted in: Mirowski 2002, 236).²¹

The juxtaposition of Lavoie and Simon’s perception of the market and Lange’s draws out a critical distinction between the two camps. Lange and the market socialists had formulated an economic solution to the problem of monopoly power that Lange believed could be revised by replacing the market component of the computation with computer calculations. Hayek, in contrast had developed, with the aid of his colleagues and the debating process, a *technological solution*, the market, whereby he conceived of the market as a computational machine managing data and notifying decision makers about the best choices. In time the market-machine became conceptualised as a structural component of the *catallaxy*, an endogenous construct where markets, firms and networks integrate into the one formation. However, in the 1930s, at the time of its emergence, it offered “a vague outline of a computer” that ensured the Austrian School remained relevant to the new machine age about to begin.

4.5 And the winner is ...

The market-machine formed the basis of the Austrians’ counterattack against the socialists’ model, which was acknowledged as theoretically valid but unworkable in practice due to the impossibility of making all the necessary calculations for the marginal rate of substitution. The importance of this epistemic turn to the market during the debates, which in Lavoie’s words, “transcends the issues that were consciously in dispute” (1985b, 2), was exemplified by the observation that the market socialists felt the long term outcome of the debates had

²¹ Lange, O. 1967. "The Computer and the Market." In *Socialism and Economic Growth*, edited by Charles Feinstein, 158-161. Cambridge: Cambridge University Press: 158.

posed a threat to the future role of science-based economic expertise (Mirowski and Nik-Khah 2017, 75) and I would suggest, expert knowledge per se. However, it would also lead, according to Mirowski and Nik-Khah, to the development of information economics (2017).

The Austrians had sown doubt about the capacity of the socialists to deliver an effective economic system based on the issue of economic data and calculation and opened up another front in the debates, deflecting attention away from the monopoly problem to the information-based market ‘solution’. This shift was reflected in texts from key scholars in the debates that did not focus on the monopoly issue (Lavoie 1985b; Kirzner 1988; Caldwell 2004). Hodgson made a general claim that neither the Austrian School economists or the socialist theorists, with their neoclassical perfect competition model, had come to grips with monopoly-oligopoly industry structures (Hodgson 2015, 302). Nevertheless, Hayek had revealed the naivety of the socialists’ understanding of the socio-economic function of knowledge (Hodgson 2015, 289). This was a portend of what was to come as neoliberalism showed enduring compatibility with the new industrial revolution unfolding in ICT following World War II.

The Socialist Calculation debates are historically the site of the emergence of neoliberalism as a discursive formation, including its concepts of “free markets”, which became neoliberalism’s signature characteristic (Birch 2017b, 35), and price-induced competition, its most cited mechanism. It is also argued here that the debates contributed to the disappearance of the problematisation of monopolies and oligopolies, so that these industrial structures could in due course become normative and then, under the contestability doctrine, become privileged structures under neoliberalism.

By taking control over the discourse, both in terms of determining the concepts and theoretical strategies, and by suppressing those of oppositional formations, the emergent neoliberals were able to set the direction of future debates and establish the ground from which the catallactic order would later transform. This I suggest was the real win for Hayek, Mises and Robbins, and the nascent neoliberal movement; not whether they won or lost the debates technically, with Hodgson noting that the consensus on who won had swung from the socialists to Hayek’s team (Hodgson 2015, 288).

4.6 Postscript to the debates

Hayek went silent on monopoly after 1935, which raises the question, what was happening in theoretical economics at the time that made this absence not appear to be a gaping void? As the ‘flip side’ of competition, the presence of monopoly would at the very least drive against Hayek’s goals of establishing a competitive order.

There was in fact some theorising concerning an economy’s ability to adjust to the ubiquitous presence of monopolies. In the 1930s a new wave of monopoly scholarship had been laid down by Joan Robinson in *The Economics of Imperfect Competition* and Edward Chamberlin in *The Theory of Monopolistic Competition* both published in 1933. These publications formed the backdrop to the debates during the Great Depression (Boettke 2002, 264), along with the work of Piero Sraffa (1926), and Mises’s *Epistemological Problems of Economics* (1933) which was cardinal to the Austrian position on monopolies.

Although Robinson, Sraffa and Chamberlin were concerned with commodities and production industries, their theories drove new conceptions that would resonate with corporations on the cusp of the new knowledge networked economy that was gestating during the 1930s. These new wave theorists re-imagined monopoly by exploring imperfect competition from an ontological perspective. This brought about three fundamental shifts. Firstly, the emphasis of analysis shifted from industry structure to the firm in Chamberlin’s case (Triffin 1962 [1940]; Georgescu-Roegen 1967) and to the individual entrepreneur who makes the decisions in Robinson’s 1933 text. Hayek adopted this micro unitisation, referring to the “independent unit” and “independent business unit” (1935b, 219, 232). Secondly, de-scaling the level of analysis to the interrelationships between firms and entrepreneurs became critical to how market performance was measured because markets were no longer either monopolistic *or* competitive (Bain 1967, 165). And thirdly, the informational aspects of markets became critical to firms and entrepreneurs functioning within the markets and for measuring market performance which was said to be dynamic, that is, oscillating constantly across the range bounded by monopoly and pure competition (Hayek 2015 [1935]-b, 230).

The treatises by Robinson and Chamberlin were considered revolutionary by many academic economists because the starting point of their analyses was monopoly and not, as orthodoxy dictated, the position of perfect competition. Imperfect competition was established as the normative range and was said to have given a far more realistic description of how capitalism actually worked (Lange 1937; Schumpeter 1947 [1943];

Baumol 1964; Hawley 1966; Bain 1967; Georgescu-Roegen 1967; Samuelson 1967; Harcourt 1986; Kirzner 2018).

Unfortunately, neither Robinson nor Chamberlin tackled the question of public utilities. Chamberlin's theoretical insights pertained to oligopoly and duopoly, and Robinson paid little heed to non-price competition which I cite from her second edition (Robinson 1976 [1969], ix). This narrowed the scope of their analytical tools. Nonetheless, the removal of perfect competition from its plinth was welcomed by a cross-section of economists who were questioning the efficacy of orthodox economic analysis in the light of the Great Depression (Robinson 1977, 1318).

Lange was content to adopt the general thesis of Robinson and Chamberlin's work (Lange 1937, 127). Hayek, in contrast, made no direct references to these authors,²² and we are left to speculate that the nature of the shift in monopoly scholarship was fortuitous enough for Hayek to leave well enough alone, theoretically speaking.

4.7 Conclusion

Hayek was an important figure in the Socialist Calculation debates that addressed the centrality of the monopoly problem and the link between monopoly and technological innovation on the cusp of the Information Age. Hayek's time at LSE between 1931 and 1949 put him at the epicentre of change in economics as the new wave in monopoly scholarship swept through neoclassical orthodoxy.

The 'perfectly competitive world' of capitalist markets was in fact a world of oligopoly—a reality that was brought home by Joan Robinson, Edward Chamberlin, Piero Sraffa and Joe Bain. Perfect competition as a modelling abstraction was passé. There was now a new school of thought on monopoly. It led Baumol's 'rebels' at AT&T to elevate contestability to a controversial claim that swung back to Lange's contention about the relationship between technology and monopoly:

22 In Hayek's seminal paper 'Economics and Knowledge' presented in 1936, he refers to imperfect competition once in what was an obtuse reference implicating Chamberlin as having found a solution regarding foresight operating in "duopoly and oligopoly", but alas Hayek did not elaborate (Hayek 1937, 34).

unlike perfect competition, perfect contestability can provide a standard for the performance of markets in which concentration is inevitable because of the nature of the production technology (Baumol, Panzar, and Willig 1982, 13-14).

This new economics of imperfect competition would advantage corporations and neoliberals to influence government policy and undertake antitrust ‘reform’ and, paradoxically, did not unseat the teaching of the perfect competition model (Robinson 1977). It has been an extraordinary feat to maintain a two-tiered system where the teaching of economic theory on the one hand embraces the abstract idea of perfect competition and on the other is grounded in an actual monopolistic global society.²³

Hayek also engaged in his own brand of intellectual equivocation. First, he absented himself from monopoly scholarship, conspicuously avoiding the modelling problem posed by natural monopolies like network industries. Second, he established an ideological position that he held throughout his career – that monopolies were created by governments interfering in the markets; a claim for which he provides no empirical evidence or theoretical proof. By the end of the debates in 1941, Hayek and his colleagues had reached their own impasse; they had *not* found a way to theorise the imitation of competition in monopoly industries.

The aim of this chapter has been to navigate the key ideas threshed out at the Socialist Calculation debates that showed how Hayek and his colleagues struggled to make a coherent argument that dealt with the issues of monopoly and technological impacts. The debates produced more questions than answers as the Austrian group found favour amongst the industrial elite. Why if Hayek was against planning in such a deeply theoretical way, did he find support amongst industrialists embracing managerialism? And why did John D. Rockefeller Jr send his youngest son David to study at LSE under the supervision of Hayek in 1937 after Hayek’s poor performance at the debates? And why did the Rockefeller Foundation sponsor the LSE and the Mises’s business cycle research institute in Vienna?

23 Students revolted in the 1960s and again post the 2008 GFC but the stand against this perverse discord has yet to succeed in expelling it.

In the next chapter I examine the other significant debate Hayek had in the 1940s when he went on the attack over corporate planners and their incursion on economic planning and science policy. His sparring partner in this debate was president of AT&T Bell Laboratories, Frank Jewett. By the end of WWII, it would become clear why Hayek's insights became so important to industrialists in the emerging information society.

5 Planning social order post-war

In preparing for battle I have always found that plans are useless, but planning is indispensable.

General Dwight D. Eisenhower

5.1 Introduction

For all of Hayek's antagonism to those who sought to construct a better social system, and his insistence on a "spontaneous order", he clearly stated his support for the rational planning of institutions:

Any brief discussion of 'economic planning' is handicapped by the necessity of first explaining what precisely is meant by 'planning'. If the term were taken in its most general sense of a rational design of human institutions, there could be no room for argument about its desirability (Hayek 1941, 580).

Hayek characterised the politics of planning with one question, "*who* is to do the planning[?]" of an efficient economic system (Hayek 1945, 520). In this chapter I argue that this question, posed in 'The Use of Knowledge in Society' (1945), had only one possible answer for Hayek even though he noted three options. The three possibilities he considered were the state, markets and "organized industries, ... monopoly" (Hayek 1945, 521). Taking into account the neo-liberal beliefs that markets could not plan themselves and state planning irrevocably led to totalitarianism, then by elimination the monopolies option which Hayek alludes to, becomes the logical choice. But as this chapter shows the monopoly choice for planner was highly considered and debated by Hayek.

Hayek made clear in the Socialist Calculation debates that he was ideologically opposed to government planning whether that was central government planning for the whole society or mixed economy models proposed by socialists. Hayek was less direct in his opinion of corporatist planning models. He avoided any analysis of them during the debates, even though central planning using the resources of corporations had already emerged, as noted

in the previous chapter, with corporate undertakings like that of AT&T during World War I.

Hayek did, however, cite a proposal put forward in 1919 by the German Minister for Economic Affairs, Rudolf Wissel, and his undersecretary, Wichard von Moellendorff.¹ These officials used the “planned economy” (Planwirtschaft) to describe what was in essence the continuation of Walter Rathenau’s programme of industry-based economic control over the German economy during the war (1914-1918) (Foucault 2008, 108; Hayek 2015 [1935]-a, 32). Hayek used the expression “halfway house between capitalism and socialism” to distinguish corporatist models, like Wissel’s, which positioned private industry to provide leadership in economic planning, from government controlled socialist economies (Hayek 2015 [1935]-a, 32). Hayek contended that the “socialization” of individual industries by corporations in cooperation with government was still set within the context of a “competitive system” (Hayek 2015 [1935]-a, 31). Although Wissel and Moellendorff’s specific programme was rejected by their Social Democratic Party (SDP), as Foucault noted, Rathenau style “planning and economic centralization was a recurrent, if not a constant form” until the Nazi’s came to power in 1933 (Foucault 2008, 108). A decade later Hayek raised the corporatist model as an option that called for “the delegation of planning to organized industries, or, in other words monopoly”, which he again refers to as the “half-way house” without any further clarification of his perspective (Hayek 1945, 521). The Second World War saw the belligerents, as in the First war, impose tight controls over their respective economies in order to maximise war production (Slobodian 2018, 28). This raises the question: was Hayek, in the post-war years, inclined to adopt the monopoly option as the best possible chance of seeing his vision of a market-based social order implemented?

This question is explored through an analysis of Hayek’s critique of corporatist planning, including how his vision of a competitive order could be planned by private monopolies. The corporatist model of social order examined is the one proposed by Frank Jewett who was president of AT&T’s Bell Laboratories from 1925 to 1940. This model was chosen because Hayek referenced Jewett in his article ‘Planning, Science and Freedom’ (1941).

A chief aide to unlocking Hayek’s views on social order models is this passage from ‘The Use of Knowledge in Society’:

1 Moellendorff was a former AEG official (Caldwell 2004, 118).

Which of these systems is likely to be more efficient depends mainly on the question under which of them we can expect that fuller use will be made of existing knowledge. (Hayek 1945, 521).

In the qualifying sentence in the above passage, Hayek suggests that the choice of planner should be based on the best use of knowledge which, as we shall see, offers us an insight into his preferred approach. The role of knowledge in the economy as processed through the price mechanism of the market was Hayek's formative narrative in 'The Uses of Knowledge in Society' (1945). At that stage he had not yet developed this idea as a coherent theory, having recently abandoned economics for political philosophy.

On his part, Jewett's proposal was to take the organisational model of Bell Laboratories, based on expert production of knowledge and innovation, and scale it to society as a means of providing the necessary knowledge and expertise to make decisions at societal level.

The knowledge efficiency proviso links these two epistemic approaches. As Hayek claimed, it was the efficient utilisation of information that was elemental to economic efficiency, a point not lost on "[t]he entrepreneurs of the great companies of the early 20th century [who] understood the importance of knowledge better than most" (Drahos and Braithwaite 2002, 41).

This chapter begins with an analysis of Frank Jewett's proposal co-authored with editor Robert King and published in *Nature* magazine in December 1940. Titled 'Engineering Progress and the Social Order',² they argued that society would be better served if societal decision making was based on scientific expertise provided by industrial laboratories like AT&T's Bell Laboratories. This paper was followed a year later by Hayek's 'Planning, Science and Freedom' also published in *Nature*. Hayek did not position his article as a direct response to Jewett and King. However he references them on a point about government planning (Hayek 1941, 583). Hayek vigorously criticised the substance of their claim that methodologies from the natural sciences should be adopted as a means of providing the knowledge base for planning society. Jewett and King's proposal for a corporatist planning model based on human expertise was an alternative to Hayek's model based on the competitive market. This necessitated a response from Hayek, not least because Jewett was a power broker within the US military-industrial complex. Frank Jewett was head of the

2 Jewett initially delivered this paper as a lecture to the Natural Sciences section of the University of Pennsylvania Bicentennial Conference, on the 18th of September 1940.

National Academy of Sciences (1939-1947), a member of the National Defence Research Committee (NDRC) (1940-1941)³ and later worked in the Office of Scientific Research and Development (OSRD) (1941-1947).⁴ He had just completed 15 years as president of Bell Laboratories and vice-president of AT&T. Jewett helped shape the US scientific war effort and was a leading corporate and public figure (Gertner 2012, 59). Robert W. King was an engineer and editor of the *Bell System Technical Journal*.

By publishing in *Nature*, Hayek made the argument for his market model to a corporate scientific elite that Veblen had identified as the new force in capitalism (Veblen 1965 [1921]). Making the case for the market to Jewett was in effect making a play for the attention of industrialists globally as they were wont to follow AT&T's lead (Danielian 1939; Reich 1980, 507; Toffler 1985, 29; Marchand 1998, 80). It was not just the corporation's size and box seat in government but Jewett's dedicated efforts on the lecture circuit, promoting his corporatist vision of science and the post-war future, that made him a public opinion leader (Gertner 2012).

A number of key factors led to Hayek's choice. To understand these factors it is helpful to introduce AT&T's Bell System which is described as "one of the most highly integrated industrial empires in existence" (Danielian 1939, 3). Much of the analysis of AT&T presented here is derived from N. R. Danielian's exposé of the company published in 1939, titled *A. T. & T.: The Story of Industrial Conquest*. Danielian was a lawyer and economist with the Federal Communications Commission and he drew on the findings of an investigation into AT&T's overcharging practices (Gertner 2012, 45). AT&T was the largest private monopoly in the world and a world leader in network technology which was critical to the success of Hayek's vision of a global market order. In the 1970s AT&T would go on to develop the contestable market doctrine, designed to exploit the economic spinoffs of their global network and justify monopolistic industry structures. These actions were indicative of the developing symbiotic relationship between the neoliberals and monopolists.

3 The National Defence Research Committee became an advisory body within the Office of Scientific Research and Development (1941-1947) which superseded the Committee.

4 Jewett's appointment was in keeping with past appointments. Walter S. Gifford was director of the Civilian Advisory Commission to the Council of National Defence during World War I, president of AT&T (1925-1948) and US Ambassador to Britain (1950-1953).

The aim of this chapter is to explore the intellectual interchange between Jewett, and Hayek. Although rooted in alternative disciplinary paradigms, they connected on a number of levels including the epistemic level whereby each understood the critical nature of knowledge and networks in planning and economic management. Their affinity was, however, also met by points of departure, which raised another ‘debate’ for Hayek in which he again came to the defence of the market as the *optimal* information processor.

The analysis will be completed by examining the politics of planning as per Hayek’s views on monopolies expressed in *The Road to Serfdom* (1944)⁵ (*Road*). It will conclude with a postscript on the politics of science that ensued in America post-war, which were marked by friction between democratic principles and the trend towards concentration of economic power. Although Hayek had touched upon monopolies in the socialist calculation debates around the question of public utilities (see Chapter 4 above), it was “a digression” from his main focus of warning against the totalitarian tendencies implicit in socialism and the impracticalities of socialist planning due to inadequate information processes (Hayek 1935b, 226). In *Road*, which Hayek self-described as propagandist in style (Hayek 1994, 125), he cautiously positions private monopolies in the public consciousness as bulwarks against the totalitarian tendencies of government. The link, which Hayek makes between monopolies and science as he promotes a corporatist ethic focused on the market, is also demonstrated. *Road* was an important book because it mapped out the territory that had to be won if neoliberal ideology was to dominate the post-war future.

5.2 Hayek and AT&T: the clashing of social order models

In ‘Planning, Science and Freedom’ (1941) Hayek promoted his market ideal while at the same time reproaching scientist-engineer capitalists like Jewett for essentially interfering in the economist’s domain. This is probably in response to Jewett and King’s article ‘Engineering Progress and the Social Order’ (1940). Jewett,⁶ who shared Hayek’s disdain for government intervention (Teitelman 1994, 82), had with King applied the lens of a corporate scientist-engineer-administrator to *social* modelling in the belief that the natural sciences had much to contribute. What becomes apparent in Hayek’s paper is the clarity

5 US edition published in 1944.

6 Jewett’s support of President Herbert Hoover, a staunch anti-interventionist in his approach to the Great Depression, was said to be indicative of his position on government (Teitelman 1994, 82).

with which he advocates for economists and the market approach. This is in marked contrast to the incoherence of his technical economic arguments against the socialists during the Socialist Calculation debates.

5.2.1 AT&T Bell Laboratories: human expertise model

Jewett and King argued that the way forward for mankind was to create a new science of human organisation based on work conducted in the natural sciences. Their argument was founded on the notion that whilst human knowledge expands, the intellectual capacity of individuals and human behaviour remain relatively fixed (Jewett and King 1940, 824-825). Human progress is, therefore, dependent on the ability of human beings to organise knowledge collectively. This was fundamentally the idea that progress was reliant on human expertise and expert systems. These knowledge instrumentalities were thought necessary for industrialised society with its combined human and machine-made complexity (Jewett and King 1940, 825)

They claimed the management of decision making for society was best modelled using the same organisational structure developed by Bell Telephone Laboratories in dealing with the complexities inherent in, what was at the time, the largest industrial laboratory in the world. The Bell Labs research model has been said to have influenced corporate America because of AT&T's business success (Reich 1980, 507) and was adopted by IBM for their research organisation in 1956 (Maney 2011, 178).

Their model was structured around a centralised elite "corps" based in principle on the division of intellectual labour (Jewett and King 1940, 825), which Hayek argued the market system had made possible (Hayek 1941, 581). Their model's key feature was that it placed experts from multiple disciplines together to share knowledge and work creatively to solve problems. This, they claimed, was far more productive than the combined total of lone individuals' contributions, particularly in complex applied sciences. The Bell model was intended as an "organizational device" to tackle specific problems in a process labelled "superorganic evolution" (Jewett and King 1940, 827) a term Hayek also notes in relation to his concept of cultural evolution (Hayek 1978b, 293).⁷ New technical knowledge and facts

7 In 1910 *Super-Organic Evolution: Nature and the Social Problem* by Enrique Lluria and D. Santiago Ramon Y Cajal was published. The book aimed to prove "that *man is a product of universal mechanics*, that the regularity existent in crystals in form and structure exists in a still greater degree in all animals; that all organisations from crystals to man would be inexplicable if there did not exist mathematically precise universal rhythms which prevail from the sidereal world to the mechanical cell of organisms as complicated as that of man." The work was highly influenced by Herbert Spencer (Lluria and Cajal 1910, 69).

confirmed through experimental methods under controlled conditions were interpreted and thence communicated to decision makers in business and government to be utilised in decision making.⁸ This laboratory model⁹ was concerned with enhancing human capacity to process information through the “harmonious co-operation” of individual experts working freely in networked specialist groups to produce knowledge in a timely manner (Jewett and King 1940, 827). Jewett and King’s approach was also characteristic of the information processes used by intelligence services at Bletchley Park (1939-1945) which by the end of the war had become fully industrialised.¹⁰ The authors rather cryptically concluded that, “[i]n fact it [the modern industrial laboratory] seems to hold the one and only key to such enigmas as baffle the world to-day” (Jewett and King 1940, 827). In advocating the scaling of the Bell Labs model to society, Jewett and King argued that “social, industrial and political life” had become increasingly complex due to technology (1940, 827). This necessitated far more highly trained individuals with a greater range of specialisations to work in a much more collaborative and coordinated way to produce the knowledge needed for society to function (Jewett and King 1940, 827). They concluded:

[T]he day is gone, and probably for ever, when a successful State can base its policies upon clamour of pressure groups or upon the uninformed beliefs of the majority, even though measured numerically by tens of millions. (Jewett and King 1940, 828).

In Jewett and King’s model, specialists’ knowledge would replace the views of the masses who were deemed to be interfering with the scientific management of society. The democratic process was regarded as too slow a process, putting liberal states at a disadvantage because it slowed the response time needed during war and commercial crises (Jewett and King 1940, 826).

8 Jewett and King’s approach was also indicative of the information processes used by intelligence services at Bletchley Park (1939-1945) which by the end of the war had become fully industrialised.

9 This model became even more integrated when in 1948 the executive vice-president of Bell Laboratories, Mervin Kelly, instituted the “branch-laboratory concept” where inter-disciplinary groups were set up at Western Electric (AT&T’s manufacturing arm) and other manufacturing sites (Pierce 1975, 195). The focus was on the whole process from discovery in mathematics and science, to systems engineering and finally to developmental engineering at the point of manufacture in what was called a “unified approach” (Kelly quoted in: Gertner 2012, 80).

10 Jewett as president of Bell Labs and as a member of the National Defence Research Committee (NDRC) was privy to top-secret intelligence research shared between the United States and Britain, particularly the work of the Government Code and Cipher School at Bletchley Park (BP) which became famous for breaking the German Enigma and Tunney codes. As part of this cooperative war effort, BP’s Alan Turing visited Bell Laboratories and Gordon Welchman visited British Security Co-ordination at the Rockefeller Center in New York. Turing and Welchman, both mathematicians, were the chief researchers who together led the program to break the German intelligence network (Smith 1993, Greenberg 2014).

This idea of specialist groups made up of free acting individuals accorded with Hayek's social schema which gave the educated elites the responsibility to plan and maintain the system and the freedom to change the rules. One difference was that Hayek's elites were not so much actively involved in decision-making as in calibrating the market which made the decisions. The elite's role was to keep the machinery of the market running smoothly. Hayek thought the market in fulfilling individuals' plans could substitute for majority rule which he thought brought out the "worst elements of any society" they being swayed by totalitarianism (2007 [1944], 160)

Jewett and King recognised that their model, which called for a more *systematic* approach to planning, also gave cause for there to be greater guidance and that this "suggests dictatorship" (1940, 827). Their proposed mitigation of this threat was, firstly, to ensure that knowledge was shared with citizens, so they can protect their own sovereignty, and, secondly, to have government adopt the Bell model, to ensure decisions were based on knowledge derived from scientific methods with all the implied political neutrality of the "immutability and irrevocability" of facts (1940, 824) They contended that the only discernible difference their laboratories model invoked in government was that the entity providing the specialist advice would have as its management representative government hereto voted for by the public and that findings ensured this advisory entity should be scrutinised by the public:

[I]n this hypothetical modern State the public is served by a corporation around whose board it occupies all the directors' seats, and the democratic tradition therefore prescribes that it shall select its own management (Jewett and King 1940, 828).

The formula that would ensure that both the public interest and the individual's sovereignty were secured, Jewett and King argued, would see corporations embedded into the institutional structure of the state as advisory agencies but combined with ideals of democratic protections (Jewett and King 1940, 827). Indeed, this model had already framed investigative and advisory bodies like the US National Research Council and the Office of Scientific Research and Development (OSRD) and was becoming part of the cooperative machinery recruited to advise government prior and during the US engagement in WWII. Jewett and King concluded that these entities or "advisory aids", as they called them, must "function almost continuously" with the corporate entity directing operations (1940, 828).

Planning for total peace

The purpose of the model, according to the authors, was to preserve liberalism while adopting the instrumentality afforded by science and engineering, which had been harnessed to social engineer German Nazism (Jewett and King 1940, 826). They argued that without expert knowledge and systems seconded from industry under a special wartime administration¹¹ a liberal state could neither match a totalitarian state at war, nor could it prevent the formation, rise and spread of totalitarianism. In other words, a liberal state could not process knowledge, sufficiently to either prevent or resist an attack from a belligerent state. It was essentially a ‘might must meet might’ argument. By December 1940, the Wehrmacht’s blitzkrieg had overrun all the states it had attacked except Britain (Smith 1993).¹² Jewett and King concluded that Nazi Germany had succeeded because it used scientific methods for organising the population, similar to those used in industry. Germany had achieved efficiencies that derived from the “uniformity of control” making the German state “none other than a vast laboratory dedicated to the perfection ... of the arts of war” (Jewett and King 1940, 825). They observed, through the prism of the war, that a population’s ability to reject and expel a totalitarian regime had become far more difficult because science and technology enables the “essential paraphernalia of dictatorship ... much more readily ... [such that] the concentrated power of dictatorship, constitutes a death threat to all liberal forms of government” (1940, 826):

Now that mankind is in possession of the weapons made possible by modern technology, the planet has suddenly grown too small to support simultaneously the type of totalitarianism and the type which we associate with liberalism. To combat the Nazi ‘total war’, there is only one possibility—that of *total peace*. (Jewett and King 1940, 826).

Total peace in this instance was a euphemism for total war preparedness functioning as a deterrent (Jewett and King 1940, 826).

11 National Defence Research Committee (NDRC).

12 Britain’s crisis would not be averted despite winning the Battle of Britain (July-October 1940) until it had crushed the U-boat menace in the Atlantic which devastated merchant shipping supplying the goods and transporting the troops needed to prosecute the war. The shipping lifeline to the US was essential, particularly after the US opened access to their industrial capacity through the Lend Lease program in March 1941 (Heinrichs 1988). This cooperation followed successful retention of US public opinion during the London Blitz (Smith 1993, 38). In December 1940 Hitler attacked the Soviet Union, which along with the Roosevelt Administration’s decision to enter the war after the attack on Pearl Harbour in December 1941, sealed the fate of the Axis powers but with years of devastating conflict to endure.

Jewett and King centred their argument on Nazi technological success proving the vigour of science under totalitarianism, a view that was shared (Rid 2016, 43), although not universally. Vannevar Bush, a leading figure¹³ in US science administration during and after the war (Zachary 1997; Edwards 1997 [1996]), took a far more tempered view of the science of the Third Reich. He contended that Hitler attempted to regiment science after his failure to “apply modern scientific techniques in their preparations for war” (Bush 1949, 17-18). Bush believed totalitarianism was driven by fear, rather than some scientific organisational logic (1949, 7). Hitler’s racist and politically inspired purges of the professions resulted in a flood of exiles, shattering the networks of interpersonal relationships which were core to the interdisciplinary approach and the integration of science with industry and the military (Bush 1949, 18). Nazi rule had hindered technological development as attested by their V1-V2 missile program which launched too late in the war to be of strategic value (Bush 1949, 76). Bush’s point was that totalitarianism was a bad model for science. He also saw the democratic process as an asset to science (1949, 2).

5.2.2 Hayek’s critique of social modelling based on the industrial organisation of the knowledge

Hayek’s response to Jewett and King’s concept of social order was both conciliatory and critical. Respectfully referring to them as “eminent American engineers”, Hayek agreed with their concern that, “the State founded on dictatorial authority...and the planned economy¹⁴ are essentially one and the same thing” (Hayek 1941, 583). This view, was, as Foucault had observed, held by German ordoliberals in their response to the origins of Nazism. The state was perceived to be defective (Hayek 1941, 583; Foucault 2008, 116):

It has frequently been pointed out that national planning, irrespective of the innocence with which it is launched or the beneficent ends held in view, will inevitably lead to dictatorship provided the political authority is created to enforce the plans when once they have been made (Jewett and King 1940, 826).

13 Bush was head of the National Defence Research Committee which he recommended be established in 1940 and subsequently became head of the later offshoot the Office of Scientific Research and Development (1941-1947) (Edwards 1997, 46, Zachary 1997, 114).

14 In a note to the editor of *The Liberal Review* Hayek confirms that he uses the term ‘planned economy’ in the same sense as Lenin used it to mean control over everything. F. Hayek Archival Media. Box No 106, Accession No. 86002-15-34, Folder 106.2, Hoover Institution.

As a solution, Jewett and King proposed separating the planning process from the politics of implementation and in so doing they anticipated the neo-liberal movement's position on the state. Their model, albeit a form of central planning, was not rebuked by Hayek on those grounds. Hayek concurred with Jewett and King on the importance of expertise coming from industry in securing the liberal state. But for Hayek the critical source of knowledge was the market:

The alternative, is of course, not *laissez-faire*, as this misleading and vague term is usually understood. Much needs to be done to ensure the effectiveness of competition; and a great deal can be done *outside* the market to supplement results. But by the attempts to supplant it we deprive ourselves not only of an instrument which we cannot replace, but also an institution without which there can be no freedom for the individual. (Hayek 1941, 583).

Hayek was adamant, however, that it was a supplement to the market which was the most efficient instrument for utilising dispersed knowledge, that is, “knowledge of particular facts and the ever-changing circumstances of the moment—a knowledge which only the man on the spot can possess” (Hayek 1941, 581). Hayek argued for decentralisation of planning decisions by individuals in a market, not central planning by experts, which Hayek thought was “incredibly clumsy, primitive and limited in scope” in comparison to his “automatic” system (1941, 581).

5.2.3 Wartime effects on modelling

Hayek was concerned that wartime economic controls would be entrenched in Britain after the war (1941, 583). Jewett and King were among those who had suggested that “wage, price and profit controls” be used to mitigate the adverse effects of “commercial war in times of nominal peace” and for bolstering organisational efficiencies in the liberal state (1940, 826). These were exactly the kinds of income distribution proposals that Hayek opposed. He declared them inefficient (Hayek 1941, 582) and the “cause of, the suppression of individual liberty and spiritual freedom” (Hayek 1941, 583).

Proposing to normalise wartime measures after a war was nothing new to Jewett; he had wanted to maintain the momentum of wartime science administration in the US after WWI to secure the economic, military and corporate gains made through war (Jewett 1919, 9). The continuation of wartime controls in peacetime was common enough amongst WWI belligerents (Slobodian 2018, 28). Foucault in his analysis of the neo-liberal response to Nazism, noted that the continuation of Rathenau's planned economy after WWI by various governments was seen by neo-liberals, as having fed the rise of German Nazism (Foucault 2008, 108-116). Hayek is an example, of a neo-liberal believing that Rathenau had

unwittingly influenced a generation, including himself as a young student (Hayek 1994, 47), with “totalitarian economics” (Hayek 2007 [1944], 186). He associated planned economies with both leftist thinking and the formation of Nazism (Hayek 2007 [1944], 186-187).

Rathenau, like Jewett, was one of Veblen’s new breed of corporate technocrat. An engineer, industrialist and much lauded statesman, he took control of his father’s electrical engineering cartel AEG in 1915, the year after he headed up the War Ministry’s, “Raw Materials Section” (Kriegsrohstoffabteilung (KRA)), which he recommended be established to institute central control over wartime production and distribution (Caldwell 2004, 118). Officially titled “raw-material dictator”, Rathenau took command of commodities, controlled prices, instituted rationing and guaranteed wages (Hayek 2007 [1944], 186; Slobodian 2018, 65). Shearmur describes Rathenau as “an advocate of a corporatist economy, in which industry in peacetime would be organized much like the war corporations that he had set up in 1914–15” (Shearmur 1996, 28). His study of Rathenau’s influence on Hayek concluded that “the young Hayek” did not offer “any detailed commitment to the ideas” (Shearmur 1996, 28). However, we might detect Rathenau’s support for “state-supervised monopolies” expressed in *The Road to Serfdom* (Hayek 2007 [1944], 206) and belief in the “wastefulness of competition” (Shearmur 1996, 27) in Hayek’s comments on the efficiency benefits of monopolies as per contestability in *The Political Order of a Free People* (Hayek 1979a, 66; Shearmur 1996, 74). Rathenau’s conception of a “middle way between capitalism and socialism” influenced Hayek after WWI when he took a mechanistic approach to social organisation in *The Sensory Order* (1952) and in his preference for some “state-supervised monopolies” in *The Road to Serfdom*, both of which, as Shearmur notes, Rathenau conceptualised (Shearmur 1996, 26-27).

Where Hayek differs from Rathenau is in the purpose of the state, which Rathenau held was to “abolish poverty and unemployment” (Rathenau quoted in: Shearmur 1996, 28),¹⁵ whereas Hayek denied the state any such higher purpose and instead saw it solely as the enforcer of the new social order (Hayek 1973, 47). Hayek’s thoughts on the causes of Nazism are relevant to the anti-state position taken by neo-liberals. Had Rathenau’s planned economy been setup to be thereafter regulated by the market and not the state, would that have led to Nazism? According to the anti-state narrative of the ordoliberal, from which Hayek and the Chicago neoliberal thought collective manifested a purer form of anti-state capitalism, the answer could have been ‘No’. For although Hayek agreed with the general

15 Rathenau, W. 1921. *In Days to Come*. London: Allen & Unwin. p. 125.

consensus at the time that there was a trend towards industry concentration writing of “the progressive tendency towards monopoly”, he put the blame for its occurrence squarely on a “deliberate policy of the Governments, inspired by the ideology of ‘planning’. ... [and the] “unholy alliance between the monopolistic organizations of capital and labour” (Hayek 1941, 582).¹⁶ Hayek’s position on monopolies during the war years can best be understood as a political argument against government and unions and a criticism of engineers for their social planning pretensions and lack of economic insight (1935a, 8). However, corporate planning of a market-based economy was potentially a liberal alternative to the type of planning that would ‘always lead to Nazism’, at least in theory.

Clashing epistemologies

Jewett and King contended that the natural sciences would evolve a science of human organisation, based on research using an industrial laboratory model. This exemplified the chief complaint Hayek had against scientists and engineers, that is their incursion into the social sciences. Hayek regarded the methodological presumptions emanating from natural sciences, when applied to the study of social phenomena, as prejudicial and therefore unscientific (Caldwell 2004, 242). This amounted to a raft of methodological problems Hayek classified under scientism, which Mirowski contended was politically motivated to discredit socialism (Mirowski 1989, 355, 356).¹⁷ This is not to say that Hayek was wholly against scientific method for he believed that the “attack on economics sprang from a dislike of the application of scientific methods to the investigation of social problems” (Hayek 1933, 124). Progress in understanding social phenomena, Hayek wrote, “has come from the economists patiently developing the technique which has grown out of their peculiar problems” (Hayek 1941, 582). Hayek saw the root problem as the bias towards empirically derived objectivist knowledge which ignored local knowledge of people and events (Hayek 1941, 581; 1945, 521). Hayek concluded that what people thought about their world was of no interest to natural scientists (Caldwell 2004, 243), which in effect denied

16 Danielian writes of an organisation called the Special Conference Committee, whose members included, AT&T, Du Pont, Standard Oil and Chicago based United States Steel which had the express purpose of replacing labour unions with company unions (Danielian 1939, 333). It is possible that such a manoeuvre could be construed as corporate collusion with unions but Hayek does not give examples so this Committee’s work may not have been known to Hayek.

17 Hayek was concerned, amongst other things, about methodological collectivism which, according to his definition, is the objectification of entities like society, capitalism or classes as wholes to which explanatory laws can be ascribed (Hayek 1979 [1952], 93). Jewett and King asserted that the problems in the “substratum of our daily lives” necessitated “organized attack” (Jewett and King 1940, 825) of which the “mass attack” was most attractive (Jewett and King 1940, 827). Their approach was to churn data through programmable systems, i.e. controlled factors and parameters to elicit decisions that could be replicated.

the central tenet of Hayek's thought, that dispersed knowledge passing between individuals mattered and that accessing knowledge necessitated engaging with the market. Hayek's individual was a "cog" inside a market-machine (Mirowski and Nik-Khah 2017, 239) which he likened to a telephone system – an automatic, self-correcting societal instrument for processing the data on an individual's decisions so the "individual entrepreneur can read off, as it were, a few gauges and in simple figures, the relevant results of everything which happens anywhere in the system" (Hayek 1941, 581). Hayek appreciated that scientists and engineers were understandably sceptical of what he regarded as a highly evolved complex system. To Hayek, the market defied understanding through purely empirical means because the price system and competition had grown spontaneously, that is unconsciously, over a long period of time (1941, 581).

The contention that advancing technology necessitated central planning was dismissed by Hayek as a "myth" (1941, 581). He held a deep-seated belief that Nazism was contrived by the state regime. His argument was that 'scientific' organisation "of industry [had] deliberately created giant monopolies and represented them as inevitable growths" (Hayek 1941, 583). Representatives of "State-organized science" backed this development in Germany and, he believed, they were backing comparable totalitarian developments in Britain under the guise of social democracy (Hayek 1941, 583).

Hayek joined the Society for Freedom in Science co-founded by John Baker and Michael Polanyi in 1941 to protect the autonomy of science from corrupting government interference (Mirowski 2002, 183; Hull 2006, 150) Hull 2006, 150). According to Hull, this battle over the control of science was a battle for hegemony over who would get to disseminate viewpoints over various discursive fields (Hull 2006, 152).

Hayek constantly returned to the problem of the engineer as a kind of technological determinist, one absorbed by "technological problems", who accounted for little more than the price of commodities used in production (1935a, 5) and whose antipathy towards economics was due to the limitations placed on planning ambitions by "spontaneous forces" (1935a, 8). Jewett was not a technological determinist. He believed the impacts of science on society could be managed and that technology operated within systems which impacted how technology was used (Jewett 1958 [1932], 25). This was exemplified by Jewett's initial field of telegraphy. As Blondheim noted, "through the process of networking, telegraph management emerged as an agency for controlling, not just facilitating, communication flow" (Blondheim 1993, 82). Jewett was careful not to politicise technology, and he believed an industrial laboratory which invents technology and produces

knowledge should be politically neutral, that is, not a pressure group, but simply a science-based technical advisory service. Hayek claimed that the market was a depoliticised instrument designed simply to deal with information made available by the system. There was no single controller, no dictator. Both Hayek and Jewett wove a discourse that only attached power to government and that power was almost by definition corrupting. The laboratory and the market were in contrast politically benign sites purposed for knowledge production. “Yet, as Foucault reminds us, power and domination are matters of actual effects, not of agents’ goals.” (Pellizzoni and Ylönen 2012, 56).

5.2.4 Synergies between Hayek and AT&T Bell Labs

Hayek’s response to Jewett and King was a polite reproach to scientists and engineer capitalists for interfering in the economist’s domain. The natural sciences were, according to Hayek, simply not equipped epistemologically for the task of modelling *social order* because they were not equipped to explain the spontaneous nature of the economy (Hayek 1941, 582).

Hayek’s catallactic model was close to Jewett and King’s industrial laboratory model in one regard, that is, the perception that individuals were both inventive and limited, which meant that an organisation was needed to utilise the knowledge they created. The basis of this synergy becomes more apparent in a later assessment of organisational management by Hayek:

Every organization in which the members are not mere tools of the organizer will determine by commands only the function to be performed by each member, the purposes to be achieved, and certain general aspects of the methods to be employed, and will leave the detail to be decided by individuals on the basis of their respective knowledge and skills (Hayek 1973, 49).

This reflects the Bell model implemented by Marvin Kelly after the war, where the research purpose was defined as the need to prosper the Bell System but where “many members of his research department roam[ed] free, sometimes without concrete goals” (Gertner 2012, 152) like Claude Shannon the inventor of the bit, who famously spent time at Bell Labs juggling whilst riding a unicycle through the hallways (Soni and Goodman 2017).

Although Bell’s model is oppositional to Hayek’s market model if applied to society, when applied to planning and maintaining the ‘engine room’ of the catallactic system, the price mechanism, the model meets Hayek’s requirements. Jewett and King’s “corps” of experts filled the need, in the general sense, of mobilising individual experts in a collaborative environment (Jewett and King 1940, 825). That Bell Labs thought of itself as an ‘institute of

creative technology¹⁸ that could predictably turn on the innovation, was said to have “always originated because of a definite need” (Kelly’s deputy Harald Friis quoted in: Gertner 2012, 152), and that need was essentially commercial guided by the market.¹⁹ Keeping the Bell model at the level of its incarnation, the organisation, where it did not interfere with the market was, I contend, a synergistic accommodation of both models.

5.2.5 The international solution to totalitarianism

Totalitarianism was the common enemy identified by Jewett and King (1940) and Hayek (1941). For Jewett and King technology was a key factor in the intensification of a totalitarian state’s destructive power. They believed that there were only two possible resolutions to the rise of totalitarianism. Either completely rid the world of totalitarian states, which is extremely difficult, or “democracies and would-be democracies [must] dictate and control the rules of the international game of give-and-take” (Jewett and King 1940, 826). Modern technology has necessitated that “we of the free nations must alter in a fundamental fashion our methods of solving social and political problems” in order to resist totalitarian powers (Jewett and King 1940, 826). Essentially, they were advocating for an international solution led by technologically advanced victor states, and pushing the idea that technology makes it impossible for a liberal democracy to function politically or economically in a militarised world. By taking an international perspective they were moving with the trend in capitalism to use the international arena to bring about change. As Slobodian observes, “capitalist internationalism” was active in the interwar years spurred by the International Chamber of Commerce (ICC) (1919-present) and the League of Nations (1920-1946) “drafting blueprints for global economic governance” (2018, 30). Hayek, Mises, Robbins, Röpke and Gottfried Haberler were all involved directly with this work (Slobodian 2018, 30). Hayek framed his internationalist aspirations in anti-government terms contending that “the price we have to pay for an international democratic government is the restriction of the power and scope of government” (1939, 149). This vision, set initially within the geopolitical context of Europe in the late 1930s, highlighted his belief that the “inter-state federation to secure peace” would be achieved through a single market (Hayek 1939, 131, 135).

18 Refers to Mervin Kelly’s 1950 lecture, “The Bell Telephone Laboratories: An example of an Institute of Creative Technology” given at the Royal Society, London, on the 23rd March 1950.

19 Gertner gives the example of mobile telephony which was conceptualised in 1947 but was actioned until twenty years later based on the belief that “a substantial market does exist” (Gertner 2012, 283).

5.2.6 Looking towards the post-war future

Hayek's 1941 article was not simply a call for what he regarded as an "automatic" knowledge-adjusting system to be considered as a valid 'planning' instrument or for the Austrian School economists' ideas to be taken seriously; he was also making a plea for the world's dominant Anglo-Saxon states not to adopt incompatible economic systems. Hayek supported President Roosevelt's policy for a competitive system in the US, citing Roosevelt's comment, "the rise of political centralism is largely the result of economic centralism" (Roosevelt quoted in: Hayek 1941, 583). The British on the other hand were leaning towards a planned socialist welfare state and the creation of nationalised monopolies. Hayek argued that such opposing economic systems could lead to a schism in the trans-Atlantic relationship and end economic cooperation once the war was over (Hayek 1941, 583).

As head of Bell Laboratories, Jewett was in a position to understand the impact on science and industry of the "special relationship" being forged between Britain and the US through the sharing of intelligence and crypto-analytic communications equipment after its cautious beginning in December 1940 (Smith 1993, 53). Hayek's warning that the benefits of the relationship could be compromised by economic incompatibilities was salient, given that the accepted wisdom amongst the military-industrial elite was that the state and industry should perpetually prepare for war (Jewett and King 1940; Bush 1949), creating what Linda Weiss called the "national security state" in the US (Weiss 2014, 2). The international cooperation already underway during WWII supported the subtext of Jewett and King's article, that with the right information just about anything could be planned, and therefore, "the urgent need is to adopt and exploit all modern fact-finding instrumentalities to their full capacity" (Jewett and King 1940, 825) including information extracted by intelligence services.

Jewett, King and Hayek all believed that for democracy to be protected and the people's sovereignty to endure, individuals must have knowledge. The difference in the models was that Hayek believed individuals had local knowledge only and therefore had to put their faith in the market (Hayek 1941, 581). In contrast, Jewett and King declared that "liberally inclined peoples must put their faith in the more effective pursuit of knowledge [scientific and engineering expertise]" (Jewett and King 1940, 827). After expert knowledge was obtained there would be "the possibility of popularly interpreting this knowledge" (Jewett and King 1940, 827). In other words, all three writers shared the view that not including the majority of people in knowledge creation made the system more efficient.

Jewett and King claimed a role for information, science, engineering and the corporation in determining the social order of the post-war future. Hayek's 1941 article is given to dissuading experts from ignoring the critical role the market played in processing subjective information, and criticises scientists and engineers for "unwittingly striving to create a state of affairs which they have most reason to fear", the hands-on control of the economy (1941, 580).

Three decades later, the thinking of the neoliberals and AT&T Bell Laboratories would further converge as they collaborated to build a global networked society. Their view that information was central to social ordering, expressed by both parties during WWII, coalesced around the competition-contestability agenda. Bell Labs invention of the contestability doctrine was, I would argue, in keeping with Jewett's view that corporate "authority" over the economy was justifiable as a counter to the "dictatorial authority" of the state which had been intensified by modern technology (Jewett and King 1940, 826) White in his appraisal of the contestability doctrine's rationalisation of "supposed 'natural monopolies'" surmised that "[t]echnological transformation transmutes into a utopian justification for dispensing with any tangible markets" (2002, 256) which would come to manifest in the global power of platform monopolies like AT&T. Bell Labs were primed to construct the digital network infrastructure for global communications. In other words, their network model, which would mature in the 1970s, included a quintessential feature of neoliberalism, a *market* design that would dispel any hint of an authoritarian undertone. The neoliberals for their part constructed the *system* that legitimised corporate hegemony by shifting the epistemological centre of antitrust law from social ethics to economics and established a global network of think tanks and academic centres that would educate the political and bureaucratic classes in the efficacy of the corporate takeover of government assets, services and functions, national economies and the global economy.

Jewett and King had proposed a form of corporate technocracy, a model of social order based on expert knowledge, which was neither British socialist planning, nor a purely market-based competitive order. Their modelling of expert knowledge was compatible with the catallactic market model if used to construct the *catallaxy* but not if it was to be used for modelling whole-of-society planning as its authors had suggested. From Hayek's perspective the telecommunications network was critical to the creation of global neoliberal order. As Melinda Cooper observed, to "Hayek, the price mechanism's ability to coordinate a complex system of incomplete knowledge into functional information was comparable to the homeostatic properties of a 'telecommunications system'" (Cooper 2011, 375). Hayek's

comparison of the price system with telecommunications (Hayek 1945, 527) was, in my view, not so much an analogous perspective but a way of expressing that the *catallaxy* and the telecommunications system were essentially one and the same system. In order to build a global network that would serve its corporate interests, AT&T needed to shape the economics of the network. In the 1960s they began to do this by employing economists led by William Baumol who counted as mentors and colleagues Robbins, Hayek and Coase at LSE (1947-1949). The Bell group sought to conceive a new industrial organisational structure using a market, and in order to do that, they required resources and a corporate culture that would support a social engineering project at magnitude.

5.3 AT&T: the leviathan in the debate

Around the time Hayek and Jewett were writing, the consolidated assets of AT&T's Bell System were worth \$US5 billion,²⁰ which "constitutes the largest aggregation of capital that has ever been controlled by a single private company at any time in the history of business (Danielian 1939, 3-4). According to Berle and Means, in 1927 AT&T was:

On the basis of assets ... equivalent to over 8,000 average sized corporations, [when average was \$570,000 in gross assets] and both the United States Steel Corporation and the Pennsylvania Railroad Company to over 4,000. ... Already the Telephone Company controls more wealth than is contained within the borders of twenty-one of the states in the country (Berle and Means 1968 [1932], 18-19).

To understand the immense power of AT&T is to engage with the problem Hayek had in promoting the primacy of the market as the model for social order that was an alternative to Jewett's vision of social order in which high levels of expert planning and scientific management were prescribed. AT&T's network infrastructure not only defined their market reach but also the value of the company itself and the political power that came with controlling essential socio-economic infrastructure. Hayek had to address their model in promoting his alternative, the primacy of the market, as the model for social order. He likely felt the need to convince Jewett of the efficacy of his market model, as the market was dependent on the telephone not only to transmit information but also to reduce transaction costs. Politically AT&T was an industrial leader, so its support would be crucial.

²⁰ At today's value that is over \$US92.1 billion.

When Earl Latham cited the statement “[t]he A. T. and T. is a structure of private government” he was using it to exemplify how “systems of sanctions wielded by official agencies and private organizations resemble each other closely” (Latham 1957, 304). Latham was addressing the structural similarities between social institutions and corporations, which Jewett and King understood when they proposed that the ‘scientific’ organisational model for industrial laboratories was a model for social order. The very notion that a private corporation would venture this must be viewed in the context of the corporate cultural history that had seen AT&T take on the mantle of a public institution. It is argued here that this history had an important influence on how the company, through its officers, saw the institution’s societal role, which was compounded during wartime, when the company and its staff were recruited for the war effort.

AT&T’s pursuit of greater political power had begun in 1907 under Theodore Vail, who along with J. P. Morgan & Company, set out to transform corporate culture with the express purpose of investing it with greater political power for the purpose of preventing the company from being nationalised or burdened by heavy regulation (Mueller 1997a, 129; Stone 1997, 32; Marchand 1998, 50). Having lost its monopoly when key patents expired in 1894, the company had been faced with a raft of problems, not least being competition from independents, made evident by the precipitous fall in its market share from 100% in 1893 to 51% in 1907 (Marchand 1998, 49). Such a loss was indicative of the company’s reputation for lowering rates to discourage competing services, under investing in services and technology, influencing financiers to stem capital from going to competitors and acting to “stifle and harass” competitors at every turn (Danielian 1939, 96). This and other aggressive tactics had left the company with an “odious public reputation” (Marchand 1998, 48) by which it was nicknamed the “Bell Octopus” (Danielian 1939, 406). Such piratical behaviour had to end if only because of the need for self-preservation in the face of calls to nationalise telephony.

Chief amongst their solutions was an effort to change how people, including their own workers, thought and felt about the company. In 1908 Vail appointed advertising agency N. W. Ayer & Son to design an advertising campaign to remake their image (Marchand 1998, 48). Vail’s intention was to claw back lost market share, particularly from those independent exchanges in cities and towns who were not connected to the Bell System. Milton Mueller Jr. contended that the percentage of “noninterconnected telephone exchanges” rose as high as 55% of all exchanges between 1902 and 1910, effectively creating a dual service system (Mueller 1997a, 7). As Vail saw it, this competition had resulted in duplication forcing

consumers who wanted good interconnection to subscribe to multiple services at additional cost and inconvenience. The telephone network, according to Vail, was a natural monopoly, and competition was “as useless as a duplicate system of highways or streets not connecting with each other” (Vail quoted in: Stone 1997, 31).²¹ Vail believed that the “[t]he inescapable reality of monopoly would be cloaked, ... with phrases like ‘a single system’ and ‘universal service’” (Marchand 1998, 50). Such obfuscation surrounding their business plans would later accompany their presentation of the contestability doctrine. The institutional public relations campaign, which ran for three decades, was spearheaded by the universal service concept following Vail’s own invention of the slogan ‘One System, One Policy, Universal Service’ (Marchand 1998, 51). It was a national campaign, the first of its kind, which gave birth to modern public relations (Marchand 1998, 52) Another strategy Vail deployed was to commit to light regulation, that is, to restrain their aggressive, expansionist tactics in favour of a more conciliatory relationship with independents and to expand interconnection through the Bell System overseen by regulators.

Mueller makes the argument that AT&T was engaged in a business strategy that represented a switch from supply-side economies of scale to demand-side economies of scope, which he pertinently noted was “the product of a political consensus rather than a unilateral product of the Bell System” (Mueller 1997b, 9). Such consensus had its origins in the Kingsbury Commitment made in 1913 whereby AT&T submitted to public utility regulation. This meant rate control, foregoing competitor buyouts, allowing non-competitors²² to connect to the Bell System and divesting their Western Union stock. This was in exchange for greater political stability and control over the network through the exclusive use of Bell technologies in the interconnection space (Mueller 1997b, 132). What AT&T had opted for was “a nationally interconnected monopoly administered by Bell but supervised by regulators” (Mueller 1997b, 107). Or as Alan Stone put it:

AT&T did not advocate that it become the sole provider of telephone service but rather the network manager of a vast network that included Bell companies, Bell licensees, and noncompeting independents. (Stone 1997, 32).

21 AT&T. *1910 Annual Report*, 32, 33.

22 These were independent exchanges servicing a local area where Bell was not but connected to Bell for the long-distance services.

AT&T was pioneering a network business structure reminiscent of today's platform monopolies whereby a corporation controls the network that coordinates the market with minimal external oversight, a model that is the precursor of Amazon and Uber. These contemporary transnational corporations are financed by global capital markets that are integrated as a result of the expansion of telecommunications networks (Castells 1996, 52).

The value for AT&T and the subscribers lay within the greater interconnection that is the driver of network expansion. State-based regulators called public utility commissions (PUCs) also wanted greater interconnection fostered through AT&T's regional monopolies whereby independent local exchanges connected to the Bell System using Bell technologies or Bell-approved technologies. Bell was able to impose these technologies because it had a strong hold over long-line services (Fischer 1987, 7). Its manufacturing arm, Western Electric, held patents over much of the Bell System's componentry. The effects of this compatibility cordon around the Bell System was to give AT&T a competitive access advantage (Mueller 1997b, 130).

Although AT&T framed the shift in terms of universal provision, Vail's strategy was to cultivate AT&T's political power, including at local level, in order to secure its business interests (Danielian 1939; Mueller 1997a; Stone 1997; Marchand 1998). Mueller points out that it is important not to misconstrue AT&T's motives, which were centred on control and not on "liberal egalitarianism ... [and] contribut[ing] to national unity and equality of opportunity" (Mueller 1997b, 5) That their PR campaign gave the impression of the latter, was a strategy to enhance the company's image. As Marchand noted, the Kingsbury Commitment "paved the way for further cultivation of AT&T's new corporate image of fairness, stability, and paternalistic responsibility" (Marchand 1998, 57).

Danielian's and Marchand's studies of AT&T's massive national, highly integrated, and unrelenting PR campaign revealed those areas where the company felt most vulnerable – the threats of nationalisation and unionisation, both related to the growth in the Bell System that led to the concentration of AT&T's power and wealth (Danielian 1939; Marchand 1998). As of 1939 the Bell System consisted of AT&T, the holding company that controlled more than 200 corporations, including subsidiary service companies called "Associated Companies", like Illinois Bell Telephone Company, and manufacturing companies, like Western Electric. As Danielian pointed out, the president of AT&T had "the power to vote their stock and to select their directors and officers" (Danielian 1939, 4). Through these "vassal corporations" AT&T controlled 80 to 90 percent of local call business and 98 percent of long-line business (long distance calls) (Danielian 1939, 4). Expansion of the

company continued as AT&T's shareholdings in the operating companies tended to increase right up to 1982 (Stone 1997, 26). This was made possible by the renewal of their policy of acquiring independents just four years after Kingsbury, prompting Mueller to describe the Commitment as "a hiatus in the march towards monopoly rather than a victory for the competitive principle" (Mueller 1997b, 133). Monopoly growth following a period of constraint would prove to be a pattern repeated after divestiture in 1984.

The issue concerning the size of the Bell System was really centred on the question of who was running AT&T and how much power they exerted. The public relations campaign begun under Vail addressed this issue of power. Firstly, it constructed power as being in the hands of the multitude of men, particularly businessmen, who could wield personal power through subscribing to Bell telephone services, an approach which was served by boasting about the number of subscribers on the network (Marchand 1998, 58). Secondly, AT&T proffered "the concept of investment democracy [which] denied that the corporation represented any nucleus of power distinct from the public at large" (Marchand 1998, 74). The power to control the institution, according to AT&T's PR, was invested in its 650,000 stockholders,²³ who like the network itself were distributed across America.²⁴ Or, as Walter S. Gifford, Vail's successor put it, "[t]he Bell System is really a new sort of thing. It is a publicly owned, privately managed institution"²⁵ (Gifford quoted in: Danielian 1939, 27). By 1954 Berle was citing 1.1 million inactive AT&T shareholders who deferred to "a unified and concentrated system of organization and command" to run the enterprise (Berle 1954, 31-32). AT&T's PR machine associated this new structure with the concept of democracy, reinforcing Gifford's contention that the Bell System management was a form of 'trusteeship' consisting of technical specialists who ran the system on behalf of the owners, the stockholding citizens (Danielian 1939, 27; Marchand 1998, 77). But, as Danielian concluded, that did not translate into a regime with a democratic structure or practices but rather the formation of an oligarchy:

23 Figure taken from Danielian (1939, Introduction v).

24 AT&T was an exemplar of the trend that Berle and Means quantified stating, "the ultimate ownership of the big corporations has become ever more widely dispersed, and control has become increasingly separated from ownership. While in 1929 only 88 [44%] of the 200 largest corporations were classed as management controlled, by 1963 169, or 84.5 per cent, were so classed" (Berle and Means 1968 [1932], xxx).

25 Gifford, W. address to the Bell System Education Conference, August 1924.

The available information points, not to the existence of a democracy of control based upon public or even stockholders' franchise, but on the contrary it reveals, through historical evolution, the rise of a financial oligarchy based upon the control of a political machinery of self-perpetuation (Danielian 1939, 90).

It was Veblen who recognised the true nexus of power in the big corporations when he identified controlling managements as consisting of investment bankers and technical specialists in management and production (Veblen 1965 [1921]). Gertner noted that young scientists recruited to Bell Labs were made aware of the future technological needs of the Bell System in commercial terms that were anchored by Vail's universalist vision of an integrated telecommunications system connecting all Americans to each other and America to the world (Gertner 2012, 20, 27).

The financiers of the Bell System were originally drawn from the Boston aristocracy, however, by 1899 complex machinations between rival consortiums had begun that eventually saw a syndicate of financiers from Wall Street headed by J. P. Morgan & Company take control of AT&T in 1907. Theodore Vail returned to the presidency of AT&T at the same time; he supported the plans of J. P. Morgan who also wanted to pursue "the elimination of 'wasteful' competition" (Danielian 1939, 50). As for the bankers' relations with AT&T's operating management, Danielian described it as "[c]ordial ... [with] management friendly and responsive to their [bankers] wishes" (Danielian 1939, 90). Today JP Morgan Chase & Co. are still AT&T's primary financiers. Hayek's former student David Rockefeller joined the bank in 1946 (then called Chase National Bank) later becoming chairman. Baran and Sweezy in their study *Monopoly Capital* gave David Rockefeller's 'entitled' ascendancy to head of the bank as an example of how wealth, property and family connections belies the corporate paradigm. They quoted C. Wright Mills's summation of this power:

Not great fortunes, but great corporations are the important units of wealth, to which individuals of property are variously attached. The corporation is the source of, and the basis of the continued power and privilege of wealth. All the men and the families of great wealth are now identified with large corporations in which their property is seated. (Mills quoted in: Baran and Sweezy 1966, 17).²⁶

26 Mills, C. Wright. 1956. *The Power Elite*. New York, p. 116.

Through its public relations onslaught AT&T had achieved by 1934 the status of a much, respected social institution affectionately called Ma Bell. What Jewett and King's proposal for a social order model signified is that the bankers and operating managers thought of Ma Bell as having a pseudo-private government status. AT&T imitated government through its PR campaigns by purporting to be invested in the national interest through its commitment to democracy and visioning of a socio-technological future. What the analysis of AT&T makes clear is that it was an organisation which wielded political power, not an organisation politically neutralised by the application of scientific methods as Jewett and King had professed. As observed by Danielian:

In a larger view, the Bell System is a political organization of the first magnitude. Its methods of control, its means of expansion, its relations with government and the public, are fundamentally political in nature. In fact, even its price policies and investment of funds follow the pattern of political behaviour. (Danielian 1939, 400).

Jewett and King may well have presented the core of the problem of capitalist planning in their industrial laboratories model of social order. The regime of management developed under Vail, however, may well have afforded Hayek the opportunity to visualise the *catallactic network* and that it was more a question of getting Jewett to see what could be achieved by conjoining the telecommunication system with the market in coordinating a whole-of-global-society network.

5.4 The politics of planning

Hayek, nevertheless, did continue to criticise Jewett and King's "coordination" planning concept, in his most polemical text *The Road to Serfdom (Road)* (Hayek 2007 [1944], 99). As the end of the war drew near the ideological battle for the post-war future intensified. This was particularly so for Hayek, as his market model was not merely competing for ideological hegemony with socialist models but also with the capitalist planning model. Unlike the socialists he needed the capitalists to not only support his vision but to construct it. Caldwell, in the introduction to the 2007 edition of *Road*, pondered why Hayek never presented his arguments against the socialist market model in the book. It would seem that Hayek thought market socialism was only a "theoretical dream" of little import to the general public, the audience for his book (Caldwell 2007, 26). Not naming the socialists' model also meant Hayek could attack AT&T's planning model surreptitiously and politely by citing the "illusion of the specialist" who thought he could fulfil objectives through planning (2007 [1944], 98). As Plehwe and Walpen observed, Hayek's attack on planning in

Serfdom was in the form of a “binary opposition of ‘market’ versus ‘planned economy’ introduced to warn against a society under total control”, irrespective of the nature of that control or the political and economic principles underpinning it (Plehwe and Walpen 2006, 31).

Hayek’s *Road* was pitted with ‘double truths’, not least in his analysis of monopolies. This was a complex area for Hayek to navigate as he wished to appear to be supporting citizens and small business, his target readership, when his unfettered marketplace would favour big business. Hayek’s analysis of monopolies addressed different kinds of monopolies, as well as different planning models that had monopolistic characteristics. Without naming AT&T, he was critical of the elevation of specialists to the role of planners (Hayek 2007 [1944], 99). However, he avoided criticism of “inevitable” monopolies, that is to say, natural monopolies like public utilities, simply stating his personal preference for “strong state control over private monopolies”, which fitted with AT&T’s regulated monopoly status at the time (Hayek 2007 [1944], 207). This common view of strong regulation, which AT&T promoted, obscured to great effect their level of control over their ever-expanding network and their influence over industry and society.

Hayek was also dependent on AT&T to build the global communications network that would run the economic system he was devising. In the next section we analyse Hayek’s views on monopoly, keeping in mind that AT&T was indispensable to his plans.

5.4.1 Monopolist representations in *The Road to Serfdom*

In *Road* Hayek, in the style of a propagandist, drew upon the caricature of a monopolist to condemn the concept of an authority controlling the whole economy:

Our freedom of choice in a competitive society rests on the fact that, if one person refuses to satisfy our wishes, we can turn to another. But if we face a monopolist we are at his mercy. And an authority directing the whole economic system would be the most powerful monopolist conceivable (Hayek 2007 [1944], 127).

Hayek thus associated monopolists with central government planning and socialist control. He was not averse to corporate monopoly as long as they too did not engage in social planning. In truth, Hayek had been looking for a solution to the problem of monopoly pricing since at least 1935 on the assumption that monopolies, like public or privately owned utilities, which he regarded as natural monopolies, were part of the market order.

Road was Hayek's most populist book, where he expressed rather more adamantly his antipathy towards monopolies than in his works for academics and political ideologists. Framed as a warning against totalitarianism, capitalist monopolistic tendencies, along with all varieties of socialism and other centrist authoritarian models, were conflated together and presented as a grave danger to a global public on the cusp of deciding how best to organise post-war society.

In the United States there was resistance during the post-war era to big business, monopolies and cartels, which were indelibly linked in the public's mind to the causes and or intensity of the Great Depression (Hawley 1966). The US government, however, had a positive reputation for planning, having achieved economic recovery under the New Deal, planned for victory in World War II (Reich 1984 [1983], 93) and then in the post-war period, being poised to conduct the reconstruction of Western Europe under the Marshall Plan (1948-1951). The neoliberals and industrialists in the US were faced with the task of stirring up the residue of anti-government sentiment within American culture and steering the public towards favouring big business (Phillips-Fein 2009).

Departing from the common image of the monopolist as an exploiter of labour and abuser of small business, Hayek denotes monopoly as an aggregation of power formed of an alliance between "organized capital and organized labour" and sundry groups whose interests are served by "support of the monopolistic organization of industry" (2007 [1944], 204), a claim for which he does not provide evidence:

This movement is, of course, deliberately planned mainly by the capitalist organizers of monopolies, ... Their responsibility is not altered by the fact that their aim is not a totalitarian system but rather a sort of corporative society in which the organized industries would appear as semi-independent and self-governing 'estates'. (Hayek 2007 [1944], 205).

Hayek argues, however, that whatever independence such "estates" achieve it would not last, as the state will not tolerate such aggregations of power in private hands (2007 [1944], 205) Hayek's argument at this point edges towards being contradictory as he claims that the state would be enlisted to the cause of monopolists:

it would nevertheless be a mistake to put the blame for the modern movement toward monopoly exclusively or mainly on that class [capitalists]. Their propensity in this direction is neither new nor would it by itself be likely to become a formidable power. The fatal development was that they have succeeded in enlisting the support of an ever increasing number of other groups and, with their help, in obtaining the support of the state (Hayek 2007 [1944], 205).

In this statement, Hayek appears to resign himself to the inevitability of corporate monopolies and to regard the source of their power to be external to them, that is vested in associates and not in the structure or makeup of monopoly itself. However, for those capitalists who support the “monopolistic organization of industry” Hayek offers a warning that totalitarianism lies at the end of this particular road (2007 [1944], 94). And in a veiled reference to Jewett’s proposal for upscaling their specialists’ model to society, Hayek simply dismisses it as misguided:

There is yet another theory which ... contends ... it will be impossible to make use of many of the new technological possibilities unless protection against competition is granted, i.e., a monopoly is conferred. ... No doubt in many cases it is used merely as a form of special pleading by interested parties. Even more often it is probably based on a confusion between technical excellence from a narrow engineering point of view and desirability from the point of view of society as a whole. (Hayek 2007 [1944], 96).

Hayek reiterates in *Road* his arguments from 1939 and 1941 that the problems associated with corporate monopolies are essentially caused by governments who condone, aid and abet monopoly, through policies that support protectionism and monopolistic behaviours like collusion (Hayek 1939; 1941; 2007 [1944], 93). Hayek remains firm in his belief that, “the planning against which all our criticism is directed is solely the planning against competition” (2007 [1944], 90). He rejects even those government measures designed to curtail monopolistic power, arguing that they will backfire, spawning new vested interests aligning with monopolists. He attempts to lay a corporatist state of affairs at the feet of “the Left”, claiming that their antipathy towards competition was responsible for the entrenchment of monopolist power (Hayek 2007 [1944], 206, 208). This, he asserted, was largely achieved through garnering public support and legislating in favour of monopolies (Hayek 2007 [1944], 205).

Hayek thus attempts to justify and purify monopoly, by proposing that market-induced versions are benign, and assigning any negative factors we might associate with monopoly to other actors. Labour unions are included, as Hayek asserts that capitalist monopoly is rendered problematic by group interests attached to its privileges, notably the labour movement, and by those convinced by monopolists to see monopolies as contributing to “a more just and orderly society” (Hayek 2007 [1944], 207). He provides no evidence of allegiance or cooperation between corporate monopolies and trade unions.

On the contrary AT&T, for example, were members of a group called the Special Conference Committee, along with corporations like Du Pont, Standard Oil of New Jersey and United States Steel, which had the express purpose of replacing labour unions with company unions, so as to disarm the labour movement (Danielian 1939, 333).

The implication is that if all influences except the market were stripped away, for example by disempowering the labour unions, convincing the executive of AT&T to drop their attempts to manage society and ensuring government did not interfere with the market, then corporate monopolies could operate soundly within the market order. In his final comments on monopolies in *Road*, Hayek leans towards private monopolies over which the state has regulatory control even if reduced efficiency is the outcome, rather than the state managing monopolies directly (Hayek 2007 [1944], 207). AT&T at this time was an exemplar of a private monopoly regulated by the US government.²⁷ Daniel Stedman Jones argues the contrary view, that Hayek was against private monopolies but sought “supervision of natural monopolies” (2012, 67). However, in *Road* Hayek defends private monopolies by noting that they were “scarcely ever complete and even more rarely of long duration or able to disregard potential competition” (2007 [1944], 206). He further states his belief that any negative effects of private monopolies were created by government policy (Hayek 2007 [1944], 93). Hayek’s comments on government regulation do form a circular argument, courtesy of the different audiences and Mirowski’s ‘double truths’ he is juggling, making clarity elusive. The public utilities posed the greatest problem of entrenchment as their infrastructures were difficult to replicate, and therefore, they were not as readily exposed to the cycle of competition as they were inducing the “invention of substitutes” to which non-inevitable monopolies were said to succumb (Hayek 2007 [1944], 207). On these inevitable or natural monopolies, his view is that these should not be state run because a “state monopoly is always a state-protected monopoly—protected against both potential competition and effective criticism” and will ultimately fail to serve the community (Hayek 2007 [1944], 206). At the time of writing *Road*, the regulated monopoly model with government-imposed controls to assuage monopoly pricing was Hayek’s solution to the public utility dilemma. It wasn’t ideal, however, because it posed the risk of the monopolist becoming too close to the government regulator, leading to compromises that undermine the independence of the business’s management. This possibility was understood by Jewett

27 In 1958 the US telegraph and telephone industry (under which AT&T was categorised) was re-classified from monopolistic to government-supervised (Nutter and Einhorn 1969, 62) meaning it was no longer counted as a monopoly for the purpose of national statistics.

and King when they proposed their industrial laboratories model, which made large corporations, part of the machinery of the state. They believed this would counter the might of totalitarian regimes, reasoning which Hayek rejected because of the problem of subsumption, or the absorption of one by the other. It was also a model close to that of the market socialists, which Hayek criticised on the grounds that the management would not serve the interests of the business (Hayek 2015 [1935]-b, 217). Hayek ultimately gave private monopolies the green light despite appearing to warn people against the potential dangers.

Following the publication of the US edition of the book, *Road* was serialised in *The Readers' Digest*. Articles appeared in other popular magazines notably *Fortune*, *Look* and the Hearst newspapers. Hayek embarked on a very successful book tour of the US in 1945 (Burgin 2012, 89; Van Horn 2013, 272). On 15 May 1945, a radio dramatisation of *Road*²⁸ was broadcast on an NBC Radio series called *Words at War* exactly one week after the signing of unconditional surrender by German forces in Berlin ended World War II in Europe (Garrison 1945, 27:15).²⁹ The radio play warned of renewed possibilities that another Hitler or Mussolini could emerge if the trend towards socialist central planning was not cauterised and was indicative of the ideological battlelines being drawn just prior to the Cold War.³⁰

Hayek's support for big business, despite his claims in the book that corporate social planning and government central planning are both incompatible with competition, is, I argue an exemplar of Mirowski's observation concerning neoliberalism's "double truth" (Mirowski 2013, 68; 2015 [2009], 426). It is argued here that Hayek voiced a concern for the rights of citizens, but all the while his actions spoke of a political philosophy that protected the freedom of entrepreneurs to go about their business without interference from government or labour organisations. Keynes is alert to this as he criticises Hayek for not being explicit about where to "draw the line ... [on planning that leads to] the slippery path

28 The play gives a lengthy appraisal of Henry J. Kaiser's can do, all American, poor immigrant boy success story. Kaiser dominated industries such as steel, construction, shipbuilding and health insurance, becoming one of the largest corporate conglomerates in America largely through government contracts – New Deal dam building, wartime Liberty shipbuilding contracts and post-war reconstruction projects including Australia's Snowy Mountains Scheme.

29 Garnet Garrison was the director of *Words at War* (NBC Radio).

30 The broadcast was a counterpoint to the previous month's dramatisation of Sir William Beveridge's book *Full Employment in a Free Society* (Beveridge 1944). Beveridge, the architect of Britain's post-war welfare state, was arguing for government intervention in the economy as a matter of employment policy. Alarmed, the US National Association of Manufacturers, representing big business and other business interests, attacked NBC for biased programming (Blue 2002, 327). Hayek said of Beveridge that "he was completely ignorant of any economics whatever ... [and that] [h]e could write on any subject where he was given instruction" (Hayek 1994, 83).

...over the precipice” (Keynes quoted in: Jones 2012, 67).³¹ However, Hayek remained aloof, with the details of his plans hidden, leaving it to the big corporations to drive their own success, which in the Tardeian sense others should imitate.³²

5.4.2 Planning R&D post-war

WWII was followed by intense questioning of how totalitarianism had been allowed to take hold, and proposals for alternative societal structures. Historically, the question was which social order model would prevail? The rather oblique answer to this question is that various models had some success, with the exception of Hayek’s pure competitive market. Keynesian economics with its emphasis on a mixed economy became the dominant economic paradigm in the three decades following the war, at least in the Anglo-Saxon sphere, Western Europe and Japan. Jewett’s scientific planning model was partially adopted, in so far as the wartime military industrial planning effort shifted to post-war reconstruction. However, peacetime brought with it a change in politics with a more nuanced approach to the issues of defence and democratic governance than Jewett’s in 1940. In July 1945 President Roosevelt released a blueprint for government oversight and policy on scientific research and education aimed at securing national defence, health and economic growth in the United States post-war. The report, *Science, The Endless Frontier*, framed the government’s role in terms of its historic engagement in nation building. The new frontiers were to be “frontiers of the mind” (Roosevelt quoted in: Bush 1945).³³ Written by Vannevar Bush, head of the OSRD, it recommended the establishment of a National Science Foundation (NSF), a self-governing agency like the OSRD, with board members selected by the President but otherwise independent of government and special interests.³⁴ The proposal was vetoed by Roosevelt’s successor, Democrat President Harry S.

31 Keynes to Hayek, 28 June 1944, Hayek Papers.

32 Gabriel Tarde had an almost Panglossian developmental view of society whereby progress was made by individuals forging initiatives that other individuals should imitate. It was a change process dependent on the validation of class power that defined what was successful. As Michael Davis notes, Tarde believed “that the best man should be the most imitated, should gain leadership and be obeyed” (Davis 1968, 87).

33 Franklin D. Roosevelt’s letter commissioning the report 17 November 1944.

34 The NSF was eventually established in 1950 with Bell Laboratories executives being appointed to the NSF board. William O. Baker (1960-1966) and Ian Ross (at the time retired from AT&T) (1991-1998) along with representatives of private institutions and a relatively small number of corporations were on the board. Members also included the: Rockefeller Foundation (1950-1960), MIT (1950-1951, 1956-1962, 1964-1967, 1970-1988, 1990-1996, 2000-2008), including Robert Solow (emeritus MIT economist) (1994-2000), Hoover Institution (1972-1978, 1982-1994), The Rand Corporation (1974-1986), Office of Naval Research (2002-2005) and private corporations including Arthur D. Little, Inc. (1951-1956), Merck (1951-1957), TRW Inc. (1984-1986, 1988-1992), IBM (1996-2000), Pegasus Global Holdings Inc. (2006-2012) and Google (2012-2018), (National Science Foundation c 2007-2018). This is not the full list of members,

Truman (1945-1953) who took exception to government functions being directed by a group of “essentially private citizens [with the] proposed National Science Foundation ... divorced from ... control by the people” (Truman quoted in: Edwards 1997 [1996], 59).

The government under Truman planned to take a more active role in science administration, and Jewett opposed this, taking a stance against a reframed NSF (Teitelman 1994, 82). Jewett’s objections were based on general criticisms of the bureaucracy and government decision-making processes (Jewett and King 1940, 827). He was joined by other critics such as MIT’s Edward Bowles, who wanted to see a more systematic approach to science and engineering reminiscent of the cross-sector partnerships forged during the war (Edwards 1997 [1996], 58). Bowles and other stakeholders from the academy, military and industry founded the private RAND Corporation, or Project RAND as it was called in 1948 (RAND Corporation 1994-2019). RAND along with the Office of Naval Research (ONR) established by the War Department in 1946, was to become a critical repository of research support across the natural and social sciences, including economics. Mirowski links RAND to the adoption in economics of operations research (OR) which had its origins in British military research on artillery gun aiming (2002, 188). He observes the “problems of rationality and organizational efficiency became conflated with problems of computer design and programming” (Mirowski 2002, 188). Baumol described the OR approach in economics as the “concept of optimization” whereby economists using computers and nonlinear programs had the option of broadening the field of analysis factoring in agents’ behaviours, business problems and public policy issues as part of the “entire relevant range of possibilities” (Baumol 1965 [1961], 1, 5). That is, a multiplicity of factors could be analysed simultaneously as a means of dealing with a whole new complexity of analysis.

The political battle over the role of government in post-war R&D was explicated by Bush in *Modern Arms and Free Men* (1949). Bush was struggling with the contradictions, raised by the question as to how to plan for total war, across the whole population and military and non-military institutions, and at the same time remain vested in a democratic process that is charged with leveraging the war machine against totalitarian aggressors (Bush 1949, Ch XVII). Bush came down on the side of what was familiar, delivering a plan that was aimed at securing US military and economic hegemony through science and innovation (Bush 1949, 261). This followed his original prescription for the wartime OSDRA agency. He did

but it does show special interests from the private and universities sector. It seems naïve that representations from different sectors would not serve their interests.

not countenance that Truman in peacetime would submit such an agency to higher standards of democratic propriety. Nonetheless, he expressed qualms about the risks to democracy of being in a permanent state of war readiness that could result in a dictatorial government embarking on a “prophylactic war” (Bush 1949, 1).

Bush believed the industrial complex posed risks. In a veiled rebuttal to Jewett and King, Bush quoted Max Ascoli³⁵—“There is no such thing as total peace, but there is such a thing as total war and total annihilation of rights” (Bush 1949, 113).³⁶ Bush made clear his opposition to any expert-based alternatives to the democratic process no matter what the urgency:

We cannot take refuge in the assertion that these are matters for specialists: for a State Department to carry on a new form of international discussion, for a Defense Department to prepare us for a new kind of war. (Bush 1949, 3).

Bush believed the moral injunction against war³⁷ was contingent on American freedom and democracy being upheld by government responsiveness to the people’s will (1949, 125). Bush upheld that public opinion was critical to maintaining a democracy (1949, 3), a view that differed from Jewett and Hayek, both of whom gave little credence to the opinions of the “great masses” (Hayek 1976 [1949], 107) or, in Jewett’s case, the “uninformed” majority (Jewett and King 1940, 828). Bush does not occlude a bottom-up democratic process from being able to remit representative authority with the power to administer a future dependent on the military stocktake of science and technology. However, ideological battles aside, within the context of the bigger picture of using science and technology to ensure US economic and military dominance, power brokers like Jewett and Bush were allied. Hayek, on the other hand, thought the public bias towards scientific knowledge was, at least in economics, ill conceived. In September 1945, two months after Bush’s report was released, Hayek raised his concerns claiming that “one kind of knowledge, namely, scientific knowledge, occupies now so prominent a place in public imagination that we tend to forget that it is not the only kind that is relevant” (1945, 521).

Hayek continued to promote his message that ‘there is no alternative’ (TINA) to the market throughout all the upheavals of war and computerisation and in the face of online universal

35 Ascoli, a political philosopher and self-described liberal, was Dean of the Graduate Faculty at the New School for Social Research, NYC (Beiler 1949).

36 Ascoli, Max. 1949. *The Power of Freedom*. New York: Farrar, Straus.

37 Bush referred to the “strike and prevail” strategy also called pre-emptive strikes (Bush 1949, 125).

access (Hayek and Levin 1980) However, his rhetoric was tempered by a political astuteness and an ability to see the potential in technology. Hayek embraced the benefits of computers, which had been amply demonstrated at LSE in 1946 when engineer economist A. W. “Bill” Phillips captured everyone’s attention by using a hydraulic computer to demonstrate Keynesian modelling (Hally 2005, 191).

As an inveterate networker and political pragmatist, Hayek would have been aware of what Gertner described as the “elite circles of industry, academia, military intelligence, and public policy” within which Jewett, Bush and their successors at AT&T moved (Gertner 2012, 157). Indeed, Hayek would form his own elite enclave at the University of Chicago, a circle which would connect with other inner circles directing US domestic and international policies. In the sciences Hayek would connect with Warren Weaver, who advised him on complex systems in the 1950s (Caldwell 2014, 15).³⁸ Weaver, according to Mirowski, was one of the “science czars” along with Bush and Jewett (2002, 170). As Director of the Division of Natural Sciences at the Rockefeller Foundation, Weaver had enormous sway over grants and was privy to developments in computerisation and military science. He took the role of linking and coordinating science activities across the private and public sectors (Mirowski 2002, 169-177).

One might perceive an incongruity between Hayek’s disparagement of scientists and engineers and his association with Weaver and his embrace of cybernetics in the 1950s (Mirowski 2002, 175). But Hayek’s complaint had always focused on the enthusiasm of scientist-engineers like Jewett, who thought specialists should plan society, which Hayek vigorously rejected in preference for the market-based network model.

Jewett died in 1949. Although he had attempted to impose his model through opposition to government control over science planning, AT&T still achieved its goal of building a vast communications network supported by government funding and defence contracts and the continued presence of its executives advising on science policy at the highest levels of government (Porter 1998 [1990], 294; Gertner 2012, 247).

38 Hayek, F. 1955. ‘Degrees of Explanation’. In: *Studies in Philosophy, Politics and Economics*. London, Routledge & Kegan Paul: 3-21. Reprint from: *The British Journal for the Philosophy of Science*, 1955, 6(23):209-225; Hayek, F. 1967. ‘The Theory of Complex Phenomena’. In: *Studies in Philosophy, Politics and Economics*. London, Routledge & Kegan Paul: 22-42. Reprint from: *The Critical Approach to Science and Philosophy: Essays in Honor of K. R. Popper*, ed. M. Bunge, New York, The Free Press: 1964. Weaver’s advice to Hayek on the 1964 piece was noted in correspondence between Hayek and Weaver. Hoover Institution Archive, Friedrich A. Von Hayek, Folder 57-16 Correspondence, Box No 57, Accession No. 86002-143.03/06.

5.5 Conclusion

This chapter has charted Hayek's attempt to redeem aspects of private monopoly in a crucial period of history during WWII. He began this with 'Planning, Science and Freedom' (1941) and fortified it in *The Road to Serfdom* (1944). In summary, he argued that those monopolies which are produced purely by market forces are largely benign and natural monopolies like public utilities should be privatised and regulated by government. The problems we might commonly associate with monopoly, such as stifling competition, were, he claimed, caused by governments. His critical point was that the antithesis of free competition was not monopoly per se, but planning by the state. Other types of planning, such as those by experts from the natural sciences, were also rejected, deemed to interfere with the market's mechanism and therefore its ability to constrain both state and corporate monopoly powers.

What Hayek put to the 'global' public (the readers of *The Road to Serfdom*) was a choice between the "impersonal discipline of the market" and a totally planned society ruled by a few powerful individuals in cahoots with government and the unions, which he determined amounted to the very doctrines against which the war was fought (2007 [1944], 208, 209). However, there was a more subtle case in his first address to the Mont Pelerin Society in 1947. Here, in an example of Mirowski's 'double truth' – Hayek clarified that the goal was to create an "efficient economic system" using the market and private corporations to create a networked global economy that was free of government interference, but which utilised the coercive powers of government to enforce market rules and otherwise protect the market mechanism and private property. This, we might conclude, had little to do with liberty for the population in the twentieth century and everything to do with the liberation of the corporations, as in the nineteenth century, given the "opportunity to realize its [corporate] ideals" (Hayek 2007 [1944], 238).

Like Hayek, AT&T's vice president, Frank Jewett, deemed government planning to be problematic. For AT&T the post-war future was lined with opportunities because much of the power they held during the war was retained as the US entered the Cold War and set about to create the modern security state based on communications technology. The society that emerged post-war was not based on the formal corporate planning model envisioned by Jewett, but on a far more revolutionary form of social engineering through the control and manipulation of information. This was made possible by AT&T pouring its R&D resources into the technology and economics of network communications.

Meanwhile at the University of Chicago Hayek would begin his own research projects towards developing the legal framework to encase the new economy. This as I will show in the next chapter, enabled the neoliberal movement and AT&T to synergise their goals in the light which had begun to shine during the 1940s debate between Hayek, Jewett and King.

6 Neoliberalism: building the pro-monopoly edifice in post-war America

Others will probably be better qualified to lay the next row of bricks of the edifice to which I am trying to contribute.

Friedrich Von Hayek
Chicago 8 May 1959

6.1 Introduction

This chapter analyses how Hayek and the Chicago neoliberal thought collective constructed an intellectual edifice in law and economics from the 1940s to the end of the 1970s that would effectively prepare the ground for the defanging of antitrust regulation, the resurgence of corporate consolidation and the ascendancy of platform monopolies like AT&T during the Reagan revolution of the 1980s.

The question considered is: by what rationale and methods did the early neoliberal movement in the United States (1946-1979) actively manoeuvre monopolies and oligopolies into a position where they could consolidate their market power and construct their version of a knowledge society?

The chapter follows the maturing of the symbiotic relationship between neoliberals and monopolies forged through Chicago's libertarian antitrust projects, the Free Market Study (1946-1953) and the Antitrust Project (1952-1955). It then examines the cross influences between Chicago law and economics and the Bell group's contestability doctrine to determine to what extent contestability, which provided justification for monopolies, was an integral part of the neoliberal project to build the *catallaxy*. It is also shown how Hayek and the Chicago School brought to fruition what Hayek portended in 1944, that, "machinery of monopoly becomes identical with the machinery of the state" (2007 [1944], 207). This switch is examined through a textual analysis of 'Law and the Future: Trade Regulation' co-authored by Aaron Director and Edward Levi from the University of Chicago Law School. This article, which has been referred as the Chicago "manifesto" (Packer 1963, 55; Van

Horn 2015 [2009], 222), a status also ascribed by other scholars (Carstensen 1996), was the summation with recommendations of the research performed at Chicago under the auspices of the Volker funded Antitrust Project. This is set within a broader critique of Hayek's viewpoint on monopolies in *The Political Ideal of the Rule of Law* (1955) and *The Constitution of Liberty* (1960).¹ My aim is to contribute to the scholarship that shows Hayek's "indispensable and pivotal role in the creation of the Chicago School" (Van Horn and Mirowski 2015 [2009], 155) by highlighting the specific ways in which Hayek's philosophy directed the project's outcomes. This is in contrast to those scholars who see *The Constitution of Liberty* (1960) as Hayek's salute to liberalism in law (Barry 1979; Gray 1984). In the second part of the chapter, the textual examination is extended to Richard Posner's *Antitrust Law: An Economic Perspective* (1976) and Robert Bork's *The Antitrust Paradox* (1978) dovetailed with a review of the key propositions of contestability which were simultaneously rolled out in industry policy in the late 1970s. The purpose is to show how Posner's and Bork's proposals for antitrust served to remove legal impediments to creating the conditions for the contestability doctrine to arise. This is linked to the emergence of a new economic-governance structure embedding a new form of monopoly capitalism based on digital platforms.

I begin the chapter with a brief overview of how the neoliberals grew in influence and power in the 1950s. In this decade the Mont Pèlerin Society (MPS) would surpass its establishment phase; the economics, law and business schools at the University of Chicago would grow their base for neoliberalism in America and the Law and Economics Movement, which was rooted in the Chicago milieu, would take neoliberalism into the halls of political, judicial and corporate power (Becchio and Leghissa 2017; Van Horn 2018). It was also the decade that cemented the base for the legitimation of AT&T's contestability doctrine. In examining how this was achieved the focus is on the development of the efficiency paradigm that came to be applied to antitrust thereby effecting a change in the very epistemological base of the law (Davies 2010, 65; Becchio and Leghissa 2017, 150), which, as I have shown was related to the requirement to establish 'sets of rules' by which the *catallaxy* could be 'programmed'; and as I will further show, undermined the principles of liberalism embodied in the Sherman Act.

1 In 1955 the National Bank of Egypt, published five lectures Hayek gave in Cairo under the title *The Political Ideal of the Rule of Law*, which was an abridged, circumspect version of his main arguments in *The Constitution of Liberty* which Hayek described as being "arranged round the Cairo lectures." (Hayek 1994, 130).

6.2 Liberalism: out with the old

Both Jewett and Hayek thought liberalism was a spent force (Jewett and King 1940; Hayek 1976 [1949]). Jewett decried its weakness in dealing with totalitarianism, claiming it lacked the organisational capacity to manage technological developments, including the kind that underwrote militarism (Jewett and King 1940). Hayek's attack on 19th century liberalism also leaned on the need to prevent the rise of totalitarianism. In his paper "'Free' Enterprise and the Competitive Order",² presented at the inaugural meeting of the MPS on 10 April 1947, he derided the liberals' complacency with the minimal state, intoning that it was not sufficient to simply retrench state activity in favour of *laissez faire*, but that the state needed to engage its powers to restructure government and society according to the computational ordering principle of the market (Hayek 1976 [1949], 109). "Hayek is no devotee to *laissez faire*; he believes in a design for an enterprise system", declared his editor John Chamberlain (2007 [1944], 254).³ Hayek himself attested decades later that "[*laissez-faire* was never more than a rule of thumb" (Hayek 1973, 62).

6.2.1 Liberals mishandling monopolies

To Hayek the 'non-interventionist' liberals were constantly using instruments of state to readjust the *laissez faire* economy resulting in a muddle of intended and unintended consequences. This was exemplified by what Hayek saw as their mishandling of the monopolies by way of promulgating laws that removed restraints on monopoly growth in such a way that they threatened the competitive order he envisaged (Hayek 1976 [1949]). In this sense, Hayek is not anti-monopoly as argued by (Jones 2012, 67) but resolutely opposed to liberal governmentality and its legislation intended to shape society. His statements included the following, that "change in civil law is determined by the dominant ideas of what would be a desirable social order is well illustrated by the development, during the last fifty years, of legislation and jurisdiction on cartels, monopoly, and the restraint of trade generally" (1976 [1949], 115). Hayek is referring to the US Sherman Act 1890 and its particularising legislation. Neoliberalism claimed that state institutions grant monopolies their power through selective privileging of corporations (Foucault 2008, 134-135) some of which are state created monopoly enterprises.

2 Published in: Hayek, F. A. 1949. *Individualism and Economic Order*. Chicago: Chicago University Press, pp. 107-118.

3 John Chamberlain, a member of MPS, was the editor of the first US edition of *The Road to Serfdom*. 1944.

The rationalisation of monopoly, like all competitive phenomena, had to be compatible with the new market internationalism that was implicit to neoliberalism, making Hayek's targets for change as diverse as international trade, taxation, corporate legal status,⁴ joint-stock companies, contracts in restraint of trade and patents (Hayek 1976 [1949]). As Foucault had observed, instruments intervening with the market's price signalling mechanism, were to be "banished" (2008, 139).

Intellectual property

One chief area of concern that Hayek earmarked for change was intellectual property (IP) law because in his view the application of rights to industrial patents amounted to the "award of a monopoly privilege" (Hayek 1976 [1949], 114), albeit a temporary one, a view held by other MPS members including Arnold Plant and Richard Posner (Liebowitz 2002, 203), Henry Simons (Van Horn 2011, 1532), Fritz Machlup (1961) and Douglass North (2009). Hayek's stance has been cited to support the argument that he wanted constraints put on monopolies, at least at that time (Paul 2004, 174; Kerin 2010, 30; Kusunoki 2015). However, I argue that the basis of his concern was that intellectual property law constrained the flow of dispersed information in a network. As Slobodian observes, Hayek believed that "[o]bstructing the dissemination of knowledge threatened the very mechanism of advancing civilization itself" (2020, 77). Knowledge had to be freely exchanged (Hayek 1960, 97). This ideal has been born out in part by the internet economy whereby firms stay ahead of their competitors by obsoleting their own products as fast as innovation allows (Lewis 1997, 18).

The US intellectual property law regime in the post-war period had been greatly strengthened culminating in the Lanham (Trademark) Act 1946, which had been facilitated by Roosevelt's New Deal during the 1930s. Steven Wilf describes the doctrinal change in intellectual property where for "the first time, products of the mind were seen as essential instruments of industrial growth" (Wilf 2008, 140). The New Dealers had focused on kickstarting the US economy, which Wilf claims translated into a new regulatory regime

4 Hayek also attacked corporate legal status and patents. Hayek declared as contentious, "the recognition of corporations as fictitious or legal persons [which] has had the effect that all the rights of a natural person were automatically extended to corporations" (Hayek 1976 [1949], 116). He called for such a right for corporations to be abolished claiming it had adverse impacts on contract law and limited liability, for which he gives no further elaboration (Hayek 1976 [1949], 115). This privilege has not only continued but was ramped-up in the landmark case *Burwell v Hobby Lobby Stores Inc.* 573 U. S. 2014 when the U.S. Supreme Court recognised that the firm Hobby Lobby was a person with religious freedom under the Religious Freedom Restoration Act 1993 thus setting a precedent allowing for-profit corporations to be exempted from general laws on religious grounds. For commentary on the Hobby Lobby's case see (Brown 2019).

aiming to create “a framework for a complex national market of mass produced consumer goods” through the use of trademarks for product differentiation (Wilf 2008, 153). They also looked towards encouraging growth in new mass media industries, like radio and motion pictures, using improved copyright protections (Wilf 2008, 152). Hayek, however, was amongst the detractors who associated instruments, like trademarks and patents, with monopoly growth. Other analysts, for example, Edward Chamberlin, conceded that these instruments were technically monopolistic, in that they granted a period of exclusive rights over content or an invention, but claimed they had positive competitive effects, not the least being monetary incentives for innovation (Chamberlin 1962 [1933], 58). The critical factor at this junction was the relationship between IP law protecting creators, and antitrust law curtailing monopolies; for as the IP regime expanded, antitrust had an important role to play in countering monopoly effects. What I will show is the Chicago School undermining antitrust thereby exposing IP to further corporate abuse.

Under neoliberalism the corporate exploitation of IP instruments has flourished. In the US patent applications soared, according to Mirowski, encouraged by neoliberal marketisation of patent regulation and cost-benefit analysis calculating patents to be lucrative investments (Mirowski 2011, 147). Transnational exploitation had also occurred through international agreements like the controversial Trade-Related Aspects of Intellectual Property Rights (TRIPS). This agreement has been described as inflicting a “sovereignty deficit” on signatory states as the agreement leads to “a globalization of business regulation” making it more difficult for local jurisdictions to rein in the power of transnational corporations through their own IP and antitrust regimes (Faunce and Drahos 1998, 299, 301).

The crux of the problem for Hayek was that the market did not determine the rules of intellectual property. In the competitive order he conceived, it was the market that would lead to the discovery of facts which would determine the rules put in place. The government would then be enlisted to enforce these rules (Hayek 1976 [1949], 114). By implication this left the legal system to fill the void on issues like product differentiation. For Hayek, trademarks like “Coca-Cola” conflated the brand with the product. Hayek thought this brand name should be freely available for use (Hayek 1976 [1949], 115).

Bringing Hayek’s propositions to bear on the knowledge economy highlights the fundamental problems his proposed market order was facing. As Slobodian observes, it was Arnold Plant who theorised that ideas became scarce because of IP becoming monopolistic (Slobodian 2020, 78). In Hayek’s network system information was the enabler of compatibility, which the markets had to be free to process. At the same time, information

had to be tradable by individuals and firms and therefore was, in some circumstances, encumbered by regulation which was detrimental to the market. Slobodian discerned in Machlup's model that "[t]he emphasis is on the extension of the network or the system of knowledge transmission rather than the conditions for knowledge creation. ... The point was not to protect knowledge for its initial producer but to expand its use and circulation in the aggregate" (Slobodian 2020, 83).

By the 1970s, the neoliberal conception of the friction-free market would incorporate contestability (see section 2.3.1). The conditions for creating a contestable market were equal access by market contestants (actual and potential) to information and production technology. Under contestable market conditions, patents were therefore a barrier to the market (Graham and Lawrence 1996, 13) because they created exclusive rights to information.

Intellectual property law also brought legislators, regulating bodies and planners into the market mix. This was Hayek's idea of dystopia, the antithesis of his spontaneous market with its monopolies forming and disappearing due to market forces.

The neoliberals did not assert their will on this issue by abolishing IP. One factor in this was possibly the uncertainty on how to respond to the new and expanding network landscape which would see the digital platform itself become protected IP (Srnicsek 2016, 31).⁵ Hayek's call for a market approach to "each class" of patent may have given the flexibility they felt they needed (Hayek 1976 [1949], 114). Also by way of explanation, Slobodian offered that "[t]he case of IP suggests that it is those neoliberal ideas most compatible with corporate interests that have been transmuted into law" (2020, 73). It was certainly the case that the reforms Hayek had flagged in 1947 for targeting corporations just faded away.

Aside from suggesting that the market deal with each class of IP, Hayek offered little else by way of ideas to reform intellectual property law. He did not address the question of how his spontaneous market order would differentiate between the different types of knowledge, that is, between knowledge given freely which progresses society and pecuniary or sold knowledge (Hayek 1960, 97).

5 Jeff Bezos patented Amazon's "one-click ordering" (Taplin 2017, 79).

6.2.2 Hayek's Cartesian insufficiency

The essential difficulty in analysing Hayek is not that Hayek obscures his beliefs, but that he obscures the means of understanding the logic of those beliefs. He fails to make a clear representation of the competitive market order he is rejecting and the new market order he wants to bring into being. Hayek does not demonstrate how economic reality is better represented by the notion of catallactic compatibility, his substitute for equilibrium analysis. Hayek's position is bereft of what Jameson calls the "undoubtedness of Cartesian certainty" (Jameson 2012 [2002], 47). That is to say, Hayek never completed a thoroughgoing deconstruction of equilibrium analysis and therefore failed to prove the need for an alternative to the existing market order. Nor was his to-do-list of corporate controls from the 1947 meeting ever fulfilled, in contrast to the neoliberal success in crushing trade unions (Steiner 2015 [2009]). Consequently, neoliberals have had a light touch when it has come to describing the benefits of their model. For Hayek there can be no rational deconstruction of an institution that historically has grown from tradition and custom rather than anthropomorphic intentionalism. Conversely, there cannot be what Hayek called Cartesian constructivism, that is the rational design of an institution from the reasoned logic of any one individual (Hayek 1960, 57; 1973, 11). Therefore, according to Hayek's own reasoning, his own individual theorising on market compatibility, cyborg networks and the rules of the *catallaxy* should not be the basis of design elements for planning a new order. That was the work of participants in the market, such as the Bell group network architects.

Hayek's concern, therefore, was not with describing the market order but with the creation of the right *conditions* for its emergence. In 1947, Hayek made a presentation to the MPS noting areas of concern that needed to be researched. He named these priorities as property and contract law, monopolies and trade unions. At this critical meeting, Hayek was manoeuvring for commitment from MPS members to work through an agenda designed to identify the threats to the "competitive order" and to promote a legal framework for their mitigation set within a new institutional framework (Hayek 1976 [1949], 111). Such a framework would apply to those monopolies whose coercive powers he considered to have been given legal sanction by inept liberals. Hayek included the trade unions in this category, deeming them monopolies that threatened the competitive order (Hayek 1976 [1949], 113, 117). This suggests an even-handed approach to trade unions and enterprise monopolies. However, by *The Constitution of Liberty* (1960) Hayek had separated enterprise monopolies from labour unions for radically different treatment (Barry 1979, 51). In his new iteration only the 'monopolies' of labour paved the 'road to serfdom', a position in parallel with

Friedman (1962) and the corporate sponsors of Hayek's research program at the University of Chicago (Van Horn and Mirowski 2015 [2009]; Van Horn 2018, 478).

The rationale for this separation came in part from the intellectual effort Hayek had organised the previous year in the Free Market Study (FMS). This project's main piece of research found the number of enterprise monopolies in the US had remained stable and concluded from this that 'the' market would 'naturally' act to constrain monopoly enterprises (Nutter 1951). The author, Warren Nutter, claimed to rebut two studies which had concluded that private industry was tending toward concentration. These were a 1936 study by Arthur R. Burns and an earlier study by Adolf Berle Jr and Gardiner Means (1968 [1932]). Classical liberal stalwarts, Chicago economists Jacob Viner and Henry Simons, had argued against concentration, seeing it as a threat to competition (Van Horn 2011, 1528). Simons believed that the "proliferation of monopoly had led to the Depression and the dissolution of economic efficiency"⁶ (Van Horn 2011, 1527), lambasting all forms of monopoly as "[t]he great enemy of democracy" (Simons quoted in: Van Horn 2018, 1530).⁷ Somewhat ironically, Simons advocated for the FMS, describing its initial intellectual direction as "a countervailing force" to collectivism (Van Horn 2018, 480). Simons conceived the oppositional forces as socialistic, but economic planners like Burns, Berle Jr and Means concluded in the 1930s that "the market-centred economy was giving way to an administered system, privately planned and directed by a few industrial leaders" (Hawley 1966, 174). Berle relished the change characterising it as "far more effective, far more sensitive and (to the writer) a far more appealing organization of affairs than ever was described under the aegis of *laissez faire*" (Berle 1954, 12). Viner left for Princeton in 1946, the year Simons suicided. In Simons the FMS lost the intellectual most steeped in the principles of *laissez faire* and neoclassical allocation efficiency as well as a fierce anti-monopolist. His death also removed an impediment to FMS funding, as Van Horn and Mirowski note "the Volker Fund was not interested in bankrolling a classical liberal economic position resembling that of Henry Simons" (Van Horn and Mirowski 2015 [2009], 157).

6 "Simons defined 'economic efficiency' as 'an allocation such that units of every kind of productive service make equally important (valuable) contributions to the social product in all the different uses among which they are transferable.'" This was in marked contrast to the price-based consumer welfare definition used by Arnold Harberger in 1954 and later adopted generally by the NTC and Bell group.

7 Simons, H. (1948). *Economic Policy for a Free Society*. Chicago, University of Chicago Press, p. 43.

6.2.3 Organising the anti-antitrust projects

The neoliberal and corporate pushback against liberalism had profound implications for liberalism's two critical concepts, competition and individual liberty. Traditionally, adherents of liberalism adhered to an anti-monopoly stance.

As discussed in the previous chapter, one of the imperatives driving post-war America was the technological response to the Cold War, particularly in communications. The Sherman Act had been born of the Second Industrial Revolution, and, as the computer age dawned, it became the target of the Chicago School. Armed with the knowledge that ICT would allow each enterprise unit in the economy to be systematised the ideas of liberal freedom to pursue business opportunities and freedom from coercive anti-competitive practices would take on a whole new corporate meaning.

Hayek visited the US in 1946 to establish himself in Chicago where he was organising the Free Market Study, the precursor to the Antitrust Project. The Mont Pèlerin Society was also inaugurated there in November 1946 (Caldwell 2020). It was not until 1950, however, that Hayek was appointed professor of social and moral science attached to the Committee on Social Thought,⁸ a special research unit of the University of Chicago where he remained until 1962 (Ebenstein 2015). From this stable collegial base Hayek launched an offensive against socialism in all its forms (Horwitz 2000). As Van Horn observed, “[i]n 1946, Chicago law and economics was spurred by the intellectual and political imperative to prevail over collectivism and shape public policy.” (Van Horn 2018, 479).

Hayek's work was supported by Aaron Director (1902-2004), who had been part of Hayek's circle at LSE in the 1930s (Van Horn 2013, 272). Director was a professor of economics in the Chicago Law School (1946-1965) (Van Horn and Mirowski 2015 [2009], 153). Hayek wisely selected Director to be head of both antitrust projects. He was Hayek's very effective hard working “disciple” (Van Horn 2013, 273) and esteemed as a teacher and administrator who supported the careers of others by his collegiality and through founding the *Law and Economics Journal* co-edited with Ronald Coase. Hayek's position was funded by the Volker Fund, a philanthropic organisation established by William Volker (1859-1947), a wealthy Kansas manufacturer, and managed by his nephew, libertarian Harold Luhnow (1895-1978). The Fund supported individuals and organisations dedicated to education and research

8 Hayek's poor reputation as a lecturer at LSE followed him to the US where he was deemed insufficiently competent as an economist for a faculty appointment (Mirowski 2020, 244).

projects,⁹ promoting free trade and other libertarian ideas aimed at separating collectivism in all its forms from the body politic dominating the academy and public policy (Van Horn and Mirowski 2015 [2009], 141). Hayek convinced the Volker Fund to support the Free Market Study (FMS) which was contracted to “investigate the legal foundations of capitalism, and produce an American *Road to Serfdom*” (Van Horn 2018, 481). What eventuated, however, was not ‘The American Road’ but a bevy of academic studies that would disavow links between monopoly power and industry concentration, thereby promoting the view that monopolies were benign (Van Horn 2011, 1538; 2015 [2009], 220-222). The studies were later used to ‘evidence’ arguments developed by Antitrust Project researchers against established liberal antitrust principles which in turn laid the neoliberal foundations of the Law and Economics movement which formed at Chicago.

Critical to the launch of both projects was Edward Levi, who was Dean of the Chicago Law School. Levi was an antitrust specialist and one of the most powerful legal figures in the country. He had been appointed the Special Assistant to the Attorney General in the Department of Justice, Antitrust Division (1940-1945) and eventually became the US Attorney General (1975-1977) under Republican President Gerald Ford. In the interim period Levi would have a distinguished career at the University of Chicago rising to become its President (1968-1975). Levi ensured that the antitrust projects were administered by the Law School which gave them the imprimatur of the academy. This arrangement allowed the Free Market Study to proceed under the supervision of an Advisory Committee which included two Volker Fund appointees, Leonard Read and Loren Miller giving the Volker Fund effective control over the project (Van Horn and Mirowski 2015 [2009], 155; Van Horn 2018, 482). Levi was also instrumental in obtaining funding for the Antitrust Project from the Volker Fund and corporate sponsors. Van Horn noted these sponsors included “Standard Oil of Indiana, Swift and Co., International Harvester, International Mineral and Chemical Co., Borg-Warner Co. and Sears Roebuck — some of which were or had been embroiled in antitrust lawsuits” (Van Horn 2018, 478).

Levi’s foremost contribution to the Antitrust Project and his ultimate legacy was known as the ‘manifesto’, a summary of the Antitrust Project’s findings and implications he co-authored with Aaron Director. This was, as Peter Carstensen observed, marked by its

9 Other recipients of Volker largesse were Murray Rothbard (1926-1995), an Austrian School economist and extreme libertarian who opposed nearly all forms of state intervention in society, and the Foundation for Economic Education (FEE) a libertarian think tank dedicated to the spread of libertarian ideas through education.

“clever use of economic analogies buttressed by unstated assumptions to advance a case for a minimalist enforcement of antitrust. ...[added to which was] a masterful acknowledgment of alternative theories that would support more activist antitrust, but these are then dismissed as inapposite thereby giving the appearance of thoughtful balance to the policy conclusions being advocated” (1996, 38). It was this document that would intellectually anchor neoliberal tenets in the body of US antitrust law (see section 6.3.2).

6.3 New theoretical strategies: Chicago antitrust projects

Under Hayek’s peripheral supervision and Director’s leadership, the Chicago project teams focused on extricating monopoly-oligopoly industry structures from the antitrust regime by building a scholarly output devoted to undermining the legal reasoning of enforcement and positing a new theory of market-based monopoly constraints. This work greatly contributed to the epistemological switch to the *efficiency paradigm* in neoliberal law and economics.

6.3.1 The Free Market Study

When Hayek put up the proposal for the Free Market Study (FMS) he described its aim as to “define the political promise of a new, more economically orientated liberalism” based on the free market ideal (Van Horn and Mirowski 2015 [2009], 152). The research output of the FMS was largely concerned with “issues of monopoly and corporations” (Van Horn 2015 [2009], 205). It produced major empirical studies that were used to justify both the assertions for the efficiency paradigm and the proposals for a new legislative framework that removed many of the impediments to monopolisation.

The studies included Nutter’s post-graduate study claiming to find that there had been no growth in industry concentration in the period 1899-1939 (Nutter 1951). Nutter’s findings were touted as ground-breaking in the January 1952 issue of *Fortune* magazine (Schliesser 2012, 161). Nutter’s chief method was to calculate the portion of private national income contributed by monopolies set against a hypothetical recalculation based on all industries having competitive pricing. The neoliberal paradigm is evident here: the question is not whether there are adverse impacts of monopoly power on other businesses, labour or community members but purely whether there were monopoly ‘effects’ on price.¹⁰ Weston’s

10 Post-graduate student Henry Einhorn’s study covering the period 1939 to 1958 also had similar findings to Nutter (Nutter and Einhorn 1969).

study on the role of mergers and acquisitions in business consolidation claimed that these did not contribute to the growth in size of American corporations (Weston 1953). This conclusion was also reached by fellow FMS researcher Robert Bork in his analysis of vertical integration (Bork 1954). Industry concentration was, however, growing in the 1950s and several of the earlier studies were considered to be methodologically flawed. The consensus from a selection of reviews of Nutter's study was that it was pioneering in its use of national and historical data in approaching the concentration question but that the incomplete datasets necessitated more research (Adelman 1952; Wilcox 1952; Kaysen 1953). Accounts of monopoly growth as a price information issue were disputed by economic statistician Stanley Lebergott who noted that "[w]hile it is safe to say a priori that the claims of 'extreme proponents' for anything are almost never correct, we still lack the a posteriori study that will demonstrate this with respect to the growth of monopoly between 1899 and 1939" (Lebergott 1953, 351).

Schliesser (2012, 161) argued that Nutter's research was eclipsed by Arnold Harberger's study that found monopoly *effects* were not appreciable at the level of resource allocation (Harberger 1954, 87).¹¹ By simply calculating the total cost to the economy of having monopolies and then extrapolating the per capita cost, Harberger dismisses the problem of monopoly simply by averaging its effects across the entire population rather than looking at its effects in sectors where monopolies dominated. Harberger deduced from this a 'rationale' for the price system to be used for defining efficiency as the lowest possible price for the consumer, hence the term "consumer welfare" denoting Chicago efficiency (Harberger 1954, 82). If a monopoly could deliver consumer welfare, then it would not infringe antitrust. Consumer welfare was identified in its entirety on price levels, with quality, diversity and sustainability of products and services unseen, as these attributes were argued to be encoded into the price. This epitomised the foundational Hayekian concept that the market was the optimal source of knowledge and the source validator of truth and, as a consequence, became the sole criteria of efficiency used by the Chicago School and Bell

11 Harberger's results in detail were stated as: "The total improvement in consumer welfare which might come from our sample of firms thus turns out to be about 26.5 million dollars. Blowing up this figure to cover the whole economy, we get what we really want: an estimate of by how much consumer welfare would have improved if resources had been optimally allocated throughout American manufacturing in the late twenties. The answer is 59 million dollars—less than one-tenth of 1 per cent of the national income. Translated into today's national income and today's prices, this comes out to 225 million dollars, or less than \$1.50 for every man, woman, and child in the United States." (Harberger 1954, 82).

group. These studies were used to shape the Antitrust Project's analysis of the US antitrust regime from a radically new combined law and economics perspective.

Director and Levi typify the neoliberal attempt to partition the market from the socio-economic effects of monopoly power. In a summary of the above studies, they dismissed as rare the possibility of abuses of monopoly power, arguing that coercion would be irrational market behaviour:

Firms which have some monopoly power over prices and output can impose coercive restrictions on suppliers and customers.... Such firms would lose revenue because they cannot both obtain the advantage of the original power and impose additional coercive restrictions so as to increase their monopoly power. The coercive restrictions on customers are possible only if the price which would be charged without the restriction is reduced. (Director and Levi 1956, 290).

The FMS was the first step towards retrenching the antitrust regime established by the liberal inspired Sherman Act 1890 which “forbade all monopolies and all attempts to monopolize”, firmly entrenching the classical model of free individualistic competition (Hawley 1966, 6, 47). The FMS prepared the ground for the emergence of contestability and its core conception — that the *imitation* of competition was justifiable on the grounds of optimising industry efficiency or by what became known as ‘consumer welfare’, defined as products and services produced at the lowest possible price (Baumol 1982b, 4):

It is essential for the growth of reason that as individuals we should bow to forces and obey principles which we cannot hope fully to understand, yet on which the advanced and even the preservation of civilization depends. (Hayek 2010, 154).

6.3.2 The Antitrust Project

The one argument Director and Levi never acknowledged in ‘Law and the Future: Trade Regulation’ was that the law as it stood was a reason why industry concentration and monopoly growth were constrained. Their ‘manifesto’ included no direct references to the Free Market Study, albeit, the conclusions of this research appear as supporting evidence for Director and Levi’s assertion that the law found monopoly to exist where economics did not, and that it was “in the identification and the prediction of the consequences of monopoly that economics has the most to contribute” (Director and Levi 1956, 287). They argued that the ‘effects’ of monopoly should be accounted for in case law to prove that a monopoly actually existed or was expanding, based on economic indicators like productive outputs, revenues and price increases (Director and Levi 1956, 294).

Robert Van Horn describes their article as presenting a coherent “Pro-Trust Antitrust” statement that is distinctly neoliberal in outlook and which would define Chicago law and economics that led to the transformation of US jurisprudence (Van Horn 2015 [2009], 221). My purpose is to show that Hayek’s *The Constitution of Liberty* serves as a postscript to the projects that reveals Hayek’s contribution of ideas on monopolies and the law which were woven through the recommendations and findings of the Antitrust Project and the ideological position taken by the Free Market Study. This extends the position taken in Chapter 3 that *Constitution*, far from been a tract supporting liberalism, was giving legal and philosophical authority to the formation of monopoly power.

Director and Levi’s article’s status as a manifesto is derived from the subsequent neoliberal political achievement in wedging neoliberal ideas into the antitrust system, which would in time weaken that system at its epistemological base; that is, it would, in large part, substitute economic analysis for legal doctrine (Davies 2010, 65). This impulse for change from the academy was given political support in that the neoliberal movement supported judge-made law over legislator-made (statute) law (Rowe 1984).

Director and Levi’s proposal represented a structural change to the antitrust regime, cast as an ‘evolutionary choice’ between law and rules:

[T]here is uncertainty whether the dominant theme of the antitrust laws is to be the evolution of laws of fair conduct, which may have nothing whatever to do with economics, or the evolution of minimal rules protecting competition or prohibiting monopoly or monopolizing in an economic sense (Director and Levi 1956, 282).

Here they were adopting Hayek’s jurisprudential philosophy and propagating its core insight that the law’s evolutionary destiny is to serve the formation of the spontaneous order as revealed by economists.¹² Hayek made clear that “*an abstract order* [like ‘the’ market] *can be the aim of the rules of conduct*” (Hayek 1973, 113). Embedded in Director and Levi’s policy agenda were the legal arguments that would work to theoretically extract monopolies out from under the antitrust regime, thereby making the regime redundant and, at the same time, promoting the functionality of the competitive order vis-à-vis the promotion of rules of conduct. This I argue, was guided by Hayek’s “requirements of generality, equality, and

12 Hayek believed lawyers had a critical role to play in economic change, but also noted that they were generally sceptical about the concept of spontaneous order (Hayek 1973, 114). It must have seemed antithetical to the profession that one would not design law with purpose and intent given the complex political debating process that goes into its legislative formulation and the high degree of precision that goes into its opinion writing and indexing.

certainty of the law” for his Rule of Law to prevail (Hayek 1955, 45), which was a component of his alternative construct of a radically conceived catallactic network. Director and Levi, however, make no explicit reference to Hayek. As Carstensen notes, their “article essentially advances a view of ‘economic doctrine’ that leads ineluctably to policy prescriptions against active enforcement of antitrust law” (1996, 37). In doing so, it laid the groundwork upon which the contestability doctrine would stand—that is the “structure of an industry is in reality determined primarily by economic forces” on the basis of the price data made available in the market (Baumol, Panzar, and Willig 1982, 2) and not juridical, social, moral or political forces.

Sherman Act

The Antitrust Project team worked through to conclusions and recommendations for a new approach to antitrust based on a review of the Sherman Act 1890 and its particularising legislation,¹³ including case histories of judicial interpretation and decisions. The Act was framed in response to the abuse of power by the Rockefellers’ Standard Oil Company, which had allied with other oil companies to control petroleum markets. This arrangement, which involved producer and holding companies formed into a network of board memberships and executive held stock options, created an entity of immense economic and political power. The manipulation of oil prices and the endemic problems with railroads and telecommunications had stirred public outrage and aroused condemnation from labour unions, farmers and smaller businesses (Baran and Sweezy 1966). Extreme levels of inequality and economic abuse spurred nationwide protest movements that gathered momentum across the political spectrum, including the conservative mainstream. This was exemplified by the Act’s chief framer Republican John Sherman who had previously warned:

They [citizens] had monopolies and mortmains of old, but never before such giants as in our day. You must heed their appeal or be ready for the socialist, the communist, and the nihilist. Society is now disturbed by forces never felt before. (Congressional Record 1890, 2460)

13 Particularising acts: Clayton Antitrust Act 1914, Federal Trade Commission Act 1914, Robinson-Patman Act 1936 and Celler-Kefauver Act 1950.

The public sentiment against the growth of inequality and the breakdown of competition that was invested in the Sherman Act was not acknowledged by Hayek who claimed, instead, that the legislation itself had “create[ed] a climate of opinion unfavourable to monopoly” (Hayek 1960, 265).

The Act was purposed to protect competition by way of *reinforcement* of the common law against monopolies (Congressional Record 1890, 2461). This was in response to the power of some trusts and combinations that had become so great they were deemed an “evil” that was denying citizens their rights to industrial liberty and threatening the whole economy (Congressional Record 1890, 2457).

From its political roots in response to the protest movements, the Act also upheld an ideal of independent small businesses as a tenet of personal freedom, which was in keeping with the American democratic ethos that demanded individuals’ rights be protected from violations by corporations (Martin 1874, 100; Congressional Record 1890, 2460). Added to this was the principle of taking account of the circumstances that produced the abuse of competition in the first place, such as the legal sanctioning of company directors owning stock in rival companies. The Chicago school set about to dismantle the Sherman Act, which was principled on the liberal ideal of liberty for individual market actors such that “the market [w]as the only site where it makes sense for an agent to act competitively” (Becchio and Leghissa 2017, 149). Director and Levi took issue with the Act on the basis that it did not frame a ‘competitive order’, and by extension this meant it did not include notions of “regulation by competition” (Director and Levi 1956, 281). They argued that the Act resulted in costs arising from “a less efficient system of production”, whereas the law needed to countenance economic efficiency (Director and Levi 1956, 285). This efficiency principle was reflected in Coase’s presumption of transaction costs that included the costs of regulation (Davies 2017, 84-85) and Bailey’s economic analysis of the regulatory constraints imposed on the earnings of monopolies like AT&T (Bailey 1973).

Director and Levi launched their offensive against the Sherman Act by targeting how antitrust treated combinations created through mergers and acquisitions that had long been a leading contributor to industry consolidation and therefore posed a risk of monopolisation.¹⁴ They argued that a large firm’s structure was much more likely to be an outcome of efficiencies and economies of scale than of mergers and acquisitions (Director

14 Other forms of combination include, holding companies.

and Levi 1956, 282-283), a claim they based on Weston's quantitative study of 74 firms in 22 concentrated industries. Weston's study concluded that growth in the firms' size was attributable to internal growth and a spate of mergers and acquisitions in the early years of the Sherman Act but not to recent merger activity (Weston 1953). However, Weston's claims were limited. He described having only "inferential evidence" concerning the effects of mergers on the growth of firms (Weston 1953, 8). Regarding acquisitions, his conclusions were based on total assets rather than sales. This biased the growth figures towards the initial effect of the combination, not the longer term effects from ongoing sales (Weston 1953, 6). Weston also lamented his limited data sets (1953, 16 fn). In a selection of reviews, his *The Role of Mergers in the Growth of Large Firms* was criticised as having invalid assumptions (Stocking Sr 1954), research questions that could not be measured (Kahn 1955), significant methodological limitations (Holton 1956) and insufficient information to settle the arguments (Coase 1954). Nonetheless, Director and Levi capitalised on Weston's study by declaring "the conclusions of economics do not justify the application of the antitrust laws in many situations in which the laws are now being applied" (Director and Levi 1956, 282).

Size

Alcoa (1945) was a landmark case that acknowledged both social and moral goals in the primacy of small business and established limited grounds for a discretionary defence of monopoly based on a monopoly's origins. Firms could become monopolies by "accident", for example, when only one firm remains after all other competitors have folded or by achieving success from sheer "superior skill, foresight and industry" (*Alcoa* at 429-430; quoted in Director and Levi 1956, 285).¹⁵ Director and Levi called this latter position an 'efficiency defence' (Director and Levi 1956, 285), which was a misnomer given there was no measure of efficiency used in the case nor were measures of efficiency generally recognised by the law at the time (Gifford and Kudrle 2015, 43).¹⁶ The authors suggested that *Alcoa* induced uncertainty by discriminating against firms "born solely out of efficiency", an assertion they conflated to mean economies of scale (Director and Levi 1956, 282, 284).

15 Judge Wyzanski in the *United Shoe Machinery case* (1953) gives a detailed list of those exempted categories: "superior skill, superior products, natural advantages (including accessibility to raw materials or markets), economic or technological efficiency (including scientific research), low margins of profit maintained permanently and without discrimination, or licenses conferred by, and used within, the limits of law (including patents on one's own inventions, or franchises granted directly to the enterprise by a public authority)." *United States v. United Shoe Mach. Corp.*, 110 F Supp. 295, 342 (D. Mass. 1953) at 342.

16 It wasn't until the 1980s that efficiencies were an allowable factor in merger guidelines (Gifford and Kudrle 2015, 43).

They determined that Judge Learned Hand had got the economics wrong suggesting the judge had not kept pace with the changing pattern of industry towards vertical integration (Bork 1954, 159; Director and Levi 1956, 284) leading to their general assertion that antitrust law should be guided by economic theory (Director and Levi 1956, 296; Van Horn 2015 [2009], 227). Director and Levi claimed antitrust posed a threat to large firms who were not otherwise engaged in abuses of power. They recommended that structure should not be countenanced as criteria for antitrust litigation because size of enterprise was a positive attribute delivering economies of scale and thus producing efficiencies. Hayek was also adamant that industry structure was superfluous and declared himself to be “seriously alarmed at the arbitrary nature of all policy aimed at limiting the size of individual enterprises” (Hayek 1960, 265).

Hayek claimed the use of discretionary powers against particular monopolies created a “good” monopoly, “bad” monopoly scenario instead of allowing what he claimed was the “transitory” state of most monopolies to naturally be dealt with by ‘the’ market (1960, 266). Director and Levi held that “artificial limitation imposed on the growth of a firm is of as much concern as the artificial growth through combination in order to monopolize” (Director and Levi 1956, 286). These arguments sought to lift sanctions against monopoly structures per se. Ironically, they were destined to enable the ultimate form of artificiality, contestable markets.

Doctrine of abuses

The doctrine of abuses covered a range of exclusionary practices like price discrimination (predatory pricing), resale price maintenance, price cutting, refusals to deal, vertical integration and exclusive business dealings like tying arrangements. These practices were curtailed by particularising legislation which reinforced the Sherman Act.¹⁷ Director and Levi disavowed the relationship between these abuses and monopoly power, claiming that “in most instances the supposed abuses neither support nor enlarge monopoly power” (Director and Levi 1956, 291).

¹⁷ The Clayton Act 1914 was against exclusive dealing, anticompetitive mergers and price discrimination, price cutting and predatory pricing. The Clayton Act itself was further reinforced on price discrimination by the Robinson-Patman Act 1936. The Federal Trade Commission Act 1914 protected consumers against a range of unfair and deceptive business practices.

In their reading of the *Standard Oil* case (1911) they described a “union of size, combination, and abuses” that resulted in the Rockefellers’ control over the petroleum industry, a unity of factors that was considered by the court (Director and Levi 1956, 283). Their analysis was critical of what they described as the court’s “*prima facie* presumption” that size through combination was the pivotal factor; instead they proposed that *actual* “injury” from abuses should be determined irrespective of the combination factor (Director and Levi 1956, 283).¹⁸ Similarly, in their analysis of the *Steel Corporation* case (1920)¹⁹ they claimed the power of the corporation was arrived at, not by monopoly status, but by the accrual of power through past abuses, hence the importance of abuse clarification (Director and Levi 1956, 284). Taking account of circumstances that produced abuses was a principle influenced by Hayek who wanted rules of conduct to address specific causes of abuse, such as the legal sanctioning of company directors owning stock in rival companies. Hayek called for a rule banning voting rights, that had been a critical factor in the formation of the Rockefeller Trust.²⁰ Director and Levi argued that the inverse was also a problem – that judges were identifying exclusionary practices, like exclusive dealing, irrespective of monopoly structure or size of firm. In the *Griffith* case (1948), Judge Douglas was cognisant of making a pre-emptive strike against a growing monopoly in a case involving a firm that was attempting to aggregate exclusive rights (Griffith case cited in: Director and Levi 1956, 288, 290). The *Griffith* case is cited as an exemplar of the incipency doctrine, designed to curb monopoly growth in its infancy (Rahl 1955, 187). This kind of intentionality, serving to prevent monopolies taking root, exemplifies what Hayek abhorred as “*intentionalism*” (Hayek 1973, 27).

18 Director and Levi cite Judge Learned Hand’s opinion in the *Corn Products* case (1916) where he raised this point rhetorically: “perhaps it is yet an open question whether or not the test is to be found only in the combination of enough producing capacity to control supply and fix prices, or whether it must be shown that the combination had injured the public in the exercise of that power” (Corn Products case 1916, at 1012 cited in Director and Levi 1956).

19 *United States v. United States Steel Corp.*, 251 U.S. 417 (1920).

20 Hayek called for the abolition of voting rights for corporations who are stockholders in other corporations, believing concentrations of power could threaten democracy (Becchio and Leghissa 2017, 150). Such rights are conferred by a legal anomaly that gives corporations the rights and powers of a natural person. Thus, a corporation could, Hayek argued, use those votes to gain a controlling majority, to serve their own interests. Voting rights could also lead to group associations resulting in conflicts, or inter-corporate factions of management elites controlling multiple holdings across a network of corporations thus placing large aggregations of resources in the hands of a few individuals (Hayek 1967 [1960], 309). The issue of corporate voting rights was one of the few known examples of Hayek recommending a specific legal rule to protect competition (Kusunoki 2015).

Director and Levi settle for an all-encompassing stand against the doctrine of abuses by declaring that “[w]e are not sure of the basis or the justification for the concept of abuses” and that “economic teaching gives little support to the idea that the abuses create or extend monopoly” (Director and Levi 1956, 289, 290). However, economics has a modelling rather than an evidential base which led them to suggest that findings on abuses under the incipiency doctrine would be more efficacious if supported by empirical analysis using market data, what Carstensen insightfully interpreted as a “kind of cost benefit analysis in evaluating abuses” (1996, 41).²¹

Collusion

Director and Levi regarded collusion to be “central to the antitrust laws.” (Director and Levi 1956, 294). Shepherd frames this focus as typical of “efficiency school” theorists who believed that collusion was the only practice that constituted real monopoly power (Shepherd 1988, 397).²² According to Director and Levi, monopoly power was not anti-competitive, unless entrenched by coercive restraints. They argued that practices like price-fixing “might be self-correcting” as agreements between firms are inherently weak (Director and Levi 1956, 294). The basis of this idea came from William Fellner who contended that firms weighed joint-profit maximisation with the risk of the loss of sovereignty; as a result, broken agreements tend to constrain monopoly (Fellner 1949; Bain 1967, 166-167). Director and Levi also concluded that where price-fixing was present in a substantial portion of the market, the economic impact was detectable in the market price. They argued that the illegality could therefore be correlated with collusive power in its effects on the market by using economic data. The problem they saw was not one of identification, but one of differentiation between legitimate cooperative activities and illegitimate activities having the same effects. How, for example, does an individual firm, sharing knowledge that triggers a response in the market affecting output, bear the responsibility for that ‘response’? This knowledge utilisation example highlights the problem of finding illegality even if the market response is predicted by the initiator and characteristic of a monopoly or monopolising oligopoly (Director and Levi 1956, 295).

21 Director and Levi were taking the lead from the Attorney General's National Committee to Study the Antitrust Laws (1955), which cited the necessity for empirical analysis of market effects (Committee's report cited in: Director and Levi 1956, 290).

22 Carl Kaysen and Donald Turner at Harvard Law School were also conducting a study into antitrust at the same time as the Antitrust Project. They concluded that covertly colluding oligopolies were such a big problem that new legislation was needed to control them (Packer 1963, 72).

If collusive practices cannot be readily distinguished from non-collusive practices, then illegality cannot be prosecuted with any certainty. And what certainty could be derived comes from the “economic foundation for the illegality [which in the case] of price fixing ... [is] when market price is affected” (Director and Levi 1956, 294-295). Starting from an assumption that abusive monopoly power is confined to collusion, the authors’ argument against antitrust on the question of collusion amounts to an argument against antitrust per se. Indeed, in Hayek’s market order, knowledge is utilised for the very purpose of calibrating output to demand, or what Hayek saw as the function of information processed by the price system to enable entrepreneurs to “adjust their activities” (Hayek 2007 [1944], 95). This is the very essence of *efficiency* in an economic system based on market information, according to Hayek. Director and Levi conclude:

It would appear to be extremely difficult and unwise for the law to assume that action taken on general knowledge implies a concert of action equivalent to collusion, conspiracy or agreement, and yet the result may be the same as that which follows from an agreement. (Director and Levi 1956, 296).

It is not surprising that Director and Levi questioned the “worthwhileness” of the Sherman Act prohibiting price fixing. In the information economy, the more information available in the market, the greater the uncertainty as to cause and market effect of any given piece of information (Director and Levi 1956, 295). Collusion becomes, the efficiency “counterpart” to size in scaling economies (Director and Levi 1956, 295). Disrupting knowledge utilisation in the market would lead to the inefficiency equivalent, ignorance. It was early days for the practical testing of this idea, as the authors note, “[t]he relative merits of knowledge and ignorance are not well defined in legal or economic doctrine” (Director and Levi 1956, 295).

With the conceptualisation of ‘the’ market as an information processor, knowledge utilisation in the act of information exchange is not only critical to the functioning of the market but forms the baseline of Hayek’s construct of liberty, where the liberty of information exchange is the liberty of action. And those entities and individuals who are successful are entitled to act.

Director and Levi’s notion of “relative merits” is in the context of “knowledge and ignorance” (Director and Levi 1956, 295). In following the Hayekian script on human limitations, juxtaposed with the goal of economic efficiency, Director and Levi were effectively sidelining the law from any meaningful role in the regulation of competition. This was not an ‘end to antitrust’ argument, as proffered by Hayek’s colleagues in the Austrian school or later by Milton Friedman (Friedman 1999), rather it was a veiled claim by

Director, Levi and Hayek that law institutions were no match for the market that processed information through the price mechanism as necessary for maintenance of the competitive order. By the 1990s this subtext was being voiced directly – “[t]he market is a more competent institution for achieving efficient ends than is the judiciary.” (Lopatka 1996, 35).

Director and Levi’s takedown of antitrust, in each case example, targeted the application of legal reasoning to the nebulous motivations of a firm, reflecting Hayek’s contention that successful institutions “serve men’s ends without men’s understanding them” (Hayek 1960, 60). Corporations are characterised as complex institutions that challenge the possibility for reasoned analysis and defray the responsibility for the actions of boards and executives whose decisions are suffused with tacit knowledge. Under the new competitive order “radical ignorance [is] a natural state of being for humankind” (Mirowski and Nik-Khah 2017, 69). As Whyte suggests, Hayek is calling on individuals to submit before the market (Whyte 2019, 175). What Director and Levi likewise proposed was a change in epistemology concerning how the law is reasoned and a change in the source of the facts used to evidence that reasoning. Now information processed by the market would become the premium source of facts used across different sectors of society including the law.

This was a structural change, the medium to long-term effects of which were to weaken the political resolve needed to keep the antitrust regime strong and monopoly power in check.

Neoliberal normalisation

Within two decades of the antitrust projects, antitrust law and practice had coalesced around Chicago’s efficiency paradigm and microeconomic analysis. Chicago’s fortunes escalated during the 1970s when Richard Posner a scholar judge shook up the legal establishment with his treatise *Economic Analysis of Law* (1973). Posner argued that all law not just antitrust should be submitted to economic analysis that by the end of the 1970s was affixed to the efficiency paradigm. Posner and the Chicago School in looking to the economics analysis of law claimed that economics was both theoretical and empirical such that it could rival the evidential base of law. An alternative to this *in extremis* law and economics perspective was taken by Guido Calabresi a judge and scholar from Yale University, who was concerned to unite economic theory with the evidential base of law such that economics served rather than subsumed the law (Calabresi 1970; Hackney 2014). Steven Teles observes that Posner’s radicalism was directed against liberalism (Teles 2008) opting instead for the prescriptions of economic empiricism which saw Chicago promote economics as a science superior to epistemologies in other social sciences (Stigler 1965), to which Nutter’s monopoly study was

said to have contributed (Schliesser 2012). Somewhat paradoxically the Chicago school saw their task as the “translation of economic science into public policy” (Emmett 2010, 1).

Neoliberal perspectives became normative as alternative schools of thought as Harvard University’s once dominant structure-conduct-performance (S-C-P) approach receded (Gifford and Kudrle 2015, 7).²³ The effect was to be pervasive as lawyers and judges schooled in neoliberal ideology by the Chicago Law School emerged imbued with an ethos that proffered market efficiency as the definitive goal of antitrust (Gifford and Kudrle 2015, 7). Chicago trained economists in positions of influence inside regulatory agencies would ensure microeconomics became the dominate modality of the law of antitrust (Gifford and Kudrle 2015, 7; Becchio and Leghissa 2017, 147; Davies 2017, 96). This reflects the achievement of Hayek, Director and Levi as well as Posner and Robert Bork in *systematically* transforming the very epistemology of law and its role in society. As Davies contends, “[t]he task of Chicago Law and Economics was to fuse legal and economic professional discourse, such that ‘efficiency’ became a proxy for ‘justice’” (2017, 87). The connections between Chicago neoliberalism and the Bell group presented in the next section, are a new approach to the question as to why, as Davies attests, “the scale of transformation” since the 1970s was so unexpected (2017, 87).

6.4 Chicago and Bell: allies in efficiency

One cannot have efficiency without inefficiency. All systems contain some degree of entropy, and there is always a loss of efficiency in any train of actions. This implies a need to assess where efficiencies and inefficiencies are in relation to each other. Focusing solely on efficiencies without paying attention to the concomitant inefficiencies created within an economy is akin to seeking a close-up of the horizon; it only appears possible. As antitrust scholar Frederick Rowe remarked, “the Efficiency Model tells what is efficient—but never when. Over time’s rainbow, in the radiance of revelation, what is efficient is what is” (Rowe 1984, 1549).

23 The Harvard School is associated with the structure-conduct-performance (S-C-P) approach pioneered by Joe Bain. This is not to say that the currents coming out of Harvard were inconsequential, as attested by Joe Bain’s *Barriers to New Competition* (1956), a study that was foundational to contestable market theory and Kaysen and Turner’s *Antitrust Policy* (1959) on efficiency justification in antitrust. The important shift is from countering monopoly structure to embracing monopoly efficiency.

In the 1950s Chicago neoliberals worked on defining efficiency and, in light of this work, diminished the role of antitrust. Their attention to efficiency, based on lowering the costs of production, created an opportunity, taken up by the Bell group, to apply the efficiency definition to any industry structure, including monopolies and oligopolies, on the basis that they too produced at the lowest possible cost, thereby legitimating the contestability doctrine. In this section we will examine how the Chicago School continued to forge that edifice during the 1970s, the period in which the contestability doctrine was being developed and deployed. The section will then explore the doctrinal and other links between the Chicago School's catallactic modelling, the efficiency paradigm and the Bell group, by locating the synergies that dovetailed in support of each other's theoretical claims.

The Bell group in their pragmatism wanted to carve out a sufficiently convincing theoretical position on competitive monopoly pricing. They found their counterpart in the long-held goal of Baumol's alma mater, LSE, and Chicago neoliberals who in a literal and metaphorical sense wanted to see the barriers to the construction of the *catallaxy* removed.

As Greer noted "contestability quickly won influence in the US not on its merits – rather, it rode on the coattails of compatible Chicago views embraced by Reagan's political and judicial appointees" (Greer 1988, 44). The most prominent of these appointees were Chicago legal scholars, Richard Posner appointed judge of the Court of Appeals (Seventh Circuit) (1981-2017) and later Chief judge (1993-2000), and Robert Bork (1927-2012) judge of the Court of Appeals for the District of Columbia (1982-1988).

6.4.1 Chicago law: The Posner–Bork effect

In the 1970s, Posner and Bork both published influential critiques on antitrust which capitalised on the principles developed by the Chicago antitrust projects. Posner's treatise was on the economic analysis of law. Bork's 'antitrust paradox' was that antitrust enforcement actually went against the interests of consumers by forcing prices to rise. He further claimed that the courts had caused this crisis by failing to understand the central importance of efficiency to the economy, using the "consumer welfare" definition of efficiency. Posner and Bork contended that the single goal of antitrust should be the promotion of efficiency (Posner 1976, 4; Bork 1978, 7, 57, 81). Crouch describes consumer welfare as a "technocratic" concept that is "deeply paternalistic" and does not promote consumer choice (2011, 55). Rather it is concerned with "a *general* gain in efficiency across the economic system" that favours large corporations who derive efficiencies from scale and network externalities (Crouch 2011, 56).

As adherents of Chicago price theory, Posner and Bork looked to the market to deliver the verdict on whether monopolies were good for the consumer. Firms effective at instituting cost minimisation would naturally gain the lion's share of a market. "This means that efficiency-based monopolies are always better for consumers than any alternative antitrust can produce. The firm is better left alone." (Bork 1978, 196). The corollary of this viewpoint was that Bork saw efficient firms like successful monopolies as "natural" barriers to the market and therefore discounted them as a problem (Bork 1978, 311). The only "artificial barrier" was legal control sanctioned by government (Bork 1978, 196). According to Bork, the courts were seeing barriers where none actually existed, insisting, "[t]hey are ghosts that inhabit antitrust theory" (Bork 1978, 310). Bork drew up a list of artificial barriers²⁴ to be expunged from the law that largely concurred with Posner's list and included aspects of market domination such as economies of scale, advertising and capitalisation (Posner 1976; Bork 1978). What the antitrust regime saw as potential barriers like product differentiation, Bork saw as forms of efficiency that were "essential to vigorous market rivalry" (Bork 1978, 312, 314).

6.4.2 Barriers to contestability

The position on antitrust taken by Posner and Bork supported the emergence of contestability in a number of ways, not least their insistence on removing regulatory barriers. Contestability economists Robert Willig and Janusz Ordover concurred arguing that antitrust laws were a barrier that caused "significant losses in dynamic efficiency" and this has a particularly deleterious effect on high technology industries (1985, 312).²⁵ It was an argument reminiscent of Oskar Lange's in the 1930s, that technology drives concentration, and, therefore, any constraints on monopoly power will have the collateral effect of stymying economic progress (Lange 1937, 132). A contestable market is designed to create the conditions for keeping prices low, so there is no excess profit to attract competitors. By removing barriers to entry, the market becomes vulnerable to potential competitors orbiting the market looking for profit opportunities should they arise. This constrains the incumbent from uncompetitive profit-taking. The tension maintained by removing barriers to the

24 Bork's list of prescribed barriers for which he disagreed included: advertising, economies of scale, product differentiation, capital requirements, vertical integration dealerships, leases and deferred rebates (Bork 1978).

25 Willig was appointed Deputy Assistant Attorney General in the Antitrust Division of the Department of Justice (1989-1991) and Ordover was Deputy Assistant Attorney General for Economics in the Antitrust Division (1991-1992). Their appointments were made under the presidency of George H. W. Bush and exemplified how the 'anti antitrust' position was propagated from within the Antitrust Division.

market was succinctly described by William Shepherd as “ultra-free entry, with a focus on exit” (Shepherd 1984, 575) enabling the entrant to make a hit on the market and run with the profit (Baumol 1982b, 4). The Bell group inventors claimed that it was possible for any industry type, including unregulated monopolies, to behave competitively if socio-legal barriers to market entry and exit were completely removed. The barriers of most concern to the Bell group were government regulations and licensing (Baumol, Panzar, and Willig 1982, 426; Bailey and Baumol 1984) and antitrust (Baumol and Ordover 1985). Barriers to market entry *imposed* by monopolies and oligopolies in the form of anti-competitive practices, such as exclusionary practices and strategic conduct (Beviglia Zampetti and Sauvé 1996, 335) or network effects, were not included in the Bell group’s analysis (Greer 1988, 61). Posner and Bork had already dismissed as unproblematic a number of barriers that even the oligopolies and monopolies themselves had traditionally acknowledged. Posner wrote positively on “cartelization”, which he thought incentivized “invention” (Posner 1976, 17), and Bork on product differentiation (1978), which was understood to be a barrier by the Bell group who referred to it as “Chamberlinian structures” (Baumol, Panzar, and Willig 1982, 333). Joe Bain (1965 [1956]) drew up a list of barriers that William Shepherd used in his review of contestability. They included, “product differentiation, economies of scale, cost advantages, and specific devices such as patents and crucial inputs” (Shepherd 1995, 581).

The Bell group defined an entry barrier as “anything that requires an expenditure by a new entrant into an industry, but imposes no equivalent cost upon an incumbent” (Baumol, Panzar, and Willig 1982, 282). They essentially used Stigler’s barrier definition: “a cost of producing (at some or every rate of output) which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry” (Stigler 1968, 67). This definition rejected the view that economies of scale were a barrier based on the contention that firms with access to the same technology could enter an industry at the same scale as incumbents or else quickly expand their output (McAfee, Mialon, and Williams 2003).²⁶ Stigler’s definition was incorporated into contestability along with Carl Christian von Weizsäcker’s definition of an entry barrier: “as *any* (unspecified) advantage over an entrant that an incumbent firm enjoys *if that advantage produces a welfare loss.*” (Baumol, Panzar, and Willig 1982, 282). Such “undesirable” consequences were reframed by Bell group as

26 Equal access to the same technology assumes that technology is not proprietary or encumbered by intellectual property rights. This is not the case in reality. However, there have been ideological positions taken against patents and copyright, for example, by Arnold Plant who thought the market was a sufficient substitute for copyright protections that provide authors with compensatory profits from their books (Liebowitz 2002, 203).

“anything that is an entry barrier by our definition does reduce the sum of consumers’ and producers’ surplus, while phenomena such as fixed costs and scale economies need not do so” (Baumol, Panzar, and Willig 1982, 282). Essentially the Bell group accepted Weizsäcker’s substitution of criteria that denotes features of barriers, like determinants of enterprise size, by the nebulous ‘effects’ of barriers on prices (welfare loss). Added to which was their generalised claim that, “anything that” interfered with surpluses could be broadly construed to mean interfering with the price mechanism of the market. Hence government regulation could be defined as a barrier. Proving monopoly-oligopoly industry structures interfered with the market was made much more difficult, because the Bell group added a stipulation that if an incumbent’s costs were lower than an entrant as a result of “superior efficiency ... such a cost difference should not be treated as an entry barrier, but as an efficiency rent which can properly be included among the incumbent’s costs, thus formally eliminating this difference between the cost of the incumbent and the entrant.” (Baumol, Panzar, and Willig 1982, 282). Here the Bell group effectively expunges monopolies and oligopolies from the barrier definition whilst at the same time making it possible for non-market forces to be defined as a barrier. They also link the barrier definition to efficiency by connoting that Weizsäcker ‘welfare loss’ is linked to surpluses, that is low prices which are taken as a visible sign that welfare is maximised.

When Shepherd analysed the Bell group’s thinking it led him to suggest they had not taken on board much of the previous “writings and the underlying literature” on entry barriers (Shepherd 1984, fn 573). The Bell group did acknowledge Bain’s insight concerning threats of entry having consequences for consumer welfare (in the sense of pricing) (Baumol, Panzar, and Willig 1982, 2). However, in following Bain’s rejection of scaled economies as market deterrents (Bain 1965 [1956]), the Bell group eliminated factors that denoted size of operation (Baumol, Panzar, and Willig 1982, 282). These included vertical integration, which since its pioneering by Western Electric’s membership of the Bell System in 1882 followed by Henry Ford during WWI (Bode 1971, 28), had become the main process by which industry concentrated its power (Lynn 2010, 63). The Bell group’s adoption of the new definitions of entry barrier, which set aside costs of entry and scale of operation, was accompanied by their ‘effects’ test which can be summarised as a welfare loss that involves higher prices caused by inefficiency.

By adopting this nebulous terminology, the price mechanism became the arbiter of what constituted an entry barrier, not policy makers or regulators. This was very significant because it meant that in a contestable market a monopoly could set prices and so perform

the role of arbiter. In other words, the Bell group's contestable market would have Oskar Lange's socialist government planners replaced by corporate monopoly planners. As observed by White, "the Baumol team calculates how some hypothetical decision-maker would compute the array of industries to enter into" (White 2002, 255), which in effect was Hayek's "omniscient dictator" directing production to meet margin price settings (Hayek 1979a, 67). Harvard economist Michael Spence considered the welfare standard in contestability to be more robust than perfect competition (1983, 982). This was on the basis that the Bell group used price vectors in their calculation of the cost function enabling them to simultaneously access various data points for analysis. He saw this as a more advanced approach to calculating utility, albeit data heavy (Spence 1983, 982).²⁷ More data, however, does not assuage the fact that calculating marginal utility (or marginal cost pricing) necessitates competition between two or more firms selling the same product. In the case of monopolistic competition where no two products are sufficiently alike, that is, products are differentiated, monopoly pricing persists. This posed a strategic problem for Baumol and Bailey because as Edward Chamberlin declared, "virtually all products are differentiated, at least slightly" (Chamberlin 1962 [1933], 57). A partial attempt was made to resolve this problem by claiming competitors would emerge to sell variants of unique brands (Bailey and Baumol 1984, 117 fn). However, as Martin points out, selling variants of variants was not a logically sound argument. "Hit-and-run entry is not possible where products are physically identical but bear different brand names. Aspirin is the generic example" (Martin 2002, 22). Consumers, he argued, will stay loyal to products they trust when the choice is essentially the same product under a different brand (Martin 2002, 22).

Product differentiation presented the Bell group with a problem. It was a widespread monopolistic entry barrier, supported by a large global advertising industry, which was said to interfere with the price mechanism that effectively negated, at least theoretically, the contestability doctrine. The Bell group conceded that "partial monopolies and those that constitute generalized Chamberlinian structures may lie outside the set of market forms in which decentralized decision making, guided by the price system, can attain results as desirable as those achievable in theory by a perfectly informed and beneficent planner" (Baumol, Panzar, and Willig 1982, 333-334). This admission supported some role for central

27 Vectors are used in utility analysis to calculate the consumption of products bundled together. For example, in telecommunications you can buy a bundle with internet, data and calls. The choice of bundles representing different items at various quantities enables the firm to optimise the available data to find out the order magnitude of demand for a product in relationship to other products sold with it. In this way information is used to pin point demand and optimise consumer utility.

planning within contestable markets. The Bell group were selling the idea that their new theory of industry organisation could determine the most efficient industry configurations, leaving the reader to assume that this meant a diversity of configurations. “Chamberlin established that product differentiation was central to market formation” (White 2002, 46). The product differentiation issue was generally ignored by reviewers with the notable exceptions of Michael Spence who played it down and William Shepherd who listed it as a major barrier to entry (Spence 1983, 988; Shepherd 1984, 580 fn, 581). Bork had also dismissed it as a problem for antitrust (Bork 1978, 312, 314). However, the contestability doctrine was fundamentally concerned with natural monopolies and oligopolies, in other words centralised price setting, Uber style. As is argued in Chapter 7, this necessitated that contestability create a set of distinctive and counter-intuitive rules.

6.4.3 Freedom of exit

The Bell group’s assault on the orthodox understanding of market barriers to competition took a further radical step regarding barriers to exit. They claimed that “freedom of exit is of comparable importance” to freedom of entry (Baumol, Panzar, and Willig 1982, 2) – or put another way, “exit must also be perfectly free, with zero sunk cost” (Shepherd 1984, 578). As Shepherd points out, only sunk costs were named as a barrier to exit. Shepherd was highly critical of “costlessly reversible entry” because the elimination of sunk costs was unrealistic (Shepherd 1984, 576) a view shared by (Brock 1983, Spence 1983, Weitzman 1983). Chicago economist and MPS member Harold Demsetz (1968) had articulated the argument that sunk costs, like plant and infrastructure, constituted a major barrier because the risk for new entrants was the high cost of replicating sunk cost facilities like transmission lines and toll roads (Bailey 1981, 178). Scale economies, went his argument, were not the problem – it was sunk costs that could be found in any sized enterprise. The reversible market entry condition fostered the international contestability of markets through policies like the abolition of exit taxes on foreign companies repatriating profits from a domestic market (Murray et al. 2014). Reversible entry’s most critical impact was structural when applied to online markets hosted on platforms. That is, it would allow markets hosted on digital platforms to operate freely by allowing suppliers registered on the same network as the market to enter and exit the market. Uber is a good example of this, with drivers registered with Uber’s network working when demand dictates. The free entry and exit to a market, induces greater circulation of money and information within the catallactic system, be that in terms of international contestable markets or through the structural integration of the market’s feedback loop or the network’s feedback loop, a system discussed further in Chapter 7.

6.4.4 Meeting the 1930s challenge

It was the Bell group's William Baumol who headed up the team that proposed a 'solution' to monopoly pricing acceptable to government policy makers. This issue had vexed his neoliberal colleagues at LSE since the 1930s (Fowler 1934; Hayek 2015 [1935]-b).

Monopolies, particularly network monopolies like public utilities, could not theoretically be brought into the catallactic system until they could function using the price mechanism of the market. The barrier setting monopolies apart from the dynamics of the catallactic market was fixed costs (also called the cost curve in older economics texts). The duplication of high-cost investment in plant and infrastructure deterred competitors from entering the market. Depreciation rates and interest rates attaching to such investments also influenced business decisions. In the absence of competitors to establish market prices, these factors prevented accurate competitive prices from being determined (Fowler 1934; Laing 2002).

The Bell group's solution was fundamentally a semantic one: they devised two major categories of fixed costs. One they called 'sunk costs' defined as those costs that could only be eliminated when the enterprise ceased operations, for example, runways and plant. The other they called 'fixed costs', including costs that could be readily sold off or moved to another market, like turbines and aircraft (Baumol and Willig 1981, 405-406).

In differentiating sunk from fixed costs, Baumol and Willig de-problematised fixed costs, claiming that depreciation assessments on them could be calculated using relatively small amounts of information and that such assessments signalled potential entrants about market opportunities (Baumol, Panzar, and Willig 1982, 396, 403). Separating sunk and fixed costs introduced greater 'flexibility' into how costs were managed. Fixed costs, even sizable ones like a fleet of aircraft, having being redefined, were now permissible costs in a contestable market, even though they were a barrier to entry – because fixed costs at magnitude were said to result in sustainable prices consistent with an efficient natural monopoly (Baumol, Panzar, and Willig 1982, 279). In other words, high fixed costs could protect the sustainability of prices. On the one hand, high fixed costs, unlike sunk costs, would not deter entrants from entering and exiting a market; on the other, they would result in scale efficiencies. This logic effectively makes a monopoly the preferred industry type according to the efficiency paradigm.

6.4.5 Natural monopoly: from structure to semantics

As Rowe notes, “the Efficiency Model shifts antitrust norms into reverse” (Rowe 1984, 1548). The role of antitrust to protect citizens’ rights to fair prices and run independent businesses had been displaced by the tortuous logic of contestability that held that monopolies benefited small business (Posner 1976, 4) and ensured consumer welfare (Posner 1976, 7; Bork 1978, 196). Under this logic, antitrust action against monopolies was consequentially detrimental to the whole economy, or, as Baumol put it, “a high concentration index may be signs of virtue, not of vice ... then, efforts to change market structure must be regarded as mischievous and antisocial in their effects” (Baumol 1982b, 14). Rowe’s insightful response to Baumol’s alternative paradigm was to deduce that “in either the swelling ‘provisional market’ or the porous ‘contestable market,’ the market becomes a variable of competition, no longer the analytic constant itself” (Rowe 1984, 1547). Baumol’s neoliberal logic signalled the potential for a competitive market to be a “variable” of the firm-controlled network; that is, markets would not function as Hayek’s optimal information processor but would be subject to the information processing power of monopolistic firms. This, I argue, establishes the rationale for the platform business model. This perspective of the firm is explored in Chapter 7.

Exemplifying this disavowal of antitrust was the view that natural monopolies should not be broken up into smaller entities. Posner argued that this was a futile act by government because economic forces would put them back together again (Posner 1976, 5), a view held by Bork (1978, 196) and which Baumol also reiterated (Baumol 1983a, 15). With the diminishment of antitrust law this became a self-fulfilling prophesy as exemplified by AT&T’s expansion after its 1984 divestiture (see AT&T charts in Appendix A).

Posner’s definition of a natural monopoly was: “[i]f the entire demand within a relevant market can be satisfied at lowest cost by one firm rather than by two or more, the market is a natural monopoly, whatever the actual number of firms in it” (Posner 1969, 548). From this he contended that more than one firm in a naturally monopolistic industry signalled either a readjustment, which would come through merger, or a failure, that is a continuation of inefficiency in production (Posner 1969, 548). This brought him to a radical conclusion: “[c]ompetition is thus not a viable regulatory mechanism under conditions of natural monopoly” (Posner 1969, 548). In effect, Posner was suggesting that competition is redundant wherever efficiency reigns, thus making obsolete actual competitive markets.

Posner's definition was in line with the Bell group's definition of efficiency. This asserted that a natural monopoly occurs if "one firm can produce a given output more cheaply than any other combination of many firms, it is clearly equivalent to what is commonly meant by the term 'natural monopoly'." (Baumol, Panzar, and Willig 1982, 18). Simply put, any monopoly could claim to be natural if it produced at the lowest price. This was known as the subadditivity efficiency test, an opaque term that the Bell group used to describe this efficiency approach to industry structure (Baumol, Panzar, and Willig 1982, 170).

Tellingly, the Bell group held that the use of the subadditivity efficiency test was pertinent to their own sector of communications. Posner remarked that his views on monopoly and regulation were influenced by his experiences as counsel on the President's Task Force on Communications Policy (1967-1968) (Posner 1969, 549). Posner worked with economists William Baumol and Leland Johnson²⁸ and antitrust law specialist William Baxter who in 1982 settled the AT&T case on behalf of the Department of Justice (Teles 2008, 97).²⁹ The concept of 'subadditivity', as used in economics, thus has its origins in AT&T's monopoly over US telephony. The Bell System was argued to be a natural monopoly because one network was cheaper for consumers than multiple networks (Bornholz and Evans 1983, 29). In 1971, Alfred Kahn, an AT&T advisor, defined natural monopoly as "a product of long-run decreasing average costs" citing telephony as a case of *demand side* rather than supply side monopolistic efficiency because consumers did not have to duplicate subscriptions across multiple networks to gain full network coverage (Kahn quoted in: Mueller 1997a, 18). Therefore, irrespective of the number of subscribers one network would always be more efficient than two (Mueller 1997b, 19). James Bonbright argued that even if average costs rose with greater output it was still possible that "any specified required rate of output can be supplied most economically by a single firm or single system" (Bonbright quoted in: Sharkey 1982, 17) a claim Milton Mueller contended was "verified" by "the 'contestable markets' school" (Mueller 1997b, 13).

The concept of subadditivity used to determine what number of firms in any given industry would supply products most efficiently seems laudable enough. However, as the inventors

28 Leland Johnson and Harvey Averch, published 'Behaviour of the Firm Under Regulatory Constraint' (1962) a seminal paper in the field of regulatory economics concerned with the application of mathematical economics to the impacts of regulation on industry which greatly influenced Bailey who researched the cost of regulatory limitations on business. She described it as having a "direct impact on domestic telecommunications" (Bell Labs Information and Publication Division 1974, 4).

29 President Lyndon Johnson (1963-1969).

note, the concept has “recondite properties” because of the amount of cost data required and the difficulty in attaining it from multiple firms, in order to evaluate possible combinations of firms (Baumol, Panzar, and Willig 1982, 170).

The difficulty lies in what the cost function needs to achieve. It must empirically show that the “cost of producing the whole is less than the sum of the cost of producing the parts” (Baumol, Panzar, and Willig 1982, 17). This necessitates what the inventors called “*global information*”, such that the cost of production must be calculated at every output level for a mix of products (y^1, \dots, y^k) being produced by multiple firms. Therefore, the calculation must show that the cost of a product produced by a single firm is lower than the entire range of output from any other combination of firms. Further, all the costs must be known; “we must know $C(y^*)$ for every $y^* \leq y$ ” (Baumol, Panzar, and Willig 1982, 17).

“Intuitively” the inventors claimed, this notation shows that an industry is a natural monopoly if the combination which produces the lowest cost is a single firm, so that “over the entire relevant range of outputs, the firm’s cost function is subadditive” (Baumol, Panzar, and Willig 1982, 17). Their mathematical notation scopes out the cost function problem without, however, providing any real possibility of an empirical outcome due to the problem of collecting data.

This issue is reminiscent of the data problems Hayek claimed afflicted socialist economic planning (Hayek 1940, 125). The technical concepts that underpin contestability, are dependent on the cost function calculation which is data heavy because they require a deep analysis of cost behaviour at different levels of operation across an industry (Baumol, Panzar, and Willig 1982, 17). That is, information must be extracted from every firm in an industry but this is unlikely given that productive output data would be confidential (Sharkey 1982, 8), added to which is the problem of untimely and incomplete data sets.

The Bell contestability group incorporated efficiency-based concepts to arrive at a conception of natural monopoly that displaced structural and social attributes.³⁰

30 Sharkey summarises some of the pre-efficiency definitions of natural monopoly as: monopoly characterised by economies of scale; industries obligated to ensure supply of an essential product or service such as public utilities and Henry Carter Adams’s definition of industries that had increasing returns to scale (Sharkey 1982, 15 (From: H. C. Adams. 1887. ‘The Relation of the State to Industrial Action’. Publications of the American Economic Association, Vol.1:6 pp.7-85)). Richard Ely, who used the term ‘natural monopoly’ (Mueller 1997b, 13), had definitions he summed up as the “unsuitability of competition” (Ely quoted in: Sharkey 1982, 16). These included sole access to a resource (as in Cournot’s notable mineral spring example), monopolies conferred by patents, high fixed to variable cost ratio, or, in

Consequently, it can be deduced that the efficiency definition makes all monopolies potentially ‘natural’, and this collapses the category to simply ‘monopolies’. Other relevant definitions include Sharkey’s statement that “[a]n industry is a monopoly (whether natural or not) if there is a single firm which makes decisions regarding price and output” (1982, 74). This is an apt description of Uber, who control the price in their rider-driver market set within the total ridesharing sector which is an oligopoly. A further definition is that of “a sustainable monopoly equilibrium”, that Baumol et al declare “is identical in spirit with that of our notion of equilibrium in contestable markets” (Baumol, Panzar, and Willig 1982, 192). The bold assertion of contestability theorists that perfect competition exists in the absence of actual competition, under the guise of a quest for efficiency, was presented by Baumol et al in considerable technical detail. Although the efficiency definition de-emphasises this paradox the question remains – how can a pool of potential entrants, theoretically able to apply hit and run tactics on a natural monopoly, be sustained in an environment where the causes of natural monopoly are things like patents and the high cost of infrastructure in public utilities? As economist William Shepherd contended, logically there is no contest (Shepherd 1984, 573). The definitional change from competition to contestability was conceived, it can be argued, in order to give credence to AT&T’s market ambitions to dominate an emerging information network rather than reflect the reality on the ground. This reality, however, would change with the advent of the internet.

6.4.6 The firm-controlled network hosting markets

The Bell group redefined natural monopoly in terms of efficiency as a necessary step in formulating contestability. The idea of efficiency justified a computational approach. What had merely been anti-competitive behaviour, had now been transformed in the Foucauldian sense, into a new object called “efficiency” in economics and law discourse. Within the Bell group, and neoliberalism more broadly, efficient practice became elevated to “efficiency”, to be described, defined and made manifest as an object within their “system of formation” (Foucault 1972, 74). Monopoly in its socio-economic and historical context had been an object of suspicion and disapprobation; but the new object of efficiency required monopoly to be transformed and its very existence as an object to be called into question. This was achieved through a change of definition for natural monopoly.

the case of public utilities, a monopoly resulting from the difficulty and cost of duplicating plant (Sharkey 1982, 16).

Bork believed that “[e]fficiency is at bottom a value concept, not a description of mechanical or engineering operation” and that value was consumer welfare in the sense of low prices (Bork 1978, 105), a measure ostensibly adopted by the Bell group. In this ‘weak invisible hand theorem’ the dual approach to pricing a product range is cited as “Ramsey optimality—maximization of welfare subject to the constraint that firms be financially self-supporting” (Baumol, Panzar, and Willig 1982, 334), serving both to keep competitors out of the market and ensure consumer welfare through ‘mainly’ lower prices set at marginal cost.

However, the contestable price mechanism, I contend, should rather be understood as the contestability doctrine prosecuting its advocacy role by associating monopoly with the positive welfare attributes of competition and disassociating it from negative welfare impacts. The inventors claimed that contestability suppressed negative impacts including, supranormal profits, production inefficiencies and below cost pricing (Baumol 1982b, 4). However, the Bell group’s efficiency definition was derived from the subadditivity formula that was used to calculate efficiencies in telecommunications transmissions, whereas Bork suggested that value in the Knightian sense of efficiency denoted the allocation of productive capacity within the economy (Bork 1978, 105).

Subadditivity was concerned with the efficiency of information transmission in networks that informed the cost calculations of various network architectures, (Sharkey 1982, 8). This is examined in greater detail in Chapter 7. In telecommunications the result is a pooling of concepts pertaining to efficiency focused on the saving of time and space; that is, saving time in information transmission and space on transmission channels. This was extrapolated to the overall design of efficiencies embodied in the design of the firm-controlled network hosting a market. The Bell group’s definition of efficiency would differentiate a new capitalism, one that was tuned by 20th century information science, not 19th century thermodynamics. When industries were earmarked for implementation of contestability, it was done so on the basis that these industries were advancing ICT networks, whether that was through computer reservation systems in the airlines industry (Bailey, Graham, and Kaplan 1985, 187), electronic funds transfers in banking (Harper 1986, 55) or computerised dispatch systems and satellite tracking in the trucking industry (Belzer 2002). Contestability was designed in the context of network technologies and architectures harnessing data for the benefit of the firms running the networks. Bailey and Baumol noted findings that showed “if left alone, contestable markets will tend to move toward the most efficient organization of productive forces” (1984, 133-134), which, for example, in the US airline

industry was the “hub-and-spoke” network (1984, 128). AT&T’s economics group were in the business of securing the corporation’s monopoly over the network ICT. Although ICT is a sunk cost and CRSs, for example, were identified as entry barriers because of travel agent bias towards CRS-owning airlines (Peteraf and Reed 1994, 199), they also made it possible to change prices quickly (Butler and Huston 1989, 34), thereby mitigating one of the key barriers of a contestable market; an incumbent who cannot change prices quickly in response to competitive threats.

The structural change that ICT network technology made possible was that markets began to function ‘inside’ information networks, a trend that became visible with the appearance in the 21st century of digital marketplaces like Uber. The Bell group recognised that networks were cooperative allocators of information, and therefore, networks did not adhere to the traditional economic principles of competitive entities equilibrated to supply and demand. It was more a question of examining “discrete optimization problems on networks” (Sharkey 1995, 713). Within a network there was an assumed “central planner” who had complete access to information that included complete knowledge about how the network and markets coordinating the network’s commercial production functioned technically (Sharkey 1995, 714). This shift was radical to the point of being disruptive of established organisational and industry structures.

These networks also constituted new opportunities for monopolies. A large firm operating a network could absorb sunk costs on behalf of the markets they serviced. Bailey, cognisant that contestability was designed to facilitate such a model, wrote:

the single most important element in the design of public policy for monopoly should be the design of arrangements which render benign the exercise of power associated with operating sunk facilities (Bailey 1981, 179).

Access to the *same* technology amounts to access to sunk facilities in the case of network-based industries such as telecommunications. Bailey recommended a contestable approach to telecommunications whereby all vendors, including the Bell System, paid the same prices to connect to the local network; therefore, the cost of interconnection is the same and “equal opportunities [are] afforded to all actual and potential competitors, with no barriers to entry, and with a policy of flexibility towards prices, the market might be expected to assure a socially efficient provision of network services” (Bailey 1981, 183).

This initial proposal, which Bailey suggested applied to markets in the network space, signposted an emerging model whereby network infrastructure would be managed by a platform monopoly whose power was considered benign because the focus was on cost minimisation and hence consumer welfare (Bailey 1981, 178).

A monopoly that controls such a network will assume an institutional status as it manages the network infrastructure and plays host to a multiplicity of agents who are competing to take advantage of the facilities. Although this has been the case in transport, with different airlines accessing airports, the facility owners have in the past often been governments. A key function of the contestability doctrine has been to advocate for privatisation of government network infrastructure because it advocates for the separation of network operator and hosted competitive markets, in effect, playing the role of government regulator (Bailey 1981).

These networks now always have a core ICT component, for example, toll road networks are made possible because of digital sensors monetarising traffic. Access to technology has become synonymous with access to networks. The demand for information has transformed the way business is done, creating new markets as networks host new types of businesses or facilitate the performance of business in new ways. For example, mobile phone networks have facilitated the greater flexibility of the labour force because workers can be called in only when demand necessitates more staff.

6.4.7 Regulating the new model

The engineer-economists at Bell Labs were not merely theorists. They also made contributions to government policy that centred on the removal of barriers, where what constituted a barrier was extremely broad and included licensing, government owned services and regulation:

the most promising course for public policy is identification and removal of any artificial obstacles to contestability (such as governmental inhibition of entry or other such constraints imposed by public policy, as well as other entry barriers) and the prevention ... of predatory acts or deterring threats by incumbents (Baumol, Panzar, and Willig 1982, 466).

Posner had made similar recommendations in the late 1960s in questioning whether government was a viable and cost-effective regulator of natural monopolies. He concluded that government should desist from regulating specific utilities like AT&T and leave it to antitrust to mop up problems that market forces could not iron out:

public utility regulation is probably not a useful exertion of governmental powers; that its benefits cannot be shown to outweigh its costs; and that even in markets where efficiency dictates monopoly we might do better to allow natural economic forces to determine business conduct and performance subject only to the constraints of antitrust policy. (Posner 1969, 549).

However, leaving it to antitrust was somewhat compromised by the contestability doctrine as it sought to quarantine monopolies from legislated sanctions even in terms of precipitous conditions for the abuse of power as divulged by Baumol et al. in their statement:

traditional *per se* indicators of market performance such as concentration, price discrimination, conglomerate mergers, or vertical and horizontal integration do *not automatically* call for government intervention in contestable markets. (Baumol, Panzar, and Willig 1982, 465).

According to contestability's inventors, market behaviour was still being guided by the "invisible hand" thus obviating the need for government control even when mergers³¹ and acquisitions were changing the structure of industry (Baumol, Panzar, and Willig 1982, 465).

The radical nature of contestability also came to be seen in the Bell group's recommendations to engineer contestable markets, which included industries newly created by the privatisation of public services:

If the industry is structurally not contestable, it may be possible to seek measures that decrease "natural" entry barriers to some degree ... [o]r it may be possible to isolate the portion of the industry's activities that cause the uncontestability and regulate that portion, leaving the remainder of the industry's activities free from governmental interference. (Baumol, Panzar, and Willig 1982, 466).

Here, the Bell group signals the possibility of 'engineering' the firm-controlled network. As Graham and Lawrence observed, in network industries like telecommunications although the network itself may be a natural monopoly and therefore not contestable³² – "markets for many products or services sold over the network can be contestable" (1996, 11). In

31 Alberro and Schwabe's analysis of contestability's legacy in antitrust examined the adoption of contestable concepts in the Merger Guidelines produced by the Department of Justice and Federal Trade Commission which was an indicator of its influence on antitrust. They noted that the concept of potential entry was introduced in 1982 and that by the 1992 edition contestability featured prominently. The guidelines were next altered in 2010 showing contestability's waning influence although hit-and-run entry (now called "rapid entry" and sunk costs were still included (2016, 27).

32 Graham and Lawrence define 'not contestable' as when the "average cost of production declines as a function of increasing output" (Graham and Lawrence 1996, 9).

other words, these network firms can host markets that are contestable as found in today's platform monopoly model. They further suggested that one goal of market regulation could be to separate the contestable from the non-contestable aspects of an industry, for example, in electricity, which created retail and wholesale sectors within the industry (Graham and Lawrence 1996, 11).

The active involvement in policy to deregulate industry wherever possible on the grounds of contestability was closely aligned with the agenda of the law and economics movement out of Chicago. Chicago market theory was labelled “a weak form of the contestable markets hypothesis” because barriers still played a role albeit “minor and temporary” (Gilbert 1989, 113). The Bell group also shared with Chicago the impetus to replace regulations with rules that would develop from contestability research. They believed this would establish better “guidelines for appropriate government intervention in the structure and conduct of firms and industries, that is, of the rules to be followed by the regulators and antitrust authorities in those cases in which their intervention is called for ... [and] the determination of criteria ... [for when] intervention by the public sector is warranted” (Baumol, Panzar, and Willig 1988, 487). In other words, to the Bell group, a monopoly, was seeking to decide how and when the state would intervene in their affairs. This corporatist position represented a rejection of the “laissez-faire position”³³ (Baumol, Panzar, and Willig 1988, 486), which Chicago's MPS members also rejected (Mirowski and Plehwe 2015 [2009]b). The close synergies between the Bell and Chicago groups were concerned with economics and law. The Bell group needed allies in law in order to activate their deregulation agenda. The economics they drew upon to support the contestability doctrine came largely from Coase and Demsetz. As I will show in the next chapter, Coase and Demsetz laid the foundations for contestability in regards to the operation of firms and whole-of-market bidding.

However, although the Chicago neoliberals were close intellectual allies, Baumol and Willig keenly expressed their desire to distance themselves from those elements of the Chicago School that Davies noted had a reputation for libertarianism (Davies 2017, 86).

33 In the 1988 edition of *Contestable Markets and the Theory of Industry Structure*, the authors made clear their incipient position regarding laissez-faire by attaching great emphasis on the objectives of rule-making based on contestability. However, in both the 1982 and 1988 editions they stated that they were on “the side of those who advocate extension of the domain of *laissez-faire*” (Baumol, Panzar, and Willig 1982, 1988, 476). The authors promoted contestability as an extension of perfect competition which they had associated with laissez-faire. It appears it should not be taken to mean a direct connection to laissez-faire philosophy.

Contestability theory does not, and was not intended to, lend support to those [libertarians] who believe (or almost seem to believe) that the unrestrained market automatically solves all economic problems and that virtually all regulation and antitrust activity constitutes a pointless and costly source of economic inefficiency. In a market that approximates perfect contestability, it is true, we believe matters can be left to take care of themselves. ... But that observation is no whitewash and establishes no presumption, one way or the other, about the desirability of public sector intervention in any particular market of reality. (Baumol and Willig 1986, 9).

Despite this disavowal, the association of contestability with “libertarian’ ideology” is unsurprising because in practice the open access conditions for a contestable market and a free market are indistinguishable. By Baumol and Willig’s own reckoning, abuse is *not* to be resolved by way of *non-market* forces. In this sense, contestability’s “alternative guidelines” provide a vision, which is compatible with neoliberal and libertarian economics, for the management of the market’s most wayward entity, the giant corporation (Baumol, Panzar, and Willig 1982, 465). For the Bell group, libertarian sensibilities were close to home with Alvin Toffler, a consultant to AT&T (1968-1972), who offered a populist version of unregulated capitalism unleashed by “the revolution in the info-sphere” (Toffler 1980, 194). Consumers, Toffler predicted, would direct control over production (Toffler 1980, 202) and corporations would pay increasing attention to societal needs being transformed by ICT (Toffler 1980, 258). Nor were other libertarians averse to the Bell group’s ideas. Professor Bryan Caplan, a self-described libertarian from George Mason University, declared it to be the “‘Age of Contestability’ in lieu of the rise of Amazon, Apple and Netflix because ‘consumers love these monopolies’” (Caplan 2012).

6.4.8 Catallactic transformations

The paradox implicit to contestability’s imitation of competition, in full knowledge that it can never be disproven, signals a new formation, transformative of the whole social order, that is emergent from neoliberal ideology as it has profited from the theory’s use in justifying privatisation and deregulation. That formation is the market-coordinated network of economies, the *catallaxy*, the construction of which involves markets ‘engineered’ to function without actual competition. The paradox is no longer how to sustain potential competitors in order to justify monopoly, but how to imitate competition that is no longer there because definitionally an efficient platform monopoly does not need to be challenged to remain efficient. The transformation in competition has occurred at the level of the individuals who populate the markets hosted by the platforms. That is to say individuals who were once employees or simply householders are now ‘entrepreneurs competing’

within online markets hosted on platforms which are essentially catalytic formations. This formation is I contend a hybrid of what Davies called “psychological formats of competition” and institutional competition because the online market is tightly controlled by a firm’s algorithms. Davies makes the argument that Schumpeter and Coase shifted away from competition as being embedded in the institution of the market to being embodied by the individual in what he called “competitive psychologies” (Davies 2017, 57). That is, the competitive dynamic resides with the individual agent rather than the market that serves to aggregate and redistribute individual’s information. To Schumpeter the entrepreneur was the font of competitiveness whereas for Coase it was a psychological capacity held by everyone, assuming that everyone can negotiate an agreement (Davies 2017, 57). Although the Coasian perspective on the agent may appear apt to market relations today, the institutional power of the firm-controlled network is close to absolute because of their power over information generated by agents operating in the markets and power over the information architectures that structure market relations in ways that favour the platform controllers. In effect what Davies cites as the “*institutional format* for competition (namely the market) (2017, 57), has I would argue shifted to being the institutional format of the firm controlling the market, leaving individuals to use their psychological capacities to ‘compete’ in an environment where they lack agency.

Efficiency eclipses competition in a contestable market and provides the rationale for the market’s design. Although efficiency was a pre-existing concept, within neoliberalism as an emergent discursive formation we are witnessing efficiency attain the status of an object, in the Foucauldian sense, such that it differentiates forms of capitalism thereby bringing forth what is new (Foucault 1972, 44). The valorisation of efficiency by members of the neoliberal thought collective, to whom Posner and Bork belonged, is notable. The Bell group of economists redefined natural monopoly in terms of efficiency as a necessary first step in formulating contestability. Efficiency cast as an object generates concepts to service its demands, of which subadditivity is one example. Efficiency justifies a simplified, computational approach for analysing socio-economic phenomena that in turn has the effect of reducing those phenomena to formulae. Further reductionist tools in neoliberal discourse transform how ‘value’ is objectified and calculated across the entire system or social order. Thus, a change of definition for natural monopoly is consistent with an alternative thread of theoretical “strategies” (Foucault 1972, 65) concerned with efficiency to which contestability, cost benefit analysis, consumer welfare effects test, and free trade agreements (FTAs) arguably belong.

The *catallaxy* can also be perceived as an object that emerges with the neoliberal discursive formation. As with contestability it has identifiable properties and identifiable relationships that is characterised by the imitation of competition. The *catallaxy* underwrites the ontological fusion between late monopoly capitalism and *neo* liberalism by a “system of rules” that “metamorphized” the US antitrust regime through the adoption of the efficiency paradigm and then was “imported” by other nation states through an international regime of rules embedded into trade and investment agreements that were negotiated in secret (Foucault 1972, 74).

6.5 Conclusion

This chapter has shown how the neoliberals and the Bell group brought about the reversal of the classical economic position on market formation. They changed it from one that defined oligopoly as a barrier to market entry and monopoly as an “insurmountable” barrier (Corsi 2006, 608), with actual competitive markets being defined as free of such barriers (Sylos-Labini 1962 [1956], 149); to one where the regulatory regime that protected actual competition by restraining monopolies and oligopolies was defined as the barrier to the markets. Davies observed that, “Posner and Bork’s programmatic critiques of anti-trust, ... effectively turned the gaze of economic critique away from private industry and towards public agencies and legal institutions” (Davies 2017, 94). While Walker succinctly observed, “[c]orporate monopoly was reimagined as merely the beneficial outworking of ‘consumer sovereignty’ and the efficient operation of the free market.” (Walker 2020, 29).

This chapter has presented the work of the Chicago School in building a new epistemology in law based on the efficiency paradigm, which adhered to the “transnational” scope of the neoliberal project (Van Horn and Mirowski 2015 [2009], 140). Hayek’s role in holding the MPS to a “One World” vision became writ large in his drive to build the Chicago edifice in law and economics (Hayek 1976, 112). Discerning Hayek’s influence has, however, not been straightforward, for in Packer’s words, the Antitrust Project was a “nebulous affair” (Packer 1963, 55). However, it is apparent that the ideas and prescriptions in Director and Levi’s ‘manifesto’ “implied a breathtaking contraction in the scope of antitrust policy” (Posner 1979, 928). Two decades later Posner and Bork were to extend the logic of ‘consumer welfare’ to argue for free markets and the dismantling of antitrust entirely (Posner 1976; Bork 1978).

The resulting diminishment of US antitrust was to the detriment of the small producers. Orthodox economists came to favour economies of scale as efficiencies that drive economic growth and incubate and commercialise innovation. In diminishing antitrust, corporate entrepreneurs' rights to accumulate were destined to overwhelm small producers' rights to be entrepreneurial.

Hayek's research output dismissed the monopoly issue as "it seemed not to possess the importance commonly attached to it" (1960, 264). He downplayed the controversial aspects of his design for a new market institution whilst regaling readers with news of imminent liberty (Mirowski 2015 [2009], 444). Hayek's major research work (Hayek 1955; 1960) during this period was, as noted in Chapter 3, devoted to an evolutionary theory of law that diverted attention away from the governance vacuum being created by the dismantling of antitrust. This would eventually be filled by an international regime of trading rules embedded into free trade agreements. As to online markets, these would be regulated by those firms that controlled the networks who hosted the markets that formed the platform monopolies. This, I argue, is the new form of capitalist institution that arose as an irruption in America.

Van Horn concluded, the antitrust projects were critical to the construction of the neoliberal edifice in America through the provision of research that concluded "monopoly is relatively benign and that corporations are not a political and an economic problem" (Van Horn 2011, 1538; 2015 [2009], 230).

Director and Levi proposed the very set of conditions contestability theory needed to attain legal legitimacy; that is, a regime that would not arrest the growth in concentration as all monopolies were deemed natural on the basis of efficiency. The contributions of the antitrust scholars Posner and Bork to the enabling of the contestability doctrine were to shrink the antitrust regime further so that it did not impede the growth of the telecommunications driven platform business model. This can be perceived as the architecture of Hayek's *catallaxy*.

Rowe's characterisation of US antitrust as "a regime of retreat and revision" (Rowe 1984, 1512) has been widely shared amongst scholars (Carstensen 1996). The best testament to regime change, however, comes from Lina Khan's analysis of Amazon's burgeoning monopoly in which she concludes that it "reveals that the current framework in antitrust – specifically its equating of competition with 'consumer welfare,' typically measured through short-term effects on price and output – fails to capture the architecture of market power in

the twenty-first century marketplace” (Khan 2017, 716). She lays this failure squarely on the influence of the Chicago School and its signature dismissal of industry structure and the competitive process as relevant factors in the restraint of monopoly power (Khan 2017).

So here we have a continuum from the 1956 Chicago ‘manifesto’ through to the derision of antitrust in the 1970s as monopoly ‘legitimately’ became the *preferred* industry structure as theorised and advocated by Baumol, Bailey, Panzar and Willig in the wake of antitrust’s retreat. In effect, we now hand over to the Bell group for the last chapter in this exploration of the rise of ICT monopolies and neoliberalism globally. In Chapter 7 we seek to explore how AT&T and their contestability doctrine shifted their own corporate paradigm and by doing so enabled them to construct a version of the *catallaxy* using the latest ICT and their own network inspired contestable market theory.

7 Contestability: the rise of the firm

[T]oday, in every corner of our economy, big, powerful corporations are killing off competition. Airlines, banking, healthcare, pharma, agriculture, telecom and tech – in industry after industry, monopolies, duopolies, and oligopolies are calling all of the shots – exerting alarming control over markets.

Senator Elizabeth Warren (2017)

7.1 Introduction

In this chapter I focus on the origins of the Bell group’s contestability theory. This theory, which integrates the firm, the industry and the market, presented AT&T with a unique solution to the dilemma it faced post-war—how to maintain their monopoly in telecommunications and at the same time reap the benefits of a digital market expanding through a combination of competition and technological innovation. As I will show, contestability was developed by AT&T to address this dilemma. This chapter explores how contestability, which consists of an industrial organisation theory and a market price analysis tool, rationalised monopoly on the basis of economic efficiency.

The economics of contestability was informed by the organisational management of AT&T, the science and engineering of the telecommunications network and the Chicago neoliberal thought collective referencing the work of economists Ronald Coase on the firm and Harold Demsetz on whole-of-market bidding. It’s also important to examine the network attributes that accord the theory its fundamental structure and evince the transformative potential of its doctrine to support a new capitalist formation utilising information.

In the previous chapter we glimpsed the outline of a new industrial structure, the firm-controlled network hosting a market. This term is used to describe a specific formation, one enabled by the Bell group’s notion of a “sustainable industry configuration” within which various conditions apply, such as no sunk costs or barriers to entry or exit (Baumol, Panzar, and Willig 1982, 25). In the current era we can observe how markets (of various designs) are integrated into networks within which the precepts of contestability apply. Uber and

Amazon are two examples. In effect, a contestable market is ‘the’ telecommunications network reimagined in economic theory to function as a market. This alludes to Hayek’s conception back in 1945 that the price mechanism of the market was like “a system of telecommunications” (Hayek 1945, 527). With that perspective in mind, the chapter will offer insights into how the Bell group forged this new industry configuration theoretically.

Although the Bell group was working for AT&T, they were articulating a general economic theory centred on the “network enterprise” that Castells identified as the fundamental organisational structure of the global information economy (Castells 1996, 168).

The endeavour of this chapter is to contribute to the literature by joining research on neoliberalism to the emergence, via Bell, of a new kind of institutional power, the network controlled by ‘platform’ monopolies. The formation of this symbiotic relationship is set within the broader context of the integration of economics and information as posited by Castells who concluded that “[n]ew information technologies are integrating the world in global networks of instrumentality.” (Castells 1996, 22).

7.2 AT&T’s new mission

The year 1956 was a watershed for both the neoliberal movement in America and AT&T. It was the year Director and Levi’s manifesto forcefully described their ‘solution’ to the restrictions imposed by antitrust, that was an epistemological shift towards economic efficiency in antitrust law. It was also the year that AT&T negotiated a Consent Decree with the Department of Justice (DOJ) that would prove to be deleterious to the corporation. The decree ended seven years of litigation over accusations that Western Electric was keeping its prices high so its parent company AT&T could rationalise higher call rates to customers (Shooshan III 1984, 13). Ironically, this settlement, which effectively postponed the breakup of AT&T, proved to be a pyrrhic victory. Charles Brown AT&T’s Chairman (1979-1986) later remarked that AT&T had been “saddled with a 1956 consent decree confining the Bell System to regulated telecommunications ... [thus] being deprived of the fruits of our own technology, our own innovation” (1984, 3). The settlement had forced AT&T to license its patents, a move that was generally regarded as serving the public interest because it disseminated knowledge (Tunstall 1985, 5). The problem for AT&T was that telephony and data processing were converging leaving their R&D investment exposed to competitors from the IT industry who could gain commercial advantages by using Bell Laboratories ICT

(Brown 1984, 3).¹ Bell Laboratories was leading the charge in ICT innovation, but was locked out of the IT industry at the moment the industry was poised to explode. This was symbolised in 1955 by the cover of *Time* magazine sporting a cartoon impression of an IBM 702 Electronic Data Processing Machine with a photographic image of IBM's President, Thomas Watson Jr. perched in front (Maney 2011, 16).² Then in 1960, Fritz Machlup coined the term 'information society' to describe a transformation that would continue through the 1960s as digitisation revolutionised telecommunications (Stone 1997, 18).

Cognisant of the need to address regulatory pressures and technological change, in 1968 AT&T's board commissioned futurist Alvin Toffler to probe its future operating environment and articulate a new "corporate mission" (Toffler 1985, 8). Toffler, a *Fortune* magazine journalist with libertarian sensibilities, would soon be catapulted to fame with his bestselling book *Future Shock* (Toffler 1971 [1970]), in which he claimed that industrial society was transitioning to a *super-industrial society* characterised by rapid technological change and socio-economic upheaval. Bell's old mission set in train by Theodore Vail in 1907 "to place a standard black telephone into every American home" under the banner of 'One System, One Policy, Universal Service' was considered accomplished (Toffler 1985, 8).

AT&T Bell Labs at this time was focused on building a global digital network to facilitate what Toffler identified as 'game changers' in technology, "the electronicization of money ... the convergence of computing and telecommunications ... [and] artificial intelligence" (Toffler 1985, 3). Toffler also identified game changes in the social sphere, for example, the world's aging population, changing social values reflected in the greater diversity of family life and international political trends such as global militarisation and cross border conflicts over data (Toffler 1985, 3).

1 Significantly, AT&T lost their right to monopolise their patents on the silicon transistor because of the 1956 Consent Decree. Invented by John Bardeen, Walter Brattain and William Shockley at Bell Laboratories in 1948, the invention was adapted by Shockley after he left Bell Laboratories and set up his own enterprise in Silicon Valley. It was also licensed to Texas Instruments and Fairchild Semiconductors. By 1968 the invention had evolved to semiconductors, integrated circuits and microprocessors that were successfully commercialised by Intel Corporation, which later became a Fortune 100 company (Gertner 2012).

2 In 1940 IBM's sales were \$46.3 million compared to Western Electric's \$241 million. By 1960 IBM sales were \$1.8 billion compared to Western's \$2.6 billion. By 1982 their positions had reversed with IBM at \$40 billion and Western Electric at only \$12.6 billion in sales (Jackson 1984, 72).

Toffler, a free market enthusiast, recommended AT&T “restructure itself radically and voluntarily” by divesting its vertically integrated monopoly in favour of competition (1985, 7). His report titled, *Social Dynamics and the Bell System* was submitted to AT&T’s board in 1972³ (Toffler 1985, 7). Toffler recommended that AT&T “reduce its control” over its 24 associated companies⁴ running its local exchange operations, by selling more stock to the public and divest Western Electric’s “routine manufacturing” thereby, “retain[ing] only the high technology parts of the company that interfaced with Bell Laboratories” (Toffler 1985, 10, 11). Divesting its vertically integrated monopoly in favour of competition was a counter intuitive yet adaptive approach to the new world that AT&T itself was forging technologically and politically. In effect Toffler was calling for AT&T to be deregulated and the restrictions imposed by the 1956 Consent Decree overturned, thus enabling AT&T to enter new markets and develop a new corporate structure in keeping with its “central role in the Super-Industrial Revolution” (Toffler 1985, 28).

As he later recounted, Toffler’s “blasphemous” recommendations in 1972 were “not a program for ‘dis-integration’ of the Bell System, ... but ‘a conscious program for the dramatic *extension of integration* over a larger sphere” (Toffler 1985, 11). The ‘extension’ he proposed would be formed by integrating a market with the firm and the network. The integrated market could coordinate many aspects of the Bell System’s operations and tap into consumer demand for communications which was diversifying and segmenting “*into highly specialized sub-markets*” (Toffler 1985, 54).

In 1968, in a move that would give AT&T its own economics research capacity, Bell Laboratories established the Economic Analysis and Graphics Research Department, later renamed the Economics Research Center. The Center had a \$1million annual budget and a staff of over thirty professionals (Bernstein 1984, 11). Staff were mainly economists with backgrounds in systems engineering, mathematics and operations research (Bell Labs Information and Publication Division 1972, 1, 4).⁵ By 1978 William O. Baker, president of Bell Labs (1973-1979), declared that the Bell System had “one of the best microeconomics groups in the country” (Bell Labs Information and Publication Division 1978, 2).⁶

3 Toffler’s report to AT&T was reproduced in full with additional commentary by Toffler in his book *The Adaptive Corporation* published in 1985.

4 These were called local operating companies (LOCs). At 8 May 1972 there were 24 LOCs, two of which were partially owned by AT&T (Coll 1986, xii-xiii). Please refer to Appendix A.

5 Baumol who joined AT&T in 1966 published *Economic Theory and Operations Analysis* in 1961 and 1965. It surveyed developments in OR as they related to economics.

6 William Baker cited in *Business Week* 30 October 1978.

Contestability emerged from this group's work on business issues related to regulatory and public utility economics and telephony rate analysis. It is important not to understate the engineering influence on these economists for they were not located at AT&T headquarters in New York City with finance and legal but at Bell Laboratories in New Jersey, amidst the technological breakthroughs leading to the world wide web and cloud-integrated global networks. In a further boost to economics at AT&T, their Council of Economic Advisers had been formed in the late 1960s on Baumol's advice. Baumol along with Alfred Kahn and Otto Eckstein advised AT&T's board and supported the work of the Economics Research Center.

Since 1949 when the case that led to the 1956 Consent Decree was brought, AT&T's monopoly had been under sustained political and legal pressure from the US Federal Government. AT&T had already armoured itself with external and internal economic advisors and an economics research department. Toffler's recommendations in 1972 proved to be in line with demands made by federal regulators only two years later, so the company's board had time to consider the advice before being forced to take it.

7.2.1 United States vs. AT&T

AT&T's travails re-ignited in 1974 when the Department of Justice brought the case *United States vs. AT&T* alleging the corporation had violated antitrust by engaging in uncompetitive practices in their long distance call business and by monopolising emergent markets (Evans 1983, 3; Temin and Galambos 1987, 111).

Under the direction of William F. Baxter, from the Department of Justice the parties eventually reached an out of court settlement called the Modified Final Judgment on 8 January 1982. Baxter who had been appointed Assistant Attorney General for Antitrust by the Reagan Administration in February 1981, had according to Stone, been prepared to negotiate only if AT&T "agreed to complete separation of all AT&T-regulated activities from unregulated ones" (Stone 1989, 323).

Under the agreement AT&T would divest the local exchange operations of 22 Bell operating companies (BOCs) (Tunstall 1985, 16-17), creating 22 independent Local Exchange Companies (LOCs) servicing local areas (Evans and Grossman 1983, 96). AT&T was also directed to draw up a plan to ensure the viability of the BOCs (Stone 1989, 327). They proposed a "seven-region planning model" that created "seven regional holding companies" (Tunstall 1985, 120). These independent companies were dubbed the

'Baby Bells'. AT&T retained their long-line business and control over Western Electric and Bell Labs (Stone 1989, 327). This along with control over their patents enabled them to "preserve the crucial integration of AT&T's research and manufacturing arms" (Tunstall 1985, 17). In return, AT&T would have unfettered access to markets, including information services and products and media, enabling the corporation to align itself fully with the technological explosion it was itself creating in ICT. As Toffler had observed, "[t]he computer, once a novelty, had become crucial to the entire economy, creating a voracious demand for new machine-to-machine communications" (Toffler 1985, 15).

The case had been precipitated by the entry of Microwave Communications Inc. (MCI) into the telecommunications market in 1971 (Shooshan III 1984, 16). AT&T had tried to keep MCI at bay by opposing its 1963 licence application to establish private line services between St Louis and Chicago which set off a chain of cases leading up to the Department of Justice filing its case in 1974. In 1966 Baumol joined AT&T's defence team as an expert witness and argued on the grounds that MCI was "creamskimming" AT&T's market (Brock and Evans 1983, 62). If competitors skimmed their profits in densely populated markets AT&T could not meet its universal service obligation to subsidise high-cost services in remote areas (Stone 1997, 64). In 1970 Baumol, Kahn and Eckstein and regulator William Baxter "insisted that 'Inherent in the concept of full competition and its benefits is the freedom to fail'" (Temin and Galambos 1987, 63). In other words, they did not want to see competitors protected by regulation. Along with AT&T's legal counsel Howard Trienens they voiced their preference for "full competition" over a "mixture of competition and regulation" (Temin and Galambos 1987, 63). By 1971 MCI had prevailed leaving a conundrum for both AT&T and the regulator—as noted by Trienens, markets would have to be allocated in the absence of competition (Temin and Galambos 1987, 1).

The 1974-1982 case brought by the government against AT&T for anticompetitive behaviour was settled by AT&T on the question of whether AT&T should remain regulated or be allowed to compete. With Baumol and the other advisors having previously taken the 'freedom to compete' position over the mix of regulation and competition, it appeared that AT&T was reaching a point where being free of regulation, or what Brown called "this legal-legislative-regulatory quagmire", was considered by some to be in AT&T's medium to long-term interests (1984, 3). As Brown noted, "the marketplace was to be the key instrument for governing the telecommunications industry in the years ahead. Competition would be the rule not the exception" (1984, 4).

That the company had mounted a defence for an extraordinary eight years, despite this emerging pro-market position, was due to the lack of a consensus position within the company. Those executives in favour of defending AT&T's monopoly were dominant, and during the defence, extensive expert economic argument was given for maintaining a natural monopoly in telecommunications, the focus of which was AT&T's efficiency in delivering services (Evans and Heckman 1983, 127). Baumol testified using the 'burden test' he devised for price setting in 1970. This test enabled a monopoly to set a higher price on one product against a loss of revenue on another. It measured demand in relation to cost, allowed a firm to derive data to be used in determining which products were becoming obsolete and was useful for product bundling (Baumol 1981, 10).⁷ The test underpinned Bell group's subadditivity theory, which demonstrated the cost efficiency of natural monopoly and was the mainstay of their efficiency argument that unfortunately, "fell far short of meeting AT&T's burden of proof" (Evans and Heckman 1983, 150).⁸ Natural monopoly was a failed argument against the government's claim that AT&T disregarded costs when setting rates in order to stifle competition.

AT&T's argument did not contend that telecommunications was a contestable market per se, although there was minor referencing of contestability in terms of lowering prices to deal with competitive threats (Evans and Heckman 1983, 23-24). AT&T used the contestability defence cautiously given that Bell economics was concerned with the inefficiency of regulated monopolies. Brock and Evans also noted the danger of the sustainable pricing argument put forward by the Bell group as it "raises the risk of deregulating public utilities and permitting free entry into heretofore monopolized markets" (Brock and Evans 1983, 71). Whether contestable market pricing was seen as a 'two-edged sword' or a 'bet each way' it appears that AT&T's defence did not use it "in any regulatory hearings" (Brock and Evans 1983, 71). Claims by Jeremy Bernstein that the Economics Research Center was disbanded because there was no longer a need for regulatory economics expertise after divestiture (Bernstein 1984), appeared not to consider that the contestability project had focused on industry deregulation so that AT&T could move unfettered into new markets.

7 Baumol's example: product X incremental cost = \$5.00, the revenue = \$7.00. If it reduces demand for another product Y causing a loss of a \$1.50 then the net incremental revenue is \$5.50 which passes the burden test (Baumol 1981, 10).

8 Evans and Beckman ran further tests using subadditivity, concluding that the "Bell System did not have a natural monopoly" (Evans and Heckman 1983a, 272).

The failure of AT&T's defence team and the decision of Baxter to halt the case and opt for a negotiated settlement produced an agreement on 8 January 1982 to divest the Bell System, a process which began on 1 January 1984. The agreement and subsequent break-up became the topic of a substantial literature that presented AT&T as having fought hard but failed to keep the Bell System intact in the face of government pressure (Evans 1983; Tunstall 1985; Temin and Galambos 1987). The breakup was lauded by anti-monopolists like journalist Steve Coll (1986). However, both within the corporation itself (Auw 1983; Toffler 1985), the academy (Stone 1989) and the wider community, many doubted the wisdom of breaking up what was generally regarded as a national institution (Marchand 1998).

Baumol and his fellow advisors Kahn and Eckstein were roundly criticised by AT&T vice president and assistant to the chairman, Alvin Von Auw,⁹ for their lacklustre performance defending AT&T in the case (Auw 1983, 132). It was an astute observation; albeit not a surprising one given that all three advisors had argued for competition over regulation in 1970, and that regulated monopoly was at cross purposes to contestability theory which called for industry deregulation. Auw was concerned by the focus on cost-related pricing and the dismissal of "externalities" which he defined as "society's goals and society's constraints – [asking] are they not the criteria to which policy should conform rather than the mindless operation of a model, however elegant its design, however precise its operation?" (1983, 121). He reserved his sharpest criticism of the outcome for Baumol, Kahn and Eckstein and the regulators, naming William Baxter (DOJ), Bruce Owen from the Office of Telecommunications Policy and William Melody and Manley Irwin of the FCC. Auw claimed both groups shared the same economic philosophy (Auw 1983, 132). This he characterised as "clockwork economics that tests whether markets are competitive—and therefore allocative efficiencies served—on the basis of their conformity to econometric models made in Chicago" (1983, 112).

Chicago law and economics promotion of the efficiency paradigm in antitrust was palpable in the philosophy of the regulators at the frontline of the case. Baxter was criticised by Auw for his single-minded adherence to "economic efficiency" as per the market and for ignoring "social pricing" that ensured subscribers in high cost areas could afford a telephone service (Auw 1983, 111). Shepherd in his analysis of the various contributors to the efficiency paradigm noted that Baumol's Princeton-Bell groups were also part of the 'efficiency school' (Shepherd 1988, 398). Baumol had defended AT&T's approach to pricing

9 Auw served three chairmen, H. I. Romnes, John deButts and Charles Brown from 1969 to 1981.

as legitimate, against the claim that Western Electric was hiking prices so AT&T could claim higher prices for cost recovery. And in theory he saw no issue with vertical integration (Baumol, Panzar, and Willig 1982, 465). To the efficiency school there were no substantive practices or structures that were prior indicators of anti-competitive effects.

However, according to Auw and Hendrik Bode former vice president of Bell Labs (1958-1969), economics contested the ‘engineering view’ at Bell which held that “functional efficiency in a strictly engineering sense” was necessary to ensure efficient service delivery (Bode 1971, 33; Auw 1983, 133). Implicit to service efficiency was the vertically integrated monopoly structure which Bode and Auw defined as a ‘natural’ monopoly because the network, with its interconnectivity of exchanges, was the one system (Bode 1971, 70; Auw 1983). Both Auw and Bode perceived there to be a tension between the engineering requirements of the Bell System and the demands of economics which Auw related to the differences between Saint-Simon and his concerns for social outcomes in contrast to Adam Smith and the self-interested economic agent, much as Hayek had done (Hayek 1979 [1952], 166; Auw 1983). However, Auw deftly points to Smith’s *The Theory of Moral Sentiments* to remind readers that human desires are ultimately served by transcending self-interest, that his was not a blanket criticism of economics but a criticism of the current trend in economics:

if there is a central tendency among today’s economists, uniting liberals and conservatives and those who might prefer to call themselves neoliberals and neoconservatives, it is a disposition to accept the competitive marketplace as the norm (1983, 121).

Auw and Bode were representative of many within AT&T, especially those appreciative of the engineering demands on the Bell System, who were cautious if not resistant to the structural change being proposed. Their position was “dubbed the ‘Fortress Bell’ policy” which according to Toffler, was festering internal divisions that went right up to the executive (1985, 16). This division was exemplified by Bell engineers Constantine Kraus and Alfred Duerig who described divestiture as a “national tragedy” in their emotively titled book *The Rape of Ma Bell* (1988, 35). Albeit, this engineering perspective was not held universally by the technical staff. Chemist Morris Tanenbaum, believed that the “[t]echnology would have destroyed the monopoly anyway” (Tanenbaum quoted in: Gertner 2012, 300).

Yet very few staff were privy to the details of what was being planned. Toffler, for example, described his report as a “samizdat document”, for AT&T’s executive had not released the information so much as let it leak to lower management (Toffler 1985, 12). But the board had prepared for change, as Brown indicated when he wrote that the “radical restructuring of our business was not a spur-of-the-moment action” (1984, 1).

7.2.2 A question of integration

Toffler's proposed organisational restructure, the "Bell Communications Constellation", essentially re-integrated former companies as affiliates along with a "network of small businesses and organizations" that would all *independently* provide services to AT&T. AT&T in turn would support these entities' activities by acting as a central planner looking after "operations, engineering, [and] construction" (1985, 141), act as the "central banker of the System" (1985, 142), manage manpower (including many former Bell System employees) through use of contracts and licenses (1985, 138, 145)¹⁰ and provide technical support to non-Bell companies (1985, 142).

AT&T would be left with command-and-control functions like "control over technical quality, research and development, major investment decisions, planning, training and coordinative activities, and other such functions. ... such as greatly strengthen[ing] itself politically by creating a vast network of local and national supplier firms and Constellation associates whose interests will overlap those of the Bell System" (Toffler 1985, 129). Toffler envisioned the Constellation would get bigger as communications expanded but that Bell would get leaner by devolving functions. This change in business model can be seen in the company metrics. Prior to divestment in 1984 AT&T had \$114 billion in assets and over one million employees (Kleinfield 1981, 3 4). In 2018, after a number of the 'Baby Bells' had been reacquired and the company had completed numerous mergers including with Time-Warner, AT&T had over \$525.5 billion in assets but only 268,220 employees (AT&T 2018a, 18).

The negotiated settlement to the antitrust case gave effect to Toffler's desire to uncouple AT&T from its vertically integrated structure, at least in part, whilst embracing technical integration and the network-based market alternatives it supported (Toffler 1985, 128), a move that also aligned with some of the requisite conditions for a contestable market.

Hendrik Bode, whom Toffler consulted, examined the relationship between technical integration and organisational integration in *Synergy: Technical Integration and Technological Innovation in the Bell System*, published by Bell Labs in 1971. Bode argued that vertical integration defined as the "flow of tangible goods" and technical integration, the "flow of an intangible – engineering information and understanding" were synergistic (1971, 28). Technological integration came from the exchange of technological information (18). For Bode the term 'technological' was broadly applicable to both physical objects and business

¹⁰ The BOCs operated under license contract, so Toffler's recommendation represented a massive extension.

systems (15). The Bell System prior to divestment could function as a commercial enterprise because the engineering and management systems were compatible. That is, the “interconnectedness of the telephone network” and the “high degree of technical coordination” (23) made it possible for millions of subscribers to connect every day. The exchange of information was facilitated by the relationship between Bell Labs, Western Electric and the Bell operating companies (BOCs) created by vertical organisation (16). Planning in this complex environment had to be “long-range” rather than opportunistic (18). Bode described vertical integration as the “successive stages in the production process under the same financial interest”, with its most critical benefit occurring between Bell Labs and Western Electric. Vertical integration between these two entities ensured that Bell Labs’ R&D qualified as ‘technological innovation’ having been manufactured and thereby reaching “the point of initial commercial use” (Bode 1971, 15).

The integrated Bell System was likened by Bode and Auw to a federalised organisation, having a central power which controlled its devolved business units and BOCs which were nonetheless quite autonomous (Bode 1971, 29; Auw 1983).

Toffler’s program called for the “*extension of integration*’ over a larger sphere” using Bell’s telecommunications network. His vision for a Constellation, was based on his understanding of the technical integration within Bell Labs “between theory and practice, between R&D and manufacture” (1985, 133), Toffler recognised that Bell Labs work practices, which had been instituted by Kelly post-war (Gertner 2012), offered a model to guide the whole Bell System. This was in keeping with Jewett’s philosophy that the Bell Labs organisational model had a wider applicability (Jewett and King 1940). He envisioned AT&T “progressively shedding functions and encouraging others to assume them and join the Constellation” (Toffler 1985, 133). That is, other firms in the Constellation would have their activities coordinated by AT&T and coordination would be greatly enhanced in the future by ICT platform technology. Digital network technology and the business models devised for it, thus could be said to have evolved from the US “telephone system” that Kelly described in 1950 as “a single, integrated, highly technical machine” (Kelly quoted in: Gertner 2012, 150).¹¹

11 Mervin Kelly. 1950. “The Bell Telephone Laboratories: An example of an Institute of Creative Technology”. Lecture at the Royal Society, London, 23 March 1950.

Toffler promised an organisational structure fit for Super-Industrial society that would ensure the “*extension of technical integration* throughout the Bell Communications Constellation – a system larger than that confined by the formal boundaries of AT&T” (Toffler 1985, 133). This conception, I contend, had the essential features of a 21st century platform business model—the monopolistic or oligopolistic firm hosting markets on its network. As Alan Stone observed, AT&T’s aim was to be “the network manager” hosting other businesses and it had in fact already served this role by hosting on its network “Bell companies, Bell licensees, and noncompeting independents” (1997, 32). What we can observe in the change proposed by Toffler was the extension of this integration by encouraging other entities to service AT&T’s requirements through the market operating within the Constellation, that is, other firms registered with the network which through further innovations became the modern day ‘platform’.

Other analysts argued, like Toffler, that Western Electric could open up to the market. Evans and Grossman contended that AT&T could achieve integration post divestiture using “market systems” to coordinate transactions with the newly independent associates and other suppliers servicing the network (1983, 95). Theirs was the Hayekian argument that dispersed information and the need to incentivise managers makes the market a ready substitute for a structurally integrated corporation (Evans and Grossman 1983, 121).

In his book *The Third Wave* (1980) Toffler called the larger sphere the “info-sphere” which was very broadly construed as “civilizations ... producing and distributing information” (Toffler 1980, 48). Toffler like Hayek asserted that information was exceeding in importance “land, labor, capital and raw materials” (Toffler 1985, 107). Information needed to course through society, the economy and the Bell Constellation to serve individual decision makers. This called for free markets and “radical deregulation” across industries to ensure these flows of information were uninterrupted (Toffler 1985, 140). In effect, Toffler’s integration was the vision promoted by the pro-market faction inside AT&T and Chicago school inspired neoliberals who were in positions of influence and power within the US antitrust regime. It was made possible on a global scale by digitisation from the 1960s.

United States vs. AT&T was a complex case. It reflected a mix of motivations, contesting philosophies and fractured views about the future of the Bell System. Toffler called upon the company to “invent” (not imitate) a business strategy to take them into a future that embraced social and technological change (Toffler 1985, 2) and an expanded view of what it meant to be integrated. The neoliberal idea that new entrepreneurial talent and innovation would unseat entrenched monopolies was not borne out by AT&T. Rather, it exemplified

Schumpeter's contention that entrepreneurship emerges from "within the shell of existing corporations" (Schumpeter quoted in: Davies 2017, 55). The growth of AT&T following divestiture in 1984 is a testament to the company's entrepreneurial and technological capacity. AT&T's industrial leadership through its radical restructure following the antitrust settlement would have ramifications for government owned telecoms and corporations generally throughout the world (Toffler 1985, 127).

AT&T's R&D included contestability theory which became an 'innovation' by Bode's definition when it was first deployed as policy in the deregulation of the US airline industry. Baumol and the Bell group's contestability theory proposed a radical new perspective that integrated markets with firms controlling networks. The benefit to the firm holding the 'central power' was the information coming from the coordinated market and the network to guide planning. The contestable market was designed to accompany the new networked industry structure which Toffler had characterised as the 'extension of integration' and which Baumol's group described as a 'construct': "A central task of our work is the integration of the process of structure determination into our model and the extraction of theoretical and policy implications from the resulting expanded construct" (Baumol, Panzar, and Willig 1982, 2).

According to the contestability doctrine, industry structures will find their optimum efficiency if regulatory barriers to markets are removed. Baumol's suggestion that the "fragmentation" resulting from divestment would be "transitory" was proved correct in AT&T's case when by the 1990s it had reconsolidated its telephony business and diversified (Baumol 1983a, 1). The willingness to cannibalise a significant part of its business to expand into unregulated markets (Evans 1983) like ICT and media (Neate 2016; AT&T 2018b) would see AT&T return to its rank of being the largest telecommunications company in the world.

7.3 Engineering a monopoly theory

The Bell economists and Toffler formed a vision that went far beyond the AT&T corporation and entailed a new economic order reminiscent of Hayek's *catallaxy*. They regarded the telecommunications system and its associated economics as a future-orientated model for the economics of the Information Age. AT&T, as the telecommunications monopolist in the US, controlled the new means of production, or rather, the 'means of transmission'. AT&T were positioned to decide what the economics of information transmission should be.

7.3.1 Defining natural monopoly in telecommunications using the subadditivity efficiency formula

The work of Bell Laboratories economist William Sharkey on natural monopoly was critical to showing the relationship between economics and network engineering in telecommunications. Sharkey noted that telecommunications, unlike most utilities, is distinguished by the “interdependent nature of demand, which plays a central role in determining the economics of the network” (1982, 185). It features a “two-party or multiparty process”, which is time dependent; that is, demand is for both incoming and outgoing calls to be put through at the time they are made or else the service is regarded as “blocked”, and delayed calls are considered a poor service. This demand for services necessitated that the capacity of the telephone system had to meet the demand during peak periods (Sharkey 1982, 8).

Capacity to handle peak periods came with a high price tag because switching technology used for routing was expensive, and it was the availability of switches that determined whether calls could be put through. As Sharkey noted, “a basic trade-off in the design of a telecommunications network involves the substitution of switching capacity for transmission capacity” (1982, 193). It was critical to calculate the number of circuits needed to maintain a quality phone service, as economies of scale declined when the number of circuits increased (Sharkey 1982, 185). Sharkey’s solution was called “plant subadditivity”, a method of calculating the least number of circuits used to rout telephone calls (1982, 8). Sharkey also applied what he called “firm subadditivity” concluding that “[a] single firm may be able to coordinate production or distribution of the industry outputs more efficiently than two or more competing firms” (1982, 8).

Each competitor had to cost their technological capacity to meet their respective peak period demand. Sharkey’s modelling showed that because each competitor servicing a town or area needed switching capacity the “combined capacities of multiple suppliers must exceed the capacity of a single supplier”. This was wasteful (Sharkey 1982, 184). Sharkey argued that this showed telecommunications was a natural monopoly, the efficiency goal of which was the centralising of demand through the system, so the more concentrated the demand the more cost effective was the supply to that demand (1982, 195-196).

7.3.2 Subadditivity and the contestability hypothesis

The key economic requirements of a telephone service, the coordination of peak demand while minimising technology production costs, became the basis of Bell's subadditivity theorem. Sharkey concluded that demand fragmented between providers would reduce the quality or service or increase costs (1982, 185). Panzar observed that for a single firm meeting demand at peak times the "average cost was not decreasing and marginal cost yielded all the revenues the firm needed to cover its costs" (Baumol, Panzar, and Willig 1982, xvi). The Bell economics group, aiming to produce a general theory, took this finding and extrapolated it to conclude that the combined production of any two products was less costly than "the total cost of producing each product separately" (Baumol, Panzar, and Willig 1982, xvi).

For Baumol et al this definition of production efficiency replaced the neoclassical economies of scale definition of a 'natural' monopoly, although economies of scale were considered in the calculation (Baumol, Panzar, and Willig 1982, 170). In forging a new definition of 'natural' monopoly in *Contestable Markets and the Theory of Industrial Structure* (1982), the inventors of contestability dropped all reference to telecommunication networks, which, unfortunately, disassociated their text from its intellectual lineage.

7.3.3 Heterogeneity and externalities in telecommunication networks

In a study of AT&T's Universal Service ethos, political economist Milton Mueller argued that the unique characteristic of ICT telephony networks was that "every pairwise connection between telephone stations [w]as a separate and distinct output". He refers to as "the 'radical heterogeneity' of network access" (Mueller 1997b, 22). These unique two-way/multiple-way connections (heterogenic products) are the basis of the features that distinguished telecommunications from other public utility monopolies selling homogenous products like water. This dependency gives rise to network effects or "network externalities" (Mueller 1997a, 27).

Sharkey determined that externalities were of two types. In one type a subscriber was not charged for receiving a call, because of a policy to charge the caller only (1982, 185). In another type, access to the network by potential subscribers expanded the number of connections and hence the user base, or what Sharkey called "overlapping communities of interest" (1982, 187). Sharkey regarded such externalities as a "public good ... benefit[ing] all those who subscribe to a telephone network by lowering the cost of communication

among its members” (1982, 187). Externalities were also key in reaching “a ‘critical mass’ of consumers” by adopting new technologies like electronic mail, which necessitated they learn new skills and processes (Jackson 1980, 119, 128).

The Bell Telephone System epitomised the drive for universal coverage despite diminishing returns on network expansion in the early years when the cost of exchanges went up as the number of connections increased (Mueller 1997a). This expansion can be attributed to Universal Service introduced by Theodore Vail in 1907 (Bornholz and Evans 1983, 29; Mueller 1997b). The sacrifice of lower profitability in order to achieve network dominance created the largest private monopoly then on Earth, a pathway which corporations like Amazon would come to emulate. AT&T in keeping with its monopoly structure and falling technology costs, eventually generated increasing returns,¹² that in high tech industries like telecommunications are a factor of low production costs and network effects (Arthur 1996). According to Brian Arthur, a pioneer theorist of network effects, a subscriber base is essential for taking advantage of increasing returns (Arthur 1996, 105). He defined this as “mechanisms of positive feedback that operate – within markets, businesses and industries – to reinforce that which gains success or aggravate that which suffers loss” (Arthur 1996, 100). Positive feedback about products and services has a multiplier or “information contagion” effect in the ‘overlapping communities’ that Sharkey describes on communication networks (Arthur and Lane 1994, 69). Kenneth Arrow noted that it was the “far-reaching concept of externalities, where some, at least, of the increasing returns are captured, not by the producer but by others” (Arrow 1994, ix).

By the early 1970s, the Bell network had an estimated five million billion units of connection (Toffler 1985, 43). Toffler’s report noted that the Bell System carried 80% of all data transmission, other than voice calls, in the US contributing 3% of AT&T’s total revenues. However, with computerisation this figure was forecast to rise to 50% of all revenues by 1980 (Toffler 1985, 52, 53). These figures signified a future fundamentally governed by Metcalfe’s Law (also called Gilder’s Law),¹³ which states that the scale of a telecommunications network is proportional to the square (n^2) of the number of telephones (communication devices) connected to the network, such that four phones make six

12 Such that the per unit cost of production falls as output increases. This pushes down prices based on marginal costs.

13 Metcalfe’s Law is commonly associated with Bob Metcalfe who invented the Ethernet, a precursor of the internet in 1976, and George Gilder, a libertarian economist and co-founder of the right-wing think tank the Discovery Institute, who published extensively on the technological future.

connections and 12 phones make 66 connections;¹⁴ similarly Moore's Law states that the number of transistors in an integrated circuit grows exponentially around every two years. In other words, the data distribution capacity of computers was expanding along with the number of networked computers, which in turn massively multiplied the number of possible point-to-point transmission connections between computers. This capacity was articulated by Bell Labs engineer John R. Pierce, an enthusiast for satellite, mobile and fiber communications, in an interview with Walter Cronkite on 29 January 1967:

I think that it's very important to realize that communication is a general function. ... So once you have the transmission facilities available, they can be used for everything interchangeably. (Pierce quoted in: Gertner 2012, 226).

This potential for business transmitted on such a huge network had presented AT&T with an opportunity and a challenge. This was how best to extract economic value from the network and at the same time extract AT&T from market access restrictions, imposed by their status as a regulated monopoly and by antitrust enforcement in general, without losing their monopoly market share. Their solution was to invent contestability, a new theory of efficiency for industrial organisation and a new market design. Both the theory and the design would be used to justify the removal of regulatory barriers and actual competition; a solution which can be regarded as being quintessentially neoliberal because it relies on the information processing power of the market to coordinate the exchanges by enterprise units on the catalytic network (Mirowski 2015 [2009]; Davies 2017; Mirowski and Nik-Khah 2017).

7.3.4 The economic quest

Willig's call for the application of "frictionless free entry" theory to industries controlled by government monopoly enterprises introduced the "notion of contestability" (Bailey 1982, xix, xx). Willig observed that the "most serious challenges to market control are presented by technological advances and product innovations like those associated with electronic mail", which in the 1980s was a service provided by the U.S. Postal Service (Willig 1980, 158). His point was that email, which was the future in messaging, was largely in government hands. Willig argued that a private unregulated monopoly could reduce wasteful competition with postal services yet behave competitively if entry and exit to the market was unencumbered (1980, 138).

¹⁴ $4+6 = 10$, $5+10 = 15$ etc.

Contestability's core rationale addressed the issue of wasteful competition through a process of cost minimisation of production expressed in terms not of market efficiency but in terms of industry efficiency. A "subadditivity" calculation would be used to examine industry structures using a cost function such that "for a particular output vector y when y can be produced more cheaply by a single firm than by *any* combination of smaller firms" (Baumol, Panzar, and Willig 1982, 170). Data on production costs would be collected from the firm/firms in an industry and used to set the price equal to marginal cost (Baumol, Panzar, and Willig 1982, 26). Contestable market analysis, according to its inventors, would assist the verification of a sustainable price setting that reflected the lowest cost of production. Therefore, the price would be set low enough to ensure that no other competitor could enter the market without pricing below cost, such that it would become predatory (Baumol, Panzar, and Willig 1982, 27). Price setting in contestability is an exercise in cost-minimisation with the aim of finding the most efficient industry configuration. Therefore, imitating the discovery procedure of actual competition to determine the price which mimics competitive behaviour is easier when there is more than one incumbent (Baumol, Panzar, and Willig 1982, 470).

Theoretically, a contestable market supplies the incumbent firm and potential competitors with the same data for price setting, so the incumbent can keep adjusting the price to remain competitive without actual competition taking place. In other words, symmetric cost information provides 'advanced warning' to all players and would-be players in a contestable market, instead of actual competition, which according to Hayek is only valuable when competitors actions can't be predicted (Hayek 1978 [1968]a, 179). Hayek, according to Beck, "defined knowledge as the ability to detect certain conditions" (Beck 2018, 72). In theory a contestable market generates that knowledge or information. However, firms also rely on other sources of information such as the data generated by communications across the network itself which is used in data analytics.

The Bell group's subadditivity formula, calculated on the basis of total industry costs, works together with contestable market analysis, which theoretically verifies the sustainable price set by a 'natural' monopoly, to keep competitors without compromising the coverage of costs (Brock 1983, 1056).

The transmission of price data is a task that contestability shares with Hayek's idealised market. Hayek expressed this goal in political terms: market efficiency was "a state of affairs in which all that is in fact produced is produced at the lowest possible costs"—a state that Hayek stands in opposition to the consideration of any other economic goal (1978 [1968]b, 91).

Hayek's theory of competition as a discovery procedure accommodates the contestable notion on the basis that "*wherever* the use of competition can be rationally justified, it is on the ground that we do *not* know in advance the facts that determine the actions of competitors" (1978 [1968]a, 179). Hayek made the point decades later that he thought it was possible for a monopoly "to fix their prices ... limited only by the consideration that they must be low enough to keep out others" (1979a, 67).

Hayek concluded that his theory was dependent on pattern prediction (Hayek 1978 [1968]a, 181) because "the validity of the theory can never be tested empirically" (Hayek 1978 [1968]a, 180). The Bell group made the same conclusion for subadditivity on the basis that "the data requirements of a statistical test of subadditivity can be very severe indeed" (Baumol, Panzar, and Willig 1982, 171).

7.3.5 Transmissions and transactions: revenues and costs

AT&T's new approach to defining natural monopoly based on subadditivity was indicative of a radical new restructuring of the corporation's network business model following the divestiture agreement in 1982. Their drive to build a global telecommunications network was, by the mid-1970s, being transformed by the development of the Ethernet¹⁵ and the widespread uptake of personal computers (PCs).¹⁶ In 1980, Tim Berners-Lee created Enquire, the first networked hypertext system and the forerunner of the World Wide Web. As the internet developed, AT&T took opportunities to extract economic value from individual transmissions, whether voice calls, emails, ATM withdrawals or data transfers. Enhancing transmissions was part of the work of rolling out a model for a global market order; that is, a networked world of individuals linked via computers, cables, satellites, microwaves and fiber-optics.

Hayek, in an interview with Bernard Levin in 1980, restated that the problem of economics was dispersed information which could only be addressed through the price signals of the market (Hayek and Levin 1980, 2:33). It was, however, clear by this time that the future unification of knowledge, reframed as universal access to information, had been secured technologically. The comparison between Hayek's price system and the World Wide Web was made by Richard Posner who identified them both as "decentralized pooling of

15 Bob Metcalfe and David Boggs published "Ethernet: Distributed Packet Switching for Local Computer Networks", in *Communications of the ACM* in July 1976.

16 The *Whole Earth Catalog* advertised Commodore and Hewlett-Packard programmable calculators in Spring 1969. The first computer ad was in 1968.

information” mechanisms (Posner 2005, 147). Hayek’s market had a competitor that could systemise information management far beyond Hayek’s computable price number system.

In an ideal Hayekian market information encoded in prices generated by exchanges would flow freely so that it could be used by entrepreneurs to locate opportunities and make decisions. Reducing transaction costs would facilitate that flow. In general, online transmission reduced the cost of executing transactions to a negligible component or, as Vernon Smith described it, “computerization vastly expanded the message space within which economic agents could communicate at vanishingly small transactions costs” (Smith quoted in: Mirowski and Nik-Khah 2017, 121).

The ubiquity of exchange informed the microeconomic thought of Coase who believed that “the ‘structure of competitive industry’ becomes tractable” based on the rise or fall of transaction costs irrespective of whether the exchange takes place within a firm or on the market (Coase 1937, 398). It is this idea that industry structure is malleable, according to the cost of making a transaction, that Coase understood to mean the cost of processing information, which in Hayekian terms was the cost of finding the price (Coase and Wang 2010). As Davies observed, “*even the price mechanism of the market* becomes subject to the efficiency audit of price theory” (Davies 2017, 52).

Coase frames his propositions on transaction costs and the firm by addressing a quandary created by Hayek:

Outside the firm, price movements direct production, which is co-ordinated through a series of exchange transactions on the market. Within a firm, these market transactions are eliminated and in place of the complicated market structure with exchange transactions is substituted the entrepreneur-co-ordinator, who directs production (Coase 1937, 388).

Why, if as Hayek¹⁷ believed, the price mechanism of the market automatically and efficiently co-ordinates the economy as if it were an “organism” (Coase 1937, 387), do firms *even exist* with their “entrepreneur-co-ordinator” who directs the completion of transactions by directing production within firms? (Coase 1937, 388).¹⁸ I contend that Coase was questioning the primacy of the Hayekian hierarchy that ‘deified’ the cosmos of the market,

17 Coase is referencing Hayek’s 1933 article ‘Trends in Economic Thinking’ *Economica* No.40 in which Hayek refers to society as an organism throughout the article, a view Hayek in turn ascribes to Mises.

18 The chief reason Coase gave for the existence of a firm was that it provided a workplace for employees and employers who liked hierarchical management as opposed to being “independent contractors” (Coase 1937, 404).

and that he saw the possibilities for entrepreneurs who were also ‘deified’ but as “islands of conscious power in this ocean of unconscious co-operation” (Robertson quoted in: Coase 1937, 388). Hypothetically, there was no reason why the institution of the market and the institution of the firm could not both compete and cooperate over which was more efficient, and in this way minimise the cost of transactions.

Coase published his theory of the firm and transaction costs in 1937, the year Hayek published his seminal paper ‘Economics and Knowledge’. The market and the firm, in this historical context, appear as a binary choice as to which is the most efficient at processing information. This choice, according to Coase, should be made purely on the basis of the cost of processing transactions (Coase 1937, 390).

Coase’s examination of the cost efficiency of firms was conceptually important to the Bell group’s formulation of the contestability doctrine, particularly as it concerned the efficiency precept and its rationalisation of ‘natural’ monopoly. Sharkey, who drew on Coase in his conceptualisation of ‘subadditivity’, writes:

the most basic question in an investigation of firm subadditivity concerns the existence of the firm, whether there be one or many in a given market. Coase (1937) was one of the first to recognize that firms could be seen to exist for purely economic reasons. That is, according to Coase a firm must perform some essential functions in the process of production more economically than a market (Sharkey 1982, 80).

Sharkey also factored in transaction costs to determine when one firm could produce a given output cheaper than two or more firms, to see which was more efficient, the firm or the market. He applied the work of Coase’s student Oliver Williamson who concluded that “although factors that impede exchanges between firms (across a market) manifest themselves somewhat differently within the firm, the same set of factors apply to both”. Those factors include the cost of managing complex contracts and negotiating prices when competitive prices don’t materialise, as in the case of monopolies (Williamson quoted in: Sharkey 1982, 81). The chief factors Sharkey and Williamson attribute to market failure are “uncertainty or complexity and the small numbers of decision makers, or thinness of markets” (Williamson quoted in: Sharkey 1982, 82). Given that several of these factors can be keyed back to the availability of information, be that in competitive prices or long-term contracts, then any boost from feedback loops between the firm and the market enabling the network controller to set prices will help mitigate uncertainty.

Understanding this difference takes us towards the essential problem which I argue the Bell Labs contestability theory aims to resolve, the question of how to integrate multiple firms within AT&T's sphere of influence – that is, how to convert a network business into a market-like provider. What can be deduced from this perspective is that a solution for the market becomes a solution for the firm, to the extent that 'the market' is congruent with a monopoly business running a network infrastructure. The challenge and the opportunity for Bell group was to work out how to create a new kind of economics that integrated markets with online networks.

To Sharkey the starting point was defining the term 'market' to mean "any collection of buyers and sellers and to the outputs that are produced and sold" (1982, 1). The firm is defined as "an organizational structure in which a centralized planning authority replaces the decentralized, impersonal forces of a market" (Sharkey 1982, 2). These definitions, with their distinctly Hayekian phraseology, elide any distinction between the public sector and private sector replacing it with a boundary drawn between organisations and markets. The measure of the exchange was the transaction cost, which Coase contended was applicable to all institutions where a transaction took place including non-commercial entities like state agencies (Coase 1960):

[W]e have to take into account the costs involved in operating the various social arrangements (whether it be the working of a market or of a government department), as well as the costs involved in moving to a new system. In devising and choosing between social arrangements we should have regard for the total effect. This, above all, is the change in approach which I am advocating. (Coase 1960, 44).

This was the basis on which market principles were to be extended to all non-market institutions, which was a key implication of Coase's theory of social costs published in 1960 (Davies 2017, 52). It can also be argued that the extension of the market principle also extends the network principle, whereby all participants whether they are active or inactive in the market at any given time, are registered on networks thereby providing data to the network operators that enable them to anticipate future transaction activity with more certainty (see section 7.3.6).

Sharkey was making an efficiency comparison between firms that exists only in terms of Coase's broader comparator between the firm and the market. Sharkey wrote "[f]irm subadditivity exists when the organization of productive activities within a firm is more efficient than organization through the competitive market" (1982, 73). Coase's efficient firm was "the entrepreneur-co-ordinator," directing the distribution of resources and

production and thus “tak[ing] the place of the price mechanism” on the purely economic ground that the internal transactions costs of a gigantic corporation are lower than market transactions costs between multiple competitors, making the firm more efficient than the market (Coase 1937, 388). Not that this was necessarily the case for Coase, who in writing before online markets believed that the high cost of marketing, the retailing component of which was tied up with bricks and mortar premises, “could only be eliminated by the abolition of ‘consumers’ choice’ ... It is conceivable that these costs might be so high that people would be willing to accept rations because the extra product obtained was worth the loss of their choice” (Coase 1937, fn 394). Rather than efficiency in the sense of the ‘optimum allocation of resources’, Coase’s efficiency was informational, amounting to a defence of monopoly pricing that I contend is a vision in *extremis* more akin to Soviet frugality than the consumerist largesse of competitive capitalism.

Combining plant subadditivity and firm subadditivity makes visible how the efficiency of network technology integrates with the efficiency of the transaction technology. As a result, subadditive efficiency has overriding dominance as an idea that threads between the firm and the network to the exclusion of market-based competition. This makes any reference to competition in the theory of industrial organisation hollow.

In applying subadditivity, Sharkey addresses the issues Coase raised, that is, the various costs of price systems. Sharkey notes that the quantification of “firm subadditivity ... [is] [o]ccasionally known as the transaction cost theory of the firm, ... [which] attempts to relate the hierarchical structure of the firm to the specific tasks that the firm must perform” (1982, 57). He further posits:

plant subadditivity is generally insufficient to justify the existence of a firm and that firms exist only because of the relative advantages of a firm over a market in organizing or coordinating inputs into production. (Sharkey 1982, 8).

In this statement Sharkey claims an advantage for the firm over an open market in coordinating a network. He also anticipates that a firm might operate without bearing any significant sunk costs. That is to say, a firm might coordinate telecommunications, electricity or toll roads, for example, with poles and wires, generators, highways and other plant and infrastructure funded and operated by other entities. It might then legitimately claim to be an efficient monopoly coordinating a market. Sharkey’s division between plant and firm subadditivity separates sunk from fixed costs, in this case, circuit technology and the costs of running the firm.

Sharkey established the structural framework for a contestable market based on cost data from which a new model of a firm and market emerge. The Bell group had conceived economic efficiency in terms of the firm-controlled network which amounted to a 'natural' monopoly being designated the most efficient industry type to manage ICT networks, online markets and network-based industries. The organisational advantages, Sharkey claimed, were anticipated by Coase's question, "[w]hy is not all production carried on by one big firm?" (Coase 1937, 394). Coase was brandishing two options, the market or a monopoly. He was not ideologically opposed to monopolies and criticised his fellow Chicago economists Frank Knight (Coase 1937, 394) and Henry Simons for their anti-monopoly stance (Burgin 2012, 41). For Coase it was a dispassionate, scientific exercise in marginal cost analysis whereby transaction costs indicated which mode was the most efficient at any given point in time. This approach was, as Sharkey noted, applicable to firms and "any other aspects of economic organization" (1982, 81).

Transaction revenues

Coase, it could be argued, was tracking towards the contestability position back in the 1930s. He contended that technology like the telephone would make the firm more efficient and hence increase the size of the firm (Coase 1937, 397). He also submitted that there was a kind of pay-off between markets and firms based on the cost of managing information and that the comparative benefits of one information-based pricing system over another tended to oscillate.

Coase also identified the possibility of buying and selling information when he "imagine[d] a system where all advice and knowledge was bought as required" (1937, 400). The information needed for pricing, in other words, could be supplied by specialists using telecommunication technologies (Coase 1937, 390, 397).

At the time Coase was writing, the value of plotting pathways and patterns of messages exchanged on communications networks was only known to military intelligence. This had begun in World War I (West 1988 [1986], 38) and substantially developed during World War II (Welchman 2016). The process of analysing data from communication exchanges logged on ICT networks was called 'traffic analysis' or 'link analysis', terms that have now been superseded by 'data analytics', which mines a broader spectrum of data available from message exchanges and transactions. AT&T Bell Labs had a Traffic Analysis Research Center set up to study telecommunications traffic, which Bailey joined in the mid-1960s, so the contestability theorists were aware of its role as an alternative source of data to the price mechanism. With

the advent of the internet, data aggregation fundamentally transformed the role of information in the economy as the focus of firms came to rest on value-adding information.

The integration of the firm with the network and market turned the firm into a data clearinghouse and revenue raising powerhouse. The firm controls the market that generates positive and negative feedback. It also controls the network that generates revenues from commissions on exchange transactions between agents in the marketplace (like riders and drivers) and revenue from on-selling aggregated data collected from the network that is generated every time an agent registers with the network, sends a message or makes a transaction across.

The contemporary answer to Coase's question about the efficacy of the firm is found in platform capitalism and the advent of contestable markets that are *hosted* by monopoly-oligopoly industry structures. This is made possible by the firm's expertise in finance and financial product development, the design and operation of markets on digital platforms, data analytics and the willingness of neoliberal governments to deregulate industries. To illustrate this development, I give a brief overview of Uber ride sharing as an exemplar of how markets and firms have integrated with the aid of digital technology and minimalist regulation of the ride sharing industry.

7.3.6 The Uber platform: does it meet the conditions of a contestable market?

Determining whether the conditions of a contestable market exist is crucial to assessing whether the Bell group's contestable model is merely a theoretical idea providing a rationalisation of deregulation and privatisation or whether it is a manifest possibility. I contend that the Bell group's concept of a contestable market describes the two-sided driver-rider market hosted by Uber, albeit not all contestable conditions are met.

Uber Technologies Inc. is what economist Peter Gabel called a "transportation network company[y] (TNC)" (Gabel 2016, 529). This term distinguishes Uber, which provides ride-sharing services, from the taxi industry. Taxi companies, unlike ride sharing, have regulated set charges and a workforce who must be professionally licenced as taxi drivers (Gabel 2016; Knight 2016). The income base of Uber is the taking of rents by charging drivers and riders a commission for the use of the Uber network (app).

Uber can be described as a 'fin-tech' firm operating in the passenger transport sector. Uber is based on a hybrid firm/market model described here as a network-controlling firm

hosting a market. The designers of the Uber model included Goldman Sachs alumni who were specialists in financial product development and digital technology. One of this group, Christophe Lamy who worked for Uber building the London market, remarked that “Uber brought a liquid market transaction system to transportation” (Christophe Lamy quoted in: Knight 2016). The business is defined by how it makes its revenue and not by the nature of its service. As Sam Knight observed, “Uber likes to describe itself as a marketplace: for a commission, it connects drivers and passengers, sets the fee, and handles payment” (Knight 2016). Uber collects rent. Its model is part of a trend that is driving “rents away from labor and towards capital” (Furman and Orszag 2015, 1).

Uber’s hosted market is endogenous, that is, it is bounded geographically by the network of roads it traverses.

In this analysis, key conditions of contestability are considered in turn and whether these are met in the market hosted on Uber’s platform. Those conditions are: symmetric information and equal access to technology, ease of entering and leaving the market, consumer welfare (that is, low prices, as defined in the theory), minimal sunk costs, efficiency, and the presence of competitive threats.

The market hosted by Uber meets the condition of *symmetric information* and equal access to *technology*. Drivers have equal access to Uber’s network technology via the Uber app and the information it generates. There is no competitive advantage for drivers regarding the knowledge that is controlled by Uber. Riders also have the same access unless Uber cares to differentiate its market for some reason.

The condition of *entry and exit* is met since drivers and riders are registered on Uber’s network and can choose to come into the market at any point over a 24/7 period of time. Arrangements that allow drivers to partake in the market by simply registering with the network have been made possible by governments failing to apply taxi industry regulations to the ride sharing industry. In New South Wales, for example, drivers no longer purchase a taxi licence, which was the cost of buying a taxi cab business the high value of which was maintained by capping the number of licenses. Any person with a driver’s licence and a vehicle can now enter and leave the ride sharing market with relative ease without investment, albeit drivers must pick up vehicle depreciation and car repayments.

Consumer welfare, defined as low prices is met except when demand is high. This is because prices are determined by supply and demand within the market. Although prices at peak times are considerably higher than at other times, the platform controller may not impose

any disadvantages on the riders, because the intertemporal price is being equilibrated by demand in the marketplace calculated by algorithms which riders and drivers are bound by—so riders accept that a lift on New Year’s Eve will be more expensive than one at 3pm on Melbourne Cup Day. Consumer welfare in the form of low fares and convenience remains intact. The drivers, although deemed to be independent entrepreneurs¹⁹ by Uber, do not set prices for riders or network fees so they have no lever on the market. They pay a commission on every ride that varies with the price based on demand (Gabel 2016, 529).

Drivers are also absorbing the low margins that accompany low prices set by Uber, which is striving for dominance of the passenger transport sector by staying competitive against the taxi industry and other ride sharing platforms like Lyft, Ola and other potential rivals coming into the ride sharing industry. Uber is not only meeting the consumer welfare criteria of a contestable market on its hosted market by shifting costs to drivers it is also pricing competitively to keep market share and deal with potential competitors entering the market.

There are *sunk costs* in the ride sharing industry, however, they can be minimised. Offices and computers can be leased and staff can be contractors. Advertising, which is defined by some scholars as a sunk cost, was considered a positive attribute which aids successful entry into a market and profitability (Geroski 1991, 71; Kessides 1991, 24). The drivers who do the work of the ‘taxi’ business, carry the lion’s share of the business’s fixed costs, that is, the vehicle and its running costs and employment costs like driver insurances. The vehicle is considered a fixed cost because it can be readily sold or used in another market (Baumol and Willig 1981, 405-406). Drivers also carry the bulk of the industry’s inefficiencies, for example, the downtime for vehicle repair and driver fatigue and sickness. Driver ‘entrepreneurs’ cannot reduce their costs from efficiencies derived from scaling their operations because they cannot control the allocation of demand from the network. In effect, the drivers are carrying the “burden of the transaction costs” of the rides, which, according to Gray and Suri in their study of gig workers, is because Uber thought of drivers not as workers but as “customers who are selling their labor ... of their own volition” (Gray and Suri 2019, 75). This attitude befits the Hayekian view that there can be no exploitation except that created by coercion (Hayek 1960, 137).

19 In some jurisdictions they are defined as employees which disrupts the business model (Butler 2018, 2021).

Within Uber's network, there are no *potential competitive threats* in contestability's sense of entrants who could seize opportunities to take profits from incumbents. Riders are competing for rides but prices are set by Uber's algorithm based on demand signals. The so-called driver 'entrepreneurs' who can theoretically 'hit-and-run' when demand is high cannot change the algorithm's price settings. They can only impact the price if Uber decides to account for demand for 'rides to drive' through aggregate demand. There is no actual entrepreneurial activity within a hosted market because drivers have no agency to change prices or services. Thus Willig's "idealized market" in fact sees the market price *endogenously* determined, so that not even the demand from riders 'off Uber' plays any substantial role in price setting, a factor predicted by Spence (Spence 1983, 988). Uber's *hosted* market is not internally contestable on this particular condition.

I also argue that at the industry level, the ridesharing sector, that is the market of network firms offering ride sharing services, will not support contestability's *potential threat condition*. Uber competes in the conventional sense with its actual rivals in the ridesharing industry like Lyft and Ola and with the taxi industry. Uber initially set their prices below the price of taxi services to attract riders and paid good rates to attract drivers from other services because their success was dependent on growing the market-network fast (Knight 2016). I contend that Uber is still in this 'start-up' phase as they continue to price to gain market share and continue to provide incentives like bonuses to attract drivers when there are shortages. The long game, however, is to take the whole market a game which is supported by investors and by not taking profits in the medium term, a point I discuss under profit taking below.

In considering the conditions for a contestable market, we have found that many, but not all of those conditions are present within the network which is Uber's ride-sharing platform. Conditions that have been met are: equal access to information and technology, minimal sunk costs, consumer welfare, and ease of entry and exit for drivers and riders. The threat condition is not met.

Several structural features of Uber's contestable market set it apart from the traditional taxi industry. The dual market-network structure quarantines the workforce and its attendant sunk costs away from the price setting mechanism of the market. Bailey referred to this dual modelling as "detaching sunk costs from the serving firm" the outcome of which was that "much of the need for traditional economic regulation of the service industry disappears, even if the industry is still a natural monopoly" (Bailey 1981, 179).

Ride sharing has avoided the regulations imposed on the taxi industry. This reflects the contestability doctrine, which advocates the removal of regulations. By skirting the costs that had been born by the established taxi industry, the price can be kept competitive to keep riders from switching from one mode of transport service to another. Although Uber has taken a considerable share of the market from the taxi industry in London (Knight 2016) and the US (Gabel 2016, 529), rider sharing is not competing on the same terms as the taxi industry as it is not regulated to the same degree. As Gabel notes, in New York City yellow cabs have been protected by a rule that bans Uber from picking up passengers “hailing a cab” on the street, a regulation Gabel described as “toxic” (Gabel 2016, 533). In his analysis of contestability of the passenger transport market, inclusive of both taxis and Uber, Gabel concluded that the traditional taxi owners, called “medallion owners”, were able to maintain their monopoly due to the hailing rule. Without the rule it was “conceivable that the Internet-based call service could eliminate the rents earned by medallion owners” (Gabel 2016, 533). This would further impact driver incomes that had already seen a per capital drop of 12 percent between June 2013 and March 2015 (Gabel 2016, 531). This suggests that the yellow cabs dominance is tenuously hanging by the thread of a rule that could be changed. Ride sharing is a fin-tech industry that was set up on the margins of the taxi industry which it encroached because governments acquiesced to the new digital business model.

Is the ride sharing industry profitable? In a word, yes. However, the market participants appear to be unwilling to take those profits until the question of how many competitors the industry will hold is resolved. This observation is based on recent figures from the US market. From early 2020 the market was reduced to Uber and Lyft taking 69 percent and 31 percent market share respectively (Wong 2021). Uber’s revenue in 2020 was \$11.14 billion and Lyft’s was \$2.3 billion (Mansoor 2021). This fintech industry is driven by data, innovation and investors. The goal is network expansion. Both companies continued to pour hundreds of millions of dollars into self-driving vehicle research, litigation, including to prove drivers are independent contractors not employees, and acquisitions and mergers (AlHusseini 2019; Korosec 2020; Shetty 2021; Vanian and Harty 2021). In other words, both companies are focused on winning market share, through self-driving vehicle innovation to remove the costs of drivers, and through buying out rivals and newcomers to the market. This duopoly, like Amazon, has forsaken profits to gamble on taking control of ‘the’ market.

Competition for market dominance is expensive because it necessitates constant technological innovation and the removal of legal barriers to win and maintain market share. The market will likely become a natural monopoly as defined by efficiency, through merger (AlHusseini 2019) or attrition. It will be a ‘winner takes all’ market if the current incumbents continue to disavow profit taking. I would also argue that this is an indicator that the market will in the long term *not support threats* from potential competitors because the sunk costs in R&D and litigation, that mark the ride sharing industry, are too high. If the industry becomes a monopoly in the US, as predicted, potential threats are even less unlikely as the monopoly will command the territory through infrastructure and network effects.

On the question of Uber’s global aspirations, they like other tech giants demonstrate network effects through global scaling of its networks coupled with greater scope as these platforms vertically integrate into food delivery and other transport modes, including government sponsored moves into replacing public transport services in Australia (Point to Point Transport Taskforce 2015; Australian Associated Press 2017). Consequently, it can be difficult to differentiate between a market effect, and a network effect, which within the industry of competing platform providers, constitutes a barrier to entry. The outcomes are increased difficulty for global competitors to match service levels and increasing rates of return for incumbents that enable them to keep prices low when potential rivals appear. Platforms like Uber, in effect, are scaling their engagement through financial product engineering to dominate firms and markets which will be enhanced by driverless vehicles. Incumbent network firms can change their pricing algorithms instantly, so the entry price as a limit mechanism is redundant. Market intelligence drawn off network data analytics also gives the platform incumbent an asymmetric information advantage and there are also some sunk costs enhancing technology.

Back in 1982, the Bell group did not theorise network effects in their main text, even though they were aware of network effects in telecommunications. As for increasing returns, they handled that issue by just “assuming it away” (Weitzman 1983, 486). The conclusion drawn here is that an imperfect contestable market does operate at the level of the driver-rider hosted market on Uber’s platform. The market governing the ride sharing firms (industry level) is however not contestable but is trending towards a conventional monopoly. The broader ride sharing market is inexorably trending towards global concentration because network effects will effectively protect the market winner from competition. That is, potentially the subadditive efficiency of having just one platform will eventually result in market lock-in whereby riders become dependent on the one network.

As for the pool of ‘entrepreneur’ drivers – they feel the effects of Ramsey optimal pricing on commission fees with the attendant loss of wages growth and conditions. They must also submit to a new form of labour exploitation, the extraction of surveillance data so that their driving patterns, and the clients for whom they drive, becomes information used to help the firm-controlled network compete (Srnicek 2016, 84).

I conclude that this industry structure, which the Bell group invented based on communications networks and which now dominates the new industrial landscape does not bode well for consumers or workers.

7.4 Taking the contestability road to the *catallaxy*

In this thesis it is argued that the firm-controlled network hosting a market has emerged as an economic-governance institution, its dominance justified by its efficient utilisation of information transmitted by exchange transactions taking place within its network. I have provided evidence that the neoliberals positioned monopolies to be the planners of their “self-organizing structures”, and that neoliberal philosophy is synergistic with this new form of capitalism (Hayek 1979a, xii). The nexus between neoliberalism and platform capitalism has, however, been obscured by neoliberal discourses on competition and free markets. In this section neoliberal discourse on competition is critiqued. Also, the extent to which contestability as a doctrine has served as a mechanism to construct the catallactic market order envisaged by Hayek is considered. It is, however, important to establish that in both contestable and catallactic conceptions there was no division between the private or public sector. Nowhere was this clearer than in the use of ‘competition and contestability’ to transfer public sector assets, services and functions to the private sector.

An exemplar of a market type that abetted the transfer of government services and functions to the private sector was whole-of-market franchising. The Bell group devised an auction that worked as a market mechanism under contestability, called a monopoly franchise auction, where competitors bid to supply a whole market. In these auctions the lowest bid wins and no revised bids from losers are allowed as in the case of typical auctions (Baumol, Panzar, and Willig 1982, 414).²⁰ This mechanism is anomalous in a contestable market because the winning bidder gets to supply all demand at a fixed price for a set period of time, or at least until a new auction is called, which constitutes a barrier to entry and exit

²⁰ This arrangement called the Bertrand-Nash expectation was derived using game theory.

for ‘hit and run’ entrants. Irrespective of this missing competitive dynamic, the Bell group claimed that the auction still produced a sustainable efficient price. This auction was a refinement of the competition-for-the-market model devised by Harold Demsetz a Chicago School economist and member of the Mont Pèlerin Society. Demsetz established, according to Bailey, “the tradition” upon which contestable market theory was built (Bailey 1981, 178). Demsetz’s auction for the entire market was designed to operate under government franchise on the basis of competitive bidding and long-term contracts being renegotiable from one auction to the next, on conditions of free entry and bidders having equivalent productive capacity (Demsetz 1968; Baumol, Panzar, and Willig 1982, 413). The fundamental difference between Demsetz and the Bell group was that under Bell’s analysis bidding markets can operate outside the auspices of government as long as the good or service is “proscribe[d] for private provision” and the winner has an exclusive franchise to supply the whole market (Baumol, Panzar, and Willig 1982, 46, 414).

In both contestable and catallactic conceptions of the market there was no division between the private or public sector. Coaseian inspired cost disciplines developed from his work on transaction costs and social cost theory could theoretically be imposed on all markets hosted by firms managing former government or regulatory entities whose main functions had been to manage externalities, whether that was a department managing environmental pollution or a regulatory agency managing bankruptcies. The symbiotic relationship between the neoliberal movement and the Bell group would ensure that, in theory, no institutional vacuum would form as state regulatory functions transitioned to the corporate sector through the process of privatisation guided by the efficiency paradigm.

7.4.1 Competition: discourse or actuality?

The Socialist Calculation debates of the 1930s not only crystallised the position taken on ‘competitive’ markets by Hayek, Mises and Robbins as the only way to organise economies (Kirzner 2018, 106), but gave rise to discourses on the superiority of free markets and competition centred around their unique capacity to process information and verify the ‘truth’. Their discourses on markets and competition were, however, largely rhetorical devices to secure political success. As Davies observed there was scant attention given to competition in early neoliberal thought (Davies 2017, 43).

Hayek identified the need for a competitive dynamic to generate data that would drive the price mechanism. He contended that the price mechanism of the market would produce “spontaneous order”, but Hayek’s writings on competition are largely speculative and

politically charged and have lent themselves to non-economic strategic uses. According to Davies, competition is “valued ... for its primarily moral, political and epistemological qualities, not its utilitarian or economic ones” (Davies 2017, 43). This observation is exemplified by the neoliberal argument that inequality in society should be accepted because it is a necessary by-product of the competitive order, the payoff being that overall, most people would be better off (Hayek 1973, 103; 1978 [1968]b, 91). Using analogies to sport and exams, Hayek used competitive activities performed in everyday life to explain social conditions such as poverty and hunger. Everything that was not winning was losing (Davies 2017, 41, 47) and that included the environment. Foucauldian scholars engaged with the pervasiveness of neoliberal competition, with Wendy Brown observing that “liberty is relocated from political to economic life” (2015, 41). The political leveraging of competition propagandises choice, satisfaction and freedom for the individual, who is promoted as a being perpetually on the lookout for opportunities—this is because the competitive market has insinuated itself into every aspect of human life (Dardot and Laval 2017 [2013], 174-175). Personhood thus becomes defined by participation in economic competition (Kotsko 2018, 36).

Foucault on competition and exchange

The pervasive application of competition to everyday life suggests that competition in neoliberal political economy should be re-examined. To do so we turn back to Foucault who considered neoliberalism in its historical context in Europe. Foucault points to “a shift from exchange to competition in the principle of the market” in the 19th century (Foucault 2008, 118, 119) and draws the conclusion that:

for the neo-liberals, the most important thing about the market is not exchange, ... [but] competition (Foucault 2008, 118).

While Foucault applied his statement to all variations of neo-liberalism. I argue that it did not apply to Chicago neoliberalism but rather only to ordoliberalism with which Foucault was more familiar. By the late 1970s, Chicago had adopted monopoly capital’s ‘imitation of competition’ doctrine, the evidence of which is to be found in Posner (1976), Bork (1978) and Hayek (1979a), and the outcomes of neoliberal policies—unconstrained expansion of American monopolies.

However, here the differences between German ordoliberalism and Chicago neoliberalism becomes critical. Foucault applied his analysis of ordoliberalism, that is the policy of *Gesellschaftspolitik* which *did* identify competition as that which must be conditioned in order for the market mechanism to function, to be generally held by neo-liberalism (Foucault

2008, 240). “There will thus be a sort of complete superimposition of market mechanisms, indexed to competition, and governmental policy” (Foucault 2008, 121). I argue, however, that Chicago neoliberalism under the influence of Hayek, Coase and Becker remained attached to the 18th century market exchange principle. The function of the market, according to Coase, was to promote exchange by reducing its cost (Coase 1988, 7). For Hayek mercantilism was, as shown in Chapter 3, a key plank in Hayekian international governance.

In describing the exchange, Foucault writes: “one of the points of anchorage of the new governmental reason [in the 18th century] was an understanding of the market as a mechanism of exchange and a site of veridiction regarding the relationship between value and price” (Foucault 2008, 44). The epistemic function of the market, its role as an information processor and claimed capacity for deriving the truth, was Hayek’s core idea. This idea would brace neoliberalism to a utilitarian systems approach expedited by ICT.

The 18th century market environment saw the emergence of a “radical approach which tried to define the juridical limitation of public authorities in terms of governmental utility” (Foucault 2008, 43). Rejecting the former mercantile capitalism, economists emphasised a market’s “exchange value and spontaneous veridiction” and fostered the idea that public authorities had to interact with a wide spectrum of societal interests that necessitated government seek its own “principle of its self-limitation” (Foucault 2008, 44). In the 19th century this idea, together with the competition principle, both manifested in *laissez-faire* economics (Foucault 2008, 119). Foucault expresses this change as “[o]ne must govern for the market, rather than because of the market.” (Foucault 2008, 121).

The ordoliberalists broke from both concepts, seeing competition as “a formal game between inequalities” that operates under certain conditions (Foucault 2008, 120). In other words, competition was not ‘natural’, as *laissez-faire* would have it, but rather should be seen in the light of its conditions of appearance as a formalised mechanism (Foucault 2008, 120).

The Chicago School also rejected *laissez-faire*, based on similar reasoning, however, their conditions emergent were not for the formation of competition but the formation of contestability, as argued in Chapter 6. As we have seen, the contestability doctrine emerged from a telecommunications monopoly. It can be observed as discourse in public policy justifying monopoly and in practice in ICT-driven exchange systems of platform monopolies. Contestability is a reinvented form of market economy based on exchange; in it the delimitation of corporate governmentality is determined by what is and what is not contestable.

Foucault approached the study of Chicago neoliberalism through Becker's *Human Capital* (1964). Foucault interprets Becker's conception of *homo aeconomicus* to be radically different from that which had gone before, "*homo aeconomicus* ... is not the man of exchange or man the consumer; he is the man of enterprise and production" (Foucault 2008, 147). Foucault famously extrapolates Becker's reformulation of 'man in society' to neo-liberalism by claiming "[H]*omo aeconomicus* ... is not at all a partner of exchange. ... [he] is an ... entrepreneur of himself" (Foucault 2008, 225, 226). The Uber example has shown that far from being producers and entrepreneurs the riders and drivers are the very thing the firm is exchanging. That is, they are not producing for themselves but for the platform. Human capital under contestability encompasses the objects of exchange. The exchange takes place in an environment that has a *weak* competitive dynamic produced by competition between riders for services, which is sufficient to feed demand and preference data to algorithms that alter the price accordingly. Competition between driver 'entrepreneurs' for rides has no impact on the price and therefore could be said to be irrelevant and indeed will soon be redundant with driverless cars. Without a mechanism to present their value to the market, individuals cannot impact the price so they themselves are not agents of competition. The competitive dynamic of the market does not function to reallocate resources but to generate preferences data which feeds the algorithms. Riders and drivers participate in this process, as well as supply their data, for free every time they use the network app. It is an example of how free data makes individuals needed but worthless (Lanier 2010).

Competition and competitiveness, it can be argued, have been leached from the market system and replaced by a regime that works on latent threats to ensure that workers and vendors keep their demands and prices as low as possible.

Monopoly capitalism has shifted from a liberal economic-juridical institutional order to the new neoliberal inspired economic-governance institution, the firm-controlled network. Government 'deregulation' has been followed by 're-regulation' by the firm within the market it controls. This process of 'deregulation' followed by 're-regulation' has been mirrored for the cyborg individual. With the emergence of the new institution and surveillance technologies comes new methods for regulating the behaviour of individuals and controlling their economic choices and actions. According to Foucault, Becker believed that human beings could be systematically ordered once they were set to functioning economically as free agents (Foucault 2008, 270). Coase had a similar view claiming that for those employees who wanted to be 'free' of the firm, there was always the option of becoming contractors (Coase 1937, 404). What studies on the new 'gig' economy show is

that contractors do not have control over their working lives (Crouch 2019; Gray and Suri 2019). This is not unexpected since the cyborg conception of the individual as a ‘cog’ or ‘node’ has dominated neoliberal thinking about the individual.

7.4.2 Scholarship and discourse

At the time Foucault was giving his lectures on neoliberalism (1978-1979), the contestability doctrine was being pilot tested in the deregulation of the US airline industry by former Bell Laboratories personnel Elizabeth Bailey and Alfred Kahn. Also around this time, Marxist scholarship in political economy had, according to John Bellamy Foster, begun “to assume the ascendancy of free competition throughout the history of capitalism” (Foster 2018, 60). Marxism was mainly concerned with industrial capitalism since the time of Adam Smith who championed the liberal ideal of free and open markets (Foster 2016, 5). Foster observed a trend in the scholarship to de-emphasise industry concentration and interpose instead the idea of capitalism as a continuum of free competition devoid of developmental stages across its timeline (Foster 2018, 60). Foster made an extensive analysis of this shift from emphasising monopoly to disregarding monopoly capitalism, and considered the spectrum of literature from conservative economists to “the ‘back to Marx’ movement” (Foster and McChesney 2012; Foster 2016, 8; 2018, 60). The shift was marked by the publication of what he and Robert McChesney regarded to be the last significant analysis of monopoly capitalism, Paul Baran and Paul Sweezy’s study *Monopoly Capital: An Essay on the American Economic and Social Order* (Baran and Sweezy 1966; Foster and McChesney 2012; Foster 2016; 2018). This is ironic because the authors observe changes that lead to the emergence of platform capitalism. Notably, that firms need to engage with information and ICT innovation to successfully compete, and that profit maximisation came with the “proviso that the exploitation of today’s profit opportunities not ruin tomorrow’s” (Baran and Sweezy 1966, 27). This became the signature approach to corporate growth by Amazon, Uber and other tech giants whose investment strategies were aimed at dominating the market.

As noted above, Davies makes a similar claim to Foster, suggesting that the socialist critique of monopoly was abandoned after 1989, the year the Berlin Wall came down. He observes this shift from denouncing dominance to tolerating inequality as long as it “was ‘meritocratic’, enabling ‘social mobility’” (Davies 2017, 40). Davies asks “[h]ow did this extreme inequality develop, with so little opposition?” (Davies 2017, 40). Daniel Zamora neatly summed this up as “[t]he intellectual consecration of neoliberalism by the Left as well as the Right” (Zamora 2016a, 80). “Thus, far from having triumphed over its enemy in a

duel to the death, neoliberalism has often converted its enemies unwittingly to its own ideas.” (Zamora 2016a, 80). This act of conversion was core to neoliberalism judging by the definition of the *catallaxy*: “‘to exchange’ but also ‘to admit to the community’ and ‘to change from enemy into friend’” (Hayek 1976, 108).

7.4.3 The last stretch

Without effective political opposition the neoliberals, AT&T and other ICT monopolies had freedom of the ‘information superhighway’ to build industry-dominating networks and construct a global *catallaxy*. By advocating for the importance of exchange over competition in neoliberal political economy, the new form of capitalism has synergised with monopolistic industry structures. This enables us to understand how contestability came to deliver the catallactic order; through integrating the firm with the market and the online network. I conclude that the contestable market is in essence the *catallaxy*.

The contestable market is not an actual market; because the strict conditions for the market are too demanding to ever exist in their entirety, although contestable conditions can exist to a degree. Nor, as Hayek said of the *catallaxy*, is it an organisation (Hayek 1978 [1968]b, 90). The contestable market is an *organising principle* for exchange in the market order based on its function to calculate costs to find the lowest price. This met Hayek’s sole criteria for the *catallaxy* (Hayek 1978 [1968]b, 91). The contestability doctrine was used as an advocacy tool to establish contestable conditions that allowed the firm-controlled network hosting a market to operate and expand unhindered by antitrust, labour laws or other legal sanctions. The doctrine therefore has played a major role in removing laws for which it has substituted contestable conditions. These are theorised to provide the strictures in monopolised markets that enable consumer welfare to be maintained. Hayek described the *catallaxy* “as the name for the theory of the market order” (Hayek 1978 [1968]b, 90). The market order as manifest is based on the contestability doctrine:

The ‘maximisation’ of the total product in the above sense [of using the totality of dispersed knowledge], and its distribution by the market, cannot be separated because it is through the determination of the prices of the factors of production that the *overall* order of the market is brought about. (Hayek 1978 [1968]b, 92). Author’s italics.

Neoliberal economics and the Bell group worked on the basis of totalising effects across economies, as a way of calculating various efficiency formulae, from total industry costs to the total cost of monopoly to the economy.

We might now sum up the relationship between contestability and the *catallaxy* by quoting Davies who captured the essence of contestability and what it means to fully utilise the “spontaneous ordering forces of the market” (Hayek 1978 [1968]b, 91) which in an information economy, is the principle upon which all decisions are made. It also suggests that the Chicago School adopted contestability as a way of giving credence to the integration of monopoly into market reasoning:

The ethos which unites the style of Chicago School argument with its content is a valorization of *contestability*. From the Chicagoan neoliberal perspective, this holds as much in intellectual life as in economic life. There is no limit to how much influence and power a good argument or a good business should be allowed to have, as long as there remains the possibility that others may contest it. (Davies 2017, 86).

I have argued in this thesis that the Chicago School and the Bell group shared in the development of the contestability doctrine, not in any formal capacity known to the author, but rather through the Bell group adopting important theoretical influences from Coase and Demsetz, and Chicago, in turn, being influenced by the Bell group’s advocacy for deregulation, which was shared by legal scholars Levi, Posner, Bork and Baxter.

The cross fertilisation between economics and law pertaining to deregulation was not just at the theoretical level but was practised by Bailey and Kahn, when as commissioners for the Civil Aeronautics Board, they adopted contestability to deregulate the airline industry. Baumol was an influencer in multiple industry sectors, having testified for over fifty corporations and nine government agencies (1965-1996) in cases mainly to do with antitrust matters in network industries like rail, oil pipelines, television and the US Postal Service. Other clients included Telecom Corporation of New Zealand, IBM, NASDAQ, the Securities and Exchange Commission, Coca Cola, Union Carbide and pharmaceuticals giant Eli Lilly (Baumol 1997 (circa)). Baumol’s firm Consultants in Industry Economics had as consultants its directors, Charles Berry, and Stephen Goldfeld who was on President Carter’s Council of Economic Advisers and Robert Willig and Janusz Ordover, both of whom held senior positions in the Antitrust Division of the Department of Justice (1989-1991) and (1991-1992) respectively.²¹ (Consultants in Industry Economics 1988).

21 It was an extremely lucrative business for Baumol. In 1988 he charged \$6,000 a day for a case testimony which ran for 5.5 days a total of \$33,000 for the week-long job (Consultants in Industry Economics 1988). Baumol’s fee is well above the normal fee for an economist today were the average rate for testimony in 2021 is \$478 per hour which is \$3,346 per day The figure is calculated using the US web site Expert Institute. <https://www.expertinstitute.com/resources/expert-witness-fees/>. Cited invoice for professional

7.5 Conclusion

This chapter began with a reappraisal of the conclusions that had commonly been drawn about the overriding power of the state in breaking up AT&T. However, research for this thesis has shown that the corporation, far from being oppressed by the state, was tracking towards its goals with the added benefit of having its long-term plans veiled by the complexity of the case *United States v AT&T* and the complexity of the divestment that followed. AT&T today is the largest telecommunications company in the world. Post-divestment the corporation diversified and merged with Time-Warner, one of the largest media and entertainment corporations in the world, after winning an antitrust lawsuit filed by the US Department of Justice in 2018.

AT&T had managed to achieve divestment on their own terms, motivated by the integration of technologies and the opportunities integration brought to exploit new markets and value-add their network, research and organisational capacity. The new firm-controlled network structure, which the contestability doctrine modelled for industry per se, justified and advocated for the global economy, in which AT&T operated, to be deregulated and privatised thus allowing them unfettered access to vast opportunities.

It is no surprise that the 1982 agreement to divest and deregulate AT&T's monopoly occurred in the same year that the doctrine justifying monopolies under conditions of deregulation was published. Although *Contestable Markets and the Theory of Industry Structure* was claimed to be a universally applicable theory of industrial organisation it represented an investment in AT&T's future. This is because contestable market design offered a means by which they could extend, as Toffler had suggested, the work of 'integration' over a sphere that was inclusive of the information society.

The political success of the neoliberals came when AT&T's Council of Economic Advisers, who shared the same neoliberal market philosophy as the regulators, acquiesced to the regulators' directions to renounce AT&T's regulated monopoly and substitute competition and market efficiency. In exchange, AT&T would have unfettered access to the emerging ICT markets. Many among the regulators had been imbued with the neoliberal efficiency paradigm that was forged by the Chicago School under the influence and leadership of Hayek and Edward Levi. The AT&T settlement was a great victory for neoliberalism; it

services in the *Gallo vs. Gallo* legal case dated October 20, 1988 billed to Philip Graham, Sullivan and Cromwell, New York. Invoice No: 2400.

freed the global leader in telecommunications to not only construct the infrastructure for the *catallaxy* but to model its market order.

This chapter has examined how the neoliberal economists, Coase and Demsetz, foregrounded the cost of transactions, and put the firm and the market on a competitive footing regarding how efficiently each institution processed transactions. Sharkey, in paying heed to Coase's questioning about the economic viability of the firm, formulated 'subadditivity', an approach to determining how many firms were needed in an industry for optimum efficiency. Subadditivity was also used by AT&T to evaluate network, market and firm efficiency in informational terms. In practice this meant that a business had an efficiency measurement tool that could assess the value of market information, i.e., the informational value of prices against the informational value of data collected and analysed off the network (data analytics). The tool could also be used to assess the value of human knowledge which MPS member Gary Becker had commodified in his theory of human capital. The point of efficiency is reached when each information source integrates into a cooperative efficiency where the parts become more enhanced as a whole. The Bell group claimed that the contestable market, as a coordinator of a network operated by a firm, is highly effective at allocating information for decision-making, including both market data and data collected from network communications.

This efficiency 'outcome', if applied recursively, would put the management of the digitally networked global economy into the hands of transnational monopolies. The Bell Group and their neoliberal allies couched this radical shift away from competition and the laissez-faire market in terms of the contestable market necessitating 'free market' conditions. In this way they justified monopoly power and offered applications of it for corporate strategy, in commerce and in legal argument. In other words, although competition is made to appear to be central to neoliberal economics, in reality it is only central to the neoliberal narrative.

The impact on individuals working in the new gig economy for platforms like Uber is a form of rentiership paid to the lord of the manor for the privilege of coming onto his estate and working the land.

With contestability AT&T and the Chicago neoliberals have achieved a doctrine that serves to govern the 'infosphere'. I conclude that this correlates with the role of the *catallaxy*, such that the *catallaxy* and contestability are one.

8 How the contestability doctrine privatises the state: an Australian case study

Fundamentally, the communications revolution means that no economy stands alone.

Coalition White Paper, *In the National Interest* (1997)

8.1 Introduction

In this thesis I have argued that Hayek and the neoliberal movement positioned the monopolies to be the planners of the *catallaxy*. What the monopolies planned and delivered was a new capitalism manifest as an institution with a Foucauldian economic regulatory ensemble which represented the integration of the firm, network and market into a platform business model. We have further argued that this radical change has impacted the relationship between monopoly capitalism and the state resulting in the severe diminishment of the power and role of the state within society.

The case study in this chapter examines how contestability and computerisation shaped the neoliberal agenda on privatisation and deregulation as it prepared Australia for integration with the global *catallaxy*. A description is provided of some of the mechanisms by which particular entities and actors within government and the corporate sector created the conditions for contestability, putting in place the policy and infrastructure for a networked economy that largely favoured oligopolies. Although this chapter is Australia-centric, many of the shifts it describes are global, for example, the acquiescence to the international trade rules designed to foster international markets and the transnational corporations who utilise them. Neoliberal ideology, neoclassical economic mechanisms, ICT and corporate power have been harnessed to progressively dismantle Australia's social settlement (1901–1980s) including union wages, public welfare, universal education and health care, and public utilities. I argue that these social benefits, even if experienced in different ways in different national contexts, are nevertheless comparable to other jurisdictions and assist us to understand the basic patterns made by economic rationalising and monopolisation.

Australia has been a social laboratory or ‘test state’ since the earliest days of British colonisation (Pincus 2016, 167) a role it shares with New Zealand, which began its contestability ‘trial’ in the 1980s (Greer 1988; Bollard 1994). Michael Pusey described neoliberalism, known in Australia in the 1980s and 1990s as “economic rationalism”, as “a kind of laboratory test of what are, in effect, metatheories of society” (1991, 240). Australia offered a canvas for such analyses because its commitment to socio-political and cultural progression was heavily imbued with pragmatism rather than ideology (Pusey 1991, 231; Pincus 2016, 168). This, along with a deference to ideas from elsewhere, made Australia vulnerable to experimentation by foreign concerns with strategic interests in the country (Pusey 1991, 230). Hayek, in a lecture he gave in Sydney in 1976, intimated that Australia was a suitable test site for neoliberalism. He quoted economic historian W. Keith Hancock who “tells how the newly-founded Federal Parliament [1901] was expected to make ‘those experiments which were to demonstrate to the world the possibility of social justice’” (Hancock quoted in: Hayek 1979b, 1).¹ Hayek had a long-held belief that the Anglo-Saxon world would bring his vision to reality because of their system of procedural rules (Hayek 1958, 235). This included the de-nationalisation of the currency by establishing a private market in currencies, which in the era of cryptocurrency and blockchain security is now technically feasible.²

Hayek became a member of the Advisory Committee³ of the neoliberal thinktank, the Centre for Independent Studies, Sydney (CIS) “along with most of Australia’s best known *laissez-faire* economists” (Pusey 1991, 227) (For more on the CIS see: Walker 2021). Milton and Rose Friedman also visited Australia in 1975 and 1981 to spread the doctrines of monetarism and small government.

1 Keith Hancock (1930), in: Friedrich Hayek, *Social Justice, Socialism and Democracy: Three Australian Lectures by F.A. Hayek* (Sydney: Centre for Independent Studies, 1979) 1.

2 When asked which country was likely to be the first to plan the denationalisation of their currency, Hayek replied: “Probably a small country.” (Interview transcript for Investment Rarities Inc. sent by Trevor Meldal-Johnsen, an Associate of Michael Baybak and Company Inc. to Hayek on the 8 July 1985, p. 3. Hoover Institution Archive, Box No 111, Folder 111.5, Accession No. 86002-15.34.) Since Austrade has already begun exploring the cryptocurrency option it is possible that Australia may be a test state for going cashless, then crypto. Hayek also discussed the abolition of the government monopoly over the issuing of currency in favour of a free enterprise market for currencies, on the ABC’s *Monday Conference* program hosted by Robert Moore broadcast on 11 October 1976. (Transcript p. 8. Hoover Institution Archive, Box No 109, Folder 109.6, Accession No. 86002-15.34.)

3 Libertarian Murray Rothbard, considered the theoretical founder of anarcho-capitalism, was also on the Advisory Committee (Walker 2021).

Baumol came to Australia in 1983 and 1997 to deliver keynote papers on contestability theory showing how it justified the deregulation and privatisation of public sector enterprises (Baumol 1983a; 1997). As noted by Pusey, Australia's private sector was, by the 1980s, already heavily concentrated in key industries like airlines, banking, media, mining and oil, adding, in his view, to Australia's vulnerability to business's entreaties for market-orientated policy. This vulnerability was compounded by Australia's small population, which a consolidating media base was able to readily manipulate (Pusey 1991, 229, 230).

The chapter is divided into three sections. The first explores how contestability underpinned the neoliberal privatisation and deregulation agenda and universalised the conception of privatisation to not only include government enterprises and services, but also government functions – including those thought to be 'natural' monopolies vulnerable to market exploitation in private hands. This section gives a brief historical account of how contestability was integrated into the neoliberal agenda and how it was integrated into public policy in the Labor governments of Bob Hawke (1983-1991) and Paul Keating (1991-1996) and the Liberal-National Coalition government of John Howard (1996-2007).

The second section examines how the international policy community adopted contestability as an advocacy tool to promote market access, a process that began with the development of the General Agreement on Trade in Services (GATS) framework, which formed the basis for all subsequent trade and investment agreements under the auspices of the World Trade Organization (WTO). The section then analyses the Harper Panel on Competition Policy Review and the Financial System Inquiry, whose reports were both published in 2015. In this section, contestability's influence on policy is shown to be mediated through the recommendations of advisory bodies. These are considered in turn, beginning with competition policy and law, and moving on to investment, financial services, infrastructure investment and procurement. This shows how the recommendations of the advisory bodies integrate with the provisions of the Trans-Pacific Partnership Agreement (TPPA) signed in 2015 revealing the vulnerabilities of the state as it integrates with the global economy (2015).

The third section analyses how contestability formed the basis of the network business model and essentially grew with the expansion of digitisation in government. I examine the implications of that change for government in Australia. This is followed by an examination of the deregulation agenda in Australia from the perspective of the international contestability of markets.

8.2 Privatising the state

Australians have traditionally had an expectation that government would provide a range of essential services. With a relatively small population and a vast continent, commercial enterprises in infrastructure like railways and telecommunications would not have been viable without massive government subsidies.⁴ Thus governments have taken the lead in the ‘nation building’ endeavour. However, Hancock has claimed that the harsh conditions of settlement encouraged overreliance on the state, which was treated “as a vast public utility” such that Australians came to favour public control of essential infrastructure and services (1961 [1930], 55). This, Hancock contended, morphed into a deeper attachment such that it was the state ‘whose duty it is to provide the greatest happiness to the greatest number’ (1961 [1930], 55). This culturally inscribed role of government is one which the neoliberal movement in Australia wanted to reassign to the market. To understand this context is to underscore the enormous scale of the structural realignment in Australia which were fraught with cultural hurdles. As observed by Hancock, an Australian “sees no opposition between his [their] individualism and his [their] reliance upon Government” (1961 [1930], 55).

8.2.1 The Whitlam era and the neoliberal wedge

The influence of neoliberal economics on government policy in Australia began with the Whitlam Government (1972-1975). The Whitlam administration was socially progressive; its social reform agenda included funding for the arts and social services and free university education, which had been opposed by prominent neoliberals like Maurice Newman.⁵ Newman, a member of the MPS, promoted the view that the government had “mocked markets and business, and engaged endlessly in mindless class warfare as if embarking on its own version of the mad and irrational Cultural Revolution” (Newman 2007, 3). Newman’s opposition belied the fact that the Whitlam government was taking economic advice from fellow MPS members. They included Geoffrey Brennan, a full-time consultant to the

4 An example of this problem was the construction of the 566 km Perth to Kalgoorlie water pipeline (Goldfields pipeline) which supplied a population of 6,790, at the time of completion in 1903, at a cost of \$1.5 billion in today’s money. <https://en.wikipedia.org/wiki/Kalgoorlie>
<https://www.abc.net.au/news/2020-01-24/goldfields-pipeline-built-by-cy-oconnor-set-to-be-replaced/11895482>

5 Newman, a member of the Mont Pèlerin Society, held numerous roles, including chairman of the Australian Securities Exchange, Deutsche Bank Australia and the Australian Broadcasting Corporation, chancellor of Macquarie University and advisor to the Abbott Government on the Prime Minister’s Business Advisory Council (2013-2015).

Australian Taxation Review Committee (1973-1974) (Brennan and Buchanan 1981, 11)⁶ and Monash University economist Michael G. Porter and New Right economist Jonathan Pincus, who were both appointed to the Whitlam Government's Priorities Review Staff established in 1973. This advisory group was "headed by a Chicago-style economist, Austin Holmes, research director of the RBA [Reserve Bank of Australia], and staffed by like-minded colleagues" (Porter 2014). The Whitlam government introduced key economic reforms, including pro-competition legislation and corporate oversight bodies like the Prices Justification Tribunal and the Trade Practices Commission, and opened diplomatic and trade relations with China. It is, however, the 25 percent cut to tariffs implemented in 1973 that is attributed to the influence of the Priorities Review Staff (Porter 2014). Tariff cuts were the first substantive move by a post-war government to open the Australian market to international competition.

8.2.2 Fraser Government nonchalance

The story goes that Milton Friedman and Hayek visited Prime Minister Malcolm Fraser (1975-1983) on separate occasions. It was said that Fraser "found the minimalist government and neo-liberalist economic ideas appealing" (Johnston 2000, 347 citing Kelly 1994), but he was also observed to be indisposed to heeding these visiting economists (Newman 2007, 6; Champion 2013). Pusey noted that "Fraser lacked the political will to make any kind of trenchant reforms" (1991, 198). It would take a dynamic duo to spark the neoliberal revolution in Australia.

8.2.3 Hawke-Keating period: launching the neoliberal project

The neoliberal project was launched in earnest by the Australian Labor Party (ALP) in the Hawke-Keating years (1983-1996).⁷ Their rigorous privatisation program was characterised as *pragmatic* because of the case-by-case approach taken (Aulich and O'Flynn 2007, 157), which was also used by the Labor party equivalent in Canada (Sturgess 1996, 70).⁸ As I have argued throughout this thesis, the ideological and capitalist forces behind the restructuring of nation states reside in the international sphere like a hub controlling the localised spokes. During these years, Labor governments "floated the dollar, lowered tariffs, decentralised

6 Brennan was appointed professor at the Public Choice Center, Virginia Tech (1976-1983) under the influence of public choice theorist James Buchanan.

7 Bob Hawke Prime Minister (1983-1991); Paul Keating Treasurer (1983-1991) and Prime Minister (1991-1996).

8 It was also the case with the associated policy of deregulation, with Baumol observing "that deregulation occurred largely under the Democratic Carter administration" (1977-1981) (Baumol 1983b, 125).

wage bargaining, promoted privatisation, and renounced the resource nationalism of the Whitlam era” (Walker 2021, 19). The period was marked by the divestment of government strategic enterprises, including institutions like the Commonwealth Bank, Tabcorp, QANTAS and Australian Airlines and many smaller enterprises, as well as the floating of the Australian dollar in 1983.

A key influence on the privatisation and deregulation agenda during this period was the contestability doctrine. In 1986, Ian Harper, who would later become chairman of the 2015 National Competition Review, called for contestability to be introduced into banking (Harper 1986) which necessitated the de-nationalisation of the Commonwealth Bank. The Bank had been established by the Labor government of Andrew Fisher in 1911 as ‘the peoples’ bank to counter the power of unregulated private banks, and provide financial security in the context of a history of credit booms, bank failures and depressions. Contestability, Harper argued, could increase competitiveness by allowing foreign banks and local non-bank financial institutions (NBFIs) to form a “consortium”, enabling foreign banks providing wholesale finance to use the retail outlets of NBFIs; thus a source of potential threats is created because sunk costs associated with bank setups are avoided (Harper 1986, 57).⁹

Baumol visited Australia in 1983, giving the contestability doctrine the weight of mathematical economics as only a Princeton scholar can. This new theory was to capture the imagination of policy makers in Canberra and become the doctrine of choice to justify radical changes in competition policy and law that would encourage unfettered growth of monopolies. In his keynote address to the Monash University Centre for Policy Development¹⁰ conference in 1983, Baumol preached a ‘faith in the market’ approach, regarding even a modicum of contestability to be preferable to taking “drastic steps” like regulation or nationalisation even in the case of natural monopoly (Baumol 1983a, 2). He suggested seeking out contestability wherever it may be and if necessary creating contestable

9 In Australia the big four retail banks are held in place by the government’s ‘four pillars’ banking policy which has allowed mergers with smaller banks but has prevented mergers between the big four since 1997 (Goddard and Walker 2002). Contestability was first mooted for the sector in 1983 on the basis of electronic banking, low sunk costs and low official barriers (Harper 1986). Knocking out the ‘pillars’ policy would it is claimed lead to the counter effects of further concentration and more competition generated by more potential entrants (Healey and Nicholls 2015).

10 “Michael Porter (MPS, 1987) built an academic base for the neoliberals at Monash University by founding the Centre of Policy Studies (est. 1979). Porter went on to found the Tasman Institute, a private consultancy whose supporters included fossil fuels corporations like Exxon, BP, Shell, Mt Isa Mines, BHP, WMC and Macquarie Group. In 1990, Liberal Premier Jeff Kennett hired the Tasman Institute and John Roskam (MPS, 2008) of the IPA to coordinate electricity privatisation.” (Walker 2021, 20).

conditions, understanding all the while that government restructuring to break up natural monopolies “is foredoomed to failure” because a multiplicity of firms will not persist (Baumol 1983a, 15). Baumol was advocating a new approach by defining the contestable market “as one in which all firms have equal access to all customers, to the same technological options, and in which entry incurs no sunk costs” (Baumol 1983a, 3), that is to say, access to everyone’s data through the equal availability of market infrastructure, technology and information. This conception was part of the ‘equality’ agenda for firms, which government ministers would describe colloquially as the ‘level playing field’. It was an ironic twist to a pro-privatisation argument that claimed the high ground precisely because “operators of government enterprises ... are apt to rationalise the requirements of self interest as the embodiment of the general interest of the public” (Baumol 1983a, 17).

Economic rationalism in Canberra: the study

In 1991 Michael Pusey published his landmark study *Economic Rationalism in Canberra: A Nation Building State Changes its Mind*. Pusey was amongst the first to articulate the influence of economic rationalism and neoliberal political philosophy within the federal government bureaucracy, which he later described as the “neoliberal takeover of Australia” (2018, 15). Pusey’s argument centred on a shift in the knowledge base of the Australian Public Service (APS) at senior levels from one that was pluralistic and morally anchored in Benthamite utilitarianism to a monoculture of neoclassical economics given over to neoliberal market philosophy. Pusey’s use of the term ‘neoclassical economics’ is drawn phenomenologically from his subjects, who had no motivation to consider the subtleties of abstract economic theory. This sentiment from the policy frontline suggested that ‘neoclassical economics’ defined what was in vogue (Pusey 1991, 175). This lack of rigour was exemplified by the dearth of critical analysis by government economists on contestability.

Pusey’s study revealed the rise to power within the APS of the ‘econocrats’ who were schooled in economics and little else (Pusey 1991, 7, 172; 2018, 15). They referred to themselves as *mandarins* and were prominent in senior departments like the Department of Prime Minister and Cabinet, Treasury, and Finance (Johnston 2000, 348). Led by key neoliberal figures like MPS member John Stone, Treasury Secretary (1979-1984), the APS followed an international trend to reinvent government in response to what Hayek and the Trilateral Commission (Crozier, Huntington, and Watanuki 1975) referred to as the problem of democratic ‘overload’ (Hayek 1939, 148). The approach prescribed by neoliberalism and subsequently adopted by the APS was to jettison the complexities of policy formation encased in any other epistemology or discipline apart from economics. These had become

to the neoliberal establishment nothing more than “distracting noise” making the work of neoliberal politics the “tasks of screening out the noise and of reducing the overloading, and thus ‘reducing complexity’” (Pusey 1991, 174).

The neoliberal argument was typified by Pincus who held that, “[s]tate-owned enterprises are used in the pursuit of government objectives ... [b]ut, almost inevitably, state enterprises come to be used to advance or protect sectional interests: in short, rent seekers” (2016, 178). These seekers “include customers who are receiving cross-subsidies, and employees who are earning rents in the form of superior pay or conditions” (Pincus 1984, 88). Pincus, who identified contestability as offering a price theory that allayed the problem of monopoly profits, was working through the possibilities of garnering the benefits of monopolies without the inefficiencies and inequities of government economic management (1984, 80, 88).¹¹ In essence this was the task, which ironically, the knowledge and pragmatism of the Australian Public Service (APS) came to perform guided by private sector advisors and New Right¹² ideologues—thus transforming a ‘nation building’ infrastructure into a ‘contestable market building’ infrastructure.

The Hilmer Report: contestability’s official debut

Although the term ‘contestable’ had been used in government documents since at least 1985 (Bureau of Transport Economics 1985), it was the report of the National Competition Policy Review (NCPR) titled, *National Competition Policy* (NCP) (Hilmer report), published in 1993 that officially established the contestability doctrine as the guiding rationale of competition policy and law. The NCP report set out a radical blueprint for a “single integrated market” by removing barriers to competition and potential competition (NCPR 1993, xvii).

Established by the Keating Labor Government, the NCPR, chaired by Fred Hilmer,¹³ was the first of three advisory panels that would drive the development of contestable market conditions in Australia in readiness for integration into the global economy. Although ‘contestability’ and ‘contestable market’ are mentioned 21 times in the report, it is only

11 Pincus had been a member of the Whitlam Government’s Priorities Review Staff.
<https://www.adelaide.edu.au/directory/jonathan.pincus#>

12 The New Right was a term used in the 1980s to label neoliberals.

13 Hilmer set out his own blueprint for change in his 1985 book *When the Luck Runs Out: The Future for Australians at Work*. An economic rationalist, schooled in America at the University of Pennsylvania (MA Laws) and the Wharton School of Business (MBA), on graduating he worked for consultancy transnational McKinsey & Company in the US and Australia. His last position was as Vice Chancellor of the University of New South Wales. He is best remembered as the Fairfax CEO who presided over the collapse of its newspaper empire (SMH editors 2007).

described obliquely within the definition of competition as “striving or potential striving of two or more persons or organisations against one another for the same or related objects” (Dennis quoted in: NCPR 1993, 2). It was further noted that a “highly ‘contestable’ market — may be of similar efficiency as a market with actual head-to-head competition” (NCPR 1993, 3).

The Hilmer Report recommended significant changes to the governance structure of competition leading to the establishment of new agencies such as the National Competition Council and Australian Competition and Consumer Commission (ACCC) and to antitrust legislation, deeming the Trade Practices Act (1974) and the Prices Surveillance Act (1983) inadequate to the task of stemming monopoly pricing (NCPR 1993, 187). The NCPR also called for “structural reform” of state-owned monopoly enterprises. It was ascertained that simply removing regulatory barriers to newly privatised entities was insufficient inducement for competition (NCPR 1993, 185). The breakup of a state monopoly necessitated the examination of its different elements and consideration of which wholesale and retail business units could be spun-off from a large monopoly. The principle of structural reform was: “(1) separating regulatory responsibilities from commercial activities; (2) separating natural monopoly elements of an organisation from activities which are contestable; and (3) separating the potentially contestable elements of a monopoly into several independent businesses operating in the one market” (NCPR 1993, 185). Structural reform was not focused on creating actual competition, but rather on creating contestable markets. This is how, for example, Australian consumers ended up having a choice of vendors billing them for electricity while power generation and distribution remained monopoly operations.

The report reflected a distinct shift towards Chicago school thinking which had privileged the economic analysis of competition over law since the 1950s. This had been symbolically and practically enacted when, along with other legislation, the responsibility for the Trade Practices Act moved from the Attorney-General’s portfolio to the Assistant Treasurer’s portfolio in 1993. The agencies recommended by the Hilmer Report, the National Competition Council (est. 1995) and the Australian Competition and Consumer Commission (est. 1995) were also placed under Treasury, along with the Productivity Commission (est. 1998). It was also, as Pusey observed, the centralisation of the intellectual capacity of the state under Treasury, which was dedicated to economic rationalism (Pusey 1991, 202).

This integration was also aimed at improving Australia’s international competitiveness. George Gear, a former Assistant Treasurer, noted the link between foreign trade and

competition policy in the Australia–New Zealand Closer Economic Relations (CER) Trade Agreement (1983) and the importance of uniformity (Gear 1994, 479). The Hilmer Report set as a principle the need for “competitive conduct rules ... [to be] applied uniformly and universally throughout the economy”. This was part of the “efficiency rationale” that also applied to international competition (National Competition Policy Review 1993, 85, 86).

Contestability was used to promote a universal approach to ‘competition’ and to support the view that there should be no exemptions from competition rules. It was claimed that in markets where barriers to entry and exit have been reduced to a minimum, competition and potential competition ensure that all businesses have the opportunity to enter a market if they come under the same conduct rules, including foreign traders and investors (National Competition Policy Review 1993, 191-192, 199-200). Australia was to be fully opened to competition and investment from transnational corporations with only the Foreign Investment Review Board, established by the Whitlam Government, monitoring investment inflows. The Hilmer Report contended that the public interest would be met by the greater economic efficiency generated by contestable conditions that necessitated a ‘level playing field’, with competitors having equal access to “essential facilities” (National Competition Policy Review 1993, 186) like transport and telecommunications. Government enterprises would be forced to abide by the same market rules under a policy of “competitive neutrality” based on a set of principles that ensured no competitive advantages accrued to government enterprises whether they be public utilities or goods and services enterprises in other industries (National Competition Policy Review 1993, 295).

The academic assessments of the Hilmer Report did not include an analysis of the contestability doctrine upon which the Hilmer Committee’s recommendations hinged. There was very little on contestability in a special issue of the journal *Review of Industrial Organization* on the subject of the evolution of competition policy and law over 20 years since the 1974 enactment of the Trade Practices Act by the Whitlam Labor Government. This Act was considered to have introduced modern antitrust into Australia (Round 1994, 460). Seven out of eight articles in the issue discussed the Hilmer Report, but only one gave more than a passing mention to contestability. The economist Neville Norman thought the concept sometimes became “extreme and pretentious” but that it nonetheless rightly called into question attempts to interfere in the market (1994, 537-538). A lack of critical engagement with the precepts and aims of contestability has characterised the academic response, even though policy prescriptions in consequent competition reviews have come to mirror the extremes of the doctrine.

It followed from the Hilmer Report's recommendations that the government would continue to proceed with privatising state-owned enterprises including Commonwealth Serum Laboratories,¹⁴ and the final stages of the Commonwealth Bank's privatisation begun in 1991 and what were previously considered to be natural monopolies such as the Pipeline Authority¹⁵ and Telstra (Walker and Walker 2000). Maureen Brunt encapsulated this shift as the "decisive rejection of the [Trade Practices] Act and its institutions as controlling mechanisms in the deregulation and privatization process", a shift she supported (1994, 520). The new controlling mechanism, contestability (National Competition Policy Review 1993), was infused with the discourse of competition in the Hilmer Report and consequently went unnoticed, even though in actuality it was the antithesis to competition. This was made clear by its advocacy for the repeal of pro-competition, anti-monopoly legislation such as the Trade Practices Act.

The Hilmer Report marked a watershed that introduced a new era of competition and contestability policy, which as we shall see served particular business interests that wanted the "unfettered freedoms" of the pre-TPA era returned (Round 1994, 460). The TPA had been highly regarded as characterised by David Round's assessment as having tough measures coupled with "a practical approach to antitrust, administratively as well as judicially, rather than one based on doctrinaire political, legal or economic thinking" (1994, 459-460). However, notwithstanding, the Act was eventually replaced with legislation in keeping with the contestability doctrine and the ideological prescriptions from the Chicago school.

Contestability gained a foothold in Australia in 1985, the year the de-regulation of the US airline industry was completed. Although Australia's commercial airline industry was extremely small it had to service a vast continent. In 1985 the Bureau of Transport Economics deemed the regulated airline duopoly unwarranted because they found the industry to be contestable (Bureau of Transport Economics 1985). The belief was that airlines did not carry any sunk costs because governments were responsible for airports (Bureau of Transport Economics 1985, 72). The recommendation did not take into account the failure of contestability in the larger US market. As Shepherd noted the theory did not fit airlines, added to which Baumol and Bailey knew that in 1984 (Shepherd 1995, 304).¹⁶

14 The Commonwealth Serum Laboratories now called CSL Ltd was specialised in biotechnologies like vaccines and anti-venoms.

15 Nationwide gas pipelines.

16 See (Bailey and Baumol 1984, 130).

This was confirmed by subsequent studies (Dempsey and Goetz 1992; Peteraf and Reed 1994).

By the end of the era, market liberalisation in banking and airlines was the centre piece of the Labor Government's policy of driving towards greater international competitiveness. This was a reaction to the pressures to open up the economy, resulting from the deregulation of global financial markets that increased the amount of global capital available for investment (Cerny 1997; Strange 1997 [1986]; Crouch 2011). Contestability was not about economics but political expediency in driving an ideology that called for faith not thought.

8.2.4 The Howard years reinventing government

With the return of the Liberal National Party to government under PM John Howard (1996-2007), the privatisation of public assets would be comprehensively progressed. A major undertaking of the Howard years was the preparation of the Australian Public Service (APS) for privatisation. It has been argued that the Coalition was more ideologically disposed towards privatisation than Labor. John Howard, for example, became a member of the MPS in 2010, suggesting he was a trusted confidante of the neoliberal project.¹⁷ The Howard Government was observed to have adopted “a more tactical and systemic approach” (Aulich and O’Flynn 2007, 158-159) to the radical restructuring of the APS (Aulich and O’Flynn 2007). Preparations included changing the administrative structure of non-departmental public bodies from statutory authorities to government-owned companies, so they were effectively prepared for privatisation in administrative terms (Wettenhall 2005).

A further wave of change came with the recommendations of the Industry Commission's report, *Competitive Tendering and Contracting by Public Sector Agencies* (1996). This set out the key mechanisms by which ‘competition’ through contestability could be achieved. The Labor Government had embraced the report, but after their 1996 election loss it passed to the incoming LNP Howard Government, which extended what they called “privatisation technologies” (Aulich and O’Flynn 2007, 159). These technologies primarily involved: outsourcing, contracting and tendering, including all IT functions across the APS; introducing “user pays” by withdrawing either full or partial funding for services (Aulich

¹⁷ John Howard's membership of MPS is listed on Desmog: <https://www.desmogblog.com/mont-pelerin-society>.

and O'Flynn 2007, 155, 159); a form of service rationing based on price (Aulich 2005); and withdrawing from goods production and services provision as these activities were deemed a barrier to market entry even when operating under the principle of competitive neutrality (Queensland Commission of Audit 2013, 2-185). Competitive tendering and contracting which “introduces contestability to services” was seen as a solution where there had been no competition previously (Industry Commission 1996, 52). The Industry Commission recognised that public service ‘markets’ were often “characterised by limited competition and extreme cases of natural monopoly” (Industry Commission 1996, 283). To attract private enterprise, contestability measures were considered, such as allowing competitive bidding for the entire market and offering long-term contracts to corporations who had the capacity to supply a whole market. These type of measures, which had been theorised by Bell group and Chicago’s Harold Demsetz in the 1970s, were used to switch the performance of government functions or provision of government services over to private monopolies where it was not efficient or possible to have multiple competitors in what the Commission loosely called “contract contestability” (Industry Commission 1996, 282). That is, the *contract* for the market or part thereof was contestable, not the market itself.

The more complex task of establishing contestable markets from public utilities was tackled and included Telecom, electricity, gas, airports and financial services (for a list of 1990s privatisations see Walker and Walker 2000, 20-23).¹⁸ Historically, public utilities had been resistant to competitive treatment as natural monopolies with high capital costs sunk in network infrastructure. Baumol contended, like Posner and Bork, that government restructuring of natural monopolies would fail if traditional competitive principles applied, because a multiplicity of firms, including an oligopoly, would not persist (Baumol 1983a, 15). Baumol returned in 1997 to fortify the contestability message to the new regime. His keynote lecture at the University of Tasmania titled, ‘Privatization, Competitive Entry and Rational Rules for Residual Regulation’ took the Hayekian line that state run monopolies were run down by sectional interests and berated the “the propensity of even well-intentioned public servants to sabotage the market mechanism” (Baumol 1997, 1). The way forward was privatisation, but with a focus on structural adjustment creating independent, contestable enterprises served by the monopoly network as well as spin-off markets like the “electricity hedge markets [which] have undergone a remarkable growth since the opening

18 Divestments between 1996 and 2007 are estimated to have reaped the government around \$61.6 billion (Aulich and O'Flynn 2007, 160).

of the NEM [national electricity market]” (AGL quoted in: Parer 2002, 157).¹⁹ In practice, the oversight of monopoly segments that were not contestable was given to price control tribunals until such time as the market fully matured into a ‘self-regulating’ system.

The Productivity Commission’s 2005 review of competition found progress had been made towards full privatisation of government enterprises and services through implementation of full retail contestability (Productivity Commission 2005, 23) creating what’s often called “quasi-markets” (Aulich and O’Flynn 2007, 155). This review led to cessation of retail price regulation (price capping) as in electricity²⁰ and other markets because competition was deemed to have been introduced (Productivity Commission 2005, 301).

The awarding of contracts in a “monopoly environment” was noted by the Productivity Commission in regards to community services:

This shift to private provision has been motivated by a view that contestability — competition *for* the market — can improve the cost-effectiveness (including quality) of services that governments fund.²¹ (Productivity Commission 2005, 315).

This statement, more than any other, drives at the essence of what a contestable market does—that is to allow entities to dominate a market *if* potential competitors *in theory*, can still enter and exit the market at some point in time. The same contestability principle also applies to services that have network architectures organisationally supported by networked ICT, which opens up market opportunities for firms coordinating service provider networks.

Subsequent studies have shown that consumer welfare was compromised by electricity privatisation. The shift from not-for-profit public utility to for-profit enterprises and speculative electricity market has resulted in historically unprecedented and protracted price increases (Cahill and Beder 2005).

19 AGL submission 48, p. 22.

20 There were various combinations across each state. In South Australia, for example, the electricity industry went from being a publicly owned monopoly to a privately owned, monopoly-oligopoly industry structure, that is, “the Electricity Trust of South Australia was separated into three separate generation companies, a transmission company and a single distribution and retail company, with ring fencing between the retail and distribution activities. These government owned corporations were then leased-out prior to being privatised” (Productivity Commission 2005, 415). Electricity prices in SA increased significantly (Cahill and Beder 2005), a problem that has only recently been resolved by the SA government’s embrace of renewable energy such that the state now has the lowest electricity prices in Australia (Australian Energy Market Commission 2019).

21 For example they were awarding contracts for whole service segments like unemployment services to one or possibly two contractors.

8.2.5 Rudd-Gillard: full steam ahead

The Productivity Commission's review of changes introduced in the decade following the Hilmer Report was focused on the process of integration within different sectors of the Australian economy, in what was called the "integrated reform agenda" for competition (Productivity Commission 2005, 128). This was to apply to different sectors of the economy including what some contestability advocates call the "public service economy" (Sturges 2015, 30). The Labor governments under Rudd and Gillard (2007-2013) continued to play a role in dismantling old market structures and creating the conditions and providing the resources to construct new market forms in readiness to join the global economy.

The Boston Consulting Group in their report on the future of the vocational education and training (VET) market stated that one of the crucial roles of government was that of a "system architect" (Boston Consulting Group 2007, 10). In the case of VET, the government provided "contestable funding" to finance the market, in which VET providers, including TAFE, would compete for students and the funding government made available for student places in courses (Boston Consulting Group 2007, 33).

Business lobby groups representing powerful domestic and transnational corporations had summoned government to meet the role of market maker,²² which also triggered the process of government withdrawing from market participation (Bell and Hindmoor 2009).

For the Commission the challenge was to integrate with the global economy and take advantage of the "mobility of global capital" (Productivity Commission 2005, 160). In other words, progress was measured by the openness of the economy to global capital. From this perspective the Commission was reviewing Australia's progress towards relinquishing control over its economy to ensure access to international trade and investment without which they deemed "standards of living [would] fall" (Productivity Commission 2005, 161).

As early as 1991, Pusey identified the neoliberalisation of the public service as "a transformation in the relation of political administration to society" (Pusey 1991, 199). The forces behind that transformation since the 1980s were necessarily the forces that brought integration of Australia into a neoliberal world economic order in the name of "efficiency" (Pusey 1991, 199, Beeson and Firth 1998, 223). This rested, according to Pusey, "on

22 Boston Consulting made this comment in reference to the new privatised vocational education and training (VET) market that successive governments had created by drawing up policies like contestable funding and student loan schemes.

completely different assumptions about the fundamental nature of coordination, assumptions that derive in turn from an entirely new, and one might even say, a ‘post-modernist’ conception of ‘system’” (Pusey 1991, 199). The concept ‘the *social system*’ under Whitlam (Pusey 1991, 199) was now a computationally tasked system programmed by economic rationalist rules on the presumption that “society per se is incoherent and ... therefore entirely dependent on an extrinsic economic logic of coherence (formal exchange through the market) that is generated and adjusted from within the system itself”, whose source is a cybernetic consciousness (Pusey 1991, 201). Pusey’s research and instincts were on target—Australia was in the throes of embracing international contestability and getting online.

8.2.6 Abbott years: the culmination

Tony Abbott’s LNP Coalition Government (2013-2015) epitomised the extremity of the contestability doctrine, as it became clear during this period that the neoliberal experiment was to replace the state with a corpocracy—that is, all state functions, with the exception of ceremonial functions representing the idealised presence of the Australian state were destined to be performed by corporations.

In 2015 the report of the Abbott appointed Competition Review Panel stated that:

government should not be a substitute for the private sector where markets are, or can, function effectively or where contestability can be realised (Harper et al. 2015, 526).

This was an oblique way of stating that the role of corporations in running the country was limitless. There were no boundaries between state and corporation because markets were a universal problem-solving mechanism and everything was contestable in theory if not in practice.

In 2015 a statement was released from the Department of Prime Minister and Cabinet relinquishing government from its ‘nation building’ role. That is, the government, albeit raising taxes and funding projects, would not be involved in planning for the nation’s future needs. That role was to be reassigned to the market. This underscores the enormous scale of the structural realignment in Australia because the future of the ‘state’ was no longer the state’s concern. “It is not the Commonwealth Government’s role to direct, or be the principal financier of, development (2015, 2). That role is assigned to “[g]lobal corporations, high net worth individuals and the international capital market” (Department of the Prime Minister and Cabinet 2015, 62). In other words, Australia’s leadership was in favour of the corpocracy taking over.

The third tranche of this breathtaking shift to a corporate command and control system came in October 2015 with the signing of the Trans-Pacific Partnership Agreement (TPPA) which would see Australia relinquish substantial governance over its economy by way of meeting its trade and investment obligations set out in the agreement. These obligations were enforced by investor-state dispute settlement (ISDS), a private international enforcement regime designed to protect foreign investment interests. The TPPA (2015) which had been negotiated in secret, represented a culmination of decades of planning for change in foreign affairs and trade which is detailed in the next section.

8.3 International road rules

The Coalition's desire to open Australia's domestic market to international competitors – and of Australian business to foreign takeover investment – was outlined in the 1997 White Paper, *In the National Interest: Australia's Foreign and Trade Policy*, which projected policy outcomes to 2015. The paper outlined policy directions that would facilitate access to Australian markets and resources by transnational corporations and commit the nation to engage with the developing international regime of rule setting designed by the WTO to induce compatibility between domestic economies and the global economy. The pressure for global integration was being driven by “a massive increase in international financial flows ... [and] the growth of transnational corporations (30 per cent of world trade is intra-firm trade)” (Department of Foreign Affairs and Trade 1997, 18). Data for recent intra-firm global trade is not available, but intra-firm transactions were estimated to be a third of global exports in 2015 (Lakatos and Ohnsorge 2017, 1, 3). As the authors of the White Paper put it:

The increasingly global activity of firms has implications for trade policy. It reinforces the importance of open markets and focuses attention on national regulatory structures as potential obstacles to the efficient allocation of global resources through international trade and investment. It creates pressures on markets to be more open to competition, and it makes globally-based trade rules and disciplines even more important. (Department of Foreign Affairs and Trade 1997, 18).

The report expressed a “whole-of-nation approach” aimed at linking domestic and foreign policy in response to globalisation (Department of Foreign Affairs and Trade 1997, 73) with a focus on Australian firms that were said to benefit from strategic alliances with transnational corporations (Department of Foreign Affairs and Trade 1997, 55).

The Coalition's desire to liberalise the economy and trade by removing trade and investment barriers was in keeping with recommendations for new regulatory approaches to international competition and contestability made by the Institute for International Economics (IIE),²³ a neoliberal thinktank based in Washington D. C, which was founded in 1981. Renamed the Peterson Institute for International Economics (PIIE) in 2006,²⁴ this organisation epitomised the power and influence that is imbued in the Washington Consensus (Graham and Richardson 1997a). A blueprint for globalisation the *Global Competition Policy* (1997),²⁵ to which Australia contributed,²⁶ made recommendations for global competition policies designed to support market access that was conflated with "contestability" (Graham and Richardson 1997a, 3). This reflected a "growing international consensus" that contestability should be a goal of policy negotiations (Graham and Lawrence 1996, 5). This was also the view of other writers (Beviglia Zampetti and Sauvé 1996, 338; Schoenbaum 1996).

Globalisation, it was argued, made national markets more contestable because it grew the pool of potential competitors and defused any adverse effects from natural monopolies, like network-based industries, even creating a "global natural monopoly ... [which] serves the whole world" (Graham and Richardson 1997a, 21).²⁷ Meeting the access requirements for global monopolies necessitated a fusion of competition and trade policy at global and national levels, which the IIE endorsed through an agreement framework called Trade-

23 The Institute, established in 1981, is a neoliberal free market thinktank which counts presidents, prime ministers, treasury officials, corporate CEOs, investment bankers and free market economists amongst their board and advisory committee members. At the time of publication, Singapore's Prime Minister Lee Kuan Yew, President de la Madrid of Mexico, Prime Minister of France, Raymond Barre, Nigel Lawson, Chancellor of the Exchequer under Thatcher, George Shultz, Secretary of State under Reagan, Alan Greenspan, Chairman of the US Federal Reserve, David Rockefeller Chairman-CEO Chase Manhattan Bank, Jon Corzine, CEO Goldman Sachs and MF Global and Democrat Governor of New Jersey, and Maurice Greenberg, Chairman-CEO AIG were an indicative cross-section of directors who numbered 39 in total. Economists advising the board at the time, included Larry Summers, one of the chief architects of US financial deregulation and the derivatives market, and Jeffrey D. Sachs, who guided the implementation of neoliberal free market economics and Friedman monetarism, what Naomi Klein called, shock economic tactics, in South America and Eastern Europe (Hodgson 2002 [2001], 253; Klein 2007, 247).

24 The Peterson Institute of International Economics (PIIE) was named after investment banker Peter G. Peterson who became the organisation's chief benefactor. Peterson founded the Blackstone Group and was a former chairman of the New York Federal Reserve.

25 This is a multi-authored work representing all the Anglo-Saxon states, plus Japan, Germany, France and the European Union (EU).

26 Graeme Thomson, a senior advisor to the Department of Trade and Foreign Affairs (DFAT) wrote the chapter on Australia and New Zealand (Thomson 1997, 385-403).

27 Examples given of global "natural" monopolies included banking and insurance based on the use of electronic-payment clearing systems, satellite services and high tech weaponry (Graham and Richardson 1997a, 21-22).

Related Antitrust Measures (TRAMS). The key measures in this were the abolition of cartels, treatment parity between domestic and foreign firms, notification of mergers with transnational effects and the incorporation of TRAMS into the WTO multilateral agreement framework that members adhere to through compatible national competition policies (Graham and Richardson 1997b, 577). The thrust of the combined Australian and New Zealand chapter, which gave a brief outline of Australia's progress towards domestic deregulation, was to recommend Australia create a "largely borderless national market" (Thomson 1997, 388). The stated goals of the new international policy were "efficiency" defined as the minimisation of waste, and "fairness"— which was not about justice towards citizens, workers or disadvantaged groups, but about elimination of national policies that impeded "free entry into a business endeavour" by foreign or transnational corporations (Graham and Richardson 1997a, 8-9). The goals and meanings of these terms changed in time with Australia claiming to foster "efficiency" based on consumer welfare (lowest prices) and community welfare (Productivity Commission 2014, 2).

The Coalition's White Paper did not reference any specific international policy on contestability, but it did reflect on the changes in communications technology, such that the spread of *ideas* disseminated through policies and planning globally "makes government policy more contestable" (Department of Foreign Affairs and Trade 1997, 20). That is to say international corporate influence de-territorialises policy development such that there is no longer an "*exclusive political monopoly over a territorialized space*", at least concerning competition policy (Läidi 2007, 22) to which the White Paper was alluding.

8.3.1 International contestability of markets

The Coalition government's adoption of the contestability doctrine to advocate for privatisation and deregulation was conceptually linked to pressures for global market integration promoted as the 'international contestability' of markets. This called for deep structural changes, including opening up borders and creating conditions for free entry and exit to national markets via trade and investment (Graham and Lawrence 1996, 5; Schoenbaum 1996). The concept of international contestable markets emerged around the time of the World Trade Organisation's establishment in 1995 (Sauvé 1996). The WTO was to play a key role in international trade governance founded on the 1947 GATT agreement and followed by the 1995 GATS agreement. These agreement frameworks established an international system of multilateral rules based the principles of efficiency and market access.

Contestability theory first entered the slipstream of international trade policy as a “policy advocacy” tool used by senior officials of the Organisation for Economic Co-operation and Development (OECD) and the European Commission in the mid-1990s (Beviglia Zampetti and Sauvé 1996, 337). They saw its usefulness not as a theory whose calculus could be applied to international markets, but as a “notion” in setting new objectives for market access in the multilateral trading system, “so as to further its adaption to the evolving reality of deep integration and the needs of globally-active firms” (Beviglia Zampetti and Sauvé 1996, 337,338).

Sir Leon Brittan, former vice-president of the European Commission and Home Secretary in Margaret Thatcher’s UK government, had clarified the goal of market access, stating that: “GATT-style [General Agreement on Tariffs and Trade] trade liberalisation is second best to free trade” (Brittan 1995a, 767). The European Commission was to lead in the formation of the WTO’s Working Group on Trade and Competition Policy, established in the wake of the conclusion of the GATT and GATS Uruguay Round in April 1994 (Graham and Richardson 1997a, 4). This marked a perceptible shift in thinking within the trade policy community (Slobodian 2018, 240). Orthodox ideas of competition represented by the GATT-style liberalisation gave way to contestability’s broader approach in GATS. The dual mechanisms of foreign direct investment (cross-border investment) and trade would facilitate international contestability by extending market access to foreign investors and exporters who were to receive parity treatment with nationals (Schoenbaum 1996, Graham and Richardson 1997b, 33). Market access initially focused on border barriers such as goods tariffs and quotas, then later on behind-border barriers such as labour laws and capital controls, which impacted services provision and investment (Young 1999, 185). The world economy was to move towards greater integration as developing countries and transition countries (former communist states) were absorbed into the market-based world economy (Sauvé and Stern 2000; Klein 2007).

Deep integration was framed as the removal of “artificial or bureaucratic distinctions between goods, services, ideas, investments/investors and business people” (Sauvé 1996, 38). This trend, contained in international agreements, brought the trade policies of nation states into greater alignment to make it easier for multinational corporations managing intra-firm operations. It was held that “the competitive process, should not be unduly impaired or distorted by the totality of potential barriers to contestability” (Sauvé 1996, 38).

Contestability in this period had nudged the perception of competition as an end in itself to one that focused on competitive conditions. No longer did a case have to be made for more

competition per se. It was the *theoretical and possible threat of competition* that upended the economic orthodoxy. Contestability simultaneously justified removing barriers to trade and investment to promote ‘competitive’ conditions, when in fact it promoted ‘contestable’ conditions and legitimised corporate consolidation in the name of greater ‘efficiency’.

The work of reconceptualising and redefining the multilateral governance overseeing this new role for competition in trade policy came through GATS 2000, the WTO’s Millennium negotiating round that would set the trade liberalisation agenda for the global services sector (Sauvé and Stern 2000). Increased liberalisation for the services sector was projected to reap an additional US\$130 billion annually (Dee and Hanslow 2000, vii). Investments in host countries and greater mobility for service suppliers (labour) were key concerns for an enhanced GATS framework of rules and disciplines, which were to be foundational to all subsequent trade and investment agreements.

Fundamental to the GATS 2000 approach was ‘competition’ policy and the efficiency precept underlying it, as influenced by contestability theory. This was considered imperative: “without the integration of competition policy disciplines in some manner, it will be very difficult politically for countries to make the necessary reciprocal market access concessions that are essential to move beyond the status quo” (Warner 1999, 396). In effect, national economies were to open themselves to international contestability of markets through removing national controls of cross-border investment, the multi-nationalisation of firms, and the unimpeded flow of finance, data, workers and business people resourcing investment and trade. This reflected the continuity with the neoliberal “slogan” from the 1980s:

International rules protect the world market against governments. (Jan Tunlir quoted in: Slobodian 2018, 250).²⁸

The international system does not countenance interference from national policy, irrespective of the unique social or environmental challenges such policy may be addressing. The role of government is reduced to complying with its international trade and investment obligations and constraining the demands of its citizens who may not understand why their needs and that of their communities have been compromised (Slobodian 2018, 250).

²⁸ Tunlir, Jan. 1983. ‘International Economic Order and Democratic Constitutionalism.’ *Ordo* 34, p. 72.

8.3.2 International agreements and advisory body recommendations

International contestability has been extended through free trade agreements (FTAs) that obligate the signatory nations to abide by specific international trade and investment rules. These rules are devised through a process of negotiation between corporations, and state officials, guided largely by WTO frameworks and bodies like the European Commission.

Australia has signed numerous FTAs,²⁹ the most significant being the Trans-Pacific Partnership Agreement (TPPA) in October 2015, which was renamed the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) following the withdrawal of the United States in 2017. The CPTPP is the regional behemoth in a loose federation of agreements that includes other regional agreements with ASEAN, and Pacific island nations including New Zealand (PACER), bilateral agreements with its Asia-Pacific neighbours and the plurilateral Agreement on Government Procurement (GPA). Collectively, these agreements form a strong 'laminated' structure of trade and investment rules that co-exist and cross over each other, further tightening the rules system as new agreements are negotiated.³⁰

The focus of this section is on the initial Trans-Pacific Partnership Agreement because significant changes to Australia's competition policy and law were made to meet its obligations. The negotiations under the TPPA are still core to the CPTPP, which was a work around agreement to proceed with the TPPA without the United States. The equivalent agreement for the European Union-US sphere, the Transatlantic Trade and Investment Partnership (TTIP) was suspended in 2016 following the US withdrawal from the Paris Agreement on climate change. According to the US Department of State, America was geographically and economically pivotal to both the TPPA and TTIP agreements (Russel 2014).

29 Australia has concluded FTAs with: Indonesia (2020), Hong Kong (2019), Peru (2019), Agreement on Government Procurement (2019), Comprehensive and Progressive Trans-Pacific Partnership (2018), New Zealand and eight Pacific island countries (PACER) (2017), China (2015), Japan (2014), Republic of Korea (2014), Malaysia (2012), ASEAN and New Zealand (2009), Chile (2008), Thailand (2004), United States (2004), Singapore (2002), and New Zealand (CER Agreement) (1982).

30 Agreements Australia is currently negotiating are: Trade in Services Agreement (TISA), Pacific Alliance Free Trade Agreement, Regional Comprehensive Economic Partnership, Australia-Gulf Cooperation Council (GCC) FTA, Australia-European Union Free Trade Agreement, Australia-India Comprehensive Economic Cooperation Agreement and Australia-United Kingdom Free Trade Agreement (Department of Foreign Affairs and Trade 2020b).

To understand the extent of legislative changes made to meet obligations in agreements, the recommendations of two advisory bodies are particularly relevant. The Harper Panel on Competition Policy Review and the Financial System Inquiry were both short-term consultative bodies appointed by the Abbott Coalition government in 2014. Members were drawn from transnational consultancies, investment banks, foreign hedge funds, corporate law, foreign and Australian thinktanks and universities. Some members had OECD and government experience. An important adjunct to the Harper Panel's review was the submission on competition policy made by the Productivity Commission.

Competition policy and law

The Harper Panel was given the task of ensuring that “the competition provisions of the *Competition and Consumer Act 2010* (CCA) ... are driving efficient, competitive and durable outcomes, particularly in light of changes to the Australian economy in recent decades and its increased integration into global markets” (Harper et al. 2015, 526). In a radical move to place government activities on the “same footing as private parties” (Harper et al. 2015, 279), in accordance with the TPPA, the panel recommended that the anti-competitive conduct provisions of the CCA should reach government businesses to cover “government activities that have a trading or commercial character” (Harper et al. 2015, 31). The rationale behind this recommendation was that: “The Crown (whether in right of the Commonwealth, state and territory, or local governments) has the potential to harm competition through its commercial arrangements entered into with market participants” (Harper et al. 2015, 96). Such a blanket change went far beyond state-owned enterprises and other commercial enterprises to cover all government activities which were ‘contestable’—that is, which a private provider could perform. It thereby arguably embraced most of government, given the private sector's capacity to plan and implement policy and deliver services. This view is supported by the panel's conclusion that:

government should not be a substitute for the private sector where markets are, or can, function effectively or where contestability can be realised (Harper et al. 2015, 526).

The implication of this statement, made within the context of the international contestability of markets, was that transnational corporations headquartered in other countries take over Australian government functions. The exception, I would argue, are those activities that would give rise to the identification of government as ‘sovereign’ government. In other words, government is given the symbolic function of ‘being’ government which only it can perform whilst substantive decision-making resides with non-government entities like corporations and the Trans-Pacific Partnership Commission and

other FTA entities and supranational organisations. The contestability doctrine offers a rationale for private governance that the Harper Panel translated into policies and procedures. It removes governance by government and at the same time bolsters corporate consolidation in Australia by creating contestable conditions.

The influence of contestability is such that the panel recommended that ‘competition’ be redefined in the CCA to include “competition from “*potential* imports of goods and services, not just *actual* imports”, and from service provision that was “capable of being rendered” from outside the country, thereby giving the concept of “credible threat of import competition” a legal status (Harper et al. 2015, 57). This could potentially be used to give legislative cover for monopolies and oligopolies forming in the market through mergers or the privatisation of government monopolies. This is a fundamental challenge to the existence of electoral democracy.

This approach is also applied to cartels, with the panel recommending the relaxation of cartel provisions in the CCA, focusing on competitive *outcome*. Thereby, “[j]oint ventures and similar forms of business collaboration” are allowable if they do not “substantially lessen competition” (Harper et al. 2015, 58). An exemption for “trading restrictions that are imposed by one firm on another in connection with the supply or acquisition of goods or services (including IP [intellectual property] licensing)” was also proposed on the same grounds (Harper et al. 2015, 58). In effect, cartels were no longer considered a threat to competition.

The effects test

The panel grappled with the risks of anti-competitive behaviour by, firstly, promoting the breakdown of barriers to induce competitive threats to market incumbents and, secondly, by recommending that the *misuse of market power* provisions in Section 46 of the CCA be reframed. The provisions were known to be ineffective. Cases were not getting to court, as it is difficult (and costly) to prove that a corporation has taken advantage of substantial power and did so for a ‘proscribed purpose’ generally considered to be anti-competitive (Merrett 2015). The new version of Section 46, proposed by the Panel and finally accepted by the government in March 2016, removed the need to prove intent and instead introduced an ‘effects test’—that is, “the proposed conduct has the purpose, or would have or be likely to have the effect, of substantially lessening competition in that or any other market” (Harper et al. 2015, 62). The effects test substituted for the ‘purpose test’, thereby breaking the legal nexus between the ‘degree of market power’ and “taking advantage” of that power by ‘purposefully’ using it to undermine competitors (Harper et al. 2015, 337). The shift from intention to effects (*outcome* of behaviour) meant capturing “anti-competitive

unilateral behaviour” without constraining “vigorous competitive conduct” (Harper et al. 2015, 336), thereby claiming to fulfil the remit of competition law to protect the “competitive process” (Harper et al. 2015, 339). The panel engaged with the debates on the efficacy of an effects test, concluding along with some legal scholars that there were correct arguments on both sides (Merrett 2015; Miller 2015) and leaving the merit of the changes to be ultimately measured by the tally of cases successfully prosecuted.

In lieu of the effects test, predatory pricing provisions and the 2007 amendments clarifying the meaning of ‘take advantage’ were deemed “unnecessary” (Harper et al. 2015, 62). To ‘take advantage’ means “eliminating or substantially damaging a competitor, preventing the entry of a person into a market, or deterring or preventing a person from engaging in competitive conduct” (CCA 2010, s 46[1] referred to in: Harper et al. 2015, 335). This change removes the causal link between industry structure (substantial market power such as monopolies) and ‘take advantage’, which effectively “takes ‘misuse’ out of the ‘misuse of market power’ test”, but would not, as I would argue, “curb their competitive behaviour” (King and Samuel 2015). This occurs, in a contestable market, as opposed to an orthodox market where competition *actually* exists. Here lies a difficulty that the courts face and contended by French in less complex times, in relation to “the linkage between the process of market definition and the determination of market power” (1994, 561). “Like ‘market’ it [market power] is a multi-dimensional abstraction which involves the making of value judgments” (French 1994, 562). The Harper report does not define a contestable market, but it does characterise competitive processes in terms of contestability, stating: “we must foster the smooth entry and exit of suppliers ... which means removing or lowering barriers to entry (and exit) wherever possible” (2015, 24). This new market type, where monopolies are theorised to behave competitively in response to latent threats, invites the proposition that government policy or action in relation to market access could be construed as a factor in, or cause of, an anti-competitive *outcome*.

The contestability doctrine that rejects regulatory interference in ‘the’ market, also informs the international regime of trade and investment agreements to which Australia conforms. The *global integration* agenda to which the ‘effects test’ is intended to adhere, along with the comprehensiveness and circularity of the non-interventionist argument, calls into question “normative or evaluative concepts” in competition law and the necessity to go beyond “pre-existing meaning” (French 1994, 548, 549). Paradoxically, it appears that the Harper panel has given legal leverage to corporate consolidation, effectively privileging domestic and foreign monopolies and oligopolies, and threatening small and medium enterprises and consumer welfare.

Aligning with the TPPA

Under the TPPA, any party to the agreement can apply its national competition laws to all commercial activities in its territory and “to commercial activities outside its borders that have anticompetitive effects within its jurisdiction” (2015, Article 16.1.2). The statement on extraterritoriality implies that the actual jurisdiction of national competition laws is not girt by national borders, nor by TPPA party borders. The enforcement of extraterritoriality in the TPPA requires the national competition laws of all parties to be synchronised, or what the TPPA denotes as ‘regulatory coherence’ (2015, Chapter 25). To this end, the panel recommended amending Section 5 of the CCA to apply to “overseas conduct insofar as the conduct relates to trade or commerce within Australia or between Australia and places outside Australia” (Harper et al. 2015, 58). The panel also considered ease of access for private actions as a way of signalling adherence to TPPA enforcement of national competition laws (ibid.). “Private rights of action enable persons (including corporations) the right to seek redress, including injunctive or monetary remedies, for damages ‘caused by a violation of national competition laws, either independently or following a finding of violation by a national competition authority’ in a court or an independent tribunal (Trans-Pacific Partnership Agreement 2015, Article 16.3)” (Colton 2017, 8).

Corralling public sector activity under the national competition laws to achieve parity with TPPA obligations has been foreshadowed by framing government functions as ‘contestable’, and by vaguely defining government commerciality in reference to state-owned enterprises as being “an orientation toward profit-making” (2015, Article 17.1). Government entities run the risk of their activities, including decision-making processes and policy functions, being deemed anti-competitive or adversely impacting a trading partner firm’s interests, be they a competitor provider, purchaser or investor. The Baird Coalition government in New South Wales flagged this to the panel, stating that the “broad application of competition laws to government commercial activities risks compromising the policy functions of government” (Harper et al. 2015, 280). The panel concluded that the continued objective of competition law was to forge “economic welfare” through greater efficiency. Economic welfare is defined as “meeting their [Australians] needs and preferences by making markets work properly” (Harper et al. 2015, 7).

This objective of national competition laws is also prescribed under the TPPA, along with consumer welfare (2015, Article 16.1). Therefore, it is not a matter of internal public policy responding to domestic needs, but rather the necessity for Australia’s competition laws to fulfil the remit of the TPPA along the terms to which Australia has already agreed. The

implication is that all changes in policy—whether from Royal Commission recommendations, Senate inquiries, coroner’s reports, community activism or political parties evolving their agendas—must always pass scrutiny with our international trade and investment obligations. Failure to do so could result in government being sued under the international trade enforcement regime called investor-state dispute settlement (ISDS).

Investment and Investor-State Dispute Settlement protections

The role of advisory bodies such as the Harper Panel has been to reappraise Australian competition policy and law within the context of free market economics and to recommend the mechanisms necessary for Australia to integrate with the global economy. The epicentre of this appetite for change has been the global financial services sector.

In his March 1995 speech in Washington, Sir Leon Brittan, Margaret Thatcher’s envoy to Brussels and later David Cameron’s chief advisor on the UK’s ‘Open for Business’ trade campaign, said: “governments still sometimes find it threatening, because free FDI flows limit administrations’ ability to control and shape their countries’ economic destiny”—a situation, he concluded, that was a “small price for allowing private sector decision makers to generate economic benefits worldwide” (Brittan 1995b, 4). Twenty years on, a reticence by Australian governments has given way to a national strategy promoting foreign direct investment, in which the investment provisions of the TPPA and bilateral agreements with China, Korea and Japan play a major facilitating role (Australian Trade Commission 2015, 57). These agreements all register adherence, in one form or another, with Brittan’s ideal for foreign investors:

[They are] free at least from unreasonable and uncompensated expropriation. ... [They have] access to a fully convertible currency, can repatriate their profits at will and are free from unduly onerous performance requirements. ... [They] will also want to have reasonable treatment from tax authorities (Brittan 1995b, 6).

The alignment of Australia’s financial services sector to the global financial marketplace in order to facilitate the free flow of capital has been a key objective of the Financial System Inquiry which included a focus on “international integration, including international financial regulation” (Murray et al. 2014, viii). Philosophically, the Financial System Inquiry held that “the financial system should be subject, and responsive, to market forces, including competition” [which] “is preferable to government intervention”, defined in extremis as not only regulation and legislation, but also “guidance, general supervision and enforcement” (Murray et al. 2014, 9 fn). This is a manifest shift away from the ‘light touch’

interventionist doctrine of the 1990s that convinced governments they should be “steering rather than rowing” (Osborne and Gaebler 1993 [1992], 25) evinced by, for example, privatised electricity corporations being constrained by regulatory price control. The Financial System Inquiry was effectively calling for governments to relinquish market management—a function that has leveraged government power in both the market and public policy (Bell and Hindmoor 2009). In less than a decade, a vigorous system of government in Australia (Bell and Hindmoor 2009) was becoming one whose institutions were losing the knowledge and memory “of how to govern—that is, the “context or continuity for the making of new decisions” (Tingle 2015, 4). The Financial System Inquiry claimed that the private sector was best placed to make decisions and “identified a number of distortions that impede the efficient market allocation of financial resources, including taxation, information imbalances and unnecessary regulation” (Murray et al. 2014, xvi). This was very much in line with the thinking of international trade policy circles of the mid-1990s, and with that of the Productivity Commission, which lists regulations, taxes, subsidies, government ownership of businesses and funding of services as instruments of intervention in a free market (Productivity Commission 2014, 6).

Such claims can be identified as ideological since the assertions being made typically have no reference to data or evidence of practical effect. This free market position has been further abstracted by contestability’s theoretical claim that barriers to market entry hinder competition, and that competition, or the threat of it, is a necessary prerequisite of free trade—that is, trade unencumbered by government intervention.

Under the TPPA, entering the Australian market will become far easier for foreign investors due to the removal of a range of performance requirements on covered investments. Governments can no longer “impose or enforce any requirement, or enforce any commitment or undertaking [from] an investment of an investor of a Party or of a non-Party in its territory” (2015, Article 9.9.1). Nor can the government impose any conditions on the “receipt of an advantage” by a foreign investor (Article 9.9.2) or stipulate that the senior management are Australian citizens (Article 9.10). These critical injunctions placed on governments by the TPPA will limit their abilities to control foreign direct investment. They will remove policy levers which ensured (a) that an inward foreign investment brought benefits to the local economy, such as stipulating local content, purchase of local goods and services, and transfers of technology and proprietary knowledge; (b) that the government was able to proportionally share in the rewards reaped by the investment; and (c) attention to local concerns by senior management.

Under the TPPA, investors can also exit the market at will. They are permitted to make transfers in and out of a party's territory, including profits and revenues from the sale or liquidation of the covered investment in a freely usable currency without delay (2015, Article 9.8). These provisions are critical for a contestable market, allowing the characteristic 'hit-and-run' ease of entering a market, profit-taking and then leaving without exit costs, such as "capital controls or financial transaction taxes" banned by the transfers provision (Faunce 2015, 603).³¹

The Financial System Inquiry's recommendations strove to drive contestability principles further into Australia's financial regulatory framework. These included lowering withholding taxes on investment incomes repatriated by non-residents to align with regional trading partners (Murray et al. 2014, 279). It was also recommended that the Australian Securities and Investments Commission (ASIC) consider competition in its mandate (Murray et al. 2014, 254) to ensure that "regulators are more sensitive to the effects of their decisions on competition, international competitiveness and the free flow of capital" (Murray et al. 2014, xvi). The Inquiry's recommendations amounted to the abolition of Australia's jurisdiction over transnational corporations operating in its territory whether remotely or through Australian offices. This in effect establishes the rise in influence of the international corpocracy over the future of the Australian state and hence the Australian people.

Investor-state dispute settlement

Protecting investments in multiple jurisdictions is an expensive and complex undertaking for transnational corporations. ISDS goes a long way in simplifying the process of prosecuting claims and claiming compensation for agreement infringements and other detriments. Under the TPPA and trade agreements with Korea and China, claimants can have their cases against governments arbitrated in private international tribunals and heard by arbitrators who can oscillate between judging and presenting for corporate claimants. There is no appeal against decisions, either to the tribunal or to national law courts (Tienhaara 2010; Faunce 2014).

The TPPA's ISDS regime includes an overreaching definition of 'investment' that covers almost every significant component of the Australian economy, including enterprises, equity, debt instruments (including loans), derivatives, various types of contracts, intellectual

31 "Over the five years to June 2015, Australia's financial markets have expanded, with total annual turnover (over-the-counter and exchange traded) rising 32 per cent to A\$135 trillion. The latest figure is 84 times the size of Australia's nominal GDP" (Australian Trade Commission 2016, 56).

property rights, rights under permits, licences and authorisations, tangible and intangible property, and property rights (Trans-Pacific Partnership Agreement 2015, Article 9.1). With an ‘investment’ so broadly defined, an investor may make a claim under ISDS based on interference emanating from a system of governance or government policy. If proven under ISDS, the policy or regulation must be rescinded. The Abbott Coalition government flagged the retreat of government from nation building goals as it withdrew its jurisdiction over investment in favour of private corporations and individuals taking the role of investors in development (Department of the Prime Minister and Cabinet 2015, 2). The government’s role is made even more tenuous by the wider net of commerciality defining its activities that breach investors’ rights under national competition laws. In this sense, governments are caught in a pincer movement that could take the problem of government performance of its functions beyond ‘regulatory chill’ (threat of litigation leading governments to compromise policy objectives) to one that undermines the “structural power” of government invested in decision-making (Strange 1988, 25). In 2010 the Productivity Commission warned the government that ISDS could ‘chill’ the policy process and posed a risk to domestic investors who were not privy to the same advantages as their foreign counterparts (Productivity Commission 2010, 271).³² This advice did not deter Coalition governments from signing further agreements with ISDS provisions³³ as continuance of their “pragmatic approach” (Dickson-Smith and Mercurio 2018, 223). The Labor Party, in contrast, committed to a policy of negotiating several ISDS exclusions³⁴ following the Commission’s report, having signed ISDS inclusive FTAs with Chile in 2008 and ASEAN and New Zealand in 2009 (Dickson-Smith and Mercurio 2018, 222), and suggesting that they too had been pragmatic. These factors, together with the weakening of capital flow controls under the TPPA, would most likely accelerate the ‘retreat of the state’ (Strange 1996) in the face of globalised power

32 Dickson-Smith and Mercurio argued that there was no empirical evidence to support the Productivity Commission’s claim that ISDS caused regulatory chill (Dickson-Smith and Mercurio 2018, 232) understandably because it is difficult to ascribe what factors are at play in decision-making. Jane Kelsey noted this in her study of the New Zealand government’s response to Australia’s battle with Philip Morris over cigarette plain packaging, which she argued was a factor in New Zealand delaying its own legislation pending the outcome of Australia’s ISDS case (Kelsey 2017).

33 Agreements with ISDS provisions are: Peru (2019) (Coalition), Comprehensive and Progressive Trans-Pacific Partnership (2018) (Coalition), China (2015) (Coalition), Republic of Korea (2014) (Coalition), ASEAN and New Zealand (2009) (Labor), Chile (2008) (Labor), Thailand (2004) (Coalition), Singapore (2002) (Coalition).

34 Agreements with **no** ISDS provisions are: Indonesia (2020) (Coalition), Hong Kong (2019) (Coalition), Agreement on Government Procurement (2019) (Coalition), New Zealand plus eight Pacific island countries (PACER) (2017) (Coalition), Japan (2014) (Coalition), Malaysia FTA (2012) (Labor), United States (2004) (Coalition), New Zealand (CER) (1982) (Coalition).

generated in financial markets, which Strange likened to a “vast casino” (Strange 1997 [1986], 1). The state has been relinquishing its ‘provider’ share of the market to the private sector, and retreating to the role of market promoter—a role encapsulated by the term “competition state” (Cerny 1990, 220; Evans 2005)—as its activities focus on promoting foreign direct investment, marketisation and enmeshment with “extraterritorial economic and legal institutions and practices” (Cerny, Menz, and Soederberg 2005, 5). This description of the state fully engaged in its own operational imperatives as a competition state in the context of “multi-level governance” (Cerny, Menz, and Soederberg 2005, 6) is unlikely to hold in the contestable environment, for in this iteration of the global market, the imitation of competition takes precedence, leaving the state with ever decreasing reserves of knowledge and functional purpose to leverage a niche in a global economy predicted to be dominated by monopolies (Baran and Sweezy 1966).

However, on the immediate horizon it is the intensification of the engagement of states with transnational corporate interests through the network of international agreements, particularly the TPPA. Embodied in this is a new supranational level of governance with its own governing body, the Trans-Pacific Partnership Commission, replete with a committee system, disciplines, rules of procedure and ISDS enforcement. The TPPA’s binding commitments have been strategically scoped to induce regulatory coherence in order to transition national governments to its regional market regime. They include removing regulations, simplifying the regulations that remain, and making “systemic regulatory improvements” in favour of trade and investment (Trans-Pacific Partnership Agreement 2015, Article 25.4).

ISDS will enforce compliance with TPPA provisions governing the new regional market, defended by the claim of contestable market theory that it will basically be self-regulating, even with the presence of monopolies. The ISDS, seen within the context of contestability, thus serves as a mechanism to protect monopoly interests. ISDS has been used to prosecute a corporation’s right to the “expectations of monopoly profits” in the case of pharmaceutical giant Eli Lilly against the Canadian government (Baker 2013). This was following the corporation’s failed attempts in the state’s appellate courts to have their Canadian patents over the drugs Strattera and Zyprexa revalidated. Eli Lilly sought \$500 million in compensation from the Canadian government under the North American Free

Trade Agreement (NAFTA).³⁵ French cited the case in the context of the TPPA to highlight the question that arises concerning the authority of state courts over private ISDS arbitration (French 2014, 9).

The Financial System Inquiry's recommendations for the ISDS enforcement provisions of the TPPA and the China and Korea free trade agreements protect the rights of corporations to "challenge capital controls and other macro-prudential financial regulations that promote financial stability" (Faunce 2015, 603). A nation's ability to control capital flows, particularly in times of crisis, is a marker of sovereign strength. In the light of ISDS and the volumes of capital involved, this suggests a considerable weakening in Australia.

Foreign direct investment and financial services

In 2018, inward foreign direct investment (FDI) was \$975.7 billion, representing 28 percent of total foreign investment into Australia (Productivity Commission 2020, 4). Outward foreign direct investment that year was \$695.6 billion (27%) of total outward foreign investment (Australian Bureau of Statistics 2019). Inward foreign direct investment, availed by the removal of barriers such as thresholds, has been growing at 8.5 percent per year since 2011 (Australian Trade and Investment Commission 2019a, 38) and now accounts for 52 percent of GDP (Productivity Commission 2020, 4), up from 29 percent in 2008 (Australian Trade Commission 2015, 58). In 2018 the highest inwards FDI investors to Australia were based in the European Union \$226 billion, US \$214 billion and Japan \$106 billion (Australian Trade and Investment Commission 2019a, 38), followed by the UK \$99 billion, Netherlands \$49 billion and China \$40 billion (Productivity Commission 2020, 33).

What Austrade accurately describes as "Australia's network of free trade agreements" (Australian Trade and Investment Commission 2019a, 37) is also by default a network of corporate governance prosecuted through ISDS in those FTAs. Currently, figures are not available for the percentage of the capital inflows that are sourced from FTAs inclusive of ISDS. It would be salient to know what proportion of the Australian economy lies within the jurisdiction of international private arbitration. That proportion would grow significantly if the US commits to a new CPTPP and the current FTA under negotiation with the UK is ratified. There are also FTAs being negotiated with India, and on a regional basis with the European Union, Gulf Cooperation Council, Pacific Alliance, the Regional Comprehensive

35 Eli Lilly failed in its bid for compensation. However, following a concerted campaign by the US and the pharmaceutical industry, "the Supreme Court of Canada eviscerated the promise/utility doctrine, which required confirmatory evidence in the patent application" (Baker and Geddes 2017, 481).

Economic Partnership and Trade in Services Agreement (TiSA), which would vastly expand and tighten the net of countries committing to specific trade and investment rules effecting standardisation of the whole trade network across the globe to ensure compatibility between trading partners—a process being fundamentally dictated by transnational capital.

The government accepted in full or part 44 out of the 56 recommendations from the Harper Review (Treasury 2015a, 1) and 43 out of 44 recommendations from the Financial System Inquiry (Treasury 2015b), giving the green light to recutting Australia's national competition laws to integrate further with this FTA-ISDS regime. Thus, government will have relinquished the autonomy invested in Australian law governing a sizeable and growing portion of the economy to an external arbitration regime. There is also the risk of governments being sued under ISDS for policies claimed to interfere with corporate rights. ISDS claims have risen significantly worldwide and by 1 January 2019 had reached 942. The majority of claimants were based in the United States. They brought 174 claims between 1987 and 2017 with another 15 claims in 2018 alone (UNCTAD 2019, 1-3).

Between 2008 and 2014, inward FDI grew a massive 84 percent, far higher than the average for developed economies of 61 percent over the same period (Australian Trade Commission 2015, 58). The timing of the surge in foreign investment since the 2008 global financial crisis suggests that financial institutions like investment banks, hedge funds and asset managers were looking to move funds and business to new markets as the housing market in the USA and “commercial property and development markets elsewhere” collapsed (Davis 2011, 307).

Australia is an attractive market. It is economically stable; its currency is periodically very cheap and it has its own enormous pool of assets—the fourth largest in the world—created by the mandatory superannuation scheme introduced by the Keating Labor government in 1992 (Davis 2011, 306). This asset base, which stood at AU\$1.995 trillion by December 2015 (Association of Superannuation Funds of Australia 2015), attracted transnational finance corporations to set up offices in Australia following ongoing deregulation in the finance sector from the 1980s. By 2010, most funds under management (AU\$1.7 trillion) were managed by international firms, collectively called ‘custodians’ (Davis 2011, 321). The volume of capital available for investment continues to grow dramatically, with Deloitte (2013, 7) predicting that assets in superannuation will rise to 180 percent of GDP and that total superannuation assets will reach AU\$7.6 trillion by 2033.

The market access provisions of the TPPA and related ISDS clauses covering financial services remove constraints that government may have chosen to impose on foreign financial institutions entering the Australian market. No measures may be imposed on foreign financial institutions or their workforces based on an economic needs test, quotas or type of legal entity (Trans-Pacific Partnership Agreement 2015, Article 11.5). If an investor makes a claim against a measure, arbitrators with financial law expertise may be appointed to the tribunal (Trans-Pacific Partnership Agreement 2015, Article 11.22) (Article 11.22). These provisions allow for the circumvention of Australian courts by offshoring the determination process to a private tribunal with pro-investor arbitrators who are not accountable to the Australian populace (Faunce 2015, 601). Thomas Faunce concluded that:

The deliberate disengagement of Australian citizens from the governance changes being wrought on Australia through mechanisms such as ISDS in the TPPA may mark a turning point in a wider disengagement of citizens from the political process not just in this country but globally. (Faunce 2015, 606).

The Australian Trade and Investment Commission (Austrade) promotes Australia as a top destination for investors because it “has one of the largest pools of contestable funds under management globally, valued at about A\$1.3 trillion (US\$850 billion)” (2015-2020). Finance is “the fastest-growing sector in the Australian economy”, clocking up growth rates of 5.1 percent per annum in the period 2002–12. In 2012, the sector’s percentage of GDP was 10 percent, just a nudge below the value of manufacturing and agriculture combined, at 11 percent of GDP (Industry Super Australia 2013, 14-15). Austrade recently announced that the “government has commenced a major review of Australia’s tax system, recognising the importance of taxation for our international competitiveness generally, and for the competitiveness of the financial services sector in particular” (Australian Trade and Investment Commission 2015-2020). High levels of foreign investment skewer the nation’s accounts, for what appears to be domestic exports earning high export income is actually foreign firms exporting goods and services from their businesses in Australia and repatriating the income to their home countries. Consequently, increases in Gross Domestic Productivity are not reflected in actual income staying in the country. The encouragement of foreign investment can be at the expense of domestic exporters. It also diminishes the planned pursuit of foreign exchange to support national environmental and social objectives.

Leon Brittan did warn that foreign direct investment would limit aspects of government control over economies. With vice chairman of the UBS AG Investment Bank amongst his other roles (BBC News Service 2010), he would most likely have been aware of the

challenges corporations faced in wresting control of capital flows away from national governments. The Financial System Inquiry and Productivity Commission, in effect, identified the grounds on which those challenges could be made, which highlights the power of advisory bodies and their interlocutory role between government and business—a role that facilitates business interests within government circles (Bell and Hindmoor 2009, 169).

Investment in infrastructure and government procurement

Efficient investment, according to the Harper panel, is a factor of a competition policy that enables the price signal to determine the optimum investment in, and use of, infrastructure and natural resources (Harper et al. 2015, 26, 27).

Under the TPPA, governments must open the economy by granting investors access rights to infrastructure projects along with natural resources and network services (utilities like telecommunications) consumed by the public (2015, Article 9.1). These rights give investors access to resources to be exploited on the basis of the price mechanism and are thus calibrated to commercial objectives. The only requirement made by the TPPA on an investment activity with regard to environmental, health or other regulatory objectives is that it be ‘sensitive’ to those objectives (2015, Article 9.15). Without mandatory provisions the environment has no protection.

Growing markets to meet the demands of global investors has been a macroeconomic policy goal of Australian governments since the 1980s. Prominent amongst these efforts has been privatisation—the sale or lease of government assets and enterprises to the private sector and the expansion of the related government procurement market.

The Harper panel considered privatisation “as a form of procurement: the transfer of assets from the public to the private sector rather than a transfer of activities—in effect, procurement that is not repeated” (Harper et al. 2015, 273). Liberalising market access to government procurement has long been seen as a key to boosting the contestability of international services markets as large, secure procurement markets serve to boost growth in trade in services within the economy overall, not just procurement markets (Sauvé 1996, 51).

The privatisation of existing infrastructure and the construction and management of new assets is a major segment of the procurement market in Australia, with expenditure on infrastructure for 2013-2023 estimated at \$760 billion, \$300 billion of which was to be invested by the government sector (Deloitte Access Economics figures quoted in: Business Council of Australia 2014, 13). Expenditure on infrastructure occurs through joint initiatives

in debt financing, such as public private partnerships (PPPs), and through procurement contracts. The Business Council of Australia (BCA) called for privatisation of infrastructure and third party access arrangements to privatised monopoly networks like public utilities (Business Council of Australia 2014, 14, 15). This was achieved by the structural separation of competitive and contestable elements which resulted in former public monopolies becoming private natural monopolies hosting markets like electricity billing services (Harper et al. 2015, 33, 192-193). Networked infrastructure would enable new network dependent enterprises to form in what is referred to as “upstream and downstream markets” (Business Council of Australia 2014, 13; Harper et al. 2015, 422).

In 2018-19, the Commonwealth government put to tender \$64.5 billion worth of procurement contracts (Department of Finance 2020), a portion of which came under the CPTPP and the Agreement on Government Procurement (GPA), which Australia signed in 2018.³⁶ Under these FTAs Australian governments cannot give preferential treatment to domestic suppliers on scheduled items (Trans-Pacific Partnership Agreement 2015, Article 15.4.1)(World Trade Organization 2018). As noted by the *Commonwealth Procurement Rules* Australia has removed discrimination barriers in this market, consequently, procurement may not function as a policy lever to promote, for example, regional development or environmental sustainability (Department of Finance 2014).

The autonomous purchasing decisions of governments are also curtailed by the threat of ISDS claims if they “apply any technical specification with the purpose or effect of creating an unnecessary obstacle to trade between the parties” (Article 15.12.1).³⁷ Consequently, the biggest consumer in the country (government) no longer has a right to require access to information, which the Productivity Commission says is essential for consumer welfare in a contestable market (Productivity Commission 2014, 6).

The price signal is also privileged in procurement, unless a public interest can be determined by the procuring entity (government) (Trans-Pacific Partnership Agreement 2015, Article 15.15.4). In an agreement where objectives, other than commercial objectives, are not able

36 The GPA first came into force in 1979 and has since been amended. It is a voluntary agreement between 20 parties including the EU, Hong Kong, China, Japan, Canada and US which sits within the WTO framework. Not all procurement contracts are covered by the agreement with states nominating inclusions which are drawn up in schedules. GPA rules aim is to ensure that lucrative procurement markets are opened up to foreign investment and trade.

37 Technical specification can include ‘a particular trademark or trade name, patent, copyright, design, type, specific origin, producer or supplier’ (Article 15.12.3).

to be governed by imposing obligations, requiring commitments or evoking sanctions, citing the public interest in a matter becomes something foreign to the process. The Harper Panel essentially framed the public interest as an “anti-competitive” contention that must be proven by “the party wishing to retain anti-competitive regulation” (Harper et al. 2015, 43), that is, the “benefits of the restriction to the community as a whole outweigh the costs; and the objectives of the legislation or government policy can only be achieved by restricting competition” (Harper et al. 2015, 98).

Using the language of contestability and the Hayekian catallactic game, the BCA noted that “the rules of the game, increasing certainty and reducing barriers to investment and expansion for business. ... provides essential protection for the community including ensuring that risks to health, safety and the environment are appropriately managed” (Business Council of Australia 2012, 4). These rules, which had been woven into WTO GATT framework by members of the Geneva School of neoliberalism (Slobodian 2018, 250, 266), were by necessity, general conduct rules because they were designed to facilitate global economic integration.

All traders and investors had to live by them, as the objective of the rules was “to protect the competitive process, rather than individual competitors” (Business Council of Australia 2014, 9) or potential competitors. Regarding ‘residual’ business regulations, the standard ascertained by the BCA is that: “[r]egulatory decisions are fair and contestable” (2014, 91). According to the BCA there was no longer a need for “unique Australian regulations” because that was an unnecessary cost on business (Business Council of Australia 2014, 9) given they were now governed by international rules set out in FTAs. The Harper panel concurred, recommending “simplification” of competition law (Harper et al. 2015, 56).

8.3.3 Australia and the Anglo-Saxon nexus

The TPPA-CPTPP is a powerful articulation of the goal expressed by the Institute of International Economics (IIE) to integrate contestability with trade policy through “judicious experimentation with a blend of principles, policies and institutions” to achieve market access, efficiency and fairness to corporations (Graham and Richardson 1997a, 4). What the IIE endorsed was a global contestability policy presented as competition, which informed the Washington Consensus on international trade policy and contributed to its

neoliberal and corporatist character. In a speech by US Deputy Secretary, Kurt Tong³⁸ to the United States Studies Centre, at the University of Sydney, in August 2015, Tong argued that the United States was:

uniquely useful in shaping the rules of the road for how trade and investment and other forms of economic activity, finance, and the like are conducted in the Asia-Pacific region (Tong 2015, 4).

His speech, veined deep with ‘American Exceptionalism’ and the ‘Manifest Destiny’ of the US in another Pacific century, invokes an ideal of empire from the British colonial enterprise in the Asia-Pacific:

it’s our basic Anglo-Saxon democratic economic values and realising that across cultures, across religions, across languages, across the Pacific is going to be a major achievement (Tong 2015, 6).

Denis Altman, writing in response, reacted to Tong’s latitude describing his ‘Anglo-Saxon’ comments as, “a moment of searing honesty” (Altman 2015, 26). Tong’s cultural positioning of ‘that relationship’ between minnow Australia and the leviathan US sees Altman cringing at that “unfortunate sycophancy”, which he claimed characterised Australia’s relationship with America from Harold Holt to John Howard (Altman 2015, 26) and which I suggest has gone beyond those years.

The risk to Australia and the region is the emergence of a *neo* colonialism created by the confluence of neoliberal ideology and the hegemony of transnational corporations who like colonialists are motivated by what they can extract. Should the US re-enter the CPTPP and Australia sign the Australia-UK FTA, it will increase the combined total of US-UK investment, which in 2019 was \$1669.8 billion representing 43.4 percent of the total stock of foreign investment in Australia (Department of Foreign Affairs and Trade 2020a). The structural power of corporations that attaches to this level of wealth would intensify the “noteworthy ‘convergence’ [within Anglo-American] ... influence” (Beeson and Firth 1998, 215). As Pusey observed such influence was augmented by decades of “structural adjustment” whereby Australia followed the market fundamentalism of the Washington Consensus (Pusey 2018, 15).

38 Kurt Tong, Principal Deputy Assistant Secretary, Bureau of Economic and Business Affairs, US Department of State.

This “[d]eepening [of] Australia’s integration with the world” (Harper et al. 2015, 16)—formed the basis of the Coalition’s “whole-of-nation approach” aimed at linking domestic and foreign policy (Department of Foreign Affairs and Trade 1997, 73). The challenge of integrating with the global economy necessitated “whole-of-government arrangements” aimed at facilitating government agency coordination and ICT systems integration (Halligan 2005, 32, 33). The pragmatic focus of domestic integration was the construction of an Australian network to link with the global economy serving the goal of international contestability.

8.4 Contestability and digital transformation

The integration of the world’s economies would not be possible without telecommunications, a view that Hayek held in the 1930s when he envisioned “common control of communications” amongst federated states (Hayek 1939, 131). The 1980s saw advances in ICT networks, and at the same time privatisation and deregulation, including global telecommunications (Strange 1996, 104); making possible the “global integration of financial markets” and the expansion of global supply chains (Castells 1996, 52).

Information technology played a decisive role in repurposing government entities into businesses tasked with creating and expanding markets. Worldwide expenditure on public sector IT systems was estimated at US\$500 billion per annum across the 1990s (Heeks and Davies 1999, 23). The transition of government activity to the private sector was called the “reengineering [of] public sector organisations”, and private sector business process information systems played a critical role. The specific needs of the public sector were, according to Kim Andersen, not considered in the structuring of information systems (Andersen 1999), a situation exacerbated by outsourcing IT (Aulich and O’Flynn 2007, 162) and IT recruitment (Jenkins 2020b).

Aulich and O’Flynn described the outsourcing of government IT in 1996 as a “tactical privatisation strategy” by privatisation advocates against the wishes of many government agencies (Aulich and O’Flynn 2007, 162). It was a bipartisan strategy, reflecting cross-party support for a fully networked global “*knowledge-based economy*” with “[k]nowledge, as embodied in human beings (as *human capital*) and in technology, [which] has always been central to economic development” (OECD 1996, 9). The OECD in their ‘best practices’ report urged member states to promote “codification of knowledge and its transmission through communications and computer networks” to facilitate market transactions and the

greater commodification of knowledge (OECD 1996, 3, 13). This perspective was quintessentially the Austro-Chicago neoliberal pathway forged by Hayek and Becker in the 1950s. By 1996 the technology could support the ideology in programmatic form. This would also lead ultimately to individuals being uniquely identified through online networks as economic contributors of codified tacit knowledge (OECD 1996, 14).

Succumbing to this pressure to integrate with global networks represented a willingness on the part of Australia's political leadership to relinquish state control over its unique administrative knowledge bank including population-based data repositories. Consecutive governments prepared policies that would ensure a future where all Australian citizens would be accessing 'government' services online. These policy positions were recommended in the 1996 National Commission of Audit, which called on government to rationalise agency IT systems with the aim of establishing compatibility across the public service and switching recipients of social security benefits over to the electronic payments system (James 1996).

According to Gary Sturgess, the network was the system architecture that would inform the role of government in the future. He envisaged a "virtual government" (Sturgess 1996, 60), a term that "presupposed that privatising and outsourcing is the optimal policy" (Walker and Walker 2000, 276). Sturgess contended that the government was in "retreat" from the manufacturing and services sectors, as well as from "[r]egulation and inspection", as alternatives such as "quality assurance and best practice management" took their place (1996, 63). He advocated that government should "concentrate on its special strengths in the information sector" (1996, 71). In the 1990s that strength was funding the integration of government systems and one-stop access to government online services (Office of Government Information Technology 1998; Heeks and Davies 1999, 24) – an APS network, in other words, which was according to the trend liable to be privatised.

Sturgess, who has been a major promoter of contestability in Australia (Sturgess 2012; 2015), is a member of the MPS, former Cabinet Secretary to NSW Premier Nick Greiner (1988-1992), and Executive Director of the London-based Serco Institute (2003-2011). An academic³⁹ and political advisor, his influence extends to national competition policy (Harper et al. 2015, 2), electricity privatisation and establishing the NSW Independent Pricing and Regulatory Tribunal (IPART) and the NSW Independent Commission Against

39 Sturgess is currently professor of Public Service Innovation at Griffith University's School of Government and International Relations. He is also the NSW Premier's ANZSOG (Australia and New Zealand School of Government) Chair of Public Service Delivery at the University of NSW.

Corruption (ICAC).⁴⁰ In 2015 he was appointed chair of the NSW Point to Point Transport Taskforce that recommended regulatory changes to integrate ridesharing, including Uber, into the transport mix in NSW (Point to Point Transport Taskforce 2015; Australian Associated Press 2017).

Over the next three decades contestability would play a role in advocating changes to telecommunications policy (Productivity Commission 2001, xlv). Pro-competition policies in telecommunications were deemed “of particular importance and relevance to firms’ ability to realise the potential for ICT-related productivity gains.” (Productivity Commission 2004, 82).

In *ICT Use and Productivity* (2004), the Productivity Commission identified lower transaction costs, efficiency gains and innovation as outcomes of ICT advances (Productivity Commission 2004, 3, 8) and called for the removal of regulation from labour markets, trade and investment, which they claimed adversely impacted a firm’s ability to innovate (Productivity Commission 2004, 82). It made no assertions regarding income earned from commissions on transactions and other rents extracted from network services. This report ignored the deleterious industry concentration resulting from network effects, merely summarising the benefits derived from ICT productivity gains for users as networks connecting more consumers, firms and government agencies (Productivity Commission 2004, 16).

In the Commission’s 2016 report, *Digital Disruption* they conceded that, “[l]ow marginal costs of production and market power from networks and data can see a winner-take-all outcome in digital services.” (Productivity Commission 2016, 35). They countered this point, however, with a positive take on the impacts of contestability:

Markets for digital services can also be highly contestable. For example, while both Google and Facebook are dominant providers in their quite different markets, they both compete for advertising revenue (Thépot 2012).⁴¹ In these ways, market power is tempered. Hence

40 “The NSW Independent Commission Against Corruption recognises the changing nature of public service delivery and the need to delegate authority in the conduct of effective procurements. In recent years it has adopted a systemic approach in its corruption prevention work, rather than simply advocating more regulation. This offers a solid platform from which to build a more diverse public service economy.” (Sturgess 2012, 86).

41 “At that time Google had 85 per cent of the search engine market share in 2012, and Facebook had a 65 per cent share of the social networking market.” (Productivity Commission 2016, fn: 60). Thépot, F. 2012, *Market Power in Online Search and Social-Networking: a Matter of Two-Sided Markets*, 4/2012, CLES Working Paper Series, Centre for Law, Economics and Society.

the sustainability of models to extract rent from monopoly control of information is an open question. (Productivity Commission 2016, 60).

The point the Commission failed to make, however, was that a winner-take-all outcome was likely for all digitally enhanced services not just specialist information services. Their partial insight did not lead them to suggest reversing it or even to exercise caution regarding their recommended policy direction. They purported to examine the impacts of technology on competition, but the conditions they expounded on were contestable not competitive.

They claimed contestable market conditions were being induced by digital technologies and networks such that information asymmetries would be lessened and “[a]dvanced manufacturing techniques, digital platforms, cloud storage, and a growing share of knowledge-based content in products, are reducing the physical capital needed to support production”; that is, sunk costs would be set to reach ‘contestable levels’ (Productivity Commission 2016, 56). They also contended that “[m]arkets can also be more contestable as a firm’s customer base (data and/or network) can give them an advantage when moving into different markets.” (Productivity Commission 2016, 57). With the cost of transactions (exchanges/messages) now miniscule in the digital environment, tech giants like Google, Amazon, Microsoft, Apple and Facebook were able to exploit their scaled economies, creating network lock-in of customers and investing “weightless capital”, which refers to forms of specialist knowledge and distribution that expand networks (Productivity Commission 2016, 57).

The Commission’s report extensively quoted Thomas Wheeler, a former chairperson of the US Federal Communications Commission (2013-2017), who regarded networks as a major source of disruption in the digital economy. He argued that new networks have a decentralising effect by registering economic activity from anywhere data is being transmitted and utilised (Wheeler paraphrased in: Productivity Commission 2016, 53).

What is clear about our network revolution, however, is that the new information networks are the new economy. Whereas earlier networks enabled the economic activities of their eras, our network revolution defines virtually all aspects of the current economy. (Wheeler quoted in: Productivity Commission 2016, 53).⁴²

42 Wheeler, Thomas E. 2013, *Net Effects: The Past, Present and Future Impact of Our Networks*. Federal Communications Commission. P. 1
<https://www.fcc.gov/general/net-effects-past-present-and-future-impact-our-networks-0>
FCC Chairman 2013-2017

However, William Melody, a specialist in ICT network regulation, warned that “market developments are delivering highly concentrated network oligopoly markets that can capture ‘the productivity gains from the new economy for themselves’” and called on governments to intervene in these markets (Melody quoted in: Productivity Commission 2016, 53).⁴³

The Commission accepted that digital disruption was part of the new economic landscape but their response to its impacts was to “adopt a ‘wait and see’ approach to new business models and products” (Productivity Commission 2016, 9). The monopolistic models were known to adhere to the principle of contestability that the Commission encouraged. Yet the Commission advocated for the removal of regulation of those digital disrupters (Productivity Commission 2016, 9). This reticence from the Commission impeded the policy response and did not acknowledge the speed at which digital technology is transforming the economy and society at large.

8.4.1 Contestability and economic integration

Contestability has been a driving doctrine behind the market system developed from within the Australian public sector under both Labor and Coalition governments. Its claim to imitate competition even across international markets was part of the rationale for a ‘self-regulatory’ system and enabled economic integration to proceed with an endogenous logic that was compatible with networked ICT. To be contestable means having plausible threats situated within a network of economies coordinated by the market that ICT could make concrete in various market designs.

In 2014 the National Commission of Audit (NCA) wanted the private sector to accelerate the rollout of e-government (National Commission of Audit 2014, xiii) by recommending a “‘digital by default’ strategy that ... removes barriers to digital services” (National Commission of Audit 2014, xxviii). This move would facilitate the transition to a privatised contestable market for a swathe of government functions. To expand the market reach of corporations, the NCA also recommended that “Commonwealth bodies that operate in contestable markets should be privatised” (National Commission of Audit 2014, lxiv), which, according to the Harper panel, meant wherever “contestability can be realised” (Harper et al. 2015, 526). As Sturgess put it, “contestability in public service delivery is contestability in

43 Melody, W. 2007. ‘Markets and Policies in New Knowledge Economies’, *The Oxford Handbook of Information and Communications Technologies*, Oxford University Press, p. 69.

management” (2015, 20). In other words, government decision-making was to be privatised. According to contestability theory, this necessitated symmetric access to government data flows and information used by humans and machines in order to make decisions. The outcome of this government decision-making driven by commercial imperatives is to put citizens’ interests at risk because of increased access to their data. This issue was raised by the 2016 merger of the ACT Public Trustee and the Guardian Unit of the ACT Public Advocate (Lawson 2016). Once management decisions are perceived as contestable then the dividing line between the public and private sectors starts to disappear. This epitomises Baumol’s comment that “[i]n a perfectly contestable world, it seems to rule everywhere” (1982b, 2).

For Sturgess the big barrier to entry to what he called the “public sector economy” was “domain knowledge” (2015, 18). Sturgess suggested this could be overcome if government opened up at least a portion of its ‘economy’ to external providers, including “international providers” (like Serco) who would bring private sector experience from established markets (2015, 18). His point acknowledges that an institution’s unique knowledge sustains its ability to function, hence the importance to the private sector of capturing that knowledge base. Canberra political journalist Laura Tingle encapsulated the problem, observing that “the push against government intervention and delivery of services by the public sector, and for contestability in all things, has had a little recognised but devastating effect. ... these changes have largely left the public service without an institutional memory of its own, and, as a result, with neither its power base nor the capacity to provide a ballast to short-term politics” (Tingle 2015, 10).

Contestability was, according to Sturgess, concerned with substituting government monopoly with private monopoly on the claim that private enterprise would encourage potential competition. He expressed his views synonymously with Hayek’s “half-way house” option (Hayek 1945, 521) by describing contestability as the “middle way between planning and competition” (Ham quoted by: Sturgess 2015, 11).⁴⁴ Claiming, as Hayek had done, that monopolies were unpopular with the people (Hayek 1945, 521), Sturgess nevertheless asserted that with contestability benchmarking performance, monopolies threatened by potential competitors could improve services in the public sector (2015, 14). The Harper panel also quoted this ‘middle way’ monopoly option in their report to government in the context of contestability delivering performance management and certainty (Harper et al. 2015, 241). This alternative to competitive tendering and contracting (outsourcing) was

44 Ham, Chris. 1996. ‘Contestability: A Middle Path for Health Care’. *BMJ* 312:7023, p. 71.

framed in terms of multiple competitors being incompatible with planning (Sturgess 2015, 11) or with “the need for system integration” (Sturgess 2015, 13). This view was supported by the Joint Councils of Social Service Network and the Harper panel (Harper et al. 2015, 239, 249). “The essence of contestability is that planning and competition should be used together, with contracts moving only when other means of improving performance have failed” (Ham 1996, 71; Sturgess 2015, 11). As Davidson noted, in human services the risks with contestability were that “profit-maximisers” could end up dominating the market and excessive market power (Davidson 2011, 223) would need to be balanced with the problem of “excessive churn among suppliers” (Sturgess 2015, 28). As long as efficiency-inducing stability is with the firm controlling the network, then a system of sub and sub-sub-contractors might impact the client base but does not impact the government paying to contract a service provider at the lowest price. Churn becomes, in this system, a problem for providers actually delivering the services.

Social services were accorded a special category because the public valued the “public service ethos” of providers (Sturgess 2015, 7) and the community sector in Australia was dependent on a large volunteer workforce (Deloitte 2015, 1). Deloitte’s report *Contestability in Human Services* (2015) refers to contestability as a “value creation process” that is exemplified by the social impact investment bond market (2015, 5, 12). Deloitte refers to a “contestability process” that includes the “informal capital contribution of volunteers” and bond trading (2015, 1), which Sturgess defined as a form of procurement that impacts on the outcomes of social program design and delivery in this infant global market (2012, 35).

Goldman Sachs has been at the forefront of developing this market globally with the invention of Social Impact Bonds (SIBs) used to leverage investment in social programs (OECD 2016). An early pilot was Uniting Care’s Burnside New Parent and Infant Network (Newpin) program, which aimed to return children in foster care to their parents. The Newpin bond issue raised \$7 million (Eyers 2014).⁴⁵ The NSW Government, which has backed financialisation of the community sector, supports the SIB market by guaranteeing investors a five percent return regardless of program outcomes (Eyers 2014). The Australian social impact bond market is estimated to be worth \$32 billion within the

45 The sale of Newpin Social Bonds to institutional investors was on the basis of a 7-10 percent return each year for seven years. The return on the bonds was calculated on the ‘restoration rate’, that is, the percentage of children in the program who were returned to their parents. In 2014, 60 percent of children in the program were returned, earning investors a 7.5 percent coupon. If 70 percent of children had been repatriated, investors would have made 15 percent (Eyers 2014).

decade (2013-2023) (Office of Social Impact Investment 2015, 2). The success of this market is greatly dependent on the growth of the precariat, that is people in insecure contract employment with no sustainable unemployment benefit or welfare system to support them when work dries up. These conditions incubate poverty, family breakdown and mental illness that is fuel to this type of bond market. I find SIB to be morally reprehensible because it is a form of short selling on humanity.⁴⁶

The key to Sturges's support for contestability was its perceived *compatibility* with system *integration* whether that was engaging with the lifecycle of a service or product or because, as Sturges contended, “[m]any public service systems are like corporate supply chains rather than markets – interactions are relational rather than transactional, and commissioners have an ongoing responsibility for the overall functioning of the supply side” (2015, 16). Sturges is suggesting that the primacy of competition and the market, which the neoliberal movement had purported to be the only way to develop a rational economic system, was giving ground to a new platform monopolistic system that was responding to the capacity of ICT to bring about system integration and the associated profitability for those firms running supply chain systems, whether relational or transactional. This is exemplified by the:

integrator model ... found in the UK Work Program, where two of the large providers manage diverse supply chains of public, private and not-for-profit providers, assuming financial risk and delivering powerful management information systems. These companies deliver no job placement services themselves, and thus are not in competition with their supply chains, operating solely as system designers and integrators (Sturges 2015, 27).

Sturges gets to the crux of the issue with this example– which is the emergence of a new type of firm that operates as a platform monopoly, utilising data and ICT to coordinate networks of services in domestic and global markets. Australia's national leadership in pursuing global integration had exposed public sector organisations to global supply chains and international trade and investment regimes (Business Council of Australia 2014, 2; Harper et al. 2015, 526). However, the recognition was that technology had changed the competition landscape such that *contestability* would be the guiding principle of the integrated market (Business Council of Australia 2014, 3, 14).

46 Social Ventures Australia (SVA), a social enterprise corporation that has a representative on the Board of Infrastructure NSW, has been at the forefront of developing and promoting this market. SVA has partnered with US investment bank, J.P. Morgan, NAB and Macquarie Bank, AMP, Champ Private Equity (Nick Greiner is the Deputy Chair), software giant Atlassian (now owned by US based T. C. Rowe), Visy, and consultants PwC.

This is not about abolishing functions performed by government, but rather monetarising functions by transferring them to the private sector. That private sector is global in dimensions, enabling transnational corporations to tap into a huge market of low-cost voluntary and mandatory exchanges occurring digitally, whether that is registering to vote, applying for benefits, paying car registration or seeking a court order.

If, as Strange asserted, structural power is invested in decision making (Strange 1988, 25), then we must ask, what are the implications of private sector management of data once the domain of government? How will the private control of data impact government decision-making? Does government even have a decision-making role if its functions are privatised? And, with the commercialisation of citizen's data, will repositories of that data and data infrastructure be governed by the regulatory regime of free trade agreements? In other words, will any barriers to accessing Australian's data be construed as interfering in a corporation's right to profitability under ISDS?

8.4.2 Contestability, deregulation and digital disruption

Progress towards privatisation of government functions, and the establishment of contestable markets has gone hand-in-hand with digitisation. The Digital Transformation Agency (DTA) (formerly called the Digital Transformation Office) is a federal executive agency established in 2015 with a budget of \$500 million. The CEO of DTA, Randell Brugeaud, was a former executive with Boston Consulting Group (BCG) (Sadler 2020) who have been one of the leading transnational consultancies advising government on contestability and digitisation.⁴⁷ The agency was tasked with implementing a whole-of-government strategy (including state and local agencies) to get government “end-user-facing services” online (Digital Transformation Office 2016). This included GOV.AU, cloud services and the Digital Marketplace, in what is referred to as “helping deliver the infrastructure necessary to industrialise this transformation of services” (Digital Transformation Office 2016, 3). The centrepiece of the strategy was the Digital Marketplace, a procurement platform for government ICT, which surpassed \$2.3 billion in contracts in August 2020. Although transnational corporations dominate this marketplace, the political message remains resolutely in “support [of] Australian business” (Jenkins

⁴⁷ The DTA is a good example of the how corporate decision-making is embedded into government through the ‘revolving door’ of staff movements with Boston’s Brugeaud coming into government and Anthony Vlastic, the DTA’s strategy officer joining Boston in 2020, along with the awarding of consultancy contracts to BCG worth millions of dollars (Sadler 2020).

2020a).⁴⁸ This corporate profile is in keeping with the stated overall aim of breaking down barriers to foreign corporations as a way of increasing contestability and integrating with the global economy. Although the DTA is a government agency working on the “digital transformation of government itself” (Digital Transformation Agency 2018, 6), their focus is economic as per their “Digital Economy Strategy” (Digital Transformation Agency 2018, 6) which aims to get all Australians registered on the network from birth with a digital identity, “myGovID”, which will enable an individual’s data to be controlled and shared by corporate and government entities (Digital Transformation Agency 2018, 25, 26, 32).

This digital positioning of the citizen in this new system was addressed by the Productivity Commission in *Data Availability and Use* (2017). Urged by the Harper panel and the Financial System Inquiry to report on ways to cost effectively increase utilisation of citizens’ data the Commission made a case for liberal access to public sector data based on a consumer choice argument (individuals get to access their own data) and economic efficiency (Productivity Commission 2017, v). The Commission recommended government entities prepare their data for the private sector for transforming into “data products” (Productivity Commission 2017, 353, 355) thereby creating a new market for data. Government data would be free unless contestable in which case cost recovery fees would be charged (Productivity Commission 2017, 355-356, 365). Sharing data is being explored by the DTA’s Data Integration Partnership for Australia program aimed at facilitating the *utilisation* of data for economic purposes (Digital Transformation Agency 2018, 33). This raises the issues of public information (“products”) being transferred to the private sector, reduced transparency and access to data by citizens, NGOs and journalists as well as posing the increased risk of corporate surveillance of citizens. The NSW Lands Titles Office registry was privatised by a leasing agreement in 2017 (Han 2017) and ASIC company registries were mooted for privatisation in 2016 but not carried through due to opposition (Hutchens 2016a; b). The line between government and non-government was blurring through the “sharing and linking of both public and private data” (Productivity Commission 2017, vii). The propensity was to embrace commercial opportunities and remove barriers to network

48 The DTO claims the online service “breaks down the barriers of entry for SMEs (a small to medium enterprise with less than 200 employees) and makes it easier to compete for the Australian Government’s annual ICT spend” (Digital Transformation Office 2021). The three most awarded contractors were all transnational corporations specialising in ICT recruitment, headquartered in other countries, including designated SME Paxus Australia, a small subsidiary of Adcorp, a publicly listed South African based transnational (Digital Transformation Office 2021). Transnational corporations are being categorised as Australian SMEs if they have an office in Australia. <https://www.paxus.com.au/adcorp-group-services>.

integration. Each individual in the *catallaxy* could now be uniquely identified (Productivity Commission 2017, 423). By addressing privacy laws and other legislative barriers the problems of information asymmetry and impediments to information flows between the sectors could be addressed.

In August 2020, Minister for Home Affairs, Peter Dutton released a report titled *Australia's Cyber Security Strategy 2020*.⁴⁹ It called for a command and control system “to centralise the management and operations of the large number of networks run by Australian Government agencies, including considering secure hubs” (Department of Home Affairs 2020, 24-25). This was for the express purpose of ensuring, “[t]he security and resilience of our allies, regional partners and the broader international community [which] is vital to ensuring Australia’s own national security and prosperity” (Department of Home Affairs 2020, 27). This, I observe, is in keeping with what Walker and Cooper noted to be the trend toward securitizing the “structural resilience of ‘critical infrastructures’ and the ‘operational resilience’ ... in the face of crisis” by the US Department of Homeland Security since 2001 (2011, 152). Australia is on track to developing *one* unified network of government data, including profiles of individuals gathered by all government departments in the name of ‘national security’ whilst making its economy and government an open portal to global corporations.

8.5 Conclusion

In this thesis I have argued that a new institution, the firm-controlled network, has emerged that is transforming society through the harnessing of platform technology and economics. It has also argued that the contestability doctrine has been used widely in the public sector in Australia to rationalise the transference of government to the private sector by way of the “contestability of management” process (Sturges 2015, 20). This has necessitated the creation, at least in theory, of conditions that are favourable to ‘contestable markets’ that take power from government and people and give it to the corporate sector. To create the conditions for this new type of network institution and contestable markets government, under advice from the private sector, has had to re-position itself to the periphery of the

49 The Advisory Panel for this report was: Chair Andrew Penn (Telstra), Kirstjen Nielsen former US Secretary of Homeland Security, Robert Mansfield (Vocus Group – Australian global telecommunications company), Robyn Denholm (Tesla), Chris Deeble (Northrop Grumman Australia – American weapons manufacturer) and Darren Kane (NBN Co.) (Department of Home Affairs 2020, 16).

economy to enable the private sector to set up. This means that new markets from government assets, services and functions are commercially readied that are also digitally readied to be hosted on networks.

In conclusion, this section contends that contestability, in extending ‘competition’ theory to justify monopolies and the outsourcing of government functions to monopoly corporations, has added a radical dimension to ‘Hayekian’ free market ideology that bolsters the power of transnational corporations at the expense of national economic management and democracy. Through this process Australian governments have relinquished control over much of the economy. This amounts to a withdrawal from the socio-economic and environmental policy space as government turned its attention to meeting obligations imposed by a growing labyrinth of international trade and investment agreements. Other signatory states are equally obliged, which indicates a global convergence on policy and regulation framed around FTAs and the trade, investment commitments and fictions of contestability.

In Australia this complex, decades long process has been guided by apparatuses of economic planning, which are controlled by private corporations. These apparatuses include private consultancies, such as the ‘big four’ transnational accountancy firms, Deloitte, KPMG, EY and PwC, advising government on policy and procedures and the embedding of corporations and corporate industry associations *within* government entities. For example, Advisian the consultancy arm of transnational infrastructure-mining giant Worley Parsons, established a program management office (PMO) *within* NSW Roads and Maritime Services (RMS) in 2012, tasked with implementing a contestability “reform program” for road maintenance (Cashen 2015). Advisian contended that “suppliers will join with governments in acting as stewards of the public interest” (Cashen 2015). The concept of corporate stewardship harks back to 17th-18th century mercantilism where private ‘governing’ was seen “in terms of the stewardship of the national estate” (Dean 2010, 114) which in the neoliberal era is rephrased as “stewarding markets” (Sturges 2012, 79).

Another example of corporate governmentality is the Office of Best Practice Regulation (OBPR), established in 2008 within the Department of Finance and Deregulation. This office, directed by an economist seconded from the Business Council of Australia (BCA), was tasked with applying cost-benefit analysis to all regulations proposed or being processed by government entities to ensure they met efficiency and market access principles (Department of Finance and Deregulation 2011, 1). Today OBPR resides within the Department of the Prime Minister and Cabinet.

The contestability doctrine has essentially invented a new form of governmentality, one that is centred on the corporation as a new institutional player that controls markets by controlling the digital platforms hosting markets and coordinating supply chains also by utilising ICT.

This chapter has argued that the Australian state is retreating because government institutions have been through the process of relinquishing control over their data and knowledge. That may have been through the loss of corporate memory through privatisation, the outsourcing of ICT or the sale or leasing of data repositories. Hayek recognised that power over the *catallaxy* would be asserted by those who successfully utilised information. This brings us to the elemental reason why the digitisation of government services and functions is critical to the privatisation of government and why digitisation represents contestability's end game. It speaks in *extremis* to what Pusey describes in Niklas Luhmann's words as a "modal switchover", such that the state "obeys not an immanent logic of needs, but instead the need for an immanent logic. ... [which] is purely cybernetic". (Luhmann quoted in: Pusey 1991, 200).⁵⁰

In terms that Hayek saw it, it can be said that it was a system entirely given over to itself because human beings could not know themselves.

Australia's contribution to the construction of the *catallaxy* continues in a way that is incalculable not because it is on a grand scale but because this nation of 'malleables', people with education and resources but who by dint of their particular social and cultural history are highly manipulable, has left the nation mired by what Mirowski and Nik-Khah call "radical ignorance". This, to Hayek, was the preferred state "for humankind" in a market-based economy (Mirowski and Nik-Khah 2017, 69).

Hayek was merely proposing a self-prophesying system that ignored human needs, because humans can't say what they need, the market has to do that for them. This, in a contestable market, is another way of saying that transnational corporations will decide for us in every event of our lives and politics.

Australia is now part of a global system that is exposed to corporate power. Susan Strange posited the most accurate and chilling description of the relationship between the state and

50 Luhmann, Niklas. 1982. *The Differentiation of Society*, trans. Stephen Holmes and Charles Larmore, Columbia University Press: New York, p. 196.

corporations when she claimed that “states were becoming ‘merely the handmaidens of firms’” (Strange 1997 [1986], 184).

The Australian state still exists but it is an imitation state holding up a fauve democracy that has over time unleashed a ‘creeping’ fascism. This cannot be halted until all Australian citizens realise that their country has been stolen from them.

The question this chapter has attempted to raise is whether the Australian public service is a population-based endeavour or a capital-based endeavour? If it is the former then the Australian population should expect to be written into the script of what it takes to be custodians of country and therefore render some hope that we as a people can push back against the extinction crisis enveloping the Australian life world and society. If on the other hand the answer is ‘capital-based’ surveying *all* as human and non-human capital, then we should expect that the nation’s affairs will be increasingly run by off-shore corporate board rooms resulting in an acceleration and intensification of the extinction crisis gripping the country. This latter outcome will necessitate an irruption against the extinction trajectory, our current leadership is taking the nation on which is here summarised:

Citizens, companies and government everywhere are, first of all, trying to come to terms with the true implications of the information age. The boardroom and street-level consequences of life in the information society are challenging the system-level architecture of governance. Technologically driven possibilities and culturally embedded expectations now demand that *governments follow corporations* and engage in mass customisation—responsive, real-time and holistic service delivery. ... The drivers of this development are not going to go away, and governments that lag behind adapting to them effectively diminish their country’s or region’s international competitiveness and *quality of life*. (Hart 2011, 201) (author’s italics).

The battle to save country from corporate exploitation is at its most elemental a battle for control over the nation’s data and water. What is at stake is not ‘quality of life’ but *life* itself.

9 Conclusion

The liberty of a democracy is not safe if the people tolerate the growth of private power to a point where it becomes stronger than their democratic state itself. That, in its essence, is fascism.

President Franklin D. Roosevelt, April 1938

In this thesis I have presented evidence that the neoliberal movement's representation of its ideology as supportive of free market competition is in fact a misrepresentation of its political project. The core project was the positioning of the monopolies to be the planners of the *catallaxy*, which was conceptualised to be a self-organising, self-governing system of networked economies by Hayek.

The research that led to this conclusion was structured by two hypotheses, which were reached after an initial textual analysis of Hayek's writings on monopoly and the Bell group's key text *Contestable Markets and the Theory of Industrial Structure* (1982) with its accompanying reviews. This gave sufficient cause to investigate whether the neoliberal movement may have actioned a project supporting monopolisation that ran counter to their discourse espousing the primacy of competition. The two hypotheses investigated were: that the neoliberal political movement, under the founding leadership of Hayek, had sought to legitimate the inclusion of monopolies into a new social order based on the idea of a global catallactic network; and that the invention of the contestability doctrine converged with neoliberal political doctrine resulting in the formation of a new form of capitalism that centred on the integration of economics and digitised information.

My exploration was framed by Hayek's account of the choices available in relation to who the planners of the new economic order would be, the government, the market or the "half-way house" option, the monopolies (Hayek 1945, 521). Given that neoliberals were ideologically opposed to government, and the fact that a competitive market order could not plan itself monopolies were the only option left. Hayek had stipulated in 1944 that the only planning permissible was planning for a competitive order.

Neoliberals were also the planners of the new order, which Hayek called the *catallaxy*, particularly in respect to establishing a new legal framework. In post-war Germany that framework was an economic constitution established by legislation creating a special agency designed specifically to protect competition indicated by the presence of small businesses and craft industries. In America, the dominant Chicago School called for the dismantling of the antitrust protections of competition in favour of allowing large corporations unfettered access to markets.

This dismantling process was underwritten by the decade-long antitrust projects (1946-1955)¹ led by Hayek and Edward Levi, and funded by the libertarian Volker Fund and a number of corporations. These projects were designed to change the epistemological basis of the law by introducing economic analysis and the efficiency paradigm as the sole criteria on which most antitrust issues were judged. As a consequence of these changes to law, the network architecture of today's digital platform business models did not incur scrutiny of their competitive structure (Khan 2017). These distinctive 21st century formations of platform capitalism evolved from AT&T's divestment in the 1984, as advanced technology and deregulation of industry on a global scale made online markets regulated by network firms possible.

The only efficiency measure was price-based consumer welfare, which the platforms met by foregoing profits as they strove for market share. This measure of efficiency relates to the Hayekian ideal that the only criteria the *catallaxy* was to be based on was low prices resulting from low production costs (Hayek 1978 [1968]b, 91). In industries where the lowest prices are achieved by a monopoly, neoliberalism deems that monopoly to be a 'natural one'; hence these network businesses are defined as 'natural' monopolies which support consumer welfare. They are also 'natural' monopolies in the sense that high tech networks will always trend towards increasing returns and network effects, which cause customers to be locked-in to the benefits of being on networks with access to a large user base of connections.

1 These dates are revised dates researched by Robert Van Horn at the Regenstein Library, University of Chicago Law School. They show the official end date of the FMS and the official end date of the Antitrust Project. This is an update of dates appearing in *The Road to Mont Pèlerin* (2015 [2009]).

Hayek and the Chicago School economists Coase, Demsetz and Director as well as the legal scholars Levi, Posner and Bork all contributed to the rise of the contestability doctrine, the precepts of which Hayek endorsed in *The Political Order of a Free People* (1979). The contestability doctrine was founded on an efficiency theorem called subadditivity that was influenced by Coase's theory of the firm and the architecture of telecommunication networks. The theorem claimed to determine the most efficient number of firms needed to optimise total industry output across the whole range of possibilities and was therefore considered a substitute for perfect competition theory.

Contestability theory included a variation on Demsetz's 'competition-for-the-market' model that purveyed contestability into the public sector where many privatised government functions and services could only be realistically performed by one entity. If a monopoly was the optimum producer it was said to be a natural monopoly, which was constrained to behave competitively by potential threats made possible in a market characterised by contestable conditions which included no sunk costs, no barriers to entry or exit and symmetric information.

Contestability theory was invented to justify natural monopolies that commonly had network infrastructures, for example, electricity and tollways, and any industry structured on networked ICT. In this thesis it has been argued that this led to the formation of a new economic-governance institution described as a firm-controlled network which hosts markets that is commonly referred to as platform capitalism. In this thesis I have argued that this structure is fundamentally what Hayek envisaged in his brief descriptions of the *catallaxy*. He described a *catallaxy* as the network of economies (enterprise-units) that are coordinated by 'the' market such that the *catallaxy* represents a unity created by the operation of the market-network and, through its own internal rules, brings about social order. That is to say, the *catallaxy* is self-regulating and enterprise-units that are compatible with the *catallaxy* find themselves in compliance with the system rules. These rules are fundamentally rules that govern the behaviour of agents and organisations on the networks and in the online marketplaces.

This shift to a new structure has been largely evidenced by the switch from a state-based order to a corpocracy as revealed in the Australian case study. The case study shows that Australian government assets, services and functions have been privatised based on the assertion that if it was contestable, privatisation should occur. Given that contestability is a decision-making theory, that is deemed to be "contestability of management", in theory there is nothing in government that necessitates a decision that is not contestable.

Consequently, in following this theory, the Australian state, could be completely switched over to a corporocracy whereby all government functions, even defence, now based on business models, could be run by transnational corporations. This switch is technically possible because of digital networks and the advent of quantum computing. The creation of markets from former government services and functions has been preceded by the digitisation of government data. For corporations operating in the information economy, I conclude that this is the real glittering prize whereby profits are earned from commissions on transactions. The movement of government to an online platform, with its vast capacity for generating exchange transactions that could be monetarised, represents a major investment opportunity for the private sector. I have argued that the contestability doctrine has been used to justify the removal of citizens' data from the domain of public governance to private corporations based in Australia and overseas. This effectively privatises the Australian state because without sole and secured domain over the nation's data, Australia cannot function effectively as an independent state, either economically or politically. The materiality of this position is represented by the labyrinth of FTAs, which obligate Australia to meet international regulatory standards in trade and investment that are principled on the international contestability of markets. As a consequence of this, Australia is being effectively recolonised by mainly American and British corporations. This change brings with it a loss of sovereignty and power over decision-making, loss of wealth formerly accorded to the population, theft of the country's resources and destruction of the country's natural wonders like the Great Barrier Reef, the Murray-Darling river system and the Great Artesian Basin through climate change inducing extraction industries and gas fracking unhindered by regulation.

For decades governments have acquiesced to this colonisation process through neoliberals attaining power in political parties and inside government bureaucracies. Corporations also influenced government by establishing offices inside government agencies and through what is colloquially called the "revolving door" which sees individuals with corporate values and loyalties periodically work for government to serve in the privatisation and deregulation process.

The neoliberal program as envisaged by Hayek was to install a catallactic model of social order. This order is structured by the global market network, connected to which are the economies of individuals and organisations from families up to mega corporations and governments. The network is an endogenous entity that hosts market participants whom Hayek referred to as "player[s]" engaged in a "wealth-creating game" played according to

international rules (Hayek 1976, 115). The purpose of the market network was to foster transactions, forming a ‘community of exchanges’ that harks back to the root meaning of *catallaxy* (Hayek 1976, 108).

The contestability doctrine developed by AT&T Bell Labs purports to be a universal theory encompassing all industry types by ensuring that each industry has the right number of firms to produce at the lowest cost. When one firm is the most efficient industry configuration, contestable market analysis serves to calculate the sustainable price that will keep competitors out of the market and ensure consumer welfare. In this way contestability is offered as a substitute for regulations because it claims to maintain the competitive discipline of the market. Contestability theory provides a justification for monopoly industries and for the privatisation of public monopolies.

The contestable market and Hayek’s *catallaxy* are both conceived as processing economic data to arrive at prices that allow the market to move towards equilibrium aided by the fact that they are both endogenous networks bounded by their infrastructure. They purport to require no external government regulation because their formations are deemed to be disciplined from within.

Contestable markets, like the *catallaxy*, don’t actually exist as organisational entities. As Shepherd notes, Baumol admitted that contestability was a “fictional ideal” (1995, 307). The conditions needed for *perfect* contestable markets are too strict and therefore cannot be realised. Contestable market *conditions*, however, do exist and are used to benchmark the competitive structure of an industry (Baumol 1982b, 2). Contestable conditions have sufficed politically to set up the rationale for allowing monopolies and oligopolies to operate markets and take over government services and functions. They are said to behave competitively if there is free entry and exit to a market because they are disciplined by latent threats from potential competitors. Thus, competition is not actual but imitated, through the assertion that it can achieve efficient outcomes like real competition.

I have maintained throughout the thesis that contestability and neoliberalism were originally distinct doctrines. Each was conceived with its own epistemology which—although made distinct by the motivations of their chief exponents, the different disciplines that formed their corpus and the unique relationships these research groups had with the power elite—evolved more or less in sync to serve the US industrial-financial-military complex. Their confluence, it is argued, was based on AT&T and the neoliberals in America sharing epistemic concerns regarding the creation, distribution and control of information and ICT

networks to promote their self-interests. As William Shepherd points out, the Bell economists' use of contestability "tended directly to advance the interests of this company [AT&T]. ... [and] by these same economists and others in order to advance dominant-firm interests" (1995, 301).

The thesis has aimed to construct a bridge between the epistemologies of Chicago neoliberalism and AT&T's contestability theory to show their distinctive features and synergies and to bring into view the history that led to their convergence in the 1970s and their subsequent political triumph. Many scholars identified the 1970s and 1980s as marking the political ascendancy of the neoliberal movement in many countries beginning in 1973 with the Pinochet regime in Chile (Fischer 2015 [2009]). The simultaneous resurgence of monopolies has been viewed as a contradiction of the neoliberal era. However, this contradiction may be better understood as the hidden logic of monopoly power behind the neoliberal political movement which is revealed by the analysis of the contestability doctrine and the new economic-governance institution it spawned in America. Foucault historicised that capitalism is not singular and that invented new forms of capitalism can emerge or "irrupt" under particular historical conditions (Foucault 2008, 167). In this thesis the platform business model, which I have described as the firm-controlling network hosting a market, is identified as the site of the integration of Bell group economics with neoliberal political philosophy into a new capitalist institution. This institution was distinctively neoliberal based on its regime of rules being endogenous to the catallactic economic system.

9.1 Historicising the rise of the neoliberal monopoly

The methodological approach taken was a close reading of key texts guided by the contradiction inherent in the use of the expression 'competition and contestability'. The advice of Jameson has been followed. "Always historicize!" he wrote, this is "the one absolute and we may even say 'transhistorical' imperative of all dialectal thought" (Jameson 1983 [1981], ix). I examined the political dimension of the neoliberal and contestability epistemologies within their historical context as a way of understanding how the politics brought them together as a political force to be reckoned with in the 1970s. I began this exploration with the Socialist Calculation debates of the 1930s, which are generally recognised by scholars as the intellectual 'hothouse' that precipitated the maturing of neoliberal ideas.

9.1.1 Socialist Calculation debates

The Socialist Calculation debates (1929-1941) were critical to the formation of neoliberal thought. Several speakers were looking for a way through to a theoretical position that supported their ideological stance against socialism in all its variants but which incorporated large corporations in their concept of the competitive order. That position, taken by Mises, Robbins and Hayek, was fraught with contradictions which were exposed by the counter arguments of Oscar Lange and the market socialists. The central issue in the debates that Mises, Robbins and Hayek struggled to reconcile with their competitive market model was, what they should do with the monopolies. This issue was epitomised by their concern to address “[t]he problem how, in the absence of real competition, the effects of competition could be simulated” (Hayek 2015 [1935]-b, 228). The solution they offered would define not merely the debates but the course of history as it would lead to the contestability doctrine and the hegemony of the monopolies.

Mises, who precipitated the debates with his treatise against socialism, had decided that the best way to handle the problem of monopolies was to blame government for their existence; this allowed him to ignore their existence as, if and when the government ceased to interfere in the market, they supposedly could not then exist. Hayek was more sanguine and could see that if he was to successfully hold his purist position on the primacy of the competitive market, he would need a technical solution, that is, a market mechanism that would compel monopolies to price competitively. On this issue he went head-to-head with Lange who said that the only way for a monopoly to imitate competitive pricing was for the state to impose price controls. In other words, neither Hayek nor Lange thought that monopoly industry structures could be abolished or held in check by competition policy, antitrust or other legal instruments. Lange believed that technological innovation necessitated scaled industries and proposed a model whereby production industries were monopolised by the state but the supply of labour and consumer spending would be left to the competitive markets. This hybrid model they argued would ensure the benefits of technological progress, such as raised living standards, without the detriments of monopoly exploitation. Hayek, in contrast, supported the privatisation of networked public utilities. Unfortunately for Hayek, the research efforts of his colleagues Plant, Fowler and Coase at the LSE had been unable to solve the problem of reconciling competitive markets with “natural” monopolies, those where high fixed costs prevented potential competitors from considering entering the market. That the ‘work around’ by the Bell group nearly forty years later pivoted on a redefinition of fixed costs was indicative of the intractable nature of this problem. It was also indicative of why Hayek and Robbins had sought to sidestep the issue of monopoly conjoined with

technology and go on the attack by pronouncing the socialist's model impossible to implement. They argued that centrally controlled economies, unlike the competitive market, could not provide the necessary timely production data on which economic managers could base sound decisions and that would invariably lead to the wastage of resources.

Lange understandably thought the socialists had won the debate based on arguments intent on protecting society and technological innovation from monopoly power. This was deeply implicated by many in the collapse of the markets that caused the Great Depression (Hawley 1966). However, Hayek persisted with his claim that the price mechanism of the market could better direct innovation and provide the data necessary for healthy competition that would curtail the excesses of the monopolies. Hayek, Mises and Robbins, unlike Lange and the socialists, had expressed no ideological opposition to monopolies per se. Mises believed that markets would curb monopoly behaviour because monopoly prices signalled competitors to come into the market (Foucault 2008, 136). Both Robbins and Hayek were associates of the Rockefellers and so, arguably, had some form of allegiance with monopoly capitalists as part of their ongoing commitment to their industrialist 'patrons'. The history of economics has shown that the influence of patronage has long been a factor in shaping the discipline (Derber and Magrass 2014, 7). This is exemplified by AT&T's Bell group who presented their research as general economic theory without fully acknowledging the relationship between their work and the corporate goals of their employer AT&T Bell Labs.²

Hayek claimed to have developed a theory of competitive order based on the market functioning as a computational device far superior to any alternative economic models, even those dependent on computer technology. It was not until the late 1970s when AT&T, a regulated monopoly, was preparing for greater competition and possibly deregulation, that their economists finally came up with the contestable market 'solution' to the technical issue of competitive price calculation for monopolies. The contestable market would legitimate, in theoretical terms, the monopolists' membership of the competitive market order.

Baumol, who would lead the contestability team at Bell Labs, was a former student of Robbins. Thus, the efforts at LSE in the 1930s when Robbins was head of the Department of Economics were the beginning of the lineage that eventually led to contestability's invention and the neoliberals' support of the doctrine.

2 Another patronage example is the University of Chicago's Kenneth C. Griffin Department of Economics so named after Griffin, a US hedge fund manager who gifted the school \$125 million in 2017. (Uchicago News 2017).

9.1.2 Planning the social order

Hayek took what could be described as a purist stance in the calculation debates by contending that the competitive system would falter if price competition was not fully implemented. In theory, that meant rejecting any kind of planned approach by government, including mixed economies harbouring both private and public monopolies. This, however, did not mesh with reality, and this was never more evident than in planning for technological innovation. World War I changed irrevocably the approach to innovation planning in America as it led to the integration of state and corporate planning for national defence and during the interwar years for national economic security. AT&T epitomised a corporation that was actively engaged with government in developing national industrial research strategies across key sectors beginning in World War I. For economists such as Oskar Lange and Thorstein Veblen, and AT&T Bell Laboratories first president, physicist Frank Jewett (1925-1940), it spelled the integration of knowledge, technology and investment capital within the industrial system of America.

Hayek and the neoliberals appeared to be out of step with this new thinking and the formation that would eventually be called the military-industrial complex. But as I have argued, competitive market theory served a useful strategic purpose in justifying the place of monopolies in the economy. This is not to suggest that Hayek was not passionate about his market ideal, but rather that he had to temper his stance in the face of persistent corporate and government planning of the economy. He did this by declaring that all planning that was not for the competitive order was planning that was destined for a totalitarian outcome (Hayek 2007 [1944], 137-138).

Between 1940 and 1941 Hayek conducted a debate within the journal *Nature* on social modelling with AT&T's Frank Jewett and Robert King. The intellectual meeting between Hayek and the powerbroker Jewett, was, I concluded, historically significant for a number of critical reasons. Firstly, it was predicated on what industrialists had long considered to be the integration of economics with information and research. This was in accord with Hayek's views and those of Coase, and other neoliberals, like Machlup, Becker, Director, Levi, Demsetz and Stigler, who were all engaged with research that centred on how economics and information were integrating. The core of neoliberal economics was the relationships between individual agents freely forming links within the network making possible the utilisation of their data. Secondly, the vision of the market coordinating the network was dependent on there being a global telecommunications infrastructure of the kind that AT&T were constructing.

Hayek and Jewett shared anti-government sentiments that were reflected in the minor roles they assigned governments in their models. Jewett's corporate technocracy model demonstrated a disdain for the "uninformed beliefs of the majority", which was a direct attack on democratic institutions (Jewett and King 1940, 828). The rationale for his position was that states based on liberalism were no match for the power of totalitarian states enhanced by modern technology. Ironically, his claim was that democratic states could no longer protect themselves without a permanent at-the-ready military force supported by private R&D; we might consider those private interests as precisely those interests against which democratic state institutions could no longer defend themselves.

Although AT&T's industrial laboratories model and Hayek's market model each assigned a different value and role for human knowledge, the synergies were clear—both saw power embedded in information. Neoliberals would support firms controlling networks that would later develop into platforms hosting markets.

9.1.3 Chicago School and the remaking of AT&T

The establishment phase of the neoliberal movement in America (1946-1962) was marked by the inauguration of the Mont Pèlerin Society in Chicago in 1946. Hayek and the neoliberal thought collective at the University of Chicago would artfully craft what Mirowski called the "double truth" doctrine, where one truth was spoken inside the Society and another was spoken for the public (Mirowski 2013, 68; 2015 [2009], 426). My research has found considerable evidence of Hayek's duplicity concerning competition and monopolies. As an academic activist, he organised 'pro-trust' research projects (1946-1956) through the University of Chicago Law School (Van Horn 2015 [2009], 221). The Antitrust Projects built the intellectual edifice of a new epistemology of law based on the economic analysis of law, the defining document of which was Director and Levi's 'Law and the Future: Trade Regulation' (1956). This 'manifesto' recommended the adoption of the efficiency paradigm measured by price. The effect of their recommendations as to how that would be achieved in law would lead to the subordination of the law to market economics which was dominated by the efficiency paradigm with its focus on consumer welfare met through ensuring the lowest price. The 'efficiency paradigm' would later be 'enhanced' by the contestability doctrine because it established the criteria by which they claimed so-called 'natural' monopolies like AT&T could legitimate their role in the economy as network operators hosting markets.

Juxtaposed to this intense period of planning for a new legal framework to remove impediments to monopoly-oligopoly industry structures was the publication of Hayek's *The Constitution of Liberty* (1960). This work can be treated as a postscript to this period, as much of it was written by 1955. Hayek had just spent the better part of a decade working on the dismantling of antitrust, yet his work gives very little attention to the question of monopoly. We must construe this as a deliberate omission, if not a careful concealment of his pro-monopoly program. Rather than bear witness to the proposed change in law's societal function, *The Constitution of Liberty* was instead a treatise on how law cannot be made. As he stated "purposive institutions might grow up which owed little to design, which were not invented but arose from the separate actions of many men who did not know what they were doing" (Hayek 1960, 50).

The book dismisses monopolies as a non-issue, yet in practice it was *the* issue pursued by Hayek in his Chicago decade that would see the Law and Economics movement emerge from the pro-trust Antitrust Projects he had promoted. This movement was funded by industrialists who used their wealth and social networks to establish thinktanks, such as the Federalist Society, and fund law schools that proffered a neoliberal version of the rule of law and freedom of the individual that was entirely centred on production efficiency. Hayek had worked tirelessly for that cause.

The evidence of the success of these changes to law, wrought by the Chicago school and later the University of Virginia Law School in favour of monopoly-oligopoly control of the *catallaxy*, is widely evidenced today. As Lina Khan iterated in her indicative and ground-breaking analysis of Amazon "[t]he current framework in antitrust fails to register certain forms of anticompetitive harm and therefore is unequipped to promote real competition — a shortcoming that is illuminated and amplified in the context of online platforms and data-driven markets" (Khan 2017, 737).

As a recent example, in 2017 AT&T and other interested parties successfully campaigned to have net neutrality in the United States rescinded. The Federal Communication commissioners who endorsed the overturning of this principle, which had been aimed at equitable pricing and ensuring ISPs did not favour their own content over a rival's, espoused the Chicago school view that individuals' desires could only be efficiently achieved through the market as a source of "economic freedom" (Federal Trade Commission 2018).

In 2016 AT&T successfully defended a challenge by the US Department of Justice to its proposed merger with Time Warner. AT&T, one of the world's largest ISPs, through this acquisition became one of the world's largest producers of content that is distributed across its global network (Fung 2017).

AT&T's power to influence changes to legislation and defend its gigantic merger was in contrast to its struggles with regulators before 1982, when it agreed to divest its monopoly in exchange for unfettered access to markets. The 1982 agreement was a watershed for both AT&T and Chicago law and economics; the largest private monopoly in the world, poised to construct the globe's digital networks, had embraced the market principles of the *catallaxy*. For the neoliberal movement, the 1982 negotiated settlement between AT&T and the regulators was a seismic shift. AT&T's deregulation was attributable to Chicago law and economics movement, which developed under the leadership of Hayek, Edward Levi and Aaron Director. In the 1950s they provided the economic arguments and legal reasoning to elevate economic efficiency to a position of primacy within legal epistemology which in time forged a new legal framework which elevated corporations as the new market regulators and savagely diminished the antitrust regime based on the Sherman Act.

The regime's *coup de grace* was delivered by Bork and Posner who claimed that it was the antitrust regime itself that was undermining competition and causing firms to behave uncompetitively. The regulators charged with prosecuting the case against AT&T to divest included those schooled or briefed in the ethos of Chicago's efficiency paradigm. Posner and Baxter had worked alongside Baumol on the President's Task Force on Communications Policy which reported in 1968. The premise underpinning the future of US telecommunications supported trimmed natural monopolies and expanded markets (O'Connell quoted in: Rostow 1968, 1 Appendix A). The policy gate for monopoly control of the market was opened.

On their part, AT&T advisors Baumol, Kahn and Eckstein encouraged AT&T's executive to divest in favour of market expansion, even though that meant temporarily sacrificing the company's local business assets. The settlement caused divisions within AT&T about the merits of divestment which in general terms was "a contest between ... the engineer's view and the economist's view" (Auw 1983, 119). This division was familiar to Hayek who had argued against Frank Jewett's 'engineered' social order based on the organisational model of Bell Labs in the 1940s. The rationalist engineers who wanted to plan using natural sciences methodologies were defeated by the market economists within AT&T who had a 'philosophical' alliance with the regulator.

AT&T's liberation from its regulated monopoly status was a victory for those antagonistic to antitrust. And although many in the firm saw AT&T's divestment agreement as a defeat, the coming decades would show that the firm had actually achieved a monumental success in switching from the regulated corporation to the role of a market regulator, one that would seal the fate of the antitrust regime itself and the economic and democratic health of the nation.

9.2 Hayek's epistemology: computer modelling society

While Hayek had views about monopoly, his writings were brief and spread thinly across his career. Hayek's mission was to usher in the *catallaxy*, which necessitated the building of a global telecommunications system for his market-based system to utilise. This called for the integration of economics and information transmission, a change that Coase also identified as being the way of the future (1937).

Mirowski and Nik-Khah (2017) in their ground breaking study on the history of information economics, have shown how Hayek's epistemology contributed to a computational or cyborg conception of humankind. What I have argued in this thesis is that Hayek's epistemology was compatible with a form of monopoly capitalism that would centre on the formation of ICT platforms. I made this argument by examining key areas of Hayek's epistemology; his shifts in economics from equilibrium to compatibility, and from competition to exchange; his shift from law to rules; and his shift from human decision-making to market 'machine-based' decision-making. Simplification predicated on market machine compatibility becomes a means to an end for that system which is reflected in contestability's "simplifying assumptions" (George, Joll, and Lynk 1992, 278) and the "simplistic assumptions" underpinning the economic analysis of law approach (Calabresi 2018).

Hayek's epistemology was dedicated to the *catallaxy*. Far from being a disparate collection of thoughts on topics from the brain to political philosophy, his epistemology had a unity derived from its purpose and the problem he sought to resolve. Hayek's theory called into question the efficacy of orthodox equilibrium analysis. To Hayek the market would remain the premium communications system and processor of information – as for the individuals whose plans were processed, they were "cogs" in that machine.

However, this was all hypothetical as Hayek was unable to explain how the price mechanism that coded information into prices actually worked. Instead, he offered the idea of spontaneous order forming from “spontaneous actions” (Hayek 1937, 52).

Hayek sought an intellectual basis for his new social order and its componentry, and a design template showing how the componentry fitted together. The problem he sought to resolve was how to set up a system that could utilise dispersed information for decision-making. The solution to that problem came in the form of a network to which all individuals and organisations (he called economies) were to be connected.

Hayek’s network architecture was based on telecommunications systems. Order itself would flow from the system run by the market ‘machine’, which was set up like a computer whose central processing unit was the price mechanism that processed all the available information coming off the nodes, that is, individuals and organisations best described by Foucault as “enterprise-units”, which were populating the network (2008, 225). The market-machine could make decisions on a yes/no basis like a computer or it could prepare the data needed by humans to make decisions. The market-machine, which ensured economic functioning, was governed by rules, and the most important requirement in the formulation of those rules was “the *certainty* of the law” (Hayek 1955, 36) which Hayek deemed essential for an “efficient society” (1960, 208). The role of rules was *to program the system* that would run the network and the markets and to govern the enterprise-units. This system’s simplified aim was to ensure that each enterprise-unit on the network was functionally compatible with the system. Hayek saw the “Highway Code” as the model, because its rules were absolute with little or no juridical discretion. Actions contravening the rules had known consequences and were not subject in theory to mitigating circumstances (Hayek 2007 [1944], 113).

This rules-based orientation found its way into the GATT and thence the WTO-controlled system of international trade and investment agreements (Slobodian 2018). Signatory states like Australia have restructured their own legal systems and economies in order to meet their obligations under the rules of the international regime. Others have shone a light on the risks this systemic change poses for law, both international and domestic, by diminishing its role in the protection of individual rights and de-legitimatising the role of socially accepted and rejected morays and norms in legal decision-making (Faunce 2015). Drawing on my analysis of Hayek, I have argued that his rule-based design is there to *program the system* or, as he put it, to ensure the integrity of the market.

Hayek's epistemology included his construct of the individual as an enterprise-unit compatible with the market's 'machine-like' order. Human beings had to be readied for life within this new order. Hayek approached this from a population-perspective and, philosophically, developed a theory of human limitations, which he published as *The Sensory Order* (1952). Hayek categorised the population into three groups: the elites, the 'malleables' and the masses. The elites had the role of devising the programming rules and generally supervising the operation of Hayek's concept, a largely self-organising and self-regulating catalytic system. Most importantly, the elites derived the most benefits from the system because they had learnt how to utilise dispersed information. This was the mark of success in the neoliberal *catallaxy*.

Other classes were conceptualised much like cyborgs as human but machine compatible (Mirowski 2002). Only the elites were allowed to be inventive mavericks. Human knowledge systems were deemed by Hayek to be limited in comparison to the market because only the market could access and process all the available information. Unable to construct the internal rules to regulate their own minds, humans could not equal the market in devising rules to regulate the *catallaxy*, therefore human made law was perceived to be inferior. This became the psychological justification for the process of deregulation. In consequence, price decisions arrived at using the total knowledge output of the market were thought to out-perform human decision-making.

These ideas, I contend, would *not* have landed Hayek a berth in history if not for his timing at the nascent stage of the computer age. The moment that I refer to as the Hayek-Turing conjunction occurred in November 1936. Hayek was considering how information functioned in the economy at the same time Turing was conceptualising a computational device that could make decisions with relative certainty if it was given rules or a set of instructions to follow. Turing called it the "universal machine" because it could connect with any other machine or person that followed the same rules (Turing 1936, 242).

Hayek's paper 'Economics and Knowledge' (1937) described the economy as one based on a network of exchanges between individuals and followed a similar logic to Turing's machine. Decisions could be made that induced compatibility between the plans of individuals if there were "definite statements about how knowledge was acquired and communicated" (Hayek 1937, 33), an idea not dissimilar to Turing's rules or instructions guiding the decision-making process. Hayek reasoned that one person's decision was another person's data on which to base further decisions, which under the right conditions would cycle through the network, expanding in number until these exchanges or data

accumulated to become information that would describe relationships in the economy and result in more certainty in matching supply with demand. Hayek had essentially envisaged this economic network like a computational machine based on dynamic exchange. This I argue was Hayek's successful tilt towards the computer age and led to the conception of the market as an information processor (Mirowski 2002).

Hayek's model was thus in synergy with the age of the algorithm and AI. An individual's knowledge was only valued in its aggregated form and it took a large corporation with computing power to utilise it, or in the vernacular of the friction-free economy, to value-add the information (Lanier 2014, 49). This amalgamation and commodification of information is the source of platform capital's power which it accumulates through the exploitation of individuals' data.

9.3 Bridging the epistemological divide

This thesis has analysed the factors and forces that led Hayek and the Chicago neoliberals towards making common cause with monopoly capitalism to build a new social order. In choosing the monopolists, or what he called "organized industries" (Hayek 1945, 521), to be the planners, Hayek was making a practical choice based on his belief expressed in *The Road to Serfdom* (1944) that the only unacceptable form of planning was "solely the planning against competition" (Hayek 2007 [1944], 90). Hayek, Mises and Robbins, who had argued against state economic planning in the 1930s, were part of the European neoliberal (ordoliberal) movement that intensified its opposition to the state during World War II. To the ordoliberals the way forward was a "state under the supervision of the market rather than a market supervised by the state" (Foucault 2008, 116). Hayek and Coase emigrated to America, joining the neoliberal thought collective at the Chicago School.

Coase, whose theory of transaction costs was influenced by Hayek, was pivotal in providing a price-based rationale for determining industry structure and championing the merits of distributing information embedded in transactions through firms and markets. Coase was concerned with how to establish a mechanism for processing transaction cost data on a continuous basis in what he called a "tractable" process (1937, 398). Like Hayek, Coase determined that telecommunications would play a central role in reducing the cost of transmitting information (Coase 1937, 397). Coase thus followed Hayek in considering information to be the elemental driver of the economy (Coase and Wang 2010).

Coase's ideas found favour with Bell economists. They extended the logic of his ideas to theorise a new definition of natural monopoly, based on a new efficiency concept they called 'subadditivity', which calculated total industry output to determine how many firms were needed for optimal efficiency defined as the lowest production costs (Baumol, Panzar, and Willig 1982). The companion concept was price sustainability, which again was a calculation designed to find the price that reflected competitive behaviour even for a monopoly. The actual claim however, was not that contestability measured efficiency across a range of firm combinations but that it "rules out inefficiencies" (Baumol 1982a, 26). Banished are inefficiencies resulting from human incompetence and intrafirm and interfirm allocative inefficiency caused by the failure to properly allocate resources within firms or an industry (Baumol 1982a, 26, 27). A contestable market induces, as in the case of Uber in the US, a process of elimination that will likely leave only one winner.

By the late 1970s Bell Laboratories were drawing on a confluence of ideas to trial their industrial organisation theory and contestable market hypothesis in the deregulation of the US airline industry. At this point, the neoliberal economic concept of transaction costs coding information into prices became infused with Bell's theory of industrial organisation and their contestable market hypothesis. That is, a theory of transaction costs within information networks linked neoliberalism with the contestability doctrine and forged the efficiency paradigm that would privilege the lowering of production costs over all other factors, including social good and equity.

Through this pathway, forged by Chicago's Law and Economics Movement, legitimacy was conferred on monopolies. This allowed monopolies to plan what Hayek would come to call "the catallaxy" (Hayek 1976; 1978 [1968]b). The critical characteristic of the *catallaxy* is that it consists of both the market and the network, the network being all the economies, individuals, firms etc integrated by exchange activity.

The contestability doctrine works as an *organising principle* of the *catallaxy*. As a universal theory encompassing all industry types, its function is to ensure that each industry has the right number of firms to produce at the lowest cost thereby fulfilling the stated aim of the *catallaxy* (Hayek 1978 [1968]b, 91). Its claim is that it can establish conditions to maintain low prices even for those sectors of the *catallaxy* dominated by monopolies and oligopolies.

The important contribution of Coase was that the structure inside the *catallaxy* was flexible. He articulated the question that firms, particularly large firms like AT&T needed to be constantly asking – is the firm, another firm or the market the most cost-effective way of organising transactions? (Coase 1937, 404). Within the ambit of this question was the consideration of how a firm might integrate these possibilities as a means of coordinating them. It was the fluidity between markets, firms and the network that mattered, mediated by the costs of transactions, not any particular structure. Coase’s fluid concept offers the possibility of a single firm operating an entire market.

In our current era Hayek’s conception of the *catallaxy* as a market-coordinated network has been brought to fruition by monopolies in a new market order that is global in scope. Hayek’s ideas offered a theoretical rationale for the development of platform monopolies and online marketplaces in the twenty-first century. We should understand this radical transformation as in essence enacting Hayek’s vision of a catallactic social structure, which he variously called a “competitive order” and “market order”, designed to resolve the problem of coordination in the economy. The eventual commodification of transactions through the new business models of Uber and Amazon was enabled by the internet. Now mature, market-network models have produced an immense growth of monopolies in the ICT sector and online, bringing into actuality Hayek’s vision of the *catallaxy* as networks of exchanges connecting the globe and, for neoliberals, fulfilling the promise of markets as information distributors par excellence.

9.3.1 Contestability

In establishing the role of AT&T Bell Laboratories’ contestability doctrine in entrenching the power of monopoly capitalism and its intersection with a rising neoliberal movement, this thesis has examined both the historical and epistemological ties that bind neoliberalism and monopoly capitalism together.

We can now better understand why the neoliberals in the 1930s had sought to model how monopolies might be disciplined to charge competitively. Monopolies could then partake in the dynamic exchanges inside the catallactic network that Mises and Hayek had begun to visualise at that time. The neoliberals failed in their initial attempt to solve the problem of monopolies, but forty years later the Bell group produced a theory of industrial organisation and designed the contestable market analytics tool that would justify the presence of monopolies in the neoliberal market order. Contestable market analysis enabled AT&T to determine how best to integrate a market into the Bell System, which was to be restructured

after the divestiture settlement in 1982. AT&T could assess what aspects of the business should remain a natural monopoly and what would be more efficiently performed by a competitor. AT&T, acting on the advice of Toffler and Bell group's contestability theorists, pioneered the creation of a new type of industry organisation which integrated the firm, network and market. This formed a new societal governance institution not run by government but ostensibly by a market under the auspices of the firm acting as the network manager. Toffler called this new industry structure the Bell Communications Constellation. His vision was to extend vertical integration "over a larger sphere" by using a market (Toffler 1985, 11). As the model evolved into a new form of capitalism, which we now call platform capitalism, it came to represent a constructed competitive market order in the Hayekian sense. The deregulation of AT&T was not without its internal and external critics who feared the loss of Bell System integrity. However, the neoliberal forces for change were aligned; within AT&T, economic advisors and researchers prepared the company for deregulation and externally regulators imbued with the Chicago School's ethos, which was antagonistic to antitrust, wanted to see corporations free to pursue market domination.

Contestability, the economic theory that justified this new industry formation, was not generally enthusiastically received by academic economists, in part because it was an incomplete explanation of the actual *principle of organisation* it was promoting. However, it was understood by neoliberal advocates in government and was quickly adopted by policy makers and lawmakers to rationalise the deregulation of the US airline industry and from there other industries, notably those with advanced networks like the trucking and banking. Contestability, as a doctrine that advocated for deregulation, met the needs of ICT network industries that were aspiring to industry domination. As Khan (2017) observed this expansion of networks has been effectively shielded from antitrust regulators. The contestability doctrine also advocated for the privatisation of the government sector as a way of redirecting government assets, services and functions to the new governance system.

Another conclusion we might draw is that both contestability and the neoliberal market could only have been progressed by the use of ICT. This is because neoliberalism and contestability are characterised by the fragmentation of processes and tasks for the purposes of unitisation, commodification and monetarisation. Everything, whether it be a procedure or a person or other living organism, is given a unique identifier so its movement through the market and on the network can be tracked and charged.

By the 1990s contestability had conceptually developed to “international contestable markets” that was related to international trade. This was deployed as an advocacy tool to justify the breaking down of trade and investment barriers between countries in the mid-1990s (Sauvé 1996, 37). International trade governance organisations like the European Commission and the World Trade Organisation (WTO) helped spread the contestability doctrine as nation states committed to the GATT and other bilateral and multilateral agreements (Slobodian 2018, 8, 23, 240). These allowed for the imitation of competition and exposed countries to monopolistic corporations by diminishing antitrust regimes as states committed to contestability commitments by way of fulfilling their agreement obligations.

To engage with the impacts of the contestability doctrine, as revealed by the research on the US, internationally and in Australia, is to engage with a project of immense scale only matched by the scale of the neoliberal project to spread its market ideology worldwide. This close relationship is evident in the narrative of contestability, which draws its success from its identification with competition made by its inventors Baumol, Panzar, Willig and Bailey at the theoretical level. It enables contestability to remain incognito, as its name suggests it is a variant of competition. Contestability has arisen unchallenged on digital platforms and in government, where it works by connecting with dispersed enterprise-units, whether they be individuals or organisations, customers or labour. White refers to this as “[a]n extreme reduction of industrial competition to isolated cognitive process” (White 2002, 255). The competitive dynamic is weak because the mainstay of revenues is earned from connections to a service and not from the service itself – yet they coexist as in the case of Uber charging commissions for access to its network. This is a transposition of what Hayek deemed to be elemental in a society based on exchange, that is, the circulation of information such that “one person’s decisions are the other person’s data” (Hayek 1937, 38). In the government sector in Australia where contestability is referred to as the “contestability of decision-making” (Peever et al. 2015, 5) or the “contestability of management” (Sturgess 2015, 20) it is the decisions that are exchanged. In this market the decision makers are contestable, which again is elemental as government is the head agency for decision making in a democracy. Contestability in this sense becomes ubiquitous, that is to say, there is nothing in government that is not contestable if an alternative decision-maker can be located.

Contestability is said to identify the most efficient configuration of firms in an industry and is seen as merely extending competition to monopoly. It is described as “unifying” because it is inclusive of all industry types. The latter idea was influenced by the work of Chicago economist Ronald Coase, who argued that both firms and markets needed to justify their existence economically because of the costs associated with their operations (1937).

Consequently, transaction costs became a focal point for determining efficiency, which gave the Bell group cause to assess all industry structures comparatively (Sharkey 1982). Hence, their unifying idea of calculating efficiencies at industry level by aggregating the total costs of an industry, not merely considering the costs and efficiencies of firms. However, achieving the lowest total costs across an industry in most cases favoured using an oligopoly or monopoly structure whereby efficiencies could be achieved through dominant market share.

The association the Bell group made between contestability and Adam Smith’s invisible hand works to obscure the fact that contestability is a theory that redefines natural monopoly according to the efficiency paradigm (Baumol, Panzar, and Willig 1982, 13). The meaning of competition itself is also redefined, if not effectively caused to disappear, by its new status as both an abstraction and an imitation. By redefining natural monopoly as a configuration of one firm producing goods and services at the lowest costs, all other definitions of natural monopoly, based on structural features such as a supply network or control over a resource or a manufacturing patent, are set aside. By using a new efficiency precept, which they called subadditivity, to calculate the optimal industry structure, all industries are theoretically justified in becoming monopolies. The efficiency precept also sets aside all other detriments to the economy, consumers and suppliers, such as poor quality goods and services, environmentally unsustainable production and the loss of small businesses and craft industries.

The shift to the efficiency paradigm in law has paid off for the corporations with regulators now on the backfoot trying to assess new market network structures, such as online markets and platforms, without the requisite legal basis in antitrust law to deal with monopoly structures in industry. Lina Khan identified this problem as a paradox that is traceable to the Chicago school, such that “[l]egal analysis of online platforms is comparatively undertheorized. ... even as platforms have emerged as central arteries in our modern economy” (Khan 2017, 784). It opens up the very real possibility that the trend towards concentration will continue unabated resulting in a corpocracy consisting of a small number of firms controlling national economies and the global economy. Khan used the example of

Amazon, a cross-border behemoth that no antitrust regime has yet been able to curtail even though its concentration levels worldwide have made it the largest online retailer (Khan 2017).

It is at this new interface between monopoly and ICT that the foresight of neoliberals and the Bell group, in removing the barriers to the market, has produced dividends for large corporations, reflected in a new discourse that can't quite describe the new corporate institutions, those "conjured up corporate empires from bits and bytes" (The Economist 2016). These empires, it can be concluded are the coordinators of Hayek's *catallaxy*, not the markets. Thus, the competition between the firm and the market that Coase identified has seen the firm triumph.

Baumol, in keeping with likeminded colleagues in Chicago and elsewhere, did not label himself a neoliberal, or his economic thought as neoliberalism. The contestability doctrine, however, is part of a distinct lineage that began with attempts to theoretically incorporate monopolies into a new competitive conception. Although this was not achieved initially in the conceptualisations of Hayek, over time elements were theorised in the work of MPS members, Coase, Stigler and Demsetz. Baumol and Bell group were finally able to produce a theory that was plausible enough to influence some government policy makers to put in place the conditions which would begin the transformation process to a *catallaxy*, in all likelihood in complete ignorance of the outcome, a signature of the neoliberal era. (See example in Appendix B).

9.4 Australian case study

My thesis journey began with the realisation that the expression 'competition and contestability' in Australian government policy documents was indicative of the neoliberal promotion of monopoly and transnational corporations being actively involved in national socio-economic planning. It was not just that audit commissions and other government advisory bodies were dominated by corporate advisors and lacked community representation, but that transnational corporations like Worley Parsons were being embedded into government departments. The Business Council of Australia (BCA) representing Australia's top 100 corporations had also established themselves within government bureaucracy.

An analysis of the Productivity Commission (2005; 2014), commissions of audit (National Commission of Audit 1996; Queensland Commission of Audit 2013; National Commission of Audit 2014), the Financial System Inquiry (Murray et al. 2014) and competition review panels (National Competition Policy Review (Hilmer Report) 1993, NSW Government 2014, Harper et al. 2015) against the backdrop of a succinct history of neoliberalism (or more colloquially referenced as ‘economic rationalism’ in Australia) (Pusey 1991) proved fruitful.

This thesis has sought to trace the genealogy of contestability’s fusion with neoliberalism, to better understand how neoliberalism is shaping Australia and other nations. It investigated neoliberal planning in Australia within the context of Hayek’s vision for a spontaneous order that he constructed as the *catallaxy*, or network of economies coordinated by ‘the’ market and the possibility that the *catallaxy* he envisaged in general terms is now being actualised, with contestability serving as one of its enabling strategies.

Much can be made of the relationship between the neoliberal project and the contestability doctrine, based on the synergies derived from sharing the same conditions for their respective versions of the market. Both call for the breakdown of barriers that impede exchange, which are defined broadly by both groups as intervention in the market by government and trade unions. This claim for change holds the portents of a radical shift in the structure of society.

The Australian government is close to completing the migration of its data registries to Microsoft’s cloud. This leads us to consider Hayek’s vision of the “common control of communications” (Hayek 1939, 131) and the implications this has for Australia’s sovereignty and the privacy of its citizens. The Australian Trade Commission is active in the policy space on blockchain security and cryptocurrency. This is driving towards Hayek’s other vision, or what he called his ‘invention’ of a “uniform monetary system”, created by a private currency market replacing national currencies and thus spelling the loss of monetary controls government has over the national economy (Hayek 1939, 131). These developments, which have been made possible by the digitisation of information transmitted on networks, serve to lock-in the Australian economy, social institutions, private organisations and citizens to a global corporately controlled network order. As Hayek envisaged, we may see only vestiges of the traditional public sector functioning in the roles of enforcement and revenue collection, leaving the Department of Home Affairs with its accumulated coercive powers and the Australian Taxation Office guided by global consultancy firms KPMG and Deloitte Australia. These are the only remaining government

agencies in the public sector not being contemplated as suitable to be given over entirely to a contestable market. Democratically inscribed law-making and policy, when made 'contestable', are subject to privatisation.

The digital management of that process includes the intense surveillance of the population and the gradual introduction of online management of citizens who connect to sites like MyGov. This connotes a command-and-control system being unfolded online in the name of efficiency and convenience. This thesis has contended, however, that such surface manifestations are the outcome of far deeper connections at the level of epistemology between the Bell group representing monopoly capitalism, and neoliberal ideology. Australia is being prepared for complete submersion into the global economy, as evidenced in government documentation and new competition laws post 2015. Will this necessitate citizens' withdrawal from managing or otherwise participating in the running of their country? Yes. Control over citizens will be prosecuted online through extreme surveillance. This is well in train as government and corporations alike collect and upload data to cloud repositories that includes the entire Australian population. In the era of transnational corporate rule, the sovereign state will exist for ceremonial and enforcement purposes only. In December 1981, Baumol described contestability theory as an "uprising" against the established order (Baumol 1982b, 1), erupting at the very beginning of an era variously labelled economic rationalist, neoliberal or corporatist. The uprising is real to those who have the money and power to harness its power. For those not yet aware of its intent, contestability falsely evokes the notion of competition and obscures its meanings. These are the tactics of stealth—quiet, insidious, duplicitous—that are white-anting Australia's democracy. Like the Trojan Horse of Troy, contestability has conveyed into the Australian state a *corps* of external interests.

Economic dominance by transnational monopolies producing increasing levels of industry concentration speaks to the success of neoliberal policies in introducing a socio-economic system that is measured purely by low production costs and has resulted in inequality, soaring poverty and ecological collapse. Baumol's revolution is one of transnational corporate hegemony.

9.5 Implications

9.5.1 We are all ‘village idiots’ now

Although Hayek was the first to centre economics in information (Mirowski 2015), he left that discipline sometime after 1941 for law and political philosophy. By doing so, he made what I regard to be his most devastating contribution to the removal of the human-determined world and its replacement by the *catallaxy*—that is, the idea of the sub-optimal human subordinated to the market machine. Hayek’s theoretical proposition concerned the impossibility of achieving societal goals in what he referred to as the “constitutional limitation of man’s knowledge and interests” (1949a, 14). Hayek’s discontent was essentially with the individual, whose knowledge, he claimed, was largely tacit and therefore unavailable to the conscious mind which was the root cause of humankind’s imperfections (Posner 2005, 159). Individuals lacked the moral fortitude to support freedom and liberty (Hayek 1976 [1949], 108), were incapable of rejecting what he termed “fraudulent” ideas like social justice (1976, xii), were brimming with hubris even in the face of increasing ignorance (1960, 26) and were incapable of loving those beyond their village circle (1976, 150). Most importantly, human beings could do nothing about it, because intent, purpose and will were redundant attributes in a spontaneous order that was the outcome of evolutionary selection and not the actions or dictates of select men, such that not even ethics could be chosen (Hayek 1979a, 167).

Hayek, being a product of his upper bourgeoisie background, held opinions about other classes that were negative and offensive. In *The Road to Serfdom*, he states that the groups most uniform in make-up were the result of a “negative principle of selection” (Hayek 2007 [1944], 160). The morally challenged ‘masses’ and the ‘malleable’ group, which could be anchored to principles if persistently goaded, comprised the majority. There was of course an elite group to which Hayek belonged who were intelligent, educated and capable of invention. In this sense the insufficiency of human beings was not total, it was simply widespread. As Posner put it “people needed the price system to overcome deficits in their knowledge” (Posner 2005, 159). The elites also need the market, but they were sufficiently endowed by evolutionary success to decide the rules of the market and ensure their own prosperity.

The failure to value human knowledge and attributes spilled over into the determination of the value of information. Much of the raw material which fuelled the knowledge economy was virtually costless to those with the computer power to harvest data from the networks. In the neoliberal social order, the information individuals could have traded was simply taken, with or without their permission.

Turing is often credited as the person who contributed most to people being compared to computers and AI (Lanier 2010). Hayek, however, infused his claim about the superiority of the market ‘machine’ as the discoverer of the truth with the associated claim that humans could not possibly match its discovery capacity. Only the market utilises all the available information and therefore can ‘know itself’ and adjust to its environment. Consequently, he held that alternative forms of organisation to the *catallaxy*, including democratic institutions like parliament, could not plan or organise society. Further, the market as a self-organising, self-regulating machine could not be matched by other computational devices. Even four years after the Ethernet was invented, which made distributed access possible for anyone with a computer, Hayek reiterated his claim that “you can’t possibly concentrate this knowledge” (Hayek and Levin 1980). The doctrine of the superiority of the market requires the whole apparatus of the *catallaxy* whereby the market and network are totally integrated with data cycling between the market and the firm-controlled network.

The pernicious effects of Hayek’s human limitations theory and classism can be seen in two trends that are apparent in the rise of the neoliberal movement to political power. Firstly, it has rationalised the abandonment of entire classes of people as exemplified by the economic argument for defunding education because only a small educated elite will be needed to work with the self-organising *catallaxy* (Brown 2015; MacLean 2017). Secondly, it has helped sponsor the view that AI will replace human beings because it simply outperforms them, hiding the fact that AI is dependent on human generated data that is commonly extracted for no payment (Lanier 2010; 2014). There is a large global workforce of piecemeal contract workers covering for the failings of AI by cleansing data and performing a multiplicity of jobs in the ICT sector that are characterised by poor pay and conditions. This workforce is largely hidden, fuelling the myth of machine superiority and impending human redundancy (Gray and Suri 2019).

Hayek’s sub-optimal human illustrates the concerns expressed by Norbert Wiener that machine automation could lead to the devaluation of those humans who can’t compete with the machines and to the abuse of power by those controlling machines (Rid 2016, 85).

Hayek’s vision for the future was described as a market order, but in reality, it was a social order on a global scale. Its most dystopian feature is its *absoluteness*. The *catallaxy* would completely enclose all other systems; its ascendancy assured by the claim that no alternatives can be countenanced because any institution created by human beings as an alternative is by definition inferior. It is an ultra-totalitarian view of humanity’s place under the rule of ICT monopoly capitalism.

9.5.2 Emergence

This thesis has addressed the question of how an ideology which valorised market competition has during its ascendancy been accompanied by the resurgence of industry concentration and monopoly power.

I have argued throughout that the neoliberals and the Bell group very carefully controlled the discourses around competition, markets and contestability and obfuscated essential elements of their ideas necessitating an approach akin to decoding their articulations. The problem is well observed as the “Stealth Revolution” (Brown 2015) the “double truth” doctrine (Mirowski 2013, 68; 2015 [2009], 426) and the “Knowledge Corruptors” (Crouch 2016). Hayek shows his mastery over discourse in his last publication, *The Fatal Conceit* (1988) when he claims ‘lock-in’ for monopoly capitalism based on its capacity to create a self-ordering system:

The contention that we are constrained to preserve capitalism because of its superior capacity to utilise dispersed knowledge raises the question of how we came to acquire such an irreplaceable economic order [?] (Hayek 1988, 8-9).

In a ‘double truth’ finale after a career dedicated to planning the *catallaxy*, he responds:

The answer to this question, ... is ... well known to economics, that our values and institutions are determined not simply by preceding causes but as part of a process of unconscious self-organisation of a structure or pattern. (Hayek 1988, 9).

He attributes this to the development of “evolutionary epistemology” in law and economics (Hayek 1988, 9).

As we live through one of the most remarkable structural changes in how global society is organised, one of its chief architects has offered little by way of a concrete vision for the future he has helped create. As a consequence, it has been extremely difficult to articulate the causes of the changes that have actually occurred. This I conclude is because Hayek and his contemporaries in the neoliberal movement engaged in intellectual duplicity hiding their true designs and motivations behind the veil of liberalism that they actively tore down. The focus in the critical scholarship has been largely on the symptomology of neoliberalism. That is to say, the impacts of neoliberalism on individuals, local communities and global society are very well documented. Monopolies have also come under the spotlight in the last few years with a surge of publications concerned with the damage they are doing to economies, communities and the life-world.

However, the planning for future change has been kept largely concealed by the neoliberal movement. Raymond Williams in *Towards 2000*, warned of:

new politics 'Plan X'. It is indeed a plan, as distinct from the unthinking reproduction of distraction. But it is different from other kinds of planning, and from all other important ways of thinking about the future, in that its objective is indeed 'X': a willed and deliberate unknown, in which the only defining factor is advantage (Williams 1985 [1983], 244).

Not all critics saw strategy in deceptive terms. Dardot and Laval, for example, consider neoliberal strategy as having “well-defined objectives” under certain conditions (2017 [2013], 149). I have argued, that it was Hayek’s mission to get human beings to abrogate their agency by accepting they were ignorant and embracing the convenience of the one catallactic market choosing for them. I also argued that during the 1970s the strategy of the neoliberals was to promote the interests of monopolists by adopting the contestability doctrine which they shrouded by associating it with competition.

Mirowski’s “double truth” doctrine warned scholars that neoliberalism was chameleon-like in its ability to represent different versions of itself to different audiences (Mirowski 2013, 68; 2015 [2009], 426), from the very first argument against planning promoted by Hayek, Mises and Robbins at the Socialist Calculation debates (Lavoie 1985b, 179). Cahill was critical of the ‘double truth’ doctrine suggesting that it necessitated the existence of an “extraordinary conspiracy” prosecuted by intellectuals (Cahill 2014, 41), but as Pusey noted in the Australian case there has been a “neoliberal takeover” (Pusey 2018, 15) involving the *coordinated* efforts of international governance institutions like the World Trade Organisation (WTO), transnational accountancy firms, neoliberal thinktanks and “econocrats”,³ who were officials in the public service schooled in economics and little else (Pusey 1991, 7, 172).

Mirowski concluded that neoliberalism “is poorly understood but curiously, draws some of its prodigious strength from that obscurity” (Mirowski 2015 [2009], 426). Obscurity, which I would argue, stems from the neoliberals engaging in strategically priming discourses on competition and markets, whilst suppressing the discourse on monopoly through the elaborate claims of ‘contestability’ theory and avoiding a discourse about catallactic networks. Hayek, for example, used the term *catallaxy* for the first time in 1976 to describe what he envisaged in 1945 as “one market” for exchanges based on a “system of

3 ‘Econocrats’ is also a term used by Susan Strange (1996, 161) and Peter Self (1975).

telecommunications” (Hayek 1945, 526, 527).⁴ Hayek had cause to develop his institutional theory of the *catallaxy* and a discourse on networks as it would have encapsulated not only his theory of dispersed information but also his vision for a federated global system of market governance. That he chose not to do this is indicative of what Mirowski contended was the ongoing concern of neoliberals to avoid being labelled or defined. Consequently they themselves do not use the term ‘neoliberal’ to identify their ideology or organisations (Mirowski 2014).

Nowhere was this silence more strategic than in the encryption of neoliberalism’s convergence with contestability. Hayek does not reference contestability or its inventors even though he clearly summarises the doctrine. This term was slipped in beside competition in policy but rarely defined as a distinct concept. The Bell group, like the neoliberals, did not write of the network environment that contestability required in order to function. Therefore, the network architecture that would have signalled a relationship between the *catallaxy* and contestability was obscured.

For their part the Bell group did not make it clear that contestability theory was designed to work with digital networks and as a consequence most reviewers of the theory dismissed it as a work of theoretical abstraction. Baumol, who would go on to promote the contestability doctrine as a benchmark tool for deregulation, privatization and international trade policy, did so in the guise of an independent scholar working for prestigious universities. AT&T was seen as co-opting expertise for their contestability research program because using “leading experts” was a way of influencing regulatory policy that impacted the company (Owen and Braeutigam quoted in: Franta 2021, 2).⁵ It was certainly the case with Baumol that given his extensive service to AT&T and other corporations, we should understand him as a ‘company man’. However, as we have seen the political struggle within AT&T over divestment revealed the neoliberal incursion into the company, so that more tellingly Baumol was the neoliberals’ ‘man inside AT&T’.

4 Hayek revealed his motivation for stealth in a 1980 TV interview with Bernard Levin, saying “we [the British public] are not willing to accept the guidance by the price mechanism, which alone can enable us to create a system of international coordination” (Hayek and Levin 1980, 2:14). This is because planning a market order would cause “severe hardship”, which was inevitable because “no stabilisation has ever been achieved without what we call the stabilisation crisis” (Hayek and Levin 1980, 12:59).

5 Owen, B.M. and Braeutigam, R., 1978. *The Regulation Game: Strategic Use of the Administrative Process*. Cambridge, Massachusetts, USA.: Ballinger Publishing Company. p. 7.

Baumol, like Hayek, cultivated an enthusiasm for competition which was not matched by his theoretical positions. He presented perfect contestability as an extension of perfect competition theory (1982b, 2), when in fact Baumol disparaged “*perfect competition*, with its vision of an economy populated exclusively by minuscule enterprises, each too weak to do much about its fate” (1982a, 23). Baumol further claimed that “tiny” firms unable to attain scaled economies were inefficient, such that the “efficiencies promised by pure competition are obviously an illusion” (1982a, 24). Perfect competition was considered a redundant concept in the light of perfect contestability which “promises to be far more useful than its predecessor” (Baumol 1982a, 24).

Shepherd, in “Contestability” vs. competition’, situates contestability in opposition to competition, which exposes contestability to political contention; but here Shepherd is alone (1995). The fields of political economy and sociology have not registered the monopoly implications of the contestable market hypothesis. Instead, contestability has travelled incognito with competition and become an exemplar of Foucault’s concept of normalising power (Foucault 2008, 146). Thus, the doctrine that justified monopoly power has elicited barely a murmur of opposition.

The deception at the heart of neoliberalism lies in its planning for systemic change without democratic permission. The facilitation of the contestability doctrine has been carried out by corporate elites who occupy worlds such as global finance and ICT (Williams 1983, 247). These corporations have embedded into executive government and the public sector at large, and strategically engaged in transferring public sector data and knowledge to the private sector, thereby undermining the foundation of the Australian state.

The neoliberal epistemology, which holds that humans cannot plan society as knowledge is only fully processable by markets, is destroying the very foundations of human knowledge and society – the knowledge repositories that hold the lessons and the memories of who we are and that have enabled humans to evolve societies and live in harmony with each other and non-human others over millennia.

I have argued in this thesis that the contestability doctrine developed by the Bell group has been an integral part of neoliberalism since the late 1970s. This doctrine has justified the ascendancy of monopoly capitalists as the corporations representing the industrial-financial-military complex move past being clients of government lodged in government institutions to fully taking over the functions of these institutions.

This argument has centred on the contention that neoliberalism has always embraced the *illusion* of competition over actual competition. Although competition was peppered through the neoliberal rhetoric of a spontaneous market order, in practice the adoption of AT&T's contestable market doctrine by the global neoliberal movement has amounted to the acquiescence of that movement to monopoly power.

Furthermore, the illusion of competition was embedded into the neoliberal concept of the *catallaxy* itself. This network of economies was allegedly posited to be coordinated by 'the competitive market'; yet at the same time the *catallaxy* itself was said to produce the 'spontaneous market order'. This circularity is a philosophical contrivance, but it serves to claim that state regulation is unnecessary and to obscure the monopoly power being exerted by the network owners. The digital networks shaping our socio-economic relationships exemplify this illusory competition. Set within the context of Australia as a 'market' state the question arises as to whether Australia has now become an imitation state with its democratic social institutions white-anted by corporate control?

In the light of this paradigmatic shift, I suggest a new term to define this newly emergent formation, that is, *monopolism*, a neologism of monopoly and oligopoly. I believe that the social structure that Hayek vaguely described is only now materialising into a concrete form. Although this form contains his vision it has also surpassed it sufficiently to warrant this new term. This fresh term is offered as a means of refreshing the semantic debates over 'neoliberalism', which have become, according to Birch, mired in multiple conceptions, overuse and contradictions (Birch 2017b, 7).

At this juncture in history, where the new order is coordinated by firm-controlled digital networks hosting markets which collectively form the *catallaxy* it is now truly evident, Jewett and King's portent from another time and place of rupture should offer pause:

knowledge in possession of a few who are without authority is powerless, while knowledge in the possession of a few with power to employ it is totalitarianism (Jewett and King 1940, 827).

That the *catallaxy* is concentrating the power of knowledge in the hands of a few there is no doubt as the technology moves in the direction of "converged networks" (Weldon quoted in: Alcatel-Lucent 2015). These networks encapsulate the possibilities "of a new digital era, where everyone and everything will be digitally connected and controllable, allowing an unprecedented level of automation" (Nokia Bell Labs 2016).

This is the materialised possibility of Hayek’s vision of a *catallaxy*, a world connected by exchange that is devoid of competition or the possibility of negotiating it to be otherwise. Dare we act to transition away from *neo* monopolism and embrace an alternative stewardship, one based on universal love and care for the Earth in a post-neoliberal, post-monopolistic Sustainocene.⁶

6 “The term ‘Sustainocene’ originated with the Canberra-based Australian physician Bryan Furnass in 2012. It was subsequently developed to refer to a period of humanity as Earth stewards through ecocentric rather than anthropocentric (or even corporatocentric) governance structures and scientific endeavor coordinated to achieve social virtues such as ecological sustainability and environmental integrity.” (Faunce 2018, 1800035 (3 of 5)).

Appendix A AT&T Inc.

This comparator of organisational charts shows AT&T's corporate structure in 1981 just prior to divestiture when it was a regulated telecommunications company. Following the 1984 divestiture the company focused on global consumer markets for IT whilst maintaining their strengths in high technology research. The 2018 chart illustrates how effective AT&T has been in regrouping its telecommunications business and diversifying into other markets. It has now returned to its former status as the largest telecommunications company in the world.

This comparative chart has been adapted from:

Kleinfeld, Sonny. 1981. *The Biggest Company on Earth*. New York: Holt, Rinehart and Winston, inside cover.

Tunstall, W. Brooke *Disconnecting Parties: Managing the Bell System Break-Up: An Inside View*. McGraw-Hill Book Company, p. 118.

MarketLine. 2018. *Company Profile: AT&T*. London: MarketLine / Progressive Digital Media, pp 85-88 (MarketLine 2018).

MarketLine. 2016. *Company Profile: Time Warner Inc*. London: MarketLine / Progressive Digital Media, pp 49-50 (MarketLine 2016).

[blank]

Comparative charts – 1981-2018

*AT&T in 1981 – pre-divestiture**AT&T in 1984 – post-divestiture**AT&T in 2018**AT&T Inc*

- Western Electric
- Bell Telephone Laboratories
- Long Lines
- The Bell Telephone Co of Pennsylvania
- The Chesapeake & Potomac Telephone Co (DC)
- The Chesapeake & Potomac Telephone Co of Maryland
- Chesapeake & Potomac Telephone Co of Virginia
- Chesapeake & Potomac Telephone Co of West Virginia
- Cincinnati Bell Inc
- The Diamond State Telephone Co
- Illinois Bell Telephone Co
- Indiana Bell Telephone Co
- Michigan Bell Telephone Co
- The Mountain States Telephone & Telegraph Co
- New England Telephone & Telegraph Co
- New Jersey Bell Telephone Co
- New York Telephone Co
- Northwestern Bell Telephone Co
- The Ohio Bell Telephone Co
- Pacific Northwest Bell Telephone Co
- The Pacific Telephone & Telegraph Co
- South Central Bell Telephone Co
- Southern Bell Telephone & Telegraph
- Southwestern Bell Telephone Co
- Wisconsin Telephone Co

AT&T Inc

- AT&T Communications
- AT&T Technologies
- AT&T Bell Laboratories
- AT&T Network Systems
- AT&T Technology Systems
- AT&T International
- AT&T Consumer Products
- AT&T Information Systems

AT&T Inc

- AT&T Comunicaciones Digitales
- AT&T Inc (Australia)
- AT&T Inc (Austria)
- AT&T Inc (Canada)
- AT&T Inc (China)
- AT&T Inc (Germany)
- AT&T Mobility
- AT&T Teleholdings
- BellSouth
- Cricket Wireless
- DirecTV Enterprises
- Illinois Bell Telephone Co
- Indiana Bell Telephone Co
- Michigan Bell Telephone Co
- Nevada Bell Telephone Co
- New Cingular Wireless Services Inc
- Pacific Bell Telephone Company (CA)
- SBC Long Distance
- Southwestern Bell Telephone Co
- Teleport Communications America
- The Ohio Bell Telephone Co
- Wisconsin Bell
- Warner Media
 - CNN America
 - Home Box Office
 - Time Warner
 - Turner Broadcasting System
 - Turner International India
 - Turner Sport
 - Warner Bros (Korea)
 - Warner Bros Entertainment
 - Warner Bros Singapore
 - Warner Communications

[blank]

Appendix B Contestability in Defence

Analysis

One might imagine that the last bastion of nation-state sovereignty and non-commercial operations of government in the ‘national interest’ would be the military. On 1 April 2015, the Australian Department of Defence released the *First Principles Review: One Defence* which set out the next phase of development of an Integrated Defence Organisation.¹

Contestability was made, for the first time in a Defence review, the central concept that underpinned the new “One Defence business model” (Peever et al. 2015, 18). The key goal of One Defence was the introduction of an enterprise approach to delivering corporate and military services, facilitated by a unified enterprise communications and information system that would serve to integrate domestic and international industry into Defence’s capability development function: “It is imperative that Defence evolves into a single, integrated system” (Peever et al. 2015, 16). The review claimed defence acquisitions should be refocused from “probity and competition requirements” (34) to a “capability development life cycle approach” (32, 68) to meet “strategic, financial and technical contestability” (37) requirements. Astonishingly for a defence document, the report referred to “contestability of decision-making” (5) related to centralised planning or what the report called “contestability from the centre” (Peever et al. 2015, 18). In 2016 Defence established a Contestability Division to expedite the changes (Department of Defence 2016, 84).

That this adoption of contestability was related to commercial interests is clear from the key structural change recommended. This was the proposal to re-integrate the Defence Materiel Organisation (DMO) “with a focus on contract management ... [and that it assume the status of] [a]n independent and commercialised DMO in whole or in part” (Peever et al.

1 The First Principles Review Team consisted of Chair, David Peever (Director Business Council of Australia, Vice Chairman Minerals Council of Australia), Prof. Robert Hill (US Studies Centre, University of Sydney, former Liberal Minister of Defence), Prof. Peter Leahy (academic, non-executive director Codan Ltd, former Chief of Army), Jim McDowell (CEO of BAE Systems Aust., non-executive director Codan Ltd) and Lindsay Tanner (former Labor Minister for Finance and Deregulation).

2015, 81). This proposal was implemented through the formation of the Capability Acquisition and Sustainment (CAS) group within the Department of Defence. It was a proxy form of privatisation, a move which was in keeping with other corporate embeddings which I argue, meshed with the stated objective of Defence to integrate with the world economy through “global supply chains” (Peever et al. 2015, 32).

Privatisation of the military had been promoted by Donald Rumsfeld, the former US Defence Secretary (2001-2006) under George W. Bush, when he called for “private contractors in all aspects of the military including combat” (Alford and O’Flynn 2012, 27). However, former President of the United States, General Dwight D. Eisenhower had warned “against the acquisition of unwarranted influence, whether sought or unsought, by the military–industrial complex” (Eisenhower 1961), precisely what would result from “industry undertak[ing] project and contract management activities currently undertaken by Defence” (Peever et al. 2015, 36).

If in reading the *First Principles Review: One Defence* you become concerned to know what contestability might mean in the context of defence, then you are not alone. Industry stakeholders involved in the First Principles Review, were perplexed by the term ‘contestability’, left undefined and yet central to the new Major Capital Acquisition Process being proposed. They commissioned their own report to address the “jargon” and come up with a definition of contestability (Grzadka et al. 2015, 2). This sat alongside another ‘please explain’ report on contestability frameworks commissioned by the Defence Department from the RAND Corporation, the California based private research arm of the US defence industry sector. RAND cited dictionary definitions of the root term ‘contest’ and went on to conclude that, “[t]here is no extensive literature on contestability per se, nor do other departments and ministries of defence routinely use the term” (RAND National Security Research Division 2015, 7). This is an extraordinary statement given that RAND was the preeminent economics research institute of “the American military [which] was also the incubator for modern ‘decision theory’” (Mirowski and Nik-Khah 2017, 28). RAND also took over publication of *The Bell Journal of Economics* in 1984 when it became the *RAND Journal of Economics*, so they had all the in-depth research on contestability at their fingertips.

The changes being rendered to Defence underscored the importance of the endeavour to understand how contestability theory positioned transnational corporations to take control of Defence’s materiel capability and most importantly of its data and decision-making processes. This subversion of the military’s function through restructuring Defence into a business orientated and globally integrated organisation based on contestability, without

Defence personnel or external stakeholders fully engaging with its meaning, is I suggest an action which qualifies for an entry in the annals of military disasters.

The corporatisation of the military with its focus on transnational corporate interests is brought to light by the differences between the 2014-15 and 2016-17 annual reports of the Department of Defence as reflected in their respective indexes. The 2014-15 report has substantial entries for the Air Force, Army and Navy. In the 2016-17 index to the Annual Report, entries for the three services are dramatically reduced whilst entries denoting business interests are significantly heightened and include entries for: Capability Acquisition and Sustainment Group, contestability, Corporate Plan, estate, First Principles Review, industry, Integrated Investment Program, Investment, One Defence.

The other indicative difference that there was cultural change occurring in the Department of Defence was the 2014-15 index had an entry for the First World War 100th anniversary commemorations and the 2016-17 Annual Report only had a brief mention. What the Annual Report failed to commemorate specifically were the 1916-17 battles which Australian troops took part in, including, Fromelles, Pozzières, Bullecourt and Messines.

The Department of Defence is a central agency in Australia not only because defence supports our nation's sovereignty but because it is expected to respect the ANZAC story and spirit which embodies what is generally accepted to be a foundational story of Australian national identity, not just in terms of the Gallipoli battlefields and Western Front but the grief and struggle that gripped the lives of men, women and children during and after the First World War (1914-1918). Out of a population of a little over 4 million people in 1914, there were 60,000 war dead, 25,000 returned defence personnel who were physically and mentally wounded and a further 20,000 deaths from Spanish influenza in 1918-1919. That the Department of Defence did not go beyond a brief mention of the 100th anniversary of the First World War is indicative of the degree to which their focus has switched to the commercial interests of transnational corporations which are taking over the reins of government, including Defence which is both the definitive *outcome* and meaning of contestability. The Department's ignorance of its own functioning and that of the nation it is meant to serve is an indictment on Australia's leadership in Defence and indicative of the success of the neoliberal movement.

[blank]

Department of Defence Annual Report 2014-15

This Index to the Department of Defence Annual Report 2014-15 is reproduced under the terms of a Creative Commons Attribution 3.0 Australia licence: see Department of Defence Annual Report 2014-15 available at <https://www.defence.gov.au/AnnualReports/14-15/> This index was created by the author. Details of the relevant licence conditions are available on the Creative Commons website (<http://creativecommons.org/licenses/by/3.0/au>), as is the full legal code for the CC BY 3.0 AU licence. Shaded emphasis has been added.

Index

A

Aboriginal and Torres Strait Islander people, 56, 153–4
 Accountable Authority Instructions, 175
 ADF Cover, 46, 134
 ADF Super, 52, 134
Administrative Appeals (Judicial Review) Act 1977, 171
 Administrative Appeals Tribunal (AAT), 170, 172
 advertising expenditure, 186–7
 Afghan National Army, 74
 Officer Academy, 4, 82
 Afghan National Defense and Security Forces, 4, 10, 57, 74, 112
 Afghan Special Forces, 82
 Afghanistan
 ADF's role, 4
 death, inquiry, 164
 Operation Highroad, 82, 83
 Operation Slipper, 74
 technology, 10, 57
 Train-Advise-Assist mission of Resolute Support, 4–5

Air Force

achievements, 31
average funded strength, 142
capability, future, 39, 40–1
ceremonial activities, 39
Chief of Air Force, responsibilities, 39
Cyclone Pam response, 39, 80, 81, 84
deliverables, 40–1
flying hours, 40–1
gender restrictions, 153
humanitarian support, 31, 39, 80, 81, 84
key performance indicators, 41
member numbers, 15, 128, 129
Mount Sinjar airdrop, Iraq, 31
Operation Bring Them Home, 39, 42
women, 148, 152

Air Force Act 1923, 8
 Air-to-Air Refuelling Capability (AIR 5402), 91, 114
 Airbus Group Australia Pacific, 57, 107
 Airservices Australia, 39
 annual report corrections, 194
 Anzac, HMAS, 32
 Anzac Day 2015, 17, 55, 63, 78, 101, 115
 AP-3C Orion aircraft, 81
 Approved Major Capital Investment Programme, 177–8
 APS Job Families Project, 137
 APS Statistical Bulletin, 155

Army

achievements, 36
average funded strength, 142
Capability Realisation Plan, 36
Chief of Army, responsibilities, 36
Cyclone Pam response, 36, 80, 81, 84
deliverables, 37–8
equipment delivery, 36
G20 Leaders' Summit, 36, 88 gender
restrictions, 153
key performance indicators, 38

members, numbers, 15, 128, 129
objectives, 36
Operation Render Safe, Bougainville, 36, 81
Project LAND, 36, 96
rate of effort (flying hours), 38
Reserves, 88, 130
women, 148

AS/NZS 9001:2008 international quality management standard, 181
 ASDEFCON templates, 177
 asset management, 175
 Associate Secretary and Chief Operating Officer, 45
 Associated Electronic Services, 112
 Association of Southeast Asian Nations (ASEAN), 30
 Audit Branch, 162
 audit work programme, 162
 Auditor-General, reports, 171–2
 audits
 ANAO, 162
 military justice unit, 163
 performance audit, 163
 AusTender, 175
 Australia and United States Environmental Monitoring Group, 182
 Australian Accounting Standards, 175
 Australian Army Nursing Service (AANS), 116
 Australian Civil–Military Centre, 60
 Australian Cyber Security Centre, 43, 44
 Australian Defence Credit Union, 72
 Australian Defence Force (ADF). *see also* Reserves
 actual funded strength, 15, 127
 Cadet Scheme, 60
 ceremonial activities, 17
 complaint handling and resolution, 137–9
 conditions of service, 133, 136, 164
 cultural change (Pathway to Change), 52, 53, 54, 60, 124, 137, 151, 155, 163
 death and invalidity scheme, 46, 134
 deaths, inquiries, 164
 emergency assistance, 87, 88, 89
 enlistment, 55, 128
 Federation Guard, 17, 60
 First Principles Review *see* First Principles Review
 Gap Year programme, 128, 149
 gender
 adviser, 152
 restrictions, removal, 151, 153
 leadership, 11
 members
 housing assistance response, 72
 on operations overseas, 17
 military justice unit audits, 163
 mission, 7
 operations 2014–15 (*see also under* individual names of operations)
 border protection, 88
 emergency assistance, 84–5, 87, 88, 89
 overseas, 80–3
 personnel deployed, 17
 Parliamentary Programme, 60
 remuneration, 133–4, 136

- salary ranges (permanent members), 133–4
 - Satellite Communications Terrestrial Enhancements project, 114
 - senior officers remuneration, 136
 - separations, 129
 - sexual misconduct reporting, 138
 - star-ranked officers, 145
 - superannuation, 134
 - Total Workforce Model, 130
 - United Nations missions, 5, 30, 82, 83
 - women
 - combat role employment categories, 151
 - and cultural reform, 151
 - workforce
 - actual funded strength, 15, 128
 - average funded strength, 128
 - enlistments, 128
 - gender, 147–8
 - growth, 15, 128
 - headcount, 15, 128
 - location, 144
 - participation rate
 - Indigenous people, 153
 - women, 151
 - permanent strength, 128, 142
 - Project Suakin, 130
 - reserves, 128, 130, 142
 - separations, 129
 - staffing figures, 127
 - star-ranked officers, 145
 - total, 142
 - Total Workforce Model, 130
 - Workplace Remuneration Arrangement 2014–17, 133, 136
 - Australian Geospatial-Intelligence Organisation, 1, 43
 - Australian Government Security Vetting Agency (AGSVA), 43
 - Australian Human Rights Commission (AHRC), 52, 53, 54, 124
 - Australian Indigenous Leadership Centre Certificate IV, 153
 - Australian industry participation policy, 176
 - Australian Military Sales Office, 10, 112
 - Australian National Action Plan on Women, Peace and Security 2012–2018, 27, 152
 - Australian National Audit Office (ANAO)
 - access clauses, 184
 - Central Administration of Security Vetting (review)*, 43
 - contract governance, 123
 - performance audits, 171–2
 - Australian Public Service (APS)
 - Code of Conduct, 7
 - complaint handling and resolution, 137–9
 - disability initiatives, 155
 - Indigenous Pathways programme, 153
 - Job Families Project, 137
 - managing and developing staff, 137
 - performance pay, 136
 - productivity gains, 136
 - remuneration, 2, 134–5, 136
 - salary ranges, 135
 - Senior Executive Service (SES)
 - numbers, 146
 - performance management, 2
 - performance pay, 136
 - remuneration, 136
 - 360-degree feedback scheme, 2
 - separations, 132
 - State of the Service Report, 155
 - Values, 7
 - voluntary redundancy programme, 2
 - women
 - employment pathways, 150
 - representation, 150
 - work value review programme, 137
 - workforce
 - actual FTE, 15, 131
 - education and training, 137
 - gender, 2, 146, 148
 - headcount, 132
 - location, 144
 - non-SES numbers, 137
 - overview, 15
 - participation rate, Indigenous people, 2, 153
 - people with disability, 2, 155, 156
 - recruitment, 132
 - reduction, 2, 15, 131, 132
 - separations, 132
 - SES, 2, 132
 - staffing figures, 15, 127, 131, 142
 - Australian Public Service Commission, 137, 153, 155
 - Australian Regular Army. *see* Army
 - Australian Signals Directorate, 43, 58
 - Australian Strategic Policy Institute, 8
 - Australian Workplace Equality Index (AWEI), 156
 - Australia–Nepal Friendship Society, 35
- B**
- base services contractual reform, 46, 123
 - Beyond the Defence Cooperation Programme, 30
 - Border Protection Command programme, 64
 - Build Partner Capacity mission, 82
 - Bundaberg*, HMAS, 57
 - Business Access Office network, 176
 - Business Enterprise Committee, 2
- C**
- C-17A Globemaster aircraft, 4, 35, 39, 42, 66, 84, 88, 89, 96
 - C-130J Hercules aircraft, 4, 39, 84
 - Cadet Scheme, 60
 - CALD Action Plan, 155
 - Canberra*, HMAS, 32, 91, 102
 - Canberra class vessels, 100, 110
 - Capability Acquisition and Sustainment Group, 2, 66, 91
 - Capability Development Group
 - deliverables, 67–8
 - key performance indicators, 68
 - responsibilities, 66
 - work value review programme, 137
 - Capital Facilities Programme, 178
 - cases
 - Comcare v Commonwealth of Australia* ACD88 of 2013, 170
 - Danthanarayana and Another v Commonwealth of Australia & Ors* [2014] FCA 552, 170
 - Stack v Chief of Army Department of Defence* [2014] FCCA 520, 171

- CEA Technologies, 91
 Centenary of Anzac
 commemorations, 17–19, 26, 55, 63, 70
 personal links, 18–19
Central Administration of Security Vetting (ANAO review), 43
 Centralised Processing Project, 50, 51
 ceremonial activities (ADF), 17, 32, 39, 60
 Chief Capability Development, 66
 Chief Defence Scientist, 57
 Chief Executive Officer (DMO). *see* Defence Materiel Organisation (DMO)
 Chief Finance Officer, 69
 Chief Finance Officer Group
 activities, 161, 175, 176
 Defence Finance Shared Services Programme, 69
 deliverables, 70
 key performance indicators, 70
 responsibilities, 69
 Chief Information Officer Group (Programme 1.7)
 achievements, 50
 Defence Single Information Environment, 50
 deliverables, 51
 funding from Approved Major Capital Investment Programme, 177
 ICT consolidation, 50
 key performance indicators, 51–2
 Chief of Air Force, 39, 74
 Chief of Army, 36, 74
 Chief of Joint Operations, 64
 Chief of Navy, 32, 74
 Chief of the Defence Force (CDF)
 appointment, 27
 commissions of inquiry, 164
 remuneration, 136
 responsibilities, 27
 review, 4–5
 Chief Operating Officer (COO) organisation. *see also* Chief Information Officer; Defence Chief Information Officer; Defence People; Defence Support and Reform Associate Secretary and Chief Operating Officer, 45
 deliverables, 48
 Enterprise Management System, 45
 First Principles Review, 8, 11, 45, 52, 53, 91, 92, 113, 121–5
 key performance indicators, 49
 overview, 45
 programmes, 46–56
 Chiefs of Service Committee, 160
 civilian (APS and contractor) average full-time equivalent, 131
 coastline security, 88
 Coastwatch civil surveillance programme, 64
 Code of Conduct (APS), 7
 Coles review, 111
 Collins submarines, 111
 Combined Inter-Agency Task Force (MH17), 82
 Combined Maritime Force (Middle East Area of Operations), 5, 82
 Combined Task Force 150 (maritime counter terrorism), 82
 Comcare, 140, 141–2, 170
 commemorations Anzac Centenary, 17–19, 26, 55, 63, 70, 82
 commissions of inquiry, 164
 Commissions of Inquiry Cell, 164
Commonwealth Authorities and Companies Act 1997, 161
 Commonwealth Disability Strategy, 155
 Commonwealth Fraud Control Framework 2014, 161
 Commonwealth Government Indigenous Procurement Policy, 176
 Commonwealth Ombudsman, 162, 172
 Commonwealth Procurement Rules (CPRs), 2, 161, 175, 183
 Commonwealth Resource Management Framework, 161
 complaint handling and resolution, 137
 sexual misconduct, 138–9
 unacceptable behaviour, 138–9
 Computer Network Defence (CND) Project, 50
 ComSuper, 71
 ComTrack. *see* Defence Complaints Management, Tracking and Reporting System
 consultancies, 183
 Contract Template Selection and Tailoring Guide, 176
 contracts
 exempt, 185
 governance, 123
 no ANAO access clause, 184–5
 Counter Improvised Explosive Device Task Force, 10, 60, 112
Creating One Defence report, 121
 cultural reform (Pathway to Change), 52, 53, 54, 60, 124, 137, 151, 155, 163
 Culturally and Linguistically Diverse Action Plan, 52
 culturally and linguistically diverse (CALD) communities, 155
 Cyber and Cryptomathematics Research (CMR) Group, 58
 cyber security, 43, 44, 137
 Cyclone Lam, 5, 39, 88, 89
 Cyclone Marcia, 5, 39, 88, 89
 Cyclone Pam, 1, 30, 32, 36, 39, 80, 81, 84
- D**
Danthanarayana and Another v Commonwealth of Australia & Ors [2014] FCA 552, 170
 Defence. *see also* Australian Defence Force (ADF); Australian Public Service (APS); Defence Housing Australia; Defence Materiel Organisation (DMO); Department of Veterans' Affairs
 advertising and market research, 186–7
 Annual Procurement Plan, 175
 asset management, 175
 capital investment, 160, 177–8
 Chiefs of Service Committee, 160
 consultancies and contracts, 183
 cultural change, 124
 cyber capability, 43
 Defence Audit and Risk Committee, 160, 162
 Defence Capability and Investment Committee, 160
 Defence Civilian Committee, 159
 Defence Committee, 2, 159, 162
 disability, employees, 156
 disability initiatives, 125, 155
 diversity of personnel
 CALD backgrounds, 155
 Indigenous Australians, 153–4
 LGBTI people, 156
 people with disability, 125, 155–6, 157
 women, 150–3

- environmental performance, 181–2
- external scrutiny, 171–2
- First Principles Review *see* First Principles Review
- fraud control, 161–2
- Gender Equality Advisory Board, 150, 161
- grants, 191–2
- ICT capability, 50
- Indigenous participation and engagement, 153–4
- leadership, 11
- legal expenses, 189
- LGBTI members and employees, 156
- matériel acquisition agreements, 95, 177
- matériel sustainment agreements, 111
- mission, 7
- net cash spend, 12
- organisational structure, 8–9
- parliamentary business, 167–8
- payment of accounts, 193
- people with disability, 125, 155–6, 157
- personnel
 - complaint handling and resolution, 137–9
 - unacceptable behaviour, 138–9
- portfolio structure, 8
- principal civilian adviser, 27
- procurement, 175–6
- programmes (*see* programmes)
- remuneration, 133
- resource statement, 14
- resource summary, 12–14
- role, 7
- Secretary and Chief of the Defence Force Advisory Committee, 50, 159
- senior committees, 159–61
- senior leadership
 - changes, 11
 - remuneration, 136
- sexual misconduct reporting, 138–9
- statutory offices, 8
- Strategic Command Group, 160
- strategic direction, 11
- values, 7
- women, initiatives for, 150–1
- work health and safety (*see* work health and safety)
- Work Health and Safety Committee, 139
- workforce (*see* workforce)
- Defence Act 1903*, 7, 133, 136, 163, 193
- Defence Administration Assistance Programme (DAAP), 125
- Defence Annual Procurement Plan, 175
- Defence Audit and Risk Committee, 160, 162
- Defence Bank, 72
- Defence Capability and Investment Committee, 160
- Defence Capability Plan (DCP), 57, 59, 66, 67, 68, 128, 160, 177
- Defence Civilian Committee, 159
- Defence Committee, 2, 159, 162
- Defence Complaints Management, Tracking and Reporting System (ComTrack), 138
- Defence Cooperation Programme, 29–30
- Defence Diversity and Inclusion Strategy 2012–2017*, 150, 155
- Defence employment offer, 133
- Defence Enterprise Collective Agreement, 134–5, 136
- Defence Environmental Clearance Certificate, 181
- Defence Estate Quality Management System, 181
- Defence Force Credit Union. *see* Defence Bank
- Defence Force Discipline Act 1982*, 8
- Defence Force Ombudsman, 172
- Defence Force Regulations 1952, 137, 170
- Defence Force Remuneration Tribunal, 133, 136
- Defence Force Retirement and Death Benefits (DFRDB) Scheme, 71
- Defence Forces Retirement Benefits Act 1948*, 171
- Defence Force Superannuation Benefits, 71
- Defence Force Superannuation Nominal Interest, 71
- Defence Fraud Control Plan No. 11, 161
- Defence Home Owner Assistance Scheme, 72
- Defence Home Owner Scheme, 72
- Defence Housing Australia, 73
- Defence Imagery and Geospatial Organisation. *see* Australian Geospatial-Intelligence Organisation
- Defence Indigenous Employment Strategy 2012–2017, 153
- Defence (Inquiry) Regulations 1985, 164
- Defence Intelligence Organisation, 43
- Defence Legislation (Enhancement of Military Justice) Act 2015*, 46
- Defence Materiel Organisation (DMO)
 - accountability, 113
 - achievements, 91
 - appropriations, 94
 - approvals (major), 178
 - Approved Major Capital Investment Programme, 177–8
 - APS employee numbers, 142
 - assets management, 175
 - Australian Military Sales Office, 10, 112
 - budgeted expenses and resources, 94
 - Chief Executive Officer
 - accountability to minister, 113
 - review, 91
 - Commercial Group, 91, 177
 - committee structure, 113–14
 - Council of Chairs' Forum, 113
 - delisting as entity, 91
 - Environmental Management System, 182
 - Executive Committee, 113
 - financial performance, 92–4
 - First Principles Review, 8, 91, 92, 113
 - functions, 92
 - governance, 113
 - grants, 192
 - Industry Skilling Enhancement package, 192
 - industry support programmes budget, 192
 - legal expenses, 190
 - Management of Capability Acquisition (Programme 1.1)
 - deliverables, 95–101
 - expenses, 94
 - key performance indicators, 101
 - overview, 95
 - Management of Capability Sustainment (Programme 1.2)
 - deliverables, 103–11
 - expenses, 94
 - key performance indicators, 111
 - objective, 103
 - product support, 103
 - matériel acquisition agreements, 95, 177

- Materiel Audit and Risk Committee, 113
 materiel sustainment agreements, 111
 New Air Combat Capability—Industry Support Programme, 192
 'One Quality Management System' reform programme, 92
 outcome and programme structure, 95
 performance, 92
 performance audits, 171–2
 Priority Industry Capability Innovation Programme, 192
 programme funding, 94
 projects of concern, 91, 114
 Provision of Policy Advice and Management Services (Programme 1.3)
 deliverables, 112
 expenses, 94
 objective, 112
 reform, 92
 removal as listed entity, 8
 role, 92
 senior committees, 113–14
 Skilling Australia's Defence Industry Programme, 192
 Strategic Commercial Legal Panel, 190
 strategic priorities, 92
 Defence P&C Job Family Professionalisation Programme, 177
 Defence People Group (Programme 1.8). *see also* workforce
 achievements, 52–3
 cultural reform, 52
 deliverables, 53–4
 Deputy Secretary Defence People, 52
 human resources shared services reform, 53
 key performance indicators, 55
 objectives, 52
 work value review programme, 137
 Defence Procurement Policy Manual, 176
 Defence Reconciliation Action Plan 2015–17, 153
 Defence Religious Advisory Committee to the Services, 155
 Defence Science and Technology Organisation (DSTO)
 awards to staff, 58
 Chief Defence Scientist, 57
 counter-IED systems, 10
 Cyber and Cryptomathematics Research (CMR) Group, 58
 Cyber and Electronic Warfare Division, 10
 deliverables, 59
 highlights, 57
 key performance indicators, 59
 MH17 disaster, 57
 MH370 search, 57
 Partnerships Week, 57
 priorities, 57
 Scientific Engineering Services, 10
 soldier protection technology, 10, 57
 strategic research investment programme, 57
 Sydney siege, 57
 Defence Secret and Restricted networks, 50, 51
 Defence Security Authority, 43
 Defence Signals Directorate. *see* Australian Signals Directorate
 Defence Single Information Environment, 50
 Defence Support and Reform Group
 asset management (whole-of-life), 46
 base services contracts, 46, 123
 communication and media, 46, 47
 deliverables, 48
 funding from Approved Major Capital Investment Programme, 177
 key performance indicators, 49
 legal services, 46
 ministerial team, 46
 responsibilities, 46
 Defence Whistleblower Scheme, 162
 Defence White Paper
 2009, 128, 173
 2015, 1, 11, 27, 52, 69, 167
 Defence Work Health and Safety (WHS) Strategy 2012–2017, 139, 140
 Department of Defence. *see* Defence
 Department of Finance, 177
 Department of Foreign Affairs and Trade, 80, 84
 Department of Human Services
 Indigenous Apprenticeship (traineeship) programme, 153
 Department of Veterans' Affairs
 housing scheme MCOU, 72
 Deputy Secretary Defence People, 52
 Deputy Secretary Intelligence and Security, 43
 Deputy Secretary Strategy, 1, 27
 diarchy, 8
 Digital Video Guard, 57
 Directorate of Select Incident Review, 164
 disability reporting mechanisms, 155–6
Diversity and Inclusion Strategy 2012–2017, 52, 150, 155
- E**
- E-7A Wedgetail aircraft, 39, 91, 96
 Edinburgh, RAAF, 88, 89
 11th Brigade Army Reserves, 89
 emergency assistance, 87, 88, 89
 Emergency Management Australia, 87
 Emergency Management Queensland, 88
 Engineering Support Group, 89
 English Language Programme, Timor-Leste, 30
 Enterprise Management System, 45
 environmental performance, 181–2
Environment Protection and Biodiversity Conservation Act 1999, 181
 ethics and fraud awareness programme, 161
 Evaluation and Negotiation Centre of Excellence, 177
 Exercise Kowari (United States and China), 36
 Exercise Southern Jackaroo (United States and Japan), 36
 Exercise Talisman Sabre 2015, 56, 60, 152, 182
- F**
- F-35A Lightning II Joint Strike Fighter, 39
 F/A-18F Super Hornet aircraft, 57
Fair Work Act 2009, 134, 170
 Federation Guard (ADF), 60
Financial Management and Accountability Act 1997, 161
 First Principles Review, 1, 2, 8, 11, 45, 52, 53, 91, 92, 113, 121–5
 base services contractual reform, 46, 123
 Creating One Defence report, 121
 Enablers work stream, 122
 first principles, 121
 implementation plan, 1
 objective, 121
 One Defence approach, 1, 121–2

- review team, 1, 121
- service delivery reform programme, 122
- First Time Manager programme, 137
- First Time Supervisor programme, 137
- First World War**
 - Anzac commemorations, 17–19, 55, 63, 78, 101, 115**
 - Australian Army Nursing Service (AANS), 116**
- Five Eyes partners, 57
- Five Power Defence Arrangements, 30
- flight MH17, 1, 57
- flight MH370, 4, 39, 42, 43, 46, 57, 60, 82
- Force Structure Review, 1
- Forgacs, 30
- Forum Fisheries Agency, Honiara, 81
- fraud
 - control programme, 161
 - investigations, 161
 - loss and recoveries, 162
- Freedom of Information Act 1982*, 172
- freedom of information (FOI), 172
- Future Submarine Programme, 2, 101
- G**
 - G20 Leaders' Summit, Brisbane, 32, 36, 88
 - Gender Equality Advisory Board, 150, 161
 - Government's strategic direction. *see* Defence White Paper grants, 191–2
 - grievance, 164–5
- H**
 - hazardous chemicals reduction programme, 140
 - Headquarters Joint Operations Command (HQJOC)
 - Domestic and Regional Operations Branch, 80
 - heavy landing craft, decommissioning, 32
 - Helicopter Aircrew Training System, 66, 178
 - Help Enterprises, 125
 - Hobart, NUSHIP, 32
 - housing. *see* Defence Home Owner Assistance Scheme
 - Housing Assistance (Programme 1.16), 72–3
 - humanitarian assistance, 4, 5, 29, 31, 32, 39, 64, 80, 81, 82, 84, 102
 - summary statistics, 85
- I**
 - ICT. *see* Chief Information Officer Group (Programme 1.7)
 - Indigenous community engagement, 56
 - Indigenous Employment Strategy 2012–2017, 153
 - Indigenous-owned enterprise, 176
 - Indigenous Performance Group, 17
 - Indigenous pre-recruitment courses, 154
 - Indigenous University Support Programme, 153
 - Indonesia, 29, 31
 - Industry Skilling Enhancement package, 192
 - Information Publication Scheme, 172
 - Inspector-General of Intelligence and Security, 43
 - Inspector-General of the Australian Defence Force (IGADF)
 - activities, 163
 - Directorate of Select Incident Review, 164
 - functions, 163
 - military justice-related training, 165
 - military justice unit audits, 163
 - public interest disclosures, 162
 - integrated investment plan, 1
 - Intellectual Disability Employment Initiative, 155
 - Intelligence and Security Group
 - cyber security, 43, 44
 - deliverables, 44
 - Deputy Secretary Intelligence and Security, 43
 - highlights, 43
 - key performance indicators, 45
 - MH17 disaster, 43
 - Intelligence Services Act 2001*, 43
 - internal audit services, 163
 - International Mission for Protection of Investigation (MH17), 82
 - Investment Committee, 2
 - Invictus Games, London 2014, 157
 - Iraq
 - air strikes against Daesh, 4, 39
 - Building Partner Capacity mission, 4, 82
 - Mount Sinjar airdrop, 31
- J**
 - Job Families Project, 137
 - Joint Committee of Public Accounts and Audit, 168
 - Joint Logistics Command, 182
 - Joint Operations Command Group
 - Border Protection Command programme, 64
 - deliverables, 64–5
 - key performance indicators, 65
 - responsibilities, 64
 - Joint Parliamentary Committee on Intelligence and Security, 168
 - Joint Standing Committee on Foreign Affairs, Defence and Trade, 167
 - Joint Standing Committee on Public Works, 168
 - Joint Standing Committee on Treaties, 168
 - Joint Strike Fighter F-35A, 39
 - Joint Task Force 633, 5
 - JP 2048 Phase 4A/4B Amphibious Deployment and Sustainment project, 91, 100
 - judicial decisions, 170–1
- L**
 - LAND 2072 Phase 2B Battlespace Communications Systems, 91, 178
 - leadership changes, 11
 - legal expenses, 189
 - LGBTI members and employees, 156
 - LGBTI people, 156
 - Lintek, 112
 - Lockheed Martin Australia, 50, 51
- M**
 - Malaysia Airlines flights
 - MH370, 4, 57
 - MH17 disaster, 1, 4, 39, 42, 43, 46, 57, 60, 82
 - maritime surveillance projects, 5, 81
 - Maritime Systems and Technologies Asia conference, 2015, 57
 - market research expenditure, 186–8
 - materiel acquisition agreements, 95, 177
 - materiel sustainment agreements, 111
 - memorandum of understanding

- Department of Veterans' Affairs, 72
 MH-60 Romeo Seahawks, 32, 98, 106, 107
 MH17 disaster (Operation Bring Them Home), 4, 39, 42, 43, 46, 57, 60, 82
 Mireo, 112
 Middle East Area of Operations, 31, 32, 57, 83, 105
 military redress of grievance, 164–5
 Military Superannuation and Benefits Scheme (MSBS), 71, 134
 Minister for Defence, 10, 11, 27, 46, 113, 121, 133, 136, 162, 163, 164, 178
 Minister for Finance, 178
 ministerial directive, 2
 ministerial responsibilities, 11
 Mount Sinjar airdrop, Iraq, 31
 MSBS Retention Benefit, 71
 multi-role helicopter (MRH-90), 84, 88, 89, 98, 102, 114
 Multi Role Tanker Transport aircraft, 39, 66, 96, 178
 multicultural diversity, 155
- N**
 National Armaments Director, 113
 National Australia Bank, 72
 National Disability Strategy 2010–2020, 155–6
 National Security Committee of Cabinet, 43, 46, 178
 national support tasks, 88
 total resourcing, 87
 NATO-led Resolute Support mission, 4–5, 74, 82
Naval Defence Act 2010, 8
- Navy**
achievements, 32
activities, 32
Armidale class vessels, 33, 34, 109
average funded strength, 142
aviation, 32
Canberra class vessels, 100, 110
ceremonial activities, 32, 82
Chief of Navy, responsibilities, 32
Cyclone Pam response, 32, 80, 81, 84
deliverables, 33–4
gender restrictions, 153
key performance indicators, 34
member numbers, 15, 128, 129
Middle East Area of Operations, 32
narcotics seizures, 5
Nepal earthquake, 35
Operation Manitou, 32, 82, 110
Reserves, 130
role, 32
women, 148
- Nepal earthquake, 5, 35, 39, 80, 81, 84
 New Air Combat Capability—Industry Support Programme, 192
 New Starters programme, 137
 Next Generation Desktop Project, 50, 51
 nurses serving, First World War, 116
 tributes, 117
- O**
Occupational Health and Safety Act 1991, 170
 Office of the Inspector-General of Intelligence and Security, 43
 Office of the Secretary and CDF (Programme 1.1)
 Defence Cooperation Programme, 29–30
- deliverables, 27–9
 key performance indicators, 29
 role, 27
 Official Public Account, 73
Ombudsman Act 1976, 172
 One Defence approach, 121–2
 Operation Aslan, 5, 82, 83
 Operation Bring Them Home (MH17 disaster), 4, 39, 42, 43, 46, 57, 60, 82
 Operation Gateway (maritime surveillance patrols), 5, 81
 Operation Hawick (ADF MH17 response), 43, 82
 Operation Highroad (Afghanistan), 82
 Operation Manitou (maritime operations), 32, 82
 Operation Mazurka (Middle East), 5, 82
 Operation Nepal Assist, 81
 Operation Ocean Shield (counter-piracy operation), 5, 82
 Operation Okra (Iraq), 4, 39, 46, 82, 104, 106
 Operation Pacific Assist (Solomon Islands and Vanuatu), 80, 81, 84
 Operation Paladin, 5, 82, 83
 Operation Palate II, 82, 83
 Operation Parapet (G20 Leaders' Summit), 32, 36, 88
 Operation Render Safe (Pacific island nations), 36, 81
 Operation Resolute (border protection), 5, 32, 88
 Operation Slipper (Afghanistan and Middle East), 39, 82
 welcome home parades, 74–5
 Operation Solania (maritime surveillance patrols), 5, 81
 operations, immediate neighbourhood. *see also* Papua New Guinea; Solomon Islands; Timor-Leste
 deliverables, 81
 key performance indicators, 82
 overview, 81
 operations, supporting wider interests, 82
 Other Administered (Programme 1.17), 73
 Outcome 1: Protection and advancement of Australia's national interests
 deliverables, 23
 key performance indicators, 23
 programmes (*see* programmes)
 summary, 23
 total cost, 24–6
 Outcome 2: Advancement of Australia's strategic interests through the conduct of military operations
 net additional cost of operations, 78–9
 programmes (*see* programmes)
 summary, 77
 total cost, 77
 Outcome 3: Support for the Australian community and civilian authorities
 programme 3.1, 88
 summary, 87
 total cost, 87
 Outcome DMO: Contributing to the preparedness of the Australian Defence organisation through acquisition and through-life support of military equipment and supplies, 95
 budgeted expenses and resources, 94
 programmes (*see* Defence Materiel Organisation (DMO))
- P**
 P-8A Poseidon, 39
 Pacific Maritime Security Programme, 30

- Pacific Patrol Boat Programme, 30
 Pakistan, 29
 Papua New Guinea (PNG), Defence Cooperation Programme, 29, 30
 Parliamentary Joint Committee on Intelligence and Security, 43
 parliamentary joint committees, 167–8
 Parliamentary Programme (ADF), 60
 Parliamentary Standing Committee on Public Works, 178
Pathway to Change: Evolving Defence Culture, 2, 52, 53, 54, 60, 124, 137, 151, 155, 163
 P&C Job Family Professionalisation Programme, 177
 people with disability, 2, 125, 155–7
 Plan Beersheba, 36
 Plan Jericho, 39
 Portfolio Additional Estimates Statements 2014–15, 69
 Portfolio Budget Statements
 2014–15, 69
 2015–16, 12
 Pride in Diversity Australia, 156
 Prime Minister, 74
 Priority Industry Capability Innovation Programme, 192
 procurement, 175–7
 programmes Outcome 1.
 Programme 1.1: Office of the Secretary and CDF, 27–31
 Programme 1.2: Navy Capabilities, 32–5
 Programme 1.3: Army Capabilities, 36–8
 Programme 1.4: Air Force Capabilities, 39–42
 Programme 1.5: Intelligence Capabilities, 43–5
 Programme 1.6: Chief Operating Officer—Defence Support and Reform, 46–9
 Programme 1.7: Chief Operating Officer—Chief Information Officer, 50–2
 Programme 1.8: Chief Operating Officer—Defence People, 52–6
 Programme 1.9: Defence Science and Technology, 57–9
 Programme 1.10: Vice Chief of the Defence Force, 60–2
 Programme 1.11: Joint Operations Command, 64–5
 Programme 1.12: Capability Development, 66–8
 Programme 1.13: Chief Finance Officer, 69–70
 Programme 1.14: Defence Force Superannuation Benefits, 71
 Programme 1.15: Defence Force Superannuation Nominal Interest, 71
 Programme 1.16: Housing Assistance, 72–3
 Programme 1.17: Other Administered, 73
 programmes Outcome 2.
 Programme 2.1: Operations Contributing to Security of Immediate Neighbourhood, 81–2
 Programme 2.2: Operations Supporting Wider Interests, 82–5
 programmes Outcome 3.
 Programme 3.1: Defence Contribution to National Support Tasks, 88–9
 programmes DMO Outcome
 Programme 1.1: Management of Capability Acquisition, 95–101
 key performance indicators, 101
 Programme 1.2: Management of Capability Sustainment, 103–111
 key performance indicators, 111
 Programme 1.3: Provision of Policy Advice and Management Services, 112
 Project LAND, 36, 96
 Project Suakin, 130
Public Governance, Performance and Accountability Act 2013, 45, 69, 113, 137, 160, 161, 175
 Public Governance, Performance and Accountability Rule 2014, 69, 161
Public Interest Disclosure Act 2013, 162
 Public Interest Disclosure (PID) Scheme, 162
 Public Sector Workplace Bargaining Policy, 136
Public Service Act 1999, 7, 134, 137
- Q**
 questions on notice, 169
- R**
 radio-controlled improvised explosive devices, 10, 112
 Rapid Prototyping, Development and Evaluation Programme, 66
 Re-Thinking Systems Review, 46
 Reconciliation Action Plan 2015–17, 153
 Redwing programme, 10, 57
 regional security and stability, 81
 Religious Advisory Committee to the Services, 155
 Remuneration Tribunal, 133, 136
Remuneration Tribunal Act 1973, 136
 Reserves
 number of Reservists, 128, 130, 142
 paid strength, 130
 Project Suakin, 130
Resource Management Guide 417—Supplier Pay on Time or Pay Interest Policy, 177
Review into the treatment of women in the Australian Defence Force, Phase 2 report, 151
Review of employment pathways for APS women in the Department of Defence, 150
 Romeo Seahawks, MH-60, 32, 98, 106, 107
 Royal Australian Air Force. *see* Air Force
 Royal Australian Navy. *see* Navy
 Russian task group (Coral Sea), 88
- S**
 Samoa, 30
 Seahawk helicopters, 103
 Secretary and Chief of the Defence Force Advisory Committee, 50, 159
 Secretary and Chief of the Defence Force Gender Equality Advisory Board, 150, 161
 Secretary of the Department of Defence
 functions, 27
 remuneration, 136
 review, 1–3
 select incident review, 164
 SeMPRO. *see* Sexual Misconduct Prevention and Response Office
 Senate committees, 168
 Senate Estimates, 168
 Senate Standing Committee on Foreign Affairs, Defence and Trade, 169, 170
 Senior Executive Service (SES)
 APS salary ranges, 135

conditions, 136
 performance management, 2
 performance pay, 136
 360-degree feedback scheme, 2
 Senior Leadership Group, remuneration, 136
 Sentinel, 53, 140
 service delivery reform programme, 122
 725 Squadron (Naval Air), 32, 98, 107
 Sex Discrimination Commissioner, 151
 Sexual Misconduct Prevention and Response Office (SeMPRO), 138
 sexual orientation diversity, 156
 Skilling Australia's Defence Industry Programme, 192
 small business, procurement initiatives, 176
 Smart Sustainment Reform Programme, 91
 Solomon Islands, 30, 81, 84
 South Australian Country Fire Service, 88, 89
 Special Operations, 4, 36, 66
Stack v Chief of Army Department of Defence [2014] FCCA 520, 171
 Standalone Network Remediation Programme, 50
 Strategic Command Group, 160
 Strategic Communications Modernisation-Land Project, 50
 strategic direction, 11
 Strategic Policy and Intelligence Group, 2
 strategic research investment programme, 57
Success, HMAS, 5, 82, 110
 superannuation, 52, 71, 134
 Superannuation Nominal Interest, 71
Sydney, HMAS, 32

T

tactical payment scheme, 193
 Technical Cooperation Programme, 57
 Terrestrial Communications Project, 50, 51
 3rd Australian General Hospital, 116
 13th Brigade Army Reserves, 17, 88, 89
 Timor-Leste, Defence Cooperation Programme, 29, 30
Tobruk, HMAS, 32, 84
 Tonga, 30
 Top 4 Strategies to Mitigate Targeted Cyber Intrusions, 43
 Tuvalu, 30

U

Ukraine, 4, 36, 43, 60, 82
 Ultra Electronics Australia, 112
 Unapproved Major Capital Investment Programme, 66
 United Nations
 missions, 5, 30, 82, 83
 Security Council Resolution 1325 on Women, Peace and Security, 152
 United States, Force Posture Agreement, 46

V

Values (APS), 7
 Vanuatu, 30, 32, 36, 39, 80, 81, 84
 vetting practices, 43
 Vice Chief of the Defence Force, 2, 60
 Vice Chief of the Defence Force Group
 achievements, 60
 deliverables, 61
 key performance indicators, 62
 mission, 60
 responsibilities, 60

W

Whistleblower Scheme, 162
 WHS Management System, 139
 Wideband Global SATCOM, 50
 women, 150–3
 'Women in the ADF' report, 151
 work health and safety
 Comcare on interventions and inspections, 141
 hazardous chemicals reduction programme, 140
 performance, 139
 policy development, 140
 safety awareness surveys, 142
 Sentinel, 53, 140
 statistics, 141–2
Work Health and Safety Act 2011, 49
 work health and safety management system (Sentinel), 53, 140
 Work Health and Safety (WHS) Strategy 2012–2017, 139, 140
 workforce. *see also* Australian Defence Force (ADF); Australian Public Service (APS); Defence People Group (Programme 1.8)
 diversity, 150–7
 gender, 2, 146–8
 headcount, 143
 Indigenous participation, 2, 153–4
 location, 144
 people with disability, 2, 125, 155–6
 permanent employees, 142
 planning, 127, 128–32
 summary, 16, 127
 Workplace Remuneration Arrangement 2014–17, 52, 133, 136

Y

Young Endeavour, 32

Department of Defence Annual Report 2016-17

This Index to the Department of Defence Annual Report 2016-17 is reproduced under the terms of a Creative Commons Attribution 3.0 Australia licence: see Department of Defence Annual Report 2016-17 available at <https://www.defence.gov.au/AnnualReports/16-17/>. This index was created by the author. Details of the relevant licence conditions are available on the Creative Commons website (<http://creativecommons.org/licenses/by/3.0/au>), as is the full legal code for the CC BY 3.0 AU licence. Shaded emphasis has been added.

Index

A

Aboriginal and Torres Strait Islander people
 Army Aboriginal Community Assistance Program, 19–20
 accountability, 63–4, 66, 67, 82, 83, 101, 104
 achievements, 2–5
 acoustics and signal processing, 48
 Acting Secretary of the Department of Defence
 review, 2–4
Adelaide, HMAS, 5
 ADF Cover, 38, 98
 ADF Super, 38, 98
 'The ADF Surprised Us', 96
 administrative tribunal decisions, 75
 advertising expenditure, 139–41
 Afghan National Army
 Officer Academy Kabul, 5
 Afghan National Defense and Security Forces, 5, 47
 Afghanistan, 32, 42
 ADF deployment, 5
Air Force
Antarctic winter airdrop, 7
Australian Air Force Cadets Aviation Program, 94
physical employment standards, 118
Reserves, 84, 85, 86
 Air Task Group (Iraq), 5
 Alcohol Management Strategy and Plan 2014–2017 (ADF), 105
 Ang-Gnarra Aboriginal Corporation, 19, 20
Angre v Chief of Navy (No 1) [2016] ADFDAT 1, 75
Angre v Chief of Navy (No 2) [2016] ADFDAT 2, 75
Angre v Chief of Navy (No 3) [2017] ADFDAT 2, 75
 annual performance statements, iv, 22
 annual procurement plan, 120
 annual report
 corrections, 142
 purpose, iv
 Architecture Management Review Board, 37
Army
Cadets Transformation Program, 94
Defence Requirements Management Module, 35
physical employment standards, 118
Reserves, 84, 85, 86
 Army Aboriginal Community Assistance Program, 19–20
 Asia–Pacific Economic Cooperation summit, 2018, 18
 asset management, 120
 Assistant Minister for Defence, 12
 Association of Southeast Asian Nations (ASEAN), 18
 Audit Branch, 68
 Auditor-General reports, 76
 audits
 ANAO, 29, 64, 68, 146
 cross-portfolio, 68, 76
 military justice system, 69
 WHS, 102
 work program, 68
 Austal Ships Pty Ltd, 17
 AusTender, 77, 120
 Australian Air Force Cadets Aviation Program, 94
 Australian Antarctic Division (AAD), 7
 Australian Army Cadets Transformation Program, 94
 Australian Border Force, 5
 Australian Command and Staff College, 18
 Australian Cyber Security Centre (ACSC), 16, 34

Australian Defence College
 Centre for Defence and Strategic Studies, 18
 Australian Defence Force (ADF). *see also* Reserves
 actual funded strength, 15, 83
 average funded strength, 82, 83, 84
 cadets, 92–4
 Cadets Headquarters, 92
 civilian life, transition, 37
 complaint handling and resolution, 106
 cultural change (Pathway to Change), 3, 32, 38, 83, 104, 105, 111
 death and invalidity scheme, 98
 death in service reviews, 70
 enlistment, 84
 family support, 37, 98
 First Principles Review (*see* First Principles Review)
 Gap Year program, 84, 95
 gender
 percentages, 3, 32, 78–9
 restrictions removal, 106
 health services, 34
 leadership, 82, 83, 101 (*see also* Senior Leadership Group)
 mental health and fitness, 32, 116–18
 military justice unit system, 69
 operations 2016–17, 6 (*see also under* individual names of operations)
 costs, 56
 performance summary, 5
 remuneration, 96–7, 100
 senior officers remuneration, 100
 separations, 84, 85
 sexual misconduct reporting, 108
 staffing figures, 83
 star-ranked officers, 89
 superannuation, 38, 97–8
 women
 combat role, 106
 and cultural reform, 62, 105–6, 109, 110, 111
 leadership, 79
 participation rate, 38, 78–9, 84, 90–1
 workforce
 enlistments, 84
 gender, 3, 32, 78–9
 headcount, 83, 84
 integration with APS, 95
 location, 88
 physical employment standards, 118
 Project Suakin, 95
 Reserves, 38, 84, 85–6, 87, 90–1, 95, 112
 separations, 84, 85
 staffing figures, 83
 star-ranked officers, 89
 Total Workforce Model, 38, 95
 Workplace Remuneration Arrangement 2014–17, 96–7, 100
 Australian Defence Force Cadets, 92–4
 Australian Disability Enterprises, 3, 113, 114
 Australian Federal Police, 5
 Australian Geospatial-Intelligence Organisation, 34, 43
 Australian Government Security Vetting Agency, 25, 28
 Australian Human Rights Commission, 105, 109
 Australian Industry Capability Plan, 122
 Australian Industry Capability Program, 43, 44, 122
 Australian industry participation policy, 121
 Australian Institute of Health and Welfare (AIHW), 117
 Australian National Audit Office (ANAO), 29, 64, 68, 146
 access clauses, 226–7

- performance audits, 68, 69, 76
 - Australian Network on Disability, 114
 - Access and Inclusion Index, 113
 - Australian Public Service (APS)
 - complaint handling and resolution, 106–7
 - disability initiatives, 113, 114
 - job families framework, 96, 101
 - leadership development, 101
 - managing and developing staff, 101
 - performance pay, 101, 102
 - remuneration, 99–100
 - salary ranges, 100
 - Senior Executive Service (SES)
 - employment arrangements, 99
 - gender, 90
 - mental health awareness program, 118
 - numbers, 89
 - performance pay, 101, 102
 - remuneration, 99, 100
 - women, 109
 - separations, 87
 - women
 - initiatives, 109
 - leadership mentoring, 79
 - participation rate, 38, 78, 89
 - workforce
 - actual FTE, 15, 82, 86, 87
 - average FTE, 86
 - benefits, 97
 - contractors, 87
 - diversity, 3, 32, 38, 78, 113
 - end-of-year FTE, 87
 - gender, 90, 109
 - headcount, 86, 87, 90
 - Indigenous people, 3, 32, 38, 78
 - integration with ADF, 95
 - location, 88
 - non-SES numbers, 99, 100, 101, 102
 - people with disability, 3, 32, 38, 113–115
 - recruitment, 87
 - separations, 87
 - staffing figures, 86
 - Australian Public Service Commission, 96, 101
 - Directions on affirmative measures, 113
 - Australian Regular Army. *see* Army
 - Australian Signals Directorate (ASD), 16, 34
 - Australian Wildlife Conservancy, 4, 132, 134
 - Australian Workplace Equality Index, 115
 - authority, ii
- B**
- Baker v Chief of Army* [2017] ADFDAT 3, 75
 - Balancing the Future: The Australian Public Service Gender Equality Strategy 2016–19*, 109
 - Bathurst, HMAS, 5
 - biodiversity, 132
- C**
- cadets, 92–4
 - Canine Operational Service Medal, 126, 127
 - Capability Acquisition and Sustainment Group
 - business framework, 66
 - contracts, 33, 46
 - performance results, 33, 46
 - Smart Buyer program, 2, 26, 28, 32, 35, 43, 46, 66, 125
 - capability delivery, 66
 - Capability Improvement Grants, 43, 45
 - capability reviews, 76
 - Carnegie Clean Energy, 130
 - cases
 - Angre v Chief of Navy (No 1)* [2016] ADFDAT 1, 75
 - Angre v Chief of Navy (No 2)* [2016] ADFDAT 2, 75
 - Angre v Chief of Navy (No 3)* [2017] ADFDAT 2, 75
 - Baker v Chief of Army* [2017] ADFDAT 3, 75
 - Chief of the Defence Force v Gaynor* [2017] FCAFC 41, 75
 - Douglas v Chief of Army* [2017] ADFDAT 5, 75
 - FJ v Commonwealth of Australia* [2017] VSCA 84, 75
 - Kornljenovic v Chief of Navy* [2017] ADFDAT 4, 75
 - Lange v Australian Broadcasting Corporation* (1997) 189 CLR 520, 75
 - McKenna v Chief of Navy* [2017] ADFDAT 1, 75
 - Williams v Chief of Army* [2016] ADFDAT 3, 75
 - cash spend (net), 50
 - Catalyst program, 101
 - Centenary of Anzac, 6
 - Centre for Defence and Strategic Studies (Australian Defence College), 18
 - Centre for Defence Industry Capability, 2, 27, 43, 44, 45, 67, 121, 122
 - Chief Finance Officer Group, 3, 29, 38, 39
 - Chief Information Officer Group, 16, 37
 - Chief of the Defence Force (CDF)
 - Gaynor* case, 75
 - legislative authority, ii, 60
 - Preparedness Directive, 2, 33, 62
 - review, 5–6
 - Chief of the Defence Force Commission of Inquiry, 70
 - Chief of the Defence Force v Gaynor* [2017] FCAFC 41, 75
 - Chiefs of Service Committee, 62
 - Code of Conduct (APS), ii
 - Coles Report, 3
 - Comcare, 102, 103
 - Commonwealth Electoral Act 1918*, 139
 - Commonwealth Fraud Control Framework 2014, 68, 69
 - Commonwealth Government Indigenous Procurement Policy, 122–3
 - Commonwealth Ombudsman, 75, 77
 - Commonwealth Procurement Rules, 120
 - Commonwealth Superannuation Corporation, 38
 - complaint handling and resolution, 106–8
 - sexual misconduct, 108
 - unacceptable behaviour, 107
 - Compliance Framework, 25
 - consultancies, 226
 - contestability**
 - decision-making, 14, 25**
 - functions, 26**
 - risk-based model, 25**
 - Contestability Division, 2, 25, 26
 - contractor workforce, 87
 - contracts
 - exempt, 77
 - no ANAO access clause, 226–7
 - Convention on the Elimination of All Forms of Discrimination against Women, 106
 - Cook Shire Council, 19, 20
 - corporate governance, 60–70
 - Corporate Plan**
 - 2016–17, ii, vi, 2, 3, 4, 10, 22**
 - performance criteria, 64**
 - 2017–18, 4, 25, 64**
 - Corporations Act 2001*, 11

- cost of operations, 56
Creating One Defence report, 14, 67. *see also* First Principles Review
 Cross Domain Desktop Compositor, 48
 cross-portfolio audit reports, 68, 76
 cultural and linguistic diversity, 113
 cultural reform (Pathway to Change), 3, 32, 38, 83, 104, 105, 111
Customs Act 1901, 69
 Cyber and Electronic Warfare Division, 47
 cyber security
 capability, 17
 collaborations, 48
 Dandelion@Defence program, 3, 114
 incidents, 16
- D**
 Dandelion@Defence Program, 3, 114
 Data61, 48
 Defence. *see also* Australian Defence Force (ADF); Australian Public Service (APS); Defence Housing Australia; Department of Veterans' Affairs
 accountability, 63–4, 66, 67, 83, 101, 104
 advertising and market research, 139–41
 annual procurement plan, 120
 asset management, 120
 awards, 59, 126, 127
 capability
 life cycle, 25, 26, 32, 43, 66, 67
 reviews, 76
 Capability Acquisition and Sustainment Group, 33, 46, 66, 125
 capital equipment projects, 33, 46
 capital investment (*see* investment)
 collaboration, 48
 compliance, 69
 consultancies and contracts, 226
 Corporate Plan
 2016–17, ii, vi, 2, 3, 4, 10, 22
 performance criterion, 64
 2017–18, 4, 25
 cultural change, 3, 32, 38, 83, 104, 105, 111
 cyber capability, 17
 Defence Audit and Risk Committee, 44, 62
 Defence Committee, 26, 60, 61, 63
 disability initiatives, 113, 114–15
 diversity of personnel
 culturally and linguistically diverse backgrounds, 113
 Indigenous Australians, 3, 32, 38, 78, 96
 lesbian, gay, bisexual, transgender and intersex people, 115
 people with disability, 3, 32, 38, 113–15
 priorities, 109, 111
 women, 32, 78–9
 Enterprise Collective Agreement, 3, 99, 100, 101
 Enterprise Information Management Strategy 2015–2025, 27
 enterprise-level risks, 63
 Enterprise Performance Management Framework, 25, 63
 estate (*see* estate)
 expenditure, 10
 First Principles Review (*see* First Principles Review)
 fraud control, 68, 69
 fuel supply chain, 135
 governance performance, 60–70
 grants, 138
 ICT (*see* ICT)
 Indigenous participation and engagement, 111–12
 industry forums, 44
 industry partnership, 31, 43, 44, 67, 121
 Industry Policy Statement, 43, 44, 45, 46, 63, 67, 121, 122
 industry role, 121
 leadership, 82, 83, 101
 legal expenses, 141
 lesbian, gay, bisexual, transgender and intersex members and employees, 115
 net cash spend, 50
 operations' costs, 56
 organisational structure, 14
 payment of accounts, 142
 people with disability, 3, 32, 38, 113–15
 performance management, 63–4
 personnel (*see also* workforce)
 complaint handling and resolution, 106–8
 unacceptable behaviour, 107
 polyfluorinated alkyl substances (PFAS), 135
 portfolio structure, iii, 11
 procurement, 120–4, 125, 130, 132
 programs (*see* programs)
 Projects of Concern regime, 124
 Redwing systems, 47
 remuneration, 96–7, 99–100
 senior leadership
 changes, 15
 remuneration, 97, 100
 senior management committees, 60–2
 sexual misconduct reporting, 108
 strategic direction, 10
 White Paper (*see* Defence White Paper)
 women, initiatives for, 62, 109, 111
 work health and safety (*see* work health and safety)
 Work Health and Safety Committee, 32, 102
 workforce (*see* workforce)
Defence Act 1903, iii, 69, 70, 92, 96, 97, 100, 144
 Defence Administration Assistance Program, 3, 84, 113, 114
 Defence Audit and Risk Committee, 44, 62
 Defence Business Plan, 63, 104
 Defence Civilian Undergraduate Sponsorship, 79
 Defence Committee, 26, 60, 61, 63
 Defence Community Organisation, 98
 Defence Cooperation Program, 2, 17–20
 Defence Cooperative Research Centres program, 44
 Defence Diversity and Inclusion Strategy 2012–2017, 109, 113
 Defence Enterprise Collective Agreement, 3, 99, 100, 101
 Defence Environmental Plan, 130
 Defence Environmental Policy, 130, 133
 Defence Environmental Strategy 2016–2036, 130, 133, 134
 Defence Estate Strategy 2016–2036, 2
 Defence Family and Domestic Violence Strategy 2017–2022, 102, 105
Defence Force Discipline Act 1982, ii, iii, 68
 Defence Force Discipline Appeal Tribunal, 75
 Defence Force Regulations
 1952, 70
 2016, 69, 70, 106
 Defence Force (Personnel) Regulations 2002, 75
 Defence Force Remuneration Tribunal, 100
 Defence Force Retirement and Death Benefits (DFRDB) Scheme, 38
 Defence Force Superannuation Benefits, 38
 Defence Force Superannuation Nominal Interest, 38
 Defence Forces Retirement Benefits (DFRB) Scheme, 38

- Defence Home Ownership Assistance Scheme, 39
 Defence Housing Australia (DHA), 39, 76–7
 Defence ICT Strategic Direction 2016–2020, 3
 Defence Industrial Capability Plan, 121
 Defence Industry Participation Policy, 121
 Defence Industry Policy Division, 27
 Defence Industry Policy Statement, 43, 44, 45, 46, 63, 67, 121, 122
 Defence Innovation Hub, 2, 43, 44, 45, 67, 121, 122
 Defence Intelligence Organisation, 34
 Defence International Engagement Policy, 2, 43
 Defence Leading for Reform program, 101
 Defence People, 37–8
 Defence People Group, 105
 Defence Planning Guidance, 2, 63
 Defence Preparedness Assessment Summary, 32
 Defence Procurement Policy Manual, 120
 Defence Public Interest Disclosure Scheme, 77
 Defence School Transition Aide Program, 98
 Defence Science and Technology Group
 commercialisation of research, 47
 research program, 46
 staff awards, 47, 48
 women, 79
 Defence Service Delivery Framework, 3
 Defence Signals Directorate. *see* Australian Signals Directorate
 Defence Strategic Workforce Plan 2016–2026, 3, 82, 96
 Defence White Paper, 64. *see also* Defence Industry Policy Statement; First Principles Review; Integrated Investment Program
 implementation, 2, 26, 43, 45, 60, 122
 performance, 63
 strategic interests, ii, 10
 workforce, 38, 82, 86
 Defence Work Health and Safety Policy Manual, 102
 Defence Youth Safety Framework, 92–3
 Department of Defence. *see* Defence
 Department of Education and Training, 27
 Department of Employment, 78, 111
 Department of Finance, 23, 25, 26, 27, 33, 44, 65, 66, 67, 120, 139
 Department of Foreign Affairs and Trade, 31, 110
 Department of Health, 116, 135
 Department of Human Services, 78, 111
 Department of Industry, Innovation and Science, 27
 Department of the Prime Minister and Cabinet, 19, 25, 26, 27, 33, 44, 66, 67, 120, 135
 Department of Veterans' Affairs, 11, 32, 37, 39, 116
 Links Steering Committee, 115
 diarchy, ii, 14, 60
 disability reporting mechanisms, 115
Douglas v Chief of Army [2017] ADFDAT 5, 75
- E**
 East Timor. *see* Timor-Leste
 ecologically sustainable development, 132
 energy, 130–1, 132
 Enhanced Air Cooperation (USA), 30
 Enterprise Business Committee, 25, 27, 60, 61, 63, 65
 Enterprise Information Management Strategy 2015–2025, 5, 27
 Enterprise Performance Management Framework, 25, 63
Environment Protection and Biodiversity Conservation Act 1999, 130, 131
 environmental improvement initiatives and review, 131–2
 environmental management, 133–4
 environmental performance, 130–1
- estate**
 divestments, 36
 environmental management, 130, 131, 132, 133, 134
 expenditure, 36
 heritage, 131
 investment, 26, 31, 123–4
- ethics, 68
 Exercise Pacific Partnership 2016, 57–8
 Exercise Talisman Saber 2017, 110, 131
 expenditure, 10. *see also* Smart Buyer program
 Experts Working Group on Peacekeeping Operations, 18
- F**
 F-35A Joint Strike Fighters, 3
Fair Work Act 2009, 99
 Family and Domestic Violence Strategy 2017–2022, 102, 105
 Family Support Funding Program, 98
 finance law compliance, 69
 financial summary, 15, 50–4
 First Joint Public Affairs Unit (1JPAU), 42
First Principles Review. *see also* Defence Industry Policy Statement; Defence White Paper; Integrated Investment Program
 capability life cycle process, 25, 26, 32, 43, 66, 67
 implementation, 14, 25, 82–3
 institutionalising Australian industry input to capability, 43
 One Defence business model, 14, 28, 28, 35
First Principles Review: Creating One Defence report, 14, 67
FJ v Commonwealth of Australia [2017] VSCA 84, 75
 Force Posture Initiatives (USA), 30–1
 fraud
 control program, 68
 investigations, 68
 loss and recoveries, 68
 freedom of information, 77
Freedom of Information Act 1982, 77
 fuel supply chain, 135
 funding, iii
 Future Defence Estate Profile, 36
 Future Submarine Design and Construction, 33
 Future Submarine program, 3, 72, 76
- G**
 Gap Year program (ADF), 84, 95
 Gateway program, 101
 gender advisors, 110, 111
 Gender Equality Advisory Board, 62, 105
 Global Supply Chain Program, 43, 121
 Golan Heights, 5, 32, 35
 governance, 60–70
 Government's strategic direction. *see* Defence White Paper
 Grand Challenges program, 2, 44
 grants, 138
 grievance, 70
- H**
 Hewlett Packard Enterprise, 3, 114
 House of Representatives committees, 72, 74
- I**
 ICT. *see also* Chief Information Officer Group
 architecture standards, 37
 capability life cycle, 37, 66
 Enterprise Information Management Strategy 2015–2025, 27
 infrastructure transformation program, 16

investment, 37
 ICT Strategic Direction 2016–2020, 3
 Implementation Committee (First Principles Review), 25, 43, 46
 Indigenous Apprenticeships Program, 78
 Indigenous Australian Government Development Program, 78
 Indigenous environmental management, 133
 Indigenous Pre-Recruit Program, 78
 Indigenous Procurement Policy, 122–3

industry

capability plans, 122
 dual employment option with ADF, 95
 embedded input to capability, 43
 as Fundamental Input to Capability, 43, 44
 industry partnership, 31, 43, 44, 67, 121
 Industry Policy Division, 27
 Industry Policy Statement, 43, 44, 45, 46, 63, 67, 121, 122
 Information Publication Scheme, 77

infrastructure. *see* estate

Inspector-General of the Australian Defence Force
 functions, 69
 military justice performance audits, 69
 military redress of grievance, 70
 report, 69
 reviews of deaths, 70
 Service Police professional standards, 69

Integrated Investment Program

capability-related investment, 66, 121, 123
 delivering, 2, 32, 33, 36, 61
 future program identification, 16
 ICT, 37
 performance criteria, 44
 and White Paper policy objectives, 36, 43, 63, 123

intelligence. *see also* Strategic Policy and Intelligence Group
 capability, 34, 43

internal audit services, 69

International Policy Division, 42

investment. *see also* Integrated Investment Program

capital, 123–4
 cyber capabilities, 16
 estate, 26, 31, 123–4
 proposals, contestability review, 26
 from United States, 30, 31
 White Paper, 36, 43, 63, 122

Investment Committee, 25, 26, 27, 33, 44, 46, 60, 61, 67, 125

J

job families project, 96
 Joint Committee of Public Accounts and Audit (JCPAA), 33, 46, 64, 72, 76
 joint committees, 72
 Joint Health Command, 116
 Joint Health Command Annual Review 2015–16, 118
 Joint Select Committee on Government Procurement, 73
 Joint Select Committee on Northern Australia, 72
 Joint Standing Committee on Foreign Affairs, Defence and Trade, 72
 Joint Standing Committee on the National Capital and External Territories, 73
 Joint Standing Committee on Treaties, 72
 Joint Task Force 661, 5
 Jordanian Armed Forces, 18
 judicial decisions, 75

K

Komljenovic v Chief of Navy [2017] ADFDAT 4, 75

L

Land Activities Environmental Management Plan, 131
 land management, 130, 132
Lange v Australian Broadcasting Corporation (1997) 189 CLR 520, 75
 leadership changes, 15
 legal expenses, 141
 legal services expenditure, 141
 legislation, 11
 lesbian, gay, bisexual, transgender and intersex members and employees, 115
 letter of transmittal, v

M

Major Projects Report, 33, 46, 64
 Management-Directed Tasks (audit), 68
 market research expenditure, 139–41
McKenna v Chief of Navy [2017] ADFDAT 1, 75
 Mental Health and Wellbeing Strategy 2017–2021, 32, 118
Mercy, USNS, 57, 58
 Middle East, 5, 17, 18, 32, 35, 36, 39, 47, 111
Military Rehabilitation and Compensation Act 2004, 75
 Military Strategy, Australia's, 63
 Military Superannuation and Benefits Scheme (MSBS), 38, 98
 Minister for Defence, 11, 12, 14, 26, 29, 32, 43, 60, 63, 69, 78, 97, 100
 powers, 60
 Minister for Defence Industry, 11, 12, 43, 45, 46, 121
 Minister for Defence Materiel, 12
 Minister for Defence Personnel, 11, 12
 Minister for Veterans' Affairs, iii
 ministerial responsibilities, 12
 ministers, iii, 11, 12
 mission, ii
 multicultural diversity, 113

N

National Australian Defence Force Family Health Program, 34
 National Mental Health Commission, 116–17
 Naval Group, 3
 Naval Shipbuilding Plan, 2, 33, 123
 Naval Shipbuilding Taskforce, 44

Navy

physical employment standards, 118
 Reserves, 84, 85, 86

net cash spend, 50

Newcastle, HMAS, 5

Next Generation Technologies Fund, 2, 43, 44, 46, 121
 Nordic Centre for Gender in Military Operations, 110

O

Ombudsman Act 1976, 75
 On Base Advisory Service, 115
 'One Cadet' reform program, 92

One Defence

approach, 2, 10, 67
 business model, 14, 26, 28, 35
 leadership behaviours, 82, 83, 101
 Operation Augury (support, civil authorities), 39
 Operation Fiji Assist (recovery), 110
 Operation Gateway (maritime surveillance patrols), 32, 39
 Operation Iraqi Freedom, 48
 Operation Manitou (maritime operations), 32, 35
 Operation Okra (Iraq), 5, 42
 Operation Queensland Assist 2017, 5
 Operation Render Safe (Pacific Island nations), 133, 143–4

- Operation Resolute (border protection), 32
 Operation Solania (maritime surveillance patrols), 32, 39
 Operational Gender Advisor course, 110
 operations 2016–17, 6
 costs, 56
 performance summary, 5
 organisational structure, 14
 Outcome 1: protection and advancement of Australia's national interests
 costs, 53–4
 expenses, 51
 programs 1.1–1.17 (see programs Outcome 1)
 Outcome 2: advancement of Australia's strategic interests
 costs, 55
 expenses, 51
 programs 2.1–2.2 (see programs Outcome 2)
 Outcome 3: support for the Australian community and civilian authorities
 costs, 55
 expenses, 51
 Program 3.1 (see programs Outcome 3)
 outcomes, 13, 22
 relationship to purposes, 22, 23
 Oversight Board (First Principles Review), 25, 67
- P**
- Pacific Islands Forum Fisheries Agency, 32, 39
 Pacific Maritime Security Program, 17
 Pacific Patrol Boat Program, 17
 Papua New Guinea Defence Force, 18
 parliamentary business, 72
 parliamentary committees, 72, 74–5
 Parliamentary Joint Committee on Intelligence and Security, 72
 Parliamentary Standing Committee on Public Works, 36, 72, 73, 123
 Pathway to Change: Evolving Defence Culture 2012–2017, 3, 32, 38, 83, 104, 105, 111
 people with disability, 3, 32, 38, 113–15
 performance management, 63–4
 performance overview, 24
 PFAS Taskforce, 135
 Philippines, 5, 57
 Phoenix Australia – Centre for Posttraumatic Mental Health, 117
 physical employment standards, 118
 policy. see Strategic Policy and Intelligence Group
 pollution prevention manual, 131
 polyfluorinated alkyl substances (PFAS), 135
 Portfolio Additional Estimates Statements, 22, 40
 Portfolio Budget Statements
 2016–17, 13, 22, 40, 50, 64
 2017–18, 15, 25, 32
 portfolio structure, iii, 11
 Preparedness and Concurrence Ministerial Advice, 32
 Pride in Diversity, 115
 procurement, 120–4, 125, 130, 132
 simplification, 67
 programs, 13
 programs Outcome 1
 Program 1.1 Strategic Policy and Intelligence, 26, 34
 Program 1.2 Navy Capabilities, 35
 Program 1.3 Army Capabilities, 35
 Program 1.4 Air Force Capabilities, 35
 Program 1.5 Joint Operations Command, 35
 Program 1.6 Vice Chief of the Defence Force, 36
 Program 1.7 Capability Acquisition and Sustainment, 46
 Program 1.8 Defence Executive Support, 28
 Program 1.9 Estate and Infrastructure, 36
 Program 1.10 Chief Information Officer, 37
 Program 1.11 Defence People, 37–8
 Program 1.12 Defence Science and Technology, 44, 46
 Program 1.13 Chief Finance Officer, 29
 Program 1.14 Defence Force Superannuation Benefits, 38
 Program 1.15 Defence Force Superannuation Nominal Interest, 38
 Program 1.16 Housing Assistance, 39
 Program 1.17 Other Administered, 39
 programs Outcome 2
 Program 2.1 Operations Contributing to the Security of the Immediate Neighbourhood, 39
 Program 2.2 Operations Supporting Wider Interests, 39
 programs Outcome 3
 Program 3.1 Defence Contribution to National Support Tasks in Australia, 39, 55
 Project Suakin, 95
 Projects of Concern regime, 124
 property disposals, 25, 26
Public Governance, Performance and Accountability Act 2013, iv, v, 10, 22, 25, 28, 60, 63
Public Governance, Performance and Accountability (Financial Reporting) Rule 2015, 29
Public Governance, Performance and Accountability Rule 2014, 44
Public Interest Disclosure Act 2013, 77
 public interest disclosures, 77
Public Service Act 1999, 99, 100, 106
 purchasing, 120
 Purpose 1: Provide advice to Government
 performance analysis, 25
 performance results, 26–9
 Purpose 2: Deliver and sustain Defence capability and conduct operations
 performance analysis, 32
 performance results, 33–41
 Purpose 3: Develop the future capability Defence needs to conduct operations
 performance analysis, 43
 performance results, 44–6
 purposes, ii, 10, 22
 relationship to outcomes, 23
 relationship to results, 24
- Q**
- questions on notice, 72, 74, 75
- R**
- Reconciliation Action Plan 2015–2018, 111, 112
 Redwing systems, 47
 remediation programs, 131
 remuneration, 96–7, 99–100
 Remuneration Tribunal, 100
Remuneration Tribunal Act 1973, 100
 Reserves
 days served, 85, 86
 funded strength, 84
 gender, 90–1
 headcount, 87
 Indigenous, 112
 paid strength, 86
 recruitment, 38
 Total Workforce Model, 95
 Resource Management Guide—*Supplier Pay On-Time or Pay Interest Policy*, 120

RESTORE (PTSD treatment), 117
 risk management, 64–5
 Risk Management Framework, 25
 role, ii
 role charters, 83
 Royal Australian Air Force. *see* Air Force
Royal Australian Air Force Veterans' Residences Act 1953, 11
 Royal Australian Navy. *see* Navy
 Royal Commission into Institutional Responses to Child Sexual Abuse, 6, 92

S

scholarships, 101
 Science in Australia Gender Equity program, 79
 SEA 5000 Phase 1 Future Frigate program, 3
 Seahawk Romeo helicopters, 3
 Secretary of the Department of Defence. *see also* Acting Secretary of the Department of Defence
 retirement, 4
 statement of preparation of annual performance statements, 22
 SeMPRO. *see* Sexual Misconduct Prevention and Response Office
 Senate
 committees, 72, 74
 questions on notice, 74, 75
 Senate Economics References Committee, 74
 Senate estimates, 74–5
 Senate Finance and Public Administration References Committee, 74
 Senate Rural and Regional Affairs and Transport References Committee, 74
 Senate Select Committee into the Scrutiny of Government Budget Measures, 74
 Senate Standing Committee on Foreign Affairs, Defence and Trade, 74, 75
 Senior Executive Service (SES)
 APS salary ranges, 100
 mental health awareness program, 118
 performance pay, 101, 102
 women, 109
 senior leadership
 changes, 15
 risk workshops, 65
 Senior Leadership Group, 65, 82, 83
 remuneration, 100
 Service Police professional standards, 69
Services Trust Fund Act 1947, 11
Sex Discrimination Act 1984, 106
 Sexual Ethics Education, 108
 sexual misconduct, 108
 Sexual Misconduct Prevention and Response Office (SeMPRO), 108
 Shoalwater Bay pest animal management program, 134
 Sinai, 5
 small business procurement initiatives, 120–1
 Smart Buyer program, 2, 26, 28, 32, 35, 43, 46, 66, 125
 smoke dispersal modelling, Iraq, 3
 Solomon Islands, 133, 143–4
 South Sudan, 5, 32, 111
 Sovereign Industrial Capability Assessment Framework, 121, 122
 Specialisterne, 3, 114
 STEM disciplines, 79, 96
 strategic defence interests, ii
 Strategic Policy and Intelligence Group, 34

Strategic Policy Committee, 62
 Strategy Framework 2017, 2, 25, 63
Study into the Business of Sustaining Australia's Strategic Collins Class Submarine Capability: Beyond Benchmark (Coles Report), 3
 superannuation, 38, 97–8
 superannuation nominal interest, 38
Supplier Pay On-Time or Pay Interest Policy, 120

T

tactical payment scheme, 144
 Task Group Taji, 5
 Team Defence Australia, 43, 121
 Timor-Leste, 18, 20, 57
 Total Workforce Model (ADF), 38, 95
 Transition Support Services, 98–9
 Tropical Cyclone Debbie, 5, 39
2014–15 Major Projects Report (ANAO report no. 16 of 2015–16), 64

U

United Nations Security Council, 110
 United States
 Enhanced Air Cooperation, 30
 Force Posture Initiatives, 30–1
 investment from, 30, 31
 Pacific Fleet—Pacific Partnership, 57–8
 University of New South Wales Canberra, 79, 101

V

Values (APS), ii
 vetting practices, 25, 28
 Vice Chief of the Defence Force
 Investment Committee, 25, 26, 27, 33, 44, 46, 60, 61, 67, 125

W

waste management, 130
 White Paper. *see* Defence White Paper
Williams v Chief of Army [2016] ADFDAT 3, 75
 women
 initiatives for, 62, 109, 110
 Senior Executive Service (SES), 78, 109
Women in the ADF Report 2016–17, 109, 111
 Women, Peace and Security
 Resolution 1325, 18, 110
 seminar, 18
 work health and safety
 achievements, 105
 audits, 102
 Comcare
 investigations, 102
 notices, 103
 culture, 104, 106
 incidents, 103
 initiatives, 102
 safety awareness surveys, 104
Work Health and Safety Act 2011, 102
 Work Health and Safety Branch, 102
 Work Health and Safety Committee, 32, 102
 Work Health and Safety Strategy 2017–2022, 102, 104
 workforce. *see also* Australian Defence Force (ADF); Australian Public Service (APS); Defence People Group
 Defence Strategic Workforce Plan 2016–2026, 3, 82, 96
 Defence White Paper allocation, 38, 82, 86
 diversity, 3, 32, 38, 78, 113

gender, 3, 32, 78–9
headcount, 82, 87, 88
Indigenous participation, 3, 32, 78, 96, 111–12
location, 88
people with disability, 3, 32, 38, 113–15
planning, 83–91
recruitment, 87
staffing (actual), 87–91
Total Workforce Model (ADF), 38, 95
women, 38, 78–9, 84, 90–1, 109
Workplace Remuneration Arrangement 2014–17, 96–7, 100

Y

Yampi Sound Training Area (WA), 4, 132, 134
YourSay survey, 104

[blank]

Appendix C Australian Financial Security Authority (AFSA)

Analysis

[T]he personal insolvency system is required to meet a number of objectives for a range of users and stakeholders. It has an economic imperative, but it is also an expression of social justice (Australian Financial Security Authority 2019, 4).

The above statement from the 2018-19 Annual Report regarding commercial imperatives and social justice suggests that both priorities would be evident in Australian Financial Security Authority (AFSA) structures and systems. The economic imperative is clearly seen in the data services the agency provides to the users and stakeholders and in the exploration of further clients to service in the financial sector (Australian Financial Security Authority 2019, 50). The ASFA is a regulatory institution, however, its stated commercial goals included:

It's important that we use our resources in a way that is efficient and commercially sound so that creditors benefit from the recovery of funds (Australian Financial Security Authority 2019, 42).

Social justice does not appear again in the report. There is no strategy around it except access to information and data integrity. Certain creditors appear to receive special consideration and access to the regulator's policy development considerations, as their Annual Report for 2019 states, "[w]e met with creditors, including senior representatives from a number of major banks, to discuss the law reform changes and to encourage their support of debtors under the new regime" (Australian Financial Security Authority 2019, 25).

The following year there was clarification about what was seen as the fundamental driver, which was to "create efficiencies in our transactional decision-making that enable us to provide more direct, tailored services to those who need them ... and (Australian Financial Security Authority 2020, 3). A key focus the AFSA is to develop new information products"

(Australian Financial Security Authority 2020, 4). The latter is a process of value adding what Sturgess called “domain knowledge”, a core asset that agencies like AFSA are preparing for commercialisation because there is market demand (Sturgess 2015, 18).

The AFSA in directing their attention towards business processes and information products is not to develop the business for themselves but “to identify and transfer bankruptcies that are better suited to being managed by the private sector” (Australian Financial Security Authority 2020, 44).

Further, their stated orientation is “to deliver value to creditors by exercising our powers in a commercially sound way” (Australian Financial Security Authority 2020, 11) which suggests the regulatory function of the AFSA has been subordinated to commercial imperatives as indicated by changes to legislation which expand the business. For example, the commercial imperatives of this ‘regulatory’ agency are served by a proposal to change the bankruptcy discharge period from three years to one year effectively allowing those who come into the market and go bankrupt to return to the market after 12 months. This would most likely not serve as deterrent nor afford time to redress the problems that led to the bankruptcy in the first place. The government’s reasoning for lowering the default period is to encourage entrepreneurship, but it has been argued that in the vast majority of bankruptcy cases consumer credit is the main problem (Brown and Dickfos 2016). What the shorter period could achieve is an increase in the churn of bankrupts to be processed thereby producing more transactions and data which is the commodity at the centre of the AFSA business model. Regarding social impact, there is the growing number of firms who deliberately go bankrupt to avoid paying creditors. This is a well-documented problem in the construction industry where most trades are subcontractors who get saddled with bad debt from construction companies going into receivership as a matter of business strategy and returning to the market under another brand.

The new legislation also marks a shift from offences to contraventions. In 2019–20 AFSA reported that:

We use our **coercive powers** to assist practitioners to obtain information and assets, learn from the complaints and tip-offs we investigate, and take steps to **impose sanctions** where we uncover serious misconduct. (Australian Financial Security Authority 2020, 35).

The regulatory or enforcement role of the institution itself is lessened because the Personal Properties Securities Register (PPSR) is perceived as a “financial risk management and consumer protection tool depend[ent] on flexible underlying technology” (Australian

Financial Security Authority 2020, 5). In essence, it is the market supported by the ICT network, which purports to serve a regulatory function because in the neoliberal world the market is held to solve most problems. The agency announced in 2020 that it had released its “first in-depth market report” (Australian Financial Security Authority 2020, 8).

The regulatory roles of Inspector-General of Bankruptcy, Official Receiver, Official Trustee in Bankruptcy and the Personal Property Securities Registrar have now all been subsumed under the role of Chief Executive. The Registrar role was the last role to be transferred to the Chief Executive on 30 June 2020. The powers of the regulator are described facilitating the business of data collection rather than that of a regulator committed to enforcing laws:

We use our coercive powers to assist practitioners to obtain information and assets, learn from the complaints and tip-offs we investigate, and take steps to impose sanctions where we uncover serious misconduct. (Australian Financial Security Authority 2020, 35).

The human element of the system is slowly receding, subsumed by data sets. The AFSA did not mention the word ‘data’ in their 2013–14 annual report, but by 2019–20 the Chief Executive exclaimed, “[d]ata is central to everything we do.” (Australian Financial Security Authority 2020, 3).

[blank]

Australian Financial Security Authority 2014-15 Annual Report

This Index to the Australian Financial Security Authority 2014-15 Annual Report is reproduced under the terms of a Creative Commons Attribution 3.0 Australia licence: see Australian Financial Security Authority 2014-15 Annual Report available at <https://www.afsa.gov.au/annual-report/annual-report-2014-15> This index was created by the author. The details of the relevant licence conditions are available on the Creative Commons website, as is the full legal code for the CC BY 3.0 AU licence (<http://creativecommons.org/licenses/by/3.0/au/legalcode>). Shaded emphasis has been added.

INDEX

A

Aboriginal and Torres Strait Islander employees, 61
 advertising, 74
 AER Online, 2, 22, 34
 Agency Multicultural Plan, 61
 agreements, employment, 62, 65
 alleged offences referred, 33, 35, 37
 annual reports, viii, 70, 76
 annulments, 16
 APS. *see* Australian Public Service
APS Statistical Bulletin, 76
 asset management, 70
 assets, 39, 40, 41. *see also* Confiscated Assets Account; Confiscated Assets Special Account
 Attorney-General, 3, 5, 8, 44, 69
 Attorney-General's Department, 26, 30, 42, 44, 45
 Audit Committee, 19, 57–8
 Auditor-General, 59, 71
 audits, 57, 58
 AusTender, 70, 71
 Australian Accounting Standards, 66
 Australian Federal Police, 24, 40
 Australian Information Commissioner, 59
Australian Insolvency Journal, 23
 Australian National Audit Office, 57, 66
 Australian Public Service (APS), 30
 Code of Conduct, 60, 61
 state of the service report, 76
 Values, 60, 61
 Australian Restructuring Insolvency and Turnaround Association (ARITA), 23, 24, 30
 Australian Securities and Investments Commission, 24, 42
 Australian Taxation Office, 24, 38

B

bankrupt estates. *see* insolvent estates
 bankruptcies
 debts not provable, 42
 discharged, 46
 discharged in error, 45
 statistics, 33
Bankruptcy Act 1966, 10
 administration of insolvent estates, 32–3
 amendments, 42–3
 cases, 38
 determinations, 43
 Inspector-General
 responsibilities, 12, 27
 investigation of offences (see investigation of Bankruptcy Act offences)
 minor infringements, 36
 objections to discharge of bankrupt, 25, 27

official receiver notices, 16, 22
personal insolvency agreements (Part X), 10, 27
realisations, 32, 33
remuneration of registered trustees, reviews, 31
section 73, 26, 27
section 77C, 42
section 116, 42
section 225, 43
subsection 52(1A), 36
subsection 267B(1), 36
voluntary compliance, 36

Bankruptcy (Estate Charges) Act 1997, 10
 Bankruptcy (Estate Charges) (Amount of Charge Payable) Determination 2015, 43, 69
 Bankruptcy (Fees and Remuneration) Determination 2015, 69
 bankruptcy notices, 12, 24
 Bankruptcy Register Search, 2, 22, 25
 Business Solutions Planning Group. *see* Risk and Operations Management Committee
 business-to-government (B2G) channel, 2, 50

C

capability development, 59, 60
 Chief Executive. *see also* Inspector-General in Bankruptcy
 as Inspector-General in Bankruptcy, 10
 reporting to Attorney-General, vii
 responsibilities, 56
 review, 2–4
 Chief Operating Officer Group, 12
 Civil Law and Justice Legislation Amendment Bill 2014, 42
 Civil Law and Justice (Omnibus Amendments) Bill 2015, 43
 client satisfaction, 50
 client service charter, 18
 Client Services division, 12. *see also* National Service Centre
 client surveys, 50
 Code of Conduct (APS), 60, 61
 committees
 operational, 56, 57–8
 registration, 29–30
 site consultative, 58, 62
 Commonwealth Contracting Suite, 71
 Commonwealth Criminal Assets Confiscation Taskforce, 39, 40
 Commonwealth Director of Public Prosecutions (CDPP), 24, 35, 36, 37, 40
 Commonwealth Disability Strategy. *see* National Disability Strategy
 Commonwealth Ombudsman, 59
 complaints about AFSA received, 20
 Commonwealth Procurement Rules, 70, 71
 Commonwealth Risk Management Policy, 58
 complaints
 about AFSA's services, 19–20
 against insolvency practitioners, 28–9

complaints and compliments register, 19, 50
 complex offences, 35, 36
 compliance letters, 35, 36
 compliance offences, 35–6
 compliments, 19, 20
 Confiscated Assets Account, 39, 40
 Confiscated Assets Special Account, 40
 consultancies, 70
 contracts, 70, 71
 contributions from bankrupts, 32, 33
 controlled property, 40
 controlling trustees (solicitor), 25, 26
 corporate governance, 56–8
 corporate plan, 6, 58
 Corporate Registers Forum conference, 3, 47
Corporations Act 2001, 42
 correction, 2013–14 annual report, 76
 cost recovery, 69
 Cost Recovery Guidelines, 5, 69
 cost recovery impact statements, 69
 court orders, 8, 10, 12, 39, 40
 creditors
 complaints against personal insolvency
 practitioners, 28–9
 Official Trustee reports, 32
Crimes Act 1914, 39
Criminal Code Act 1995, 35
Customs Act 1901, 10, 39, 40

D

debt agreement administrators. *see also* registered trustees
 complaints against, 29
 disciplinary action, 28
 inspection programme, 26–7
 registration, 29, 30
 statistics, 30
 unregistered, 25
 debt agreements, 5, 10, 12, 23, 24, 33. *see also* personal insolvency agreements
 debtors
 complaints against personal insolvency
 practitioners, 28–9
 petitions, 33
 debts, not provable in bankruptcy, 42
 Department of Finance, 52, 71
 Department of Social Services, 76
 determinations, 43, 53, 69
 disability employment strategy, 61
 disability reporting, 76
 discharge of registration, 45, 46
 objections, 25, 27
 Diversity Programme, 2014–17, 61
 dividends paid, 33
 divisions, 12

E

ecologically sustainable development, 75
 employee recognition programme, 62
 employees. *see also* Senior Executive Service
 agreements, 62
 conditions, 62
 consultation, 62
 Indigenous, 61
 individual flexibility arrangements, 62
 learning and development, 12, 60
 non-English-speaking backgrounds, 61
 non-ongoing, 64
 non-Senior Executive Service, 62, 65
 numbers, 63
 part-time, 64
 people with disability, 61
 performance management, 59, 60
 performance pay, 62
 profile, 62–4
 reward and recognition, 62
 salary ranges, 65
 training, 4, 61
 energy consumption, 75
 Enterprise Agreement 2011–14, 62, 65
 entity resource statement 2014–15, 67
 environmental performance, 75
Environment Protection and Biodiversity Conservation Act 1999, 75
 estates. *see* insolvent estates
 ethical behaviour, 60–1
 exempt contracts, 71
 expenses 2014–15, 68
 external scrutiny, 59

F

Federal Court of Australia, 24
 Federal Register of Legislative Instruments, 51
 fees and charges
 cost-recovery regime, 69
 determinations, 43, 69
 maintenance, 46
 Finance, People and Capability division, 12
 Financial Counselling Australia, 24
 financial performance, 66
 financial statements, 77–167
 forfeited assets, 39, 40, 41
 forfeiture orders, 40
 forums, 23, 24, 50
 fraud control, 58
Freedom of Information Act 1982, 71, 76
 freedom of information, 76
 functions, 8–9

G

goals, 2015–16, 6
 govCMS, 52
 governance structure, 56
 Government Contact Centre Summit, 3
 groups and divisions, 12
 Guidelines for Rehabilitation Authorities 2012, 74

H

Harmony Day, 61
 head office, 75
 HELP debts, 42

I

ICT Services division, 12
 income contribution, 27, 32, 33
 Indigenous Australian Government Development Programme, 61
 Indigenous employees, 61
 Indigenous employment strategy, 61
 information and registry service, 22–5. *see also* National Personal Insolvency Index (NPII)
 deliverables, 22
 key performance indicators, 22, 24
 information provision, 23
 Information Publication Scheme, 76
 infringement notices, 35, 36
 innovation programme, 21
 Insolvency and Reconstruction Law Committee, 24
 Insolvency and Trustee Services division, 12
 insolvency information packs, 23
 Insolvency Law Reform Bill 2014, 42
 Insolvency Practitioner Compliance Programme 2014–15, 3, 6
Insolvency practitioner remuneration (video), 5
 insolvency practitioners. *see also* debt agreement administrators; registered trustees, regulatory framework for insolvency practitioners
 creditor meetings, oversight, 26, 27
 pre-referral enquiries, 35
 insolvency services, complaints about, 19
 insolvent estates, 8, 32–3. *see also* Official Trustee
 deliverables, 32
 dividend payments, 33
 key performance indicators, 32, 33
 realisations, 32, 33

Inspector-General in Bankruptcy

annual reports, vii
Chief Executive as, 10
functions, 25–6
powers of Official Trustee exercised by, 39
reporting to Attorney-General, vii
responsibilities, 12, 27
review, internal, 2–4

reviews

objections to discharge, 27
registered trustee remuneration, 31

role, 10**statutory reviews, 27**

Inspector-General Practice Statements, 26, 27, 28, 29, 36
 internal auditors, 57
 International Association of Commercial Administrators conference, 3, 47
 International Association of Insolvency Regulators conference, 3
 International Day of People with Disability, 61
 investigation of Bankruptcy Act offences, 35–7
 briefs of evidence submitted to CDP, 35, 37
 deliverable, 35
 investigations, 17
 key performance indicator, 35
 prosecutions, 38
 referrals, 35, 36, 37
 statistics, 36, 37
 warning letters, 36
 ITSA Enterprise Agreement 2011–14, 62, 65

J

Joint Committee of Public Accounts and Audit, vii

L

Law Council of Australia, 24
 learning and development, 12, 60
 Legal and Governance division, 12
 legislative framework of AFSA, 10
 letter of transmittal, iii

M

maintenance fee, 46
 market research, 74
 meetings, 26, 27
 minister. *see* Attorney-General
 Moore Stephens, 57

N

NAIDOC Week, 61
 National Australian Built Environment Rating System (NABERS), 75
 National Consultative Committee, 58, 62, 74
 National Disability Insurance Scheme, 42
 National Disability Strategy 2010–20, 76
 National Management Board, 3, 5, 19, 44, 56, 57, 74
 National Personal Insolvency Index (NPII), 12, 22, 24–5
 business-to-government (B2G) channel, 2, 50
 key performance indicator, 24
 online self-service register, 2, 22, 25
 purpose, 24–5
 search statistics, 16, 25

National Service Centre, 5, 18, 21, 24, 48, 49, 50
 interactive voice response system, 21
 newsletters, 23, 57
 notices. *see* bankruptcy notices; infringement notices; objections to discharge
 NPII. *see* National Personal Insolvency Index

O

objections to discharge
 notices, 25
 reviews, 27
 objectives, 45
 offences. *see also* complex offences; compliance offences; investigation of Bankruptcy Act offences
 minor, 36
 referrals, 33, 35, 36, 37
 offenders
 alleged, 36
 found guilty of criminal offences, 38
Official Receiver
appointments, 3
bankruptcy notices, 12, 24
insolvency proceedings notices, 22
offence referrals, 35, 36
powers, 12, 42
role, 10
sequestration orders, 23, 36
statutory notices, 16, 22
Official Trustee in Bankruptcy
 administered estates, 33
 administered property, proceeds of crime, 39–40
 administrations (Part X), 27
 dividends paid, 33
 forfeited property, 39
 functions and powers, 32
 personal insolvency, 33
 proceeds of crime, 39, 40, 41
 legislation, 10
 offence referrals, 36
 personal insolvency agreements, 33
 property control, 10, 39–41
 public interest, 32
 realisations, 32, 33
 reports to creditors, 32
 responsibilities, 10
 restrained property, 39, 41
 role, 10, 12
 Ombudsman. *see* Commonwealth Ombudsman
 online service delivery, 2. *see also* websites
 bankruptcy self-service register, 2, 22, 25
 business-to-government (B2G) channel, 2, 50
 for insolvency practitioners, 2, 22, 34
 operating surplus, 66
 operational plans, 58
 Operations Forum (PPS), 50
 organisational learning programmes, 60

organisational structure, 11
 Outcome 1, 13, 68
 outcome and programme structure, 13
 outlook, 2015–16, 6–7

P

parliamentary committees, 59
 pecuniary penalty orders, 39, 40
 people with disability, 61, 76
 performance management, 59
 performance summary, 16–17
 personal insolvency, 33. *see also* National Service Centre
 AFSA functions, 8
 applications, 22, 24
 statistics, 51
 personal insolvency agreements
 Official Trustee's role, 33
 register, 24
 Personal Insolvency News site, 23
Personal insolvency practitioner compliance report 2013–14, 5
 personal insolvency practitioners. *see also* debt agreement administrators; trustees
 complaints about, 28–9
 Personal Insolvency Professionals Association, 24
Personal Insolvency Regulator newsletter, 23
***Personal Property Securities Act 2009*, 5, 9, 10, 48**
amendments, 45, 53
determinations, 53
fees, 69
powers
 to amend or remove registrations, 51
 to restore registrations, 45
review, 3, 44–5, 47
section 158, 51
section 186, 45
section 343, 44
subsection 147(5), 49
subsection 147(6), 50
subsection 190(4), 53
verification statements, 51
 Personal Property Securities Amendment (Deregulatory Measures) Bill 2014, 53
 Personal Property Securities Amendment (Motor Vehicles) Regulation 2014, 53
 Personal Property Securities Deputy Registrar, 3
 Personal Property Securities (Fees) Determination 2015, 53
 Personal Property Securities Register (PPSR), 48–51. *see also* National Service Centre
 access to information, 49–50
 business guide, 47
 client satisfaction, 50
 complaints about, 19
 contact centre, 48
 cost recovery impact statements, 69
 data analytics capability, 45

- deliverable, 48
 - enhancement upgrades, 47
 - fees, 46
 - inaccurate registrations, 46
 - integrity, 46
 - key performance indicators, 48, 50
 - misuse, 46
 - objectives, 45
 - refusal of access to, 49–50
 - registrations
 - by collateral class, 51
 - removed or amended, 51
 - repayment to Commonwealth, 66
 - stakeholder engagement, 50
 - surveys, client, 50
 - suspension of, 49, 50
 - website
 - statistics, 48
 - upgrade, 49, 52
 - Personal Property Securities Registrar**
 - actions, 51**
 - appointment, 3, 44**
 - introduction by, 44–7**
 - powers, 51**
 - responsibilities, 10, 45**
 - role, 10**
 - Personal Property Securities Regulations 2010, 53
 - practice statements. *see* Inspector-General Practice Statements
 - pre-referral enquiries, 35
 - priorities, 2015–16, 6
 - Privacy Act 1988*, 58
 - Proceeds of Crime Act 1987*, 10, 39, 40
 - Proceeds of Crime Act 2002*, 10, 39, 40, 41
 - proceeds of crime property, administration of, 39–40
 - Confiscated Assets Account, 39, 40
 - Confiscated Assets Special Account, 40
 - court orders, 39, 40
 - deliverables, 39
 - key performance indicator, 39
 - purpose, 39
 - restrained property, 39, 41
 - procurement, 70
 - programme
 - expenses, 68
 - structure, 13
 - programmes
 - 1.1: Personal insolvency and trustee services
 - Component 1.1.1: An efficient information and registry service, 22–5
 - Component 1.1.2: An effective regulatory framework for insolvency practitioners, 25–30
 - Component 1.1.3: Administration of insolvent estates where private insolvency practitioners are not appointed, 32–3
 - Component 1.1.4: Investigation of Bankruptcy Act offences, 35–7
 - Component 1.1.5: Administration of proceeds of crime property, 39–40
 - 1.2: Operation of a national register of security interests in personal property, 44–51
 - Component 1.2.1: A Personal Property Securities Register and registry services, 48–51
 - prosecutions, 38
 - briefs of evidence to CDFP, 37
 - cases, 38
 - offences, proven, 37
 - offenders found guilty, 38
 - Public Governance, Performance and Accountability Act 2013*, 5, 6, 70
 - Public Governance, Performance and Accountability (Consequential and Transitional Provisions) Act 2014*, 42
 - Public Governance, Performance and Accountability (Financial Reporting) Rule 2015, 42, 66
 - Public Service Act 1999*, 62
 - publications, 23
 - purchasing, 70
 - purpose, 8
- R**
- realisations, 32, 33
 - realisations charge, 5, 69
 - Reconciliation Action Plan, 61
 - registered trustees. *see also* debt agreement administrators
 - annual estate returns, 34
 - complaints against, 28–9
 - disciplinary action, 28
 - inspection programme for, 26–7
 - objections to discharge reviews, 27
 - offence referrals, 36
 - registration, 29, 30
 - remedial action, 27
 - remuneration, 5, 23, 31
 - resignations, 30
 - statutory reviews of decisions, 27
 - Registrar of Personal Property Securities. *see* Personal Property Securities Registrar
 - registry service. *see also* National Personal Insolvency Index (NPII)
 - deliverables, 22
 - functions, 24
 - key performance indicator, 24
 - Regulation and Enforcement division, 5, 23. *see also* Inspector-General in Bankruptcy
 - complaints, 28
 - Confiscated Assets Account, 39, 40
 - Confiscated Assets Special Account, 40
 - creditor meetings, 26, 27
 - inspection programme, 26–7
 - referrals, 33
 - role, 9, 12
 - Regulator Performance Framework, 3, 6, 9

regulatory framework for insolvency practitioners, 25–30. *see also* insolvency practitioners; Inspector-General in Bankruptcy deliverables, 26 key performance indicators, 26, 27, 29 remuneration. *see* registered trustees; trustees restraining orders, 45 reviews objections to discharge, 27 proposals, 27 registered trustee remuneration, 31 statutory, 27 trustees' decisions, 10, 31 Risk and Operations Management Committee, 19, 57 risk management, 58. *see also* fraud control roles, AFSA, 3, 40

S

Safety, Rehabilitation and Compensation Act 1988, 74 search to registration ratio, 45 section 73 compositions, 26 security interests leases of serial-numbered good, 45, 53 *Selected statistics 2013–14*, 5 seminars, 24 senior executive, 11, 57, 62 responsibilities, 11, 56 Senior Executive Service, 61 salary ranges, 65 sequestration orders, 23, 36 *SFS Projects Australia Pty Ltd v Registrar of Personal Property Securities* (No. 2) [2014] FCA 987, 45 site consultative committees, 58, 62 solicitor controlling trustees, 25, 26 staff. *see* employees stakeholder engagement, 2, 50 Stakeholder Forum (PPS), 50 stakeholders information for, 23, 50 training, 24 statutory reviews, 27. *see also* *Personal Property Securities Act 2009*—review Stepping Into programme, 61 strategic plan, 58 Studies Assistance Scheme, 60

T

Technical Forum (PPS), 50 trade support loan debts, 42 *Trade Support Loans (Consequential Amendments) Act 2014*, 42 training of stakeholders, 24 Treasury, 42 trustee function (AFSA's). *see* Official Trustee

Trustee Online Services. *see* AER Online trustees. *see also* controlling trustees; Official Trustee in Bankruptcy; registered trustees complaints against, 28–9 inspection programme for, 26–7 registration, 29, 30 remedial action, 27 remuneration refunded to estate (review), 31

U

Unmanageable debt—compare your options, 5 unregistered debt agreement administrators, 25

V

Values (APS), 60, 61 verification statements, 51 voluntary compliance, 36 voluntary debtor's petitions, 33 voting process, 12

W

warning letters, 36 websites, 2, 18, 21, 22–3, 24, 69 whistleblowers, 61 *Work Health and Safety Act 2011*, 74 work health and safety, 74 workers' compensation, 74

Australian Financial Security Authority Annual Report 2019-20

This Index to the Australian Financial Security Authority Annual Report 2019-20 is reproduced under the terms of a Creative Commons Attribution 4.0 International (CC BY 4.0) licence: see Australian Financial Security Authority 2019-20 Annual Report available at <https://www.afsa.gov.au/annual-report-pdf/annual-report-2019-20> This index was created by the author. The details of the relevant licence conditions are available on the Creative Commons website (<http://creativecommons.org/licenses/by/4.0>), as is the full legal code for the Creative Commons BY 4.0 licence. Shaded emphasis has been added.

Index

A

- 'A Day in the Life' program, 7
 - AASB 16 – Leases standard, 57
 - Aboriginal and Torres Strait Islander people, 72–3, 80
 - administrator misconduct, 60
 - Advancing Data Sharing in Government Conference 2020, 9
 - advertising, 80, 150
 - AFSA Enterprise Agreement 2018, 74
 - AFSA People Policy 17/03 – Declarations of Personal, Financial and Other Interests, 74
 - AFSA People Policy 19/06 – Remuneration Policy, 75
 - AFSA Regulator Performance Framework, 28
 - AFSA website, 29, 53, 55
 - AFSAsandpit, 6, 15, 23, 29, 34, 43, 48, 50, 53
 - agreements, employment, 74
 - annual performance statements 2019–20, 20, 21, 22–56
 - annual reports, v, 151
 - applications for bankruptcy, 47, 54
 - APS. *see* Australian Public Service
 - APS Statistical Bulletin, 73
 - asset management, 78
 - assets
 - COVID-19 pandemic impacts, 40, 45, 46
 - sales, 40, 45
 - Association of Independent Insolvency Practitioners, 15, 39
 - assurance strategy, 68
 - Attorney-General, v, 68
 - portfolio, 10
 - Attorney-General's Department, 5
 - Audit Committee, 65–6, 132–3
 - Auditor-General, 68, 79
 - audits, 66
 - AusTender, 79, 80
 - Australian Federal Police (AFP), 40
 - Australian Finance Industry Association, 31
 - Australian Government Charging Framework, 57, 58
 - Australian Government Cost Recovery Guidelines, 57
 - Australian Government Information Security Manual, 67
 - Australian Government's Cost Recovery Guidelines, 57
 - Australian Information Commissioner, 68
 - Australian Institute of Credit Management, 31
 - Australian National Audit Office, 65, 84–5
 - access clause, 79
 - Australian Network on Disability, Stepping Into program, 73
 - Australian Public Service (APS)
 - Code of Conduct, 76, 77
 - Employee Census, 76, 77
 - Values, 76–7
 - Australian Public Service Commission
 - Jawun APS Secondment Program, 72, 73
 - State of the Service report, 73
 - Australian Public Service Employee Census, 76, 77
 - Australian Restructuring Insolvency and Turnaround Association (ARITA), 15, 28, 31, 39, 44, 49
 - Australian Securities and Investments Commission, 15, 39, 49, 71
 - Australian Small Business and Family Enterprise Ombudsman, 4, 31
 - Australian Taxation Office, 15, 29
 - awards, HRD Innovative HR Teams 2020, 70
- ### B
- bankruptcy
 - statutory minimum debt triggering proceedings, 60, 61
 - transfer to private sector, 44
 - Bankruptcy Act 1966, 12, 13, 14, 61**
 - amendments, 60, 61**
 - Inspector-General responsibilities, 13, 17**
 - offences, 12, 13, 17, 33, 44, 45**
 - roles created by, 13**
 - temporary changes, 4**

- Bankruptcy (Estate Charges) Act 1997*, 12
Bankruptcy Amendment (Debt Agreement Reform) Act 2018, 33, 60
 bankruptcy notices, 60
 Bankruptcy Online, 4, 8, 27, 38, 43
 Bankruptcy Register Search, 37
 Bankruptcy Regulations 1996, 60, 61
 bankrupts
 compliance, 36
 data collection, 44
 payments to trustees, 34
 Behavioural Economics Team (Australian Government), 5, 51
 bstreetsmart NSW 2019, 6, 31
Business Funding Guide and FitsME – Essential Guide to Business Funding, 31
 business planning process, 67
 business-to-government (B2G) service, 38
- C**
- capability development, 3, 48, 69, 70
 Chartered Accountants Australia and New Zealand, 31
Chief Executive. see also Inspector-General in Bankruptcy; Registrar of Personal Property Securities
 annual performance statements, 22
 as accountable authority, v, 16, 22, 86
 as Inspector-General in Bankruptcy, 13
 as Registrar of Personal Property Securities, 13
 review, 2–5
 Client and Digital Services Division, 17
 client-centred approach, 11
 client survey, 51
 cloud-based services, 7
 Code of Conduct (APS), 76, 77
 Comcare, 78
 committees, 64, 65–6
 Commonwealth Contracting Suite, 79
 Commonwealth Director of Public Prosecutions, 15
Commonwealth Electoral Act 1918, 80
 Commonwealth Fraud Control Framework, 68
 Commonwealth Ombudsman, 68
 Commonwealth Procurement Rules, 78, 79, 80
 complaints, 48
 compliance
 finance law, 68
 official cautions, 36
 compliance data, 36
 compliance reporting, 33
 consultants, 80, 149
 consumer protection, 5
Coronavirus Economic Response Package Omnibus Act 2020, 33, 60
 coronavirus pandemic. *see* COVID-19 pandemic
 corporate governance, 64–8
 Corporate Plan 2019–20, 20, 21, 67
 corrections (annual report), 151
 corruption, 68
 cost recovery, 41, 57–8
 implementation statements, 58
 Cost Recovery Guidelines (Australian Government), 57
 Council of Australian Governments, 73
 Council of Small Business Organisations Australia, 31
 COVID-19 pandemic
 AFSA revenues, 57, 58
 assets, 40, 45, 46
 bankrupts, impacts, 27
 data management, 3, 28
 debt protection measures, 4, 5, 8, 29, 30, 33, 34, 49, 52
 employees, 52, 70, 72, 74, 76, 77
 enhancement program, 50
 fees and charges, 41, 44
 legislation, 4, 44, 49, 60
 personal insolvency system, 3–4, 8
 regulatory role, 4
 response, general, 2, 23
 restrictions, 32, 34, 45, 46
 small businesses, impacts, 31
 stakeholder engagement, 9, 27, 31, 32, 34
 technological response and impacts, 3, 5, 9, 35
 temporary changes, 4, 8, 33, 52
 creditor bankruptcy notices, 38

creditors
 outcomes for, 35, 45
 returns, bankruptcy administrations, 40
 statutory minimum debt triggering
 bankruptcy proceedings, 60, 61
 unsecured, 4, 8
Crimes Act 1914, 13
 cultural awareness program, 72
Customs Act 1901, 13

D

data

assets, 17

capability, 3, 12

integrity, 28

value of, 3

debt agreement administrators, 4, 13, 28,
 33, 39
 debt agreements, legislative changes, 5, 6,
 33, 60
 Debt Agreements Online, 38
 debt protection, temporary, 4, 5, 8, 29, 30,
 33, 34, 49, 52
 debtors
 default period protected from
 enforcement, 4, 5, 33, 60
 petition, 33, 36, 43
 statutory minimum debt triggering
 bankruptcy proceedings, 60, 61
 statutory period response to
 bankruptcy notice, 60, 61
 declaration of intention form, 33, 60
 declarations, 60
 Deputy Chief Executive Group, 17, 71
 digital design capability, 3, 48
 digital services, 43
 Digital Transformation Strategy, 8
 disability network, 73
 disability reporting, 73
 'Dispute a registration' guide, 30
 diversity and inclusion strategy, #iBelong,
 70–3
 Diversity Council of Australia, 70
 divisional plans, 67
 divisions, 17

E

ecologically sustainable development, 81
 email enquiries, 50, 51
 employee assistance program, 78
 employees. *see also* Senior Executive
 Service (SES) remuneration; workforce
 agreements, 74
 capability development, 76
 conditions, 74
 consultation, 77
 COVID-19 impacts, 52, 70, 72, 74
 data and analytics, 70
 diversity and inclusion, 70–3
 flexibility arrangements, 74
 level cap, 70
 performance pay, 74
 profile, 134–44, 151
 reward and recognition, 74
 salary ranges, 74
 training and development, 72, 76, 77,
 78, 79
 energy consumption, 81
 Energy Efficiency in Government Operations
 policy, 81
 enforcement, 11, 12, 17, 37, 60
 default period debtor is protected from,
 4, 5, 33, 60
 enhancement program, 50
 enquiries to ASFA, 17, 50–1
 Enterprise Agreement 2018, 74
 Enterprise Risk Manager, 65
 entity resource statement, 130–1
*Environment Protection and Biodiversity
 Conservation Act 1999*, 81
 environmental performance, 81
 ethical behaviour, 76–7
 executive remuneration, 74–5, 145–8
 exempt contracts, 79
 expenses, 131
 external scrutiny, 68

F

Facebook, 29, 30
Fair Work Act 2009, 74
 Federal Circuit Court, 15
 Federal Court, 15
 feedback, 3, 6, 23, 27, 29, 48, 51, 53, 75

- fees and charges, 41, 57
 - finance law compliance, 68
 - financial capability, 56
 - Financial Counselling Australia, 7, 15, 39, 52
 - financial counsellors, 7, 27, 29, 34, 48–9, 54, 56
 - financial performance, 57–8
 - financial risk management, 5, 10, 11
 - financial statements, 84–128
 - forums, 3, 15, 28, 30–1
 - fraud control, 68
 - freedom of information, 69
 - Freedom of Information Act 1982* (FOI Act), 69, 79
 - functions, 11–12
 - funding, 57
 - Future AFSA, 2–3, 5, 9, 66
- G**
- gender equality strategy, 70, 71
 - goals, 3, 20, 23, 24
 - Goal 1: Foster confidence, 26–39
 - Goal 2: Deliver value, 40–3
 - Goal 3: Effective services, 44–52
 - Goal 4: Quality information, 53–6
 - good culture statement, 28
 - governance structure, 64
 - Green Lease Schedule, 81
 - groups, 17
 - Guidelines for Rehabilitation Authorities 2019, 77
- H**
- HRD* Innovative HR Teams 2020 awards, 70
 - human resources management, 69–78
- I**
- ICT Steering Committee, 66
 - Identity Matching Services (IDMatch), 38, 43
 - #iBelong diversity and inclusion strategy, 70, 72
 - #IWILL – Inspiring Women in Life and Leadership, 70, 71
 - income, 57
 - income contributions calculator, 34, 48, 56
 - Indigenous Procurement Policy, 80
 - Industry Innovation and Competitiveness Agenda, 79
 - information, commercial value, 45
 - Information Publication Scheme, 69
 - Innovate@AFSA, 3
 - Innovative HR Teams 2020 award, 70
 - Insolvency and Trustee Services Division, 17. *see also* National Personal Insolvency Index
 - insolvency practitioners
 - culture of industry, 28
 - independence, 4
 - remuneration, 4
 - insolvency services, 11
 - active administrations, 46
 - complaints, 48
 - digital channels, 44
 - Inspector-General in Bankruptcy**
 - Chief Executive as, 13, 16**
 - offences, 33**
 - powers, 60**
 - and Regulation and Enforcement Division, 17**
 - reporting to Attorney-General, v**
 - responsibilities, 17**
 - role, 13**
 - integrity principles, 28
 - internal audits, 66
 - Internal Client Services Division, 17
 - invoice payments, 41–2
- J**
- Jawun APS Secondment Program, 72, 73
 - judicial decisions, 68
- L**
- Lean In, 71
 - Legal and Governance Division, 17
 - legislation, 12–13
 - amendments, 5, 60, 61
 - temporary changes, 4
 - lesbian, gay, bisexual, transgender, intersex and queer (LGBTIQ+) employees, 70, 71–2
 - letter of transmittal, iii
 - LinkedIn, 31, 33

M

market research, 51, 80, 150
 mentoring program, 71
 Minister. *see* Attorney-General
 misconduct
 administrators, 60
 approach to, 35, 37
 and organisational culture, 39
 Motor Trade Association of South Australia
 and the Northern Territory, 32
 Motor Trades Association of Australia, 32
 motor vehicle search, 31–2
Mutual Assistance in Criminal Matters Act
 1987, 13

N

NAIDOC, 73
 National Australian Built Environment
 Rating System, 81
 National Consultative Committee, 66, 77
 National Disability Strategy 2010–20, 73
 National Financial Capability Strategy, 56
 National Management Board, 65, 66
 National Personal Insolvency Index (NPII),
 17, 37, 38, 47. *see also* Insolvency and
 Trustee Services Division
 National Service Centre
 client survey, 51
 statistics, 50–1
 New Enterprise Incentive Scheme, 31
 non-English-speaking background
 people, 70
 noncompliance
 harm minimisation, 26, 36
 machine learning, 35
 notices, statutory period debtors' response
 to, 60, 61

O

offences
 referrals, 33, 36
 serious, referred to investigation, 37
 official cautions, 36
Official Receiver
 administrations, 46

and Insolvency and Trustee Services

 division, 17
 notices, 38
 powers, 13
 role, 13
 Official Trustee in Bankruptcy, 13
 Ombudsman. *see* Commonwealth
 Ombudsman
 organisational structure, 16–17
 outcome and programs
 expenses 2019–20, 131
 structure, 10

P

pandemic. *see* COVID-19 pandemic
 Parents@AFSA program, 71
 people with disability, 73
 performance pay, 74
 performance results 2019–20, 25
 performance snapshot, 23
 personal insolvency administrations, 47
 Personal Insolvency Compliance Program
 2019–20, 6, 34, 35, 39
 Personal Insolvency Compliance Report
 2018–19, 33
 personal insolvency practitioners
 portal, 38
 remuneration, 4
 Personal Insolvency Professionals
 Association, 15, 39
Personal Insolvency Regulator newsletter, 49
 Personal Insolvency Stakeholder Forum,
 28, 30–1
 personal insolvency system
 compliance, 33–6
 positive culture, 39
 regulation and enforcement, 12
 personal property securities
 forums, 28, 30–1
 regulation and enforcement, 12
***Personal Property Securities Act 2009* (PPS
 Act), 12, 13**
 amendments, 61
 Registrar actions, 61–2
 review, 5
 role created, 13
 suspended operation, 62

- Personal Property Securities Register (PPSR), 4–5. *see also* National Service Centre; Registrar of Personal Property Securities
- access to information, 37
 - business guide, 5, 30
 - case studies, 50, 56
 - complaints about, 48
 - compliance, 36
 - cost recovery, 41, 57–8
 - data integrity, 28
 - enquiries, 50–1
 - information products, 4, 5, 23
 - motor vehicle search, 31–2
 - purpose, 11–12, 37
 - registrations removed/amended, 62
 - search statistics, 38
 - stakeholder forums, 28, 30–1
 - suspension, 62
 - website, 54–5
- Personal Property Securities Register (PPSR) Program Group, 66**
- personal property securities system, 10, 11, 12, 17, 26, 28
 - petitions, 60, 61
 - planning, 67
 - Portfolio Budget Statements 2019–20, 10, 20, 21
 - PPS Act. *see* *Personal Property Securities Act 2009*
 - prescribed payment term, 41
 - Pride in Diversity, 72
 - proceeds of crime, 40
 - Proceeds of Crime Act 1987*, 13
 - Proceeds of Crime Act 2002*, 12, 13
 - proceeds-of-crime-related revenue, 57
 - procurement, 79–80
 - Program Board, 66
 - programs
 - 1.1: Personal insolvency and trustee services, 10
 - 1.2: Operation of a national register of security interests in personal property, 10
 - Protective Security Policy Framework, 67
 - Public Governance, Performance and Accountability Act 2013*, 22, 68, 80
 - Public Service Act 1999*, 74
 - purchasing, 78
 - purpose, 10. *see also* goals
- R**
- Reconciliation Action Plan 2017–2020, 72, 73
 - Reconciliation Action Plan committee, 72
 - Reconciliation Australia, 73
 - Red Shoes Rock campaign, 73
 - referrals alleged offences, 33, 36
 - registered debt agreement practitioners, compliance, 33
 - Registered trustee remuneration in the personal insolvency system*, 8
 - registered trustees, 13, 17, 27, 28, 34, 38, 44
 - integrity principles, 28, 39
 - remuneration, 4, 8, 35
 - registers. *see* National Personal Insolvency Index; Personal Property Securities Register
 - Registrar of Personal Property Securities
 - actions under PPS Act, 61–2
 - Chief Executive as, 13, 16
 - role, 13
 - Regulation 4.02AA, 61
 - regulation and enforcement, 11, 12
 - Regulation and Enforcement Division, 17. *see also* Inspector-General in Bankruptcy
 - Regulator Performance Framework, 28
 - remuneration, executive, 74–5, 145–8
 - Remuneration Tribunal (Remuneration and Allowances for Holders of Full-Time Public Office) Determination 2019, 74
 - reporting framework, 20–1
 - Reserve Bank of Australia, 31
 - resource statement, 130–1
 - Responsible PPSR registration management guide*, 36
 - results 2019–20, 24–5
 - returns, bankruptcy administrations, 40
 - Risk and Operations Management Committee, 65
 - risk management, 5, 10, 11, 68, 79. *see also* fraud control
 - roles, AFSA, 13

S

Safety, Rehabilitation and Compensation Act 1988, 77

sandpit. *see* AFSAsandpit

Security Advisory Group, 67

senior executive, 16, 64

Senior Executive Service (SES)
remuneration, 74–5, 145–8

service users, 14

site consultative committees, 77, 78

small and medium-sized enterprises (SMEs)
procurement, 79–80
roundtable, 31

SMG Health, 78

social media, 29, 33

staff. *see* employees

stakeholders, 4, 14–15
feedback, 3, 6, 23, 27, 29, 48, 51, 53
forums (PPSR), 28, 30–1
fostering confidence, 26
good culture, 28

State of the Service report (Australian Public Service Commission), 73

statement of affairs form, 36, 43, 44

statutory minimum debt triggering
bankruptcy proceedings, 60, 61

statutory period, debtors' response to
notice, 60, 61

Stepping Into program, 73

STEptember, Cerebral Palsy Alliance, 77

Strategic Workforce Plan 2017–2020, 75

Studies Assistance Program, 76

succession planning, 76

surveys, 51

T

Takata airbag recall, 50

telephone enquiries, 51

temporary debt protection, 4, 5, 8, 29, 30, 33, 34, 49, 52

tenancies, 81

trustee function (AFSA's). *see* Official Trustee in Bankruptcy

trustee services, 11, 57

trustees. *see* Official Trustee in Bankruptcy; registered trustees

'Trying to get your invoices paid?' guide, 30

Twitter, 29

U

United Nations Convention on the Rights of Persons with Disabilities, 73

V

Values (APS), 76–7

vision, 10

W

waste, 81

water entitlements, 40

Web Content Accessibility Guidelines (WCAG), 53, 54

websites
AFSAsandpit, 6, 15, 23, 29, 34, 43, 48, 50, 53
statistics, 55

Wellbeing@AFSA, 77

work health and safety (WHS), 77–8
site committees, 78

Work Health and Safety Act 2011 (WHS Act), 77, 78

workforce
capability, 75, 76
planning and performance, 75–6
statistics, 69, 134–44

workplace diversity, 70–3

Y

'Your customer has gone broke' fact sheet, 31

[blank]

Bibliography

1890. Congressional Record: Senate. 51st, 1st, 21 March 1890, vol 21, pt. 3, p 2460.
1916. United States v. Corn Products Refining Co., 234 Fed. 964, (S.D.N.Y 1916),.
1945. United States v. Aluminum Co. of America, 148 F2d 416 (2d Cir. 1945) (*Alcoa* case),.
- Adelman, M. A. 1952. "Reviewed Work(s): The Extent of Enterprise Monopoly in the United States 1899-1939 by G. Warren Nutter." *The American Economic Review* 42 (1):206-207.
- Alberro, José , and Rainer Schwabe. 2016. "The Theory of Contestable Markets and its Legacy in Antitrust Practice." *Economics Committee Newsletter* 16 (1):20-28.
- Alcatel-Lucent. 2015. "Bell Labs Launches Consulting Division to Advise Industry on Path to Network of 2020." *Telecom Reseller*, 25 March 2015. Available from: <https://telecomreseller.com/2015/03/26/bell-labs-launches-consulting-division-to-advise-industry-on-path-to-network-of-2020/> (accessed 12 May 2016).
- Alford, John, and Janine O'Flynn. 2012. *Rethinking Public Service Delivery: Managing with External Providers*. Basingstoke: Palgrave Macmillan.
- AlHusseini, Ibrahim 2019. "Uber Needs to Buy Lyft to Survive." *Business Insider*, 11 November 2019. Available from: <https://www.businessinsider.com/uber-needs-buy-merge-lyft-survive-make-profit-2019-11?r=AU&IR=T> (accessed 10 September 2021).
- Altman, Denis. 2015. "Trans-Pacific Partnership: To Whose Advantage? A Response to Kurt Tong." *Australasian Journal of American Studies* 34 (2):25-27.
- Andersen, Kim Viborg. 1999. "Reengineering Public Sector Organisations Using Information Technology." In *Reinventing Government in the Information Age: International Practice in IT-enabled Public Sector Reform*, edited by Richard Heeks, 312-330. Abingdon, Oxon: Routledge.
- Arrow, Kenneth. 1994. "Foreword." In *Increasing Returns and Path Dependence in the Economy* edited by W. Brian Arthur, ix-x. Ann Arbor: University of Michigan Press.
- Arrow, Kenneth, B. Douglas Bernheim, Martin Feldstein, Daniel McFadden, James Poterba, and Robert Solow. 2011. "100 Years of the American Economic Review: The Top 20 Articles." *American Economic Review* 101 (1):1-8.
- Arthur, W. Brian. 1996. "Increasing Returns and the New World of Business." *Harvard Business Review* 74 (4):100-109.
- Arthur, W. Brian, and David A. Lane. 1994. "Information Contagion." In *Increasing Returns and Path Dependence in the Economy* 69-97. Ann Arbor: University of Michigan Press.
- Ashby, W. Ross. 1947. "The Nervous System as Physical Machine: With Special Reference to the Origin of Adaptive Behavior." *Mind* 56 (221):44-59.
- Association of Superannuation Funds of Australia (ASFA). 2020. "Super Statistics." Available from: <https://www.superannuation.asn.au/resources/superannuation-statistics> (accessed 16 March 2020).
- AT&T. 2018a. *2018 Annual Report*. Dallas (TX).
- AT&T. 2018b. "AT&T Completes Acquisition of Time Warner Inc.", 15 June 2018. Available from: https://about.att.com/story/att_completes_acquisition_of_time_warner_inc.html (accessed 18 January 2021).
- Attali, Jacques. 2009 [2006]. *A Brief History of the Future: A Brave and Controversial Look at the Twenty-First Century* Translated by Jeremy Leggatt. New York: Arcade Publishing.

- Aulich, Chris. 2005. "Privatisation and Outsourcing." In *Howard's Second and Third Governments: Australian Commonwealth Administration 1998-2004*, edited by Chris Aulich and Roger Wettenhall, 57-76. Sydney: UNSW Press.
- Aulich, Chris, and Janine O'Flynn. 2007. "From Public to Private: The Australian Experience of Privatisation." *The Asia Pacific Journal of Public Administration* 29 (2):153-171.
- Australian Associated Press. 2017. "Uber in Talks with NSW Government to Fill Sydney's Public Transport Gaps." *The Guardian*, 21 August 2017. Available from: <https://www.theguardian.com/technology/2017/aug/21/uber-in-talks-with-nsw-government-to-fill-sydneys-public-transport-gaps> (accessed 2 October 2017).
- Australian Bureau of Statistics. 2019. *5352.0 - International Investment Position, Australia: Supplementary Statistics, 2018*. Canberra: ABS.
- Australian Council of Social Service. ACOSS, 2019. *Surviving, Not Living: The (In)adequacy of Newstart and Related Payments: Submission to Senate Community Affairs References Committee*. Sydney: ACOSS.
- Australian Energy Market Commission. 2019. "Household Power Prices Falling in South Australia: Australian Energy Market Commission Residential Electricity Price Trends Report 2019." *AEMC News*.
- Australian Financial Security Authority. 2019. *Annual Report 2018-19*. Edited by Australian Financial Security Authority. Canberra: Australian Financial Security Authority.
- Australian Financial Security Authority. 2020. *Annual Report 2019-20*. Edited by Australian Financial Security Authority. Canberra: Australian Financial Security Authority.
- Australian Institute of Health and Welfare. 2019. *Australia's Welfare 2019 Data Insights*. Vol. No 14, *Australia's Welfare Series*. Canberra: Australian Institute of Health and Welfare.
- Australian Taxation Office. 2019. "Escape from the Country, But Not Your Student Loans." 8 July 2019. Available from: <https://www.ato.gov.au/Media-centre/Media-releases/Escape-from-the-country,-but-not-your-student-loans/> (accessed 5 April 2020).
- Australian Trade and Investment Commission. 2015-2020. "Australian Industry Capabilities." Available from: <https://www.austrade.gov.au/International/Buy/Australian-industry-capabilities/financial-services> (accessed 3 September 2020).
- Australian Trade and Investment Commission. 2019a. *Annual Report 2018-19*. Canberra: Australian Trade and Investment Commission.
- Australian Trade and Investment Commission. 2019b. *Why Australia: Benchmark Report 2019*. Canberra: Australian Trade and Investment Commission.
- Australian Trade Commission. 2015. *Annual Report 2014-15*. Canberra: Australian Trade Commission.
- Australian Trade Commission. 2016. *Why Australia: Benchmark Report 2016*. Sydney: Australian Trade Commission.
- Auw, Alvin von. 1983. *Heritage and Destiny*. New York: Praeger.
- Averch, Harvey, and Leland Johnson. 1962. "Behaviour of the Firm Under Regulatory Constraint." *American Economic Review* 52 (5):1052-1069.
- Ayres, Robert. 1994. *Information, Entropy, and Progress: A New Evolutionary Paradigm*. New York: American Institute of Physics.
- Bailey, Elizabeth E. 1973. *Economic Theory of Regulatory Constraint*. Lexington, Mass.: Lexington Books.
- Bailey, Elizabeth E. 1981. "Contestability and the Design of Regulatory and Antitrust Policy." *American Economic Review* 71 (2):178-183.
- Bailey, Elizabeth E. 1982. "Foreword." In *Contestable Markets and the Theory of Industry Structure*, edited by William J. Baumol, John Panzar and Robert Willig, xiii-xxii. New York: Harcourt Brace Jovanovich.
- Bailey, Elizabeth E., and William Baumol. 1984. "Deregulation and the Theory of Contestable Markets." *Yale Journal on Regulation* 1 (2):111-138.
- Bailey, Elizabeth E., David Graham, and Daniel Kaplan. 1985. *Deregulating the Airlines*. Cambridge (MA): MIT Press.

- Bailey, Elizabeth E., and John Panzar. 1981. "The Contestability of Airline Markets During the Transition to Deregulation. (Managing the Transition to Deregulation)." *Law and Contemporary Problems* 44 (1):125-145.
- Bain, Joe S. 1965 [1956]. *Barriers to New Competition: Their Character and Consequences in Manufacturing Industries*. Cambridge (MA): Harvard University Press.
- Bain, Joe S. 1967. "Chamberlin's Impact on Microeconomic Theory" In *Monopolistic Competition Theory: Studies in Impact: Essays in Honour of Edward H. Chamberlin*, edited by Robert E. Kuenne, 147-176. New York: John Wiley & Sons Inc.
- Baker, Brook K. 2013. "Threat of Pharmaceutical-Related IP Investment Rights in the Trans-Pacific Partnership Agreement: An Eli Lilly v Canada Case Study." *Investment Treaty News*, 20 September 2013. Available from: <https://www.iisd.org/itn/en/2013/09/20/threat-of-pharmaceutical-related-ip-investment-rights-in-the-trans-pacific-partnership-agreement-an-eli-lilly-v-canada-case-study/> (accessed 6 April 2021).
- Baker, Brook K., and Katrina Geddes. 2017. "The Incredible Shrinking Victory: *Eli Lilly v. Canada*, Success, Judicial Reversal, and Continuing Threats from Pharmaceutical ISDS." *Loyola University Chicago Law Journal* 49 (2):479-513.
- Bakhtiari, Sasan 2019. *Trends in Market Concentration of Australian Industries*, edited by Innovation and Science Department of Industry. *Research Paper 8/2019*. Canberra: Department of Industry, Innovation and Science.
- Baran, Paul A, and Paul M Sweezy. 1966. *Monopoly Capital: An Essay on the American Economic and Social Order*. New York: Monthly Review Press.
- Barone, Enrico. 1935. "The Ministry of Production in the Collectivist State." In *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism*, edited by Friedrich Hayek, 245-290. London: Lund Humphries.
- Barry, Norman P. 1979. *Hayek's Social and Economic Philosophy*. London: Macmillan Press Ltd.
- Basañes, Federico, Evamaría Uribe, and Robert Willig, eds. 1999. *Can Privatization Deliver? Infrastructure for Latin America*. Washington: Inter-American Development Bank.
- Bauman, Zygmunt. 2000. *Liquid Modernity*. Cambridge: Polity Press. Reprint, 2012.
- Baumol, William J, John Panzar, and Robert Willig. 1982. *Contestable Markets and the Theory of Industry Structure*. New York: Harcourt Brace Jovanovich.
- Baumol, William J. 1964. "Monopolistic Competition and Welfare Economics." *American Economic Review* 54 (3):44-52.
- Baumol, William J. 1965 [1961]. *Economic Theory and Operations Analysis*. 2nd ed. Englewood Cliffs, (NJ): Prentice-Hall.
- Baumol, William J. 1981. Testimony of William J. Baumol: United States v. AT&T, Civil Action No. 74-1698 William J. Baumol Papers, Box No 68, Folder 'Legal Testimony – United States v. AT&T (1981)': Durham (NC): Rubenstein Library, Duke University.
- Baumol, William J. 1982a. "Contestable Markets, Antitrust and Regulation." *The Wharton Magazine* 7 (1):23-30.
- Baumol, William J. 1982b. "Contestable Markets: An Uprising in the Theory of Industry Structure." *American Economic Review* 72 (1):1-15.
- Baumol, William J. 1983a. "Natural Monopoly and Contestable Market Analysis." In *State Enterprise and Deregulation: Special Study No. 5*, edited by Monash University Centre of Policy Studies, 1-17. Melbourne: Centre of Policy Studies, Monash University.
- Baumol, William J. 1983b. "Public and Private Enterprises and Economic Efficiency: Deregulation in the United States." In *State Enterprise and Deregulation: Special Study No. 5*, edited by Michael G. Porter, 125-128. Melbourne: Centre of Policy Studies, Monash University.
- Baumol, William J. 1997. *Privatization, Competitive Entry and Rational Rules for Residual Regulation: 1997 Annual Giblin Lecture, University of Tasmania*. Hobart: Department of Economics, University of Tasmania.
- Baumol, William J. 1997 (circa). 'Testimony List William J. Baumol'. William J. Baumol Papers, Box No 68, Folder 'Professional Services': Durham (NC): Rubenstein Library, Duke University.

- Baumol, William J. 2002. *The Free-Market Innovation Machine: Analysing the Growth Miracle of Capitalism*. Princeton (NJ): Princeton University Press.
- Baumol, William J., Elizabeth E. Bailey, and Robert Willig. 1977. "Weak Invisible Hand Theorems on the Sustainability of Multiproduct Natural Monopoly." *American Economic Review* 67 (3):350-365.
- Baumol, William J., and Alan Krueger. 2001. "An Interview with William J Baumol." *Journal of Economic Perspectives* 15 (3):211-213.
- Baumol, William J., and Janusz Ordover. 1985. "Use of Antitrust to Subvert Competition." *The Journal of Law & Economics* 28 (2):247-265.
- Baumol, William J., John Panzar, and Robert Willig. 1988. *Contestable Markets and the Theory of Industry Structure*. 2nd ed. San Diego: Harcourt Brace Jovanovich.
- Baumol, William J., and Robert Willig. 1981. "Fixed Costs, Sunk Costs, Entry Barriers, and Sustainability of Monopoly." *The Quarterly Journal of Economics* 96 (3):405-431.
- Baumol, William J., and Robert Willig. 1986. "Contestability: Developments Since the Book." *Oxford Economic Papers, New Series, Supplement: Strategic Behaviour and Industrial Competition* 38:9-36.
- BBC News Service. 2010. "Ex-Home Secretary Lord Brittan made trade adviser." *BBC News*, 19 August 2010. Available from: <http://www.bbc.com/news/uk-politics-11026437> (accessed 7 January 2016).
- Becchio, Giandomenica, and Giovanni Leghissa. 2017. *The Origins of Neoliberalism: Insights from Economics and Philosophy*. London: Routledge.
- Beck, Naomi. 2018. *Hayek and the Evolution of Capitalism*. Chicago: The University of Chicago Press.
- Becker, Gary. 1975. *Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education*. 2nd ed. New York: National Bureau of Economic Research.
- Becker, Gary. 1983. "A Theory of Competition among Pressure Groups for Political Influence." *Quarterly Journal of Economics* 98 (August):371-400.
- Beder, Sharon. 2006. *Free Market Missionaries: The Corporate Manipulation of Community Values*. London: Earthscan.
- Beeson, Mark, and Ann Firth. 1998. "Neoliberalism: As a Political Rationality: Australian Public Policy Since the 1980s." *Journal of Sociology* 34 (3):215-231.
- Behrent, Michael. 2016. "Conclusion: The Strange Failure (and Peculiar Success) of Foucault's Project." In *Foucault and Neoliberalism*, edited by Daniel Zamora and Michael Behrent, 176-186. Cambridge: Polity.
- Bell Labs Information and Publication Division. 1972. "Economics Research at Bell Labs helps AT&T Planning." *Bell Labs News* 12 (41):1, 4.
- Bell Labs Information and Publication Division. 1974. "Researcher's Book Surveys Her Field." *Bell Labs News* 14 (2):1-4.
- Bell Labs Information and Publication Division. 1978. "Economic Center Formed; Zajac is Appointed Director." *Bell Labs News* 18 (44):1,2.
- Bell, Stephen, and Andrew Hindmoor. 2009. *Rethinking Governance: The Centrality of the State in Modern Society*. Cambridge: Cambridge University Press.
- Belzer, Michael. 2002. "Technological Innovation and the Trucking Industry: Information Revolution and the Effect on the Work Process." *Journal of Labor Research* 23 (3):375-395.
- Berle, Adolf. 1954. *The 20th Century Capitalist Revolution*. New York: Harcourt, Brace.
- Berle, Adolf, and Gardiner Means. 1968 [1932]. *The Modern Corporation and Private Property*. 1968 ed. New York: Harcourt, Brace & World, Inc.
- Berman, Ayelet 2017. "Industry, Regulatory Capture and Transnational Standard Setting." *American Journal of International Law* 111:112-118.
- Bernhardt, Chris. 2016. *Turing's Vision: The Birth of Computer Science* Cambridge (MA): The MIT Press.
- Bernstein, Jeremy. 1984. *Three Degrees Above Zero: Bell Laboratories in the Information Age*. Cambridge: Cambridge University Press.

- Beviglia Zampetti, Americano, and Pierre Sauvé. 1996. "Onwards to Singapore: The International Contestability of Markets and the New Trade Agenda." *The World Economy* 19 (3):333-343.
- Birch, Kean. 2017a. *Business and Society: A Critical Introduction*. London: Zed Books.
- Birch, Kean. 2017b. *A Research Agenda for Neoliberalism*. Cheltenham: Edward Elgar.
- Birner, Jack. 1996. "Mind, Market and Society Network Structures in the Work of F. A. Hayek." *CEEL Working Papers* (9602):1-26.
- Birner, Jack. 2014. *How Artificial is Intelligence in AI?: Arguments for a Non-Discriminatory Turing Test?* Trento: Dipartimento di Sociologia e Ricerca Sociale, University of Trento.
- Blondheim, Menahem. 1993. "When Bad Things Happen to Good Technologies: Three Phases in the Diffusion and Perception of American Telegraphy." In *Technology, Pessimism, and Postmodernism*, edited by Yaron Ezrahi, Everett Mendelsohn and Howard Segal, 77-92. Dordrecht: Kluwer Academic Publishers.
- Bode, Hendrik. 1971. *Synergy: Technical Integration and Technological Innovation in the Bell System*. Murray Hill (NJ): Bell Laboratories.
- Boettke, Peter. 2002. "Information and Knowledge: Austrian Economics in Search of its Uniqueness." *Review of Austrian Economics* 15 (4):263-274.
- Bollard, Alan E. 1994. "The Role of Antitrust in a Small Open Economy: The Commerce Act in New Zealand." *Review of Industrial Organization* 9 (5):671-694.
- Bork, Robert. 1954. "Vertical Integration and the Sherman Act: The Legal History of an Economic Misconception." *The University of Chicago Law Review* 22:157-201.
- Bork, Robert. 1978. *The Antitrust Paradox*. New York: Basic Books.
- Bornholz, Robert, and David S. Evans. 1983. "The Early History of Competition in the Telephone Industry." In *Breaking Up Bell: Essays on Industrial Organization and Regulation*, edited by David S. Evans, 7-40. New York: North-Holland.
- Boston Consulting Group. 2007. *Skilling Australia's Workforce 2005-08' Mid-Term Review*. Canberra: Department of Education, Science and Training.
- Boyer, Kenneth D. 1986. "What Do We Understand About the Economics of Regulation: The Effects of U.S. Transport Deregulation." In *Mainstreams in Industrial Organisation*, edited by William Shepherd and H. W. de Jong, 317-346. Dordrecht, NL: Martinus Nijhoff.
- Braverman, Harry. 1974. *Labour and Monopoly Capital: The Degradation of Work in the Twentieth Century*. New York: Monthly Review Press.
- Brennan, H. Geoffrey, and James Buchanan. 1981. *Monopoly in Money and Inflation: The Case for a Constitution to Discipline Government, Hobart Paper*. London: The Institute of Economic Affairs.
- Brittan, Leon. 1995a. "How to Make Trade Liberalisation Popular." *World Economy* 18 (6):761-767.
- Brittan, Leon. 1995b. "Investment Liberalisation: The Next Great Boost to the World Economy." *Transnational Corporations* 4 (1):1-10.
- Brock, William. 1983. "Contestable Markets and the Theory of Industry Structure: A Review Article." *Journal of Political Economy* 91 (6):1055-1066.
- Brock, William, and David S. Evans. 1983. "Creamskimming." In *Breaking up Bell: Essays on Industrial Organization and Regulation*, edited by David S. Evans, 61-94. New York, Amsterdam and Oxford: North-Holland.
- Brown, Catherine, and Jennifer Dickfos. 2016. "Reducing Bankruptcy to 12 Months Ignores Realities of Insolvency." *The Conversation*.
- Brown, Charles L. 1984. "A Personal Introduction." In *Disconnecting Bell: The Impact of the AT&T Divestiture*, edited by Harry Shooshan III, 1-7. New York: Pergamon Press.
- Brown, Wendy. 2015. *Undoing the Demos: Neoliberalism's Stealth Revolution*. Cambridge (MA): MIT Press.
- Brown, Wendy. 2019. *In the Ruins of Neoliberalism: The Rise of Antidemocratic Politics in the West*. New York: Columbia University Press.
- Brunt, Maureen. 1994. "The Australian Antitrust Law after 20 Years: A Stocktake." *Review of Industrial Organization* 9 (5):483-526.

- Bureau of Transport Economics. 1985. *Competition and Regulation in Domestic Aviation: Submission to Independent Review*, edited by AGPS. Vol. Occasional Paper 72. Canberra: Bureau of Transport Economics.
- Burgin, Angus. 2012. *The Great Persuasion: Reinventing Free Markets Since the Depression*. Cambridge, (MA): Harvard University Press.
- Bush, Vannevar. 1945. *Science The Endless Frontier: A Report to the President by Vannevar Bush, Director of the Office of Scientific Research and Development*. Washington DC: United States Government Printing Office.
- Bush, Vannevar. 1949. *Modern Arms and Free Men: A Discussion of the Role of Science in Preserving Democracy*. New York: Simon and Schuster.
- Business Council of Australia. 2012. *Policy Essentials: Standards for Rule Making*, edited by Business Council of Australia. Melbourne.
- Business Council of Australia. 2014. *Submission to the Competition Policy Review: Summary Report*. Melbourne: BCA.
- Butler, Ben, and Nick Evershed. 2020. "Some of Australia's Biggest Companies Paid More in Political Donations Than Tax in 2018-19." *The Guardian*, 11 December 2020. Available from: <https://www.theguardian.com/australia-news/2020/dec/11/australian-arm-of-fossil-fuel-giant-chevron-paid-no-tax-on-income-of-900m-in-2019> (accessed 18 April 2021).
- Butler, Richard, and John Huston. 1989. "How Contestable are Airline Markets?" *Atlantic Economic Journal* 17 (2):27-35.
- Cahill, Damien. 2012. "The Embedded Neoliberal Economy." In *Neoliberalism: Beyond the Free Market*, edited by Damien Cahill, Lindy Edwards and Frank Stilwell, 110-127. Cheltenham: Edward Elgar.
- Cahill, Damien. 2014. *The End of Laissez-Faire? On the Durability of Embedded Neoliberalism*. Cheltenham: Edward Elgar.
- Cahill, Damien. 2020. "Market Analysis Beyond Market Fetishism." *EPA: Economy and Space* 52 (1):27-45.
- Cahill, Damien, and Sharon Beder. 2005. "Regulating the Power Shift: The State, Capital and Electricity Privatisation in Australia." *Journal of Australian Political Economy* 55:5-22.
- Calabresi, Guido. 1970. *The Cost of Accidents: A Legal and Economic Analysis*. New Haven (CT): Yale University Press.
- Calabresi, Guido. 2018. Caroline Colton in Conversation with Guido Calabresi. edited by Caroline Colton.
- Caldwell, Bruce. 1988. "Hayek's Transformation." *History of Political Economy* 20 (4):513-541.
- Caldwell, Bruce. 2004. *Hayek's Challenge: An Intellectual Biography of F A Hayek*. Chicago: University of Chicago.
- Caldwell, Bruce. 2007. "Introduction." In *The Road to Serfdom: Text and Documents*, edited by Bruce Caldwell, 1-33. Chicago: University of Chicago Press.
- Caldwell, Bruce. 2014. "Introduction." In *The Market and Other Orders*, edited by Bruce Caldwell, 1-38. Chicago: University of Chicago Press.
- Caldwell, Bruce. 2020. "Mont Pelerin 1947". Paper read at *From the Past to the Future: Ideas and Actions for a Free Society*, 15-17 January 2020, at Hoover Institution, Stanford University. https://www.hoover.org/sites/default/files/research/docs/mps_caldwell.pdf (accessed 15-17 January 2020).
- Callon, Michel. 1998. "Introduction: The Embeddedness of Economic Markets in Economics." In *The Laws of the Markets*, edited by Michel Callon, 1-57. Oxford: Blackwell Publishers, The Sociological Review.
- Campbell-Kelly, Martin. 2004 [2003]. *From Airline Reservations to Sonic the Hedgehog: A History of the Software Industry*. Cambridge (MA): The MIT Press. Reprint, paperback 2004.
- Caplan, Bryan. 2012. The Age of Contestability. In *EconLog*, edited by The Library of Economics and Liberty. Carmel (IN): Liberty Fund Inc.
- Carstensen, Peter. 1996. "Director and Levi After 40 Years: The Anti-Antitrust Agenda Revisited." *Mississippi College Law Review* 17 (1):37-42.

- Cashen, Ian. 2015. "Ensuring Contestability Succeeds Through Stewardship." *Advisian*, 12 August 2015. Available from: <http://www.advisian.com/perspectives/ensuring-contestability-succeeds-through-stewardship-2.aspx> (accessed 3 August 2020).
- Castells, Manuel. 1996. *The Rise of the Network Society*. Vol. 1, *The Information Age: Economy, Society and Culture* Oxford: Blackwell Publishers.
- Castells, Manuel. 2010. *The Rise of the Network Society*. Vol. 1, *The Information Age: Economy, Society and Culture* Chichester: Wiley-Blackwell.
- Cerny, Philip. 1990. *The Changing Architecture of Politics: Structure, Agency and the Future of the State*. London: Sage Publications.
- Cerny, Philip. 1997. "Paradoxes of the Competition State: The Dynamics of Political Globalization." *Government and Opposition* 32 (2):251-274.
- Cerny, Philip, Georg Menz, and Suzanne Soederberg. 2005. "Different Roads to Globalization: Neoliberalism, the Competition State, and Politics in a More Open World." In *Internalizing Globalization: The Rise of Neoliberalism and the Decline of National Varieties of Capitalism* edited by Suzanne Soederberg, Georg Menz and Phillip Cerny, 1-30. London: Palgrave Macmillan.
- Cerny, Philip, and Alex Prichard. 2017. "The New Anarchy: Globalisation and Fragmentation in World Politics." *Journal of International Political Theory* 13 (3):378-394.
- Chamberlain, John. 2007 [1944]. "Foreword to the 1944 American Edition." In *The Road to Serfdom: Text and Documents*, edited by Bruce Caldwell, 253-254. Chicago: University of Chicago Press.
- Chamberlin, Edward. 1962 [1933]. *Theory of Monopolistic Competition: A Re-orientation of the Theory of Value*. 8th ed. Cambridge (MA): Harvard University Press.
- Champion, Rafe. 2013. "When Malcolm Met Friedrich." *Catallaxy Files*, 1 May 2013. Available from: <https://catallaxyfiles.com/2013/05/01/when-malcolm-met-friedrich/> (accessed 29 August 2020).
- Chester, Lynne. 2012. "The Australian Variant of Neoliberal Capitalism." In *Neoliberalism: Beyond the Free Market*, edited by Damien Cahill, Lindy Edwards and Frank Stilwell, 153-179. Cheltenham: Edward Elgar.
- Clifford, Jessica, and Timothy Fernandez. 2020. "Bushfire Burns Victims Join Protest Against Manyana Land Clearing on NSW South Coast." *ABC News*, 29 May 2020. Available from: <https://www.abc.net.au/news/2020-05-29/bushfire-victims-join-fight-against-manyana-land-clearing/12297110> (accessed 12 Nov 2020).
- Coase, Ronald. 1937. "The Nature of the Firm." *Economica* 4 (16):386-405.
- Coase, Ronald. 1954. "Book Reviews: The Role of Mergers in the Growth of Large Firms. By J. Fred Weston." *American Economic Review* 44 (1):203-204.
- Coase, Ronald. 1959. "The Federal Communications Commission." *Journal of Law and Economics* 2:1-40.
- Coase, Ronald. 1960. "The Problem of Social Cost." *Journal of Law and Economics* 3:1-44.
- Coase, Ronald. 1988. *The Firm, the Market and the Law*. Chicago: University of Chicago Press.
- Coase, Ronald, and Ning Wang. 2010. "Interview with Professor Ronald Coase." *Unirule Institute of Economics*, 28-29 December 2010. Available from: <https://web.archive.org/web/20110117184354/http://english.unirule.org.cn/Html/Unirule-News/20110101130956819.html> (accessed 12 February 2020).
- Coats, A. W. Bob. 1993. *The Sociology and Professionalization of Economics*. Vol. 2. London: Routledge.
- Coll, Steve. 1986. *The Deal of the Century: The Breakup of AT&T*. New York: Touchstone Simon & Schuster.
- Colton, Caroline. 2017. "Contestability 'theory', Its Links with Australia's Competition Policy, and Recent International Trade and Investment Agreements." *Australian Journal of International Affairs* 71 (3):315-334.
- Consultants in Industry Economics. 1988. Invoice for Professional Services Re: Gallo vs. Gallo. William J. Baumol Papers, Box No 59, Folder 'Writings - Productivity Book': Rubenstein Library, Duke University: Durham (NC).

- Cooper, Melinda. 2011. "Complexity Theory After the Financial Crisis: The Death of Neoliberalism or the Triumph of Hayek?" *Journal of Cultural Economy* 4 (4):371-385.
- Corsi, Marcella. 2006. "In Memory of Paolo Sylos Labini (1920 – 2005)." *The European Journal of the History of Economic Thought* 13 (4):607-611.
- Cowie, Jonathan. 2011. "Contestability in Bus Markets: Evidence from the British Deregulated Market." *Applied Economics* 44 (36):4777-4785.
- Crane, Daniel. 2020. "Fascism and Monopoly." *Michigan Law Review* 118 (7):1315-1370.
- Crouch, Colin. 2008. "What Will Follow the Demise of Privatised Keynesianism?" *The Political Quarterly* 79 (4):476-487.
- Crouch, Colin. 2011. *The Strange Non-death of Neoliberalism*. Cambridge: Polity Press.
- Crouch, Colin. 2013. *Making Capitalism Fit for Society*. Cambridge: Polity.
- Crouch, Colin. 2016. *The Knowledge Corrupters: Hidden Consequencers of the Financial Takeover of Public Life*. Cambridge: Polity Press.
- Crouch, Colin. 2019. *Will the Gig Economy Prevail?* Cambridge: Polity Press.
- Crozier, Michel, Samuel Huntington, and Joji Watanuki. 1975. *The Crisis of Democracy: Report on the Governability of Democracies to the Trilateral Commission*. New York: University Press.
- D'Amico, Daniel J., and Peter Boettke. 2010. "Making Sense Out of *The Sensory Order*." In *The Social Science of Hayek's 'The Sensory Order'*, edited by William N. Butos, 357-381. Bingley, UK: Emerald Books.
- Daley, John, and Brenden Coates. 2018. *Housing Affordability: Re-imagining the Australian Dream*, edited by Grattan Institute. Vol. Report No. 2018-04, March 2018. Melbourne: Grattan Institute.
- Danielian, N R. 1939. *AT&T: The Story of Industrial Conquest*. New York: The Vanguard Press.
- Dardot, Pierre, and Christian Laval. 2017 [2013]. *The New Way of the World: On Neo-liberal Society* Translated by Gregory Elliott. London: Verso.
- Davidson, Bob. 2011. "Contestability in Human Services Markets." *Journal of Australian Political Economy* (68):213-239.
- Davies, William. 2010. "Economics and the 'Nonsense' of Law: The Case of the Chicago Antitrust Revolution." *Economy and Society* 39 (1):64-83.
- Davies, William. 2017. *The Limits of Neoliberalism: Authority, Sovereignty and the Logic of Competition*. revised ed. Los Angeles: Sage. Original edition, 2014.
- Davis, Kevin. 2011. "The Australian Financial System in the 2000s: Dodging the bullet". Paper presented at *RBA Conference 2011 Sydney, Reserve Bank of Australia*, at Sydney, 301-348.
- Davis, Michael Marks. 1968. *Psychological Interpretations of Society, Studies in History, Economics and Public Law* New York: AMS Press.
- Dean, Mitchell. 2010. *Governmentality: Power and Rule in Modern Society*. 2nd ed. London: SAGE.
- Dean, Mitchell. 2014. "Rethinking Neoliberalism." *Journal of Sociology* 50 (2):150-163.
- Dean, Mitchell. 2015. "Foucault Must Not Be Defended" *History and Theory* 54 (3):389-403.
- Dean, Mitchell. 2016. "Foucault, Ewald, Neoliberalism and the Left." In *Foucault and Neoliberalism*, edited by Daniel Zamora and Michael Behrent, 85-113. Cambridge: Polity Press.
- Dee, Philippa, and Kevin Hanslow. 2000. *Multilateral Liberalisation of Services Trade*. Melbourne: Productivity Commission.
- Deloitte. 2013. *Dynamics of the Australian Superannuation System*. Sydney: Deloitte.
- Deloitte. 2015. *Contestability in Human Services: Committed to the Right Solution*. Sydney: Deloitte.
- Deloitte Access Economics. 2019. *Mobile Nation 2019: The 5G Future*, edited by Deloitte Access Economics. Sydney: Deloitte Access Economics.
- Dempsey, Paul, and Andrew Goetz. 1992. *Airline Deregulation and Laissez-Faire Mythology*. Westport (CT): Quorum Books.
- Demsetz, Harold. 1968. "Why Regulate Utilities?" *Journal of Law and Economics* 11 (1):55-65.
- Denord, François. 2015 [2009]. "French Neoliberalism and Its Divisions: From Colloque Walter Lippmann to the Fifth Republic." In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, 45-67. Cambridge (MA): Harvard University Press. Original edition, 2009.

- Department of Defence. 2016. *Defence Annual Report 2015–16: Volume One: Performance, Governance and Accountability*. Canberra: Department of Defence.
- Department of Finance. 2014. *Commonwealth Procurement Rules*. July 2014 ed. Canberra: Department of Finance.
- Department of Finance. 2015b. “What is the Contestability Programme?”, 12 June 2016. Available from: <http://www.finance.gov.au/resource-management/governance/contestability/overview/> (accessed 24 June 2015).
- Department of Finance. 2018. *Department of Finance Annual Report 2017-18*. Canberra: Department of Finance.
- Department of Finance. 2020. “Procurement.” Available from: <https://www.finance.gov.au/government/procurement> (accessed 21 August 2020).
- Department of Finance and Deregulation. 2011. *Submission to Productivity Commission’s 2011 Annual Review of the Regulatory Burden On Business: Identifying and Evaluating Regulation Reforms*. Edited by Department of Finance and Deregulation. Canberra: Department of Finance and Deregulation.
- Department of Foreign Affairs and Trade. 1997. *In the National Interest: Australia’s Foreign and Trade Policy: White Paper*. Canberra: Department of Foreign Affairs and Trade.
- Department of Foreign Affairs and Trade. 2020a. “Foreign Investment Statistics”. Available from: <https://www.dfat.gov.au/trade/resources/investment-statistics/Pages/statistics-on-who-invests-in-australia> (accessed 21 August 2020).
- Department of Foreign Affairs and Trade. 2020b. “FTAs Under Negotiation.” Available from: <https://www.dfat.gov.au/trade/agreements/negotiations/Pages/ftas-under-negotiation> (accessed 21 August 2020).
- Department of Home Affairs. 2020. *Australia’s Cyber Security Strategy 2020*. Canberra: Department of Home Affairs.
- Department of the Prime Minister and Cabinet. 2015. *Our North, Our Future: White Paper on Developing Northern Australia*. Canberra: DPMC.
- Derber, Charles, and Yale R. Magrass. 2014. *Capitalism: Should You Buy It?: An Invitation to Political Economy*. Boulder (CO): Paradigm Publishers.
- Desai, Meghnad. 1994. “Equilibrium, Expectations and Knowledge.” In *Hayek, Co-Ordination and Evolution: His Legacy in Philosophy, Politics, Economics, and the History of Ideas*, edited by Jack Birner and Rudy van Zijp, 25-50. London: Routledge.
- Dickson-Smith, Kyle Dylan, and Bryan Mercurio. 2018. “Australia’s Position on Investor-State Dispute Settlement: Fruit of a Poisonous Tree or a Few Rotten Apples?” *Sydney Law Review* 40 (2):213-254.
- Digital Transformation Agency. 2018. *Vision 2025: We Will Deliver World-leading Digital Services for the Benefit of All Australians*. Canberra: Digital Transformation Agency.
- Digital Transformation Office. 2016. *Digital Transformation Office Annual Report 2015-16*. Canberra: Digital Transformation Office.
- Digital Transformation Office. 2021. “Digital Marketplace Insights: March 2021.” Issued April 2021. Available from: <https://marketplace.service.gov.au/2/insights> (accessed 25 April 2021).
- Director, Aaron, and Edward Levi. 1956. “Law and the Future: Trade Regulation.” *Northwestern University Law Review* 51 (2):281-296.
- Drahos, Peter, and John Braithwaite. 2002. *Information Feudalism: Who Owns the Knowledge Economy?* New York: The New Press.
- Duménil, Gérard, and Dominique Lévy. 2004. *Capital Resurgent: Roots of the Neoliberal Revolution*. Translated by Derek Jeffers. Cambridge (MA): Harvard University Press.
- Dupuy, Jean-Pierre 2004. “Intersubjectivity and Embodiment.” *Journal of Bioeconomics* 6 (3):275–294.
- Dyson, George. 2012. *Turing’s Cathedral: The Origins of the Digital Universe*. New York: Vintage Books.
- Ebenstein, Alan. 2015. *Chicagonomics: The Evolution of Chicago Free Market Economics*. New York: St Martin’s Press.

- Edwards, Paul N. 1997 [1996]. *The Closed World: Computers and the Politics of Discourse in Cold War America*. Cambridge (MA): The MIT Press.
- Eisenhower, Dwight D. 2020. *Eisenhower's Farewell Address to the Nation: January 17, 1961*. Our Documents (National History Day, The National Archives and Records Administration, and USA Freedom Corps) 19612020]. Available from <https://www.ourdocuments.gov/doc.php?flash=false&doc=90&page=transcript>.
- Emmett, Ross. 2010. "Introduction." In *Companion to Chicago Economics*, edited by Ross Emmett. Cheltenham: Edward Elgar.
- Evans, David S., ed. 1983. *Breaking up Bell: Essays on Industrial Organization and Regulation*. New York, Amsterdam and Oxford: North-Holland.
- Evans, David S., and Sanford Grossman. 1983. "Integration." In *Breaking up Bell: Essays on Industrial Organization and Regulation*, edited by David S. Evans, 95-126. New York: North-Holland.
- Evans, David S., and James Heckman. 1983. "Natural Monopoly." In *Breaking up Bell: Essays on Industrial Organization and Regulation*, edited by David S. Evans, 127-156. New York: North-Holland.
- Evans, Mark. 2005. "Neoliberalism and Policy Transfer in the British Competition State: The Case of Welfare Reform." In *Internalizing Globalization: The Rise of Neoliberalism and the Decline of National Varieties of Capitalism*, edited by Susanne Soederberg, Georg Menz and Philip Cerny, 69-89. Basingstoke: Palgrave Macmillan.
- Eyers, James. 2014. "NSW Social Impact Bond Returns 7.5 Per Cent." *The Sydney Morning Herald*, 31 August 2014. Available from: <http://www.smh.com.au/business/nsw-social-impact-bond-returns-75-per-cent-20140831-10ajsa.html> (accessed 2 June 2015).
- Fair Work Commission. 2019. "The Australian Minimum Wage from 1906." *Waltzing Matilda: and the Sunshine Harvester Factory*, 12 July 2019. Available from: <https://www.fwc.gov.au/waltzing-matilda-and-the-sunshine-harvester-factory/historical-material/the-australian-minimum-wage> (accessed 16 March 2020).
- Farrant, Andrew, and Edward McPhail. 2009. "Hayek, Samuelson, and the Logic of the Mixed Economy?" *Journal of Economic Behavior & Organization* 69 (1):5-16.
- Faunce, Thomas. 2007. *Who Owns Your Health?: Medical Professionalism and the Market State*. Baltimore: Johns Hopkins University Press.
- Faunce, Thomas. 2014. *Trade and Foreign Investment (Protecting the Public Interest) Bill 2014: Submission 49, The Committee Secretariat, Foreign Affairs, Defence and Trade Committee Department of the Senate*. Canberra: Australian National University.
- Faunce, Thomas. 2015. "Australia's Embrace of Investor State Dispute Settlement: A Challenge to the Social Contract Ideal?" *Australian Journal of International Affairs* 69 (5):595-609.
- Faunce, Thomas. 2018. "Global Artificial Photosynthesis and Renewable Energy Storage and Policy for the Sustainocene." *Advanced Sustainable Systems* 2 (8-9):1800035-n/a.
- Faunce, Thomas, and Peter Drahos. 1998. "Trade Related Aspects of Intellectual Property Rights (TRIPS) and the Threat to Patients: A Plea for Doctors to Respond Internationally." *Medicine and Law* 17 (3):299-310.
- Federal Trade Commission. 2018. "FTC Posts Blog on Voices for Liberty Video Project." 17 January 2018. Available from: <https://www.ftc.gov/news-events/press-releases/2018/01/ftc-posts-blog-voices-liberty-video-project> (accessed 7 February 2020).
- Fellner, William. 1949. *Competition Among the Few*. New York: Knopf.
- Filkov, Alexander, Tuan Ngo, Stuart Matthews, Simeon Telfer, and Trent Penman. 2020. "Impact of Australia's Catastrophic 2019/20 Bushfire Season on Communities and Environment: Retrospective Analysis and Current Trends." *Journal of Safety Science and Resilience* 1:44-56.
- Finer, Herman. 1946 [1945]. *Road to Reaction, Atlantic Monthly Press Book*. Boston: Little, Brown and Company.
- First Principles Review Team. 2015. *First Principles Review: Creating One Defence, Report of the Canberra: Department of Defence*.

- Fischer, Claude. 1987. "Revolution in Rural Telephony: 1900-1920." *Journal of Social History* 21 (1):5-26.
- Fischer, Karin. 2015 [2009]. "The Influence of Neoliberals in Chile, Before, During and After Pinochet." In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, 305-346. Cambridge (MA): Harvard University Press.
- Foodbank. 2019. *Foodbank Hunger Report 2019*, edited by Foodbank. Sydney: Foodbank.
- Foster, John Bellamy. 2016. "Monopoly Capital at the Half-Century Mark." *Monthly Review* 68 (3):1-25.
- Foster, John Bellamy. 2018. "What Is Monopoly Capital?" *Monthly Review* 68 (8):56-62.
- Foster, John Bellamy, and Robert W. McChesney. 2012. *The Endless Crisis: How Monopoly-Finance Capital Produces Stagnation and Upheaval from the U.S.A to China*. New York: Monthly Review Press.
- Foucault, Michel. 1972. *The Archaeology of Knowledge and the Discourse on Language* Translated by A. M. Sheridan-Smith. New York: Pantheon Books.
- Foucault, Michel. 2008. *The Birth of Biopolitics: Lectures at the College De France, 1978-1979*, edited by Michel Senellart. Translated by Graham Burchell. Basingstoke: Palgrave Macmillan.
- Fowler, R. F. 1934. *The Depreciation of Capital: Analytically Considered*. London: King.
- Franta, Benjamin 2021. "Weaponizing Economics: Big Oil, Economic Consultants, and Climate Policy Delay." *Environmental Politics*.
- French, Robert. 1994. "Judicial Approaches to Economic Analysis in Australia." *Review of Industrial Organization* 9 (5):547-568.
- French, Robert. 2014. "Investor-State Dispute Settlement — A Cut Above the Courts?". Paper read at *Supreme and Federal Courts Judges' Conference*, 9 July 2014, at Darwin. <https://cdn.hcourt.gov.au/assets/publications/speeches/current-justices/frenchcj/frenchcj09jul14.pdf> (accessed 9 July 2014).
- Friedman, Milton. 1962. *Capitalism and Freedom*. Chicago: University of Chicago Press.
- Friedman, Milton. 1999. "The Business Community's Suicidal Impulse." *Cato Policy Report* XXI (2):6-7.
- Fung, Brian. 2017. "The FCC's Net Neutrality Plan May have Even Bigger Ramifications in Light of this Obscure Court Case." *Washington Post*, 6 December 2017. Available from: https://www.washingtonpost.com/news/the-switch/wp/2017/12/06/the-fccs-net-neutrality-plan-may-have-even-bigger-ramifications-in-light-of-this-obscure-court-case/?utm_term=.101d188f8b14 (accessed 7 December 2017).
- Furman, Jason, and Peter Orszag. 2015. "A Firm-Level Perspective on the Role of Rents in the Rise in Inequality". Paper presented at "A Just Society" Centennial Event in Honor of Joseph Stiglitz, 16 October 2015, at New York, 19-47.
- Gabel, David. 2016. "Uber and the Persistence of Market Power." *Journal of Economic Issues* 50 (2):257-534.
- Galloway, Scott. 2017. *The Four: The Hidden DNA of Amazon, Apple, Facebook and Google*. London: Corgi Books imprint of Transworld Publishers.
- Garrison, Garnet (director). 1945. The Road to Serfdom. In *Words at War*: NBC.
- Gear, George. 1994. "A Minister's Perspective on Twenty Years of the Trade Practices Act." *Review of Industrial Organization* 9 (5):475-482.
- George, Kenneth D., Caroline Joll, and E. L. Lynk. 1992. *Industrial Organisation: Competition, Growth and Structural Change*. 4th ed. London: Routledge.
- Georgescu-Roegen, Nicholas. 1967. "Chamberlin's New Economics and the Unit of Production." In *Monopolistic Competition Theory: Studies in Impact: Essays in Honour of Edward H. Chamberlin*, edited by Robert E. Kuene, 31-62. New York: John Wiley & Sons Inc.
- Geroski, Paul. 1991. "Domestic and Foreign Entry in the United Kingdom: 1983-1984." In *Entry and Market Contestability: An International Comparison*, edited by Paul Geroski and Jochim Schwalbach, 63-88. Oxford: Basil Blackwell.
- Gertner, Jon. 2012. *The Idea Factory: Bell Labs and the Great Age of American Innovation*. New York: Penguin Press.

- Gifford, Daniel, and Robert Kudrle. 2015. *The Atlantic Divide in Antitrust: An Examination of US and EU Competition Policy*. Chicago: University of Chicago Press.
- Gilbert, Richard. 1989. "The Role of Potential Competition in Industrial Organization." *Journal of Economic Perspectives* 3 (3):107-127.
- Gilfillan, Geoff. 2019. *The Extent and Causes of the Wage Growth Slowdown in Australia, Research Paper Series*. Canberra: Parliamentary Library.
- Gleick, James. 2011. *The Information: A History, a Theory, a Flood*. London: Fourth Estate.
- Goddard, Garry K., and Greg Walker. 2002. "Competition Analysis of Bank Mergers in Australia." *Journal of Law and Financial Management* 1 (1):6-23.
- Graham, Edward M., and Robert Z. Lawrence. 1996. "Measuring the International Contestability of Markets: A Conceptual Approach." *Journal of World Trade* 30 (5):5-20.
- Graham, Edward M., and J David Richardson. 1997a. "Issue Overview." In *Global Competition Policy*, edited by Edward M. Graham and J David Richardson, 3-44. Washington (DC): Institute of International Economics.
- Graham, Edward M., and J. David Richardson. 1997b. "Conclusions and Recommendations." In *Global Economic Policy*, edited by Edward M. Graham and J David Richardson, 547-579. Washington (DC): Institute of International Economics.
- Gray, John. 1984. *Hayek on Liberty*. Oxford: Basil Blackwell.
- Gray, Mary L., and Siddharth Suri. 2019. *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass*. Boston: Houghton Mifflin Harcourt.
- Greenberg, Joel. 2016 [2014]. *Gordon Welchman: Bletchley Park's Architect of Ultra Intelligence*. London: Frontline Books.
- Greer, Douglas F. 1988. "Contestability in Competition Policy: Replacement, Supplement or Impediment?" In *The Influence of United States Economics on New Zealand*, edited by Alan Bollard, 39-68. Wellington: NZ-US Educational Foundational and the New Zealand Institute of Economic Research.
- Grullon, Gustavo, Yelena Larkin, and Roni Michaely. 2019. "Are US Industries Becoming More Concentrated?" *Review of Finance* 23 (4):697-743.
- Grzadzka, Neil, Dan Hartigan, Michael Hardy, and et al. 2015. *What Does Industry Think 'Contestability' Will Do for the Major Capital Acquisition Process*. Canberra: Defence Industry Study Course.
- Hackney, James. 2014. "Guido Calabresi and the Construction of Contemporary American Legal Theory." *Law And Contemporary Problems* 77 (2):45-64.
- Halligan, John. 2005. "Public Sector Reform." In *Howard's Second and Third Governments: Australian Commonwealth Administration 1998-2004*, 21-39. Sydney: UNSW Press.
- Hally, Mike. 2005. *Electronic Brains: Stories from the Dawn of the Computer Age*. London: Granta Books.
- Halm, Georg. 1935. "Further Considerations on the Possibility of Adequate Calculation in a Socialist Community." In *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism*, edited by Friedrich Hayek, 131-200. London: Routledge & Kegan Paul.
- Ham, Chris. 1996. "Contestability: A Middle Path for Health Care." *The BMJ* 312 (7023):70-71.
- Hambur, Jonathan, and Gianni La Cava. 2018. "Business Concentration and Mark-ups in the Retail Trade Sector." *Reserve Bank of Australia Bulletin* December.
- Hamowy, Ronald. 1978. "Law and the Liberal Society: F. A. Hayek's Constitution of Liberty." *Journal of Libertarian Studies* 2 (4):287-297.
- Han, Esther. 2017. "NSW Land Titles Registry Leased for \$2.6 billion to Hastings Funds Management, First State Super." *The Sydney Morning Herald*, 13 April 2017. Available from: <http://www.smh.com.au/nsw/nsw-land-titles-registry-leased-for-26-billion-to-hastings-funds-management-first-state-super-20170412-gvjcfw.html> (accessed 20 May 2017).
- Hancock, William Keith. 1961 [1930]. *Australia*. Brisbane: Jacaranda Press.
- Hannaford, Stephen. 2007. *Market Domination!: The Impact of Industry Consolidation on Competition, Innovation, and Consumer Choice*. Westport (CT): Praeger.

- Harberger, Arnold. 1954. "Monopoly and Resource Allocation." *The American Economic Review, Papers and Proceedings of the Sixty-sixth Annual Meeting of the American Economic Association* 44 (2):77-87.
- Harberger, Arnold, and David Levy. 1999. "Interview with Arnold Harberger." *Region* 1 March 1999. Available from: <https://www.minneapolisfed.org/article/1999/interview-with-arnold-harberger> (accessed 20 May 2019).
- Harcourt, Geoffrey C. 1986. "On the Influence of Piero Sraffa on the Contributions of Joan Robinson to Economic Theory." *Economic Journal* 96:96-108.
- Harper, Ian. 1986. "An Application of Contestable Market Analysis to the Australian Banking Industry." *Economic Analysis and Policy* 16 (1):50-60.
- Harper, Ian (Chairman), Peter Anderson, Su McCluskey, and Michael O'Bryan. 2015. *Competition Policy Review: Final Report*. Canberra: The Treasury.
- Hart, Paul 't 2011. "Epilogue: Rules for Reformers." In *Delivering Policy Reform: Anchoring Significant Reforms in Turbulent Times*, edited by Evert A. Lindquist, Sam Vincent and John Wanna, 201-211. Canberra: ANU E Press.
- Harvey, David. 2005. *A Brief History of Neoliberalism*. Oxford: Oxford University Press. Reprint, 1st paperback edition 2007.
- Harvey, David. 2007 [2005]. *A Brief History of Neoliberalism*. Oxford: Oxford University Press.
- Hawley, Ellis W. 1966. *The New Deal and the Problem of Monopoly: A Study in Economic Ambivalence*. Princeton, NJ: Princeton University Press.
- Hayek, Friedrich. 1933. "The Trend of Economic Thinking." *Economica* (40):121-137.
- Hayek, Friedrich. 1935a. "The Nature and History of the Problem." In *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism*, edited by Friedrich Hayek, 1-40. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1935b. "The Present State of the Debate." In *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism*, edited by Friedrich Hayek, 201-243. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1937. "Economics and Knowledge." *Economica, New Series* 4 (13):33-54.
- Hayek, Friedrich. 1939. "The Economic Conditions of Interstate Federalism." *New Commonwealth Quarterly* 2 (September):131-149.
- Hayek, Friedrich. 1940. "Socialist Calculation: The Competitive 'Solution'." *Economica, New Series* 7 (26):125-149.
- Hayek, Friedrich. 1941. "Planning, Science and Freedom." *Nature* 148:580-584.
- Hayek, Friedrich. 1945. "The Use of Knowledge in Society." *American Economic Review* 35 (4):519-530.
- Hayek, Friedrich. 1949a. "Individualism: True and False." In *Individualism and Economic Order*, 1-32. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1949b. "The Meaning of Competition." In *Individualism and Economic Order*, edited by Friedrich Hayek, 92-106. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1955. *The Political Ideal of the Rule of Law, National Bank of Egypt: Fiftieth Anniversary Commemoration Lectures*. Cairo: National Bank of Egypt.
- Hayek, Friedrich. 1958. "Freedom, Reason and Tradition." *Ethics* 68 (4):229-245.
- Hayek, Friedrich. 1960. *The Constitution of Liberty*. London: Routledge and Kegan Paul.
- Hayek, Friedrich. 1962 [1941]. *The Pure Theory of Capital*. London: Routledge & Kegan Paul. Reprint, 1962.
- Hayek, Friedrich. 1967a. "Kinds of Rationalism." In *Studies in Philosophy, Politics and Economics*, edited by Friedrich Hayek, 82-95. London: Routledge and Kegan Paul.
- Hayek, Friedrich. 1967b. "Notes on the Evolution of Systems of Rules of Conduct: The Interplay Between Rules of Individual Conduct and the Social Order of Actions." In *Studies in Philosophy, Politics and Economics*, edited by Friedrich Hayek, 66-81. Chicago: University of Chicago Press.
- Hayek, Friedrich. 1967c. "Rules, Perception and Intelligibility." In *Studies in Philosophy, Politics and Economics*, 43-65. London: Routledge & Kegan Paul. Original edition, 1963.
- Hayek, Friedrich. 1967d. *Studies in Philosophy, Politics and Economics*. London: Routledge & Kegan Paul.

- Hayek, Friedrich. 1967 [1955]. "Degrees of Explanation." In *Studies in Philosophy, Politics and Economics*, edited by Friedrich Hayek, 3-21. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1967 [1960]. "The Corporation in a Democratic Society: In Whose Interest Ought It To and Will It Be Run?" In *Studies in Philosophy, Politics and Economics*, edited by Friedrich Hayek, 300-312. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1973. *Law, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy: Rules and Order*. Vol. 1. Chicago: The University of Chicago Press.
- Hayek, Friedrich. 1976. *Law, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy: The Mirage of Social Justice*. 3 vols. Vol. 2. Chicago: The University of Chicago Press.
- Hayek, Friedrich. 1976 [1949]. "'Free' Enterprise and Competitive Order." In *Individualism and Economic Order*, edited by Friedrich Hayek, 107-118. London and Henley: Routledge & Kegan Paul.
- Hayek, Friedrich. 1976 [1952]. *The Sensory Order: An Inquiry into the Foundations of Theoretical Psychology*. Chicago: University of Chicago Press. Original edition, 1952. Reprint, 1976.
- Hayek, Friedrich. 1978a. "Dr Bernard Mandeville." In *New Studies in Philosophy, Politics, Economics and the History of Ideas*, edited by Friedrich Hayek, 249-266. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1978b. "Nature v. Nurture Once Again." In *New Studies in Philosophy, Politics, Economics and the History of Ideas*, edited by Friedrich Hayek, 290-294. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1978c. "The Primacy of the Abstract." In *New Studies in Philosophy, Politics, Economics and the History of Ideas*, edited by Friedrich Hayek, 35-49. London: Routledge & Kegan Paul. Original edition, From: Lecture at Alpbach 7 June 1968.
- Hayek, Friedrich. 1978 [1968]a. "Competition as a Discovery Procedure." In *New Studies in Philosophy, Politics, Economics and the History of Ideas*, 179-190. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1978 [1968]b. "The Confusion of Language in Political Thought." In *New Studies in Philosophy, Politics and Economics and the History of Ideas*, edited by Friedrich Hayek, 71-97. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 1979a. *Law, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy: The Political Order of a Free People*. 3 vols. Vol. 3. Chicago: University of Chicago Press.
- Hayek, Friedrich. 1979b. *Social Justice, Socialism And Democracy: Three Australian Lectures by F. A. Hayek, CIS Occasional Papers 2*. Sydney: Centre For Independent Studies.
- Hayek, Friedrich. 1979 [1952]. *The Counter-revolution of Science: Studies on the Abuse of Reason*. 2nd ed. Liberty Fund Inc.: Indianapolis. Original edition, 1952.
- Hayek, Friedrich. 1982. "The Sensory Order After 25 Years." In *Cognition and the Symbolic Process*, edited by Walter Weimer, B. and David Palermo, 287-293. Hillsdale (NJ): Lawrence Erlbaum and Associates.
- Hayek, Friedrich. 1984 [1928]. "Intertemporal Price Equilibrium and Movements in the Value of Money (1928)." In *Money, Capital, and Fluctuations: Early Essays*, edited by Roy McCloughry, 71-117. Chicago: University of Chicago Press.
- Hayek, Friedrich. 1988. *The Fatal Conceit: The Errors of Socialism*. Edited by W. W. Bartley III, *The Collected Works of Friedrich August Hayek: Volume 1*. London: Routledge.
- Hayek, Friedrich. 1990 [1976]. *Denationalization of Money: The Argument Refined; An Analysis of the Theory and Practice of Concurrent Currencies*. 3rd ed, *Hobart Paper Special 70*. London: Institute of Economic Affairs.
- Hayek, Friedrich. 1994. *Hayek on Hayek: An Autobiographical Dialogue*. Edited by Stephen Kresge and Leif Wenar. London: Routledge.
- Hayek, Friedrich. 2007 [1944]. *The Road to Serfdom: Text and Documents*. Edited by Bruce Caldwell, *The Collected Works of F. A. Hayek Volume 2*. Chicago: University of Chicago Press.
- Hayek, Friedrich. 2010. *Studies on the Abuse and Decline of Reason: Text and Documents*. Edited by Bruce Caldwell. Chicago: University of Chicago Press.

- Hayek, Friedrich. 2012 [1939]. *Freedom and the Economic System*, edited by Harry Gideonse. Chicago: Martino Publishing / University of Chicago Press.
- Hayek, Friedrich. 2015 [1935]-a. "The Nature and History of the Problem." In *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism*, edited by Friedrich Hayek, 1-40. London: Routledge & Kegan Paul.
- Hayek, Friedrich. 2015 [1935]-b. "The Present State of the Debate." In *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism*, edited by Friedrich Hayek, 201-243. London: Routledge & Kegan Paul.
- Hayek, Friedrich (translated by M. S. Snow). 2002. "Competition as a Discovery Procedure." *Quarterly Journal of Austrian Economics* 5 (3):9-23.
- Hayek, Friedrich, and El Mercurio. 1981. "Hayek Interview." *El Mercurio*. Available from: http://www.fahayek.org/index.php?option=com_content&task=view&id=121 (accessed 24 May 2017).
- Hayek, Friedrich, and Frederick Kempe. 1979. "A Period of Muddle-Heads: Interview Fredrich Von Hayek." *Newsweek* 5 November 1979, 68
- Hayek, Friedrich, and Bernard Levin. 1980. "Bernard Levin in Conversation with Economist Professor Friedrich Hayek." *BBC*, 31 May 1980. Available from: https://www.youtube.com/watch?v=dV7-2Aua4_4 (accessed 3 May 2015).
- Headrick, Daniel. 1991. *The Invisible Weapon: Telecommunications and International Politics 1851-1945*. Oxford: Oxford University Press.
- Healey, Deborah, and Rob Nicholls. 2015. *Balancing Competition and Stability in Australian Retail Banking, Working Paper No. 076/2015*. Sydney: Centre for International Finance and Regulation.
- Heeks, Richard. 1999. "Reinventing Government in the Information Age." In *Reinventing Government in the Information Age: International Practice in IT-enabled Public Sector Reform*, edited by Richard Heeks, 9-21. Abingdon, Oxon: Routledge.
- Heeks, Richard, and Anne Davies. 1999. "Different Approaches to Information Age Reform." In *Reinventing Government in the Information Age: International Practice in IT-enabled Public Sector Reform*, edited by Richard Heeks, 22-48. Abingdon, Oxon: Routledge.
- Henderson, Troy, and Tom Swann. 2018. *Excessive Hours and Unpaid Overtime: 2018 Update*. Canberra: Centre for Future Work, The Australia Institute.
- Hodgson, Geoffrey M. 1999. *Economics and Utopia*. London: Routledge.
- Hodgson, Geoffrey M. 2002 [2001]. *How Economics Forgot History: The Problem of Historical Specificity in Social Science*. Edited by Tony Lawson, *Economics as Social Theory*. London: Routledge. Reprint, 2002.
- Hodgson, Geoffrey M. 2006. "What Are Institutions?" *Journal of Economic Issues* 40 (1):1-25.
- Hodgson, Geoffrey M. 2015. *Conceptualizing Capitalism: Institutions, Evolution, Future*. Chicago: University of Chicago Press.
- Holler, Manfred. 1985. "The Theory of Contestable Markets: Comment." *Bulletin of Economic Research* 37 (1):65-67.
- Holton, Richard. 1956. "Reviewed Work(s): The Role of Mergers in the Growth of Large Firms by J. Fred Weston." *The Review of Economics and Statistics* 38 (1):116-117.
- Homelessness Australia. 2019. "Homelessness Australia." Available from: <https://www.homelessnessaustralia.org.au/> (accessed 17 March 2020).
- Hope, Wayne. 2017. "Impoverishing the Mediated Public Sphere in Aotearoa-New Zealand: The Slow Demise of Television News and Current Affairs." In *The Death of Public Knowledge?: How Free Markets Destroy the General Intellect*, edited by Aeron Davis, 45-53. London Goldsmiths Press.
- Horwitz, Steven. 2000. "From *The Sensory Order* to the Liberal Order: Hayek's Non-rationalist Liberalism." *Review of Austrian Economics* 13:23-40.
- Howson, Susan. 2011. *Lionel Robbins*. Cambridge: Cambridge University Press.
- Hull, Richard. 2006. "The Great Lie: Markets, Freedom and Knowledge." In *Neoliberal Hegemony: A Global Critique*, edited by Dieter Plehwe, Bernhard Walpen and Gisela Neunhöffer, 141-155. London: Routledge.

- Hutchens, Gareth. 2016a. "Privatising ASIC's Data 'Will Hinder Scrutiny of Corporate Wrongdoing'." *The Guardian*, 25 August 2016. Available from: <https://www.theguardian.com/australia-news/2016/aug/25/privatising-asics-data-will-hinder-scrutiny-of-corporate-wrongdoing> (accessed 25 August 2016).
- Hutchens, Gareth. 2016b. "Selling off ASIC's Trove of Company Data 'would hinder tax enforcement'." *The Guardian*, 18 August 2016. Available from: <https://www.theguardian.com/australia-news/2016/aug/18/selling-off-asics-trove-of-company-data-would-hinder-tax-enforcement> (accessed 25 August 2016).
- Hutchens, Gareth. 2018. "Top 1% of Australians Own More Wealth than Bottom 70% Combined." *The Guardian*, 22 January 2018. Available from: <https://www.theguardian.com/australia-news/2018/jan/22/top-1-per-cent-of-australians-own-more-wealth-than-bottom-70-per-cent-combined> (accessed 4 May 2021).
- Hutton, Will. 2002. *The World We're In*. London: Little Brown & Company.
- Industry Commission. 1996. *Competitive Tendering and Contracting by Public Sector Agencies, Report No. 48*. Melbourne: Australian Government Publishing Service.
- Industry Super Australia. 2013. *Finance and Capital Formation in Australia*. Melbourne: ISA Research.
- Jackson, Charles L. 1980. "What Will New Technology Bring?" In *Perspectives on Postal Service Issues*, edited by Roger Sherman, 119-129. Washington (DC): American Enterprise Institute for Public Policy Research.
- Jackson, Sue, and Lesley Head. 2020. "Australia's Mass Fish Kills as a Crisis of Modern Water: Understanding Hydrosocial Change in the Murray-Darling Basin." *Geoforum* 109:44-56.
- James, Denis. 1996. "More of the Same or a Brave New World?: The National Commission of Audit." *Parliament of Australia Current Issues Briefs 1995-1996*, 25 June 1996. Available from: https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/CIB/cib9596/96cib23 (accessed 14 February 2020).
- Jameson, Fredric. 1983 [1981]. *The Political Unconscious: Narrative as a Socially Symbolic Act*. London: Routledge.
- Jameson, Fredric. 1992. *Postmodernism: or, The Cultural Logic of Late Capitalism*. Durham, NC: Duke University Press.
- Jameson, Fredric. 2012 [2002]. *A Singular Modernity*. London: Verso.
- Jameson, Fredric. 2018. Caroline Colton in Conversation with Fredric Jameson. edited by Caroline Colton.
- Jenkins, Shannon. 2020a. "Federal Government's Digital Procurement Site Hits \$2b Milestone." *The Mandarin*, 7 August 2020. Available from: <https://www.themandarin.com.au/136952-federal-governments-digital-procurement-site-hits-2b-milestone/> (accessed 11 September 2020).
- Jenkins, Shannon. 2020b. "Research Reveals Extent of Outsourcing Australian Public Service Jobs." *The Mandarin*, 11 September 2020. Available from: <https://www.themandarin.com.au/139449-research-reveals-extent-of-outsourcing-australian-public-service-jobs/> (accessed 11 September 2020).
- Jewett, Frank B. 1919. "Industrial Research." *National Research Council: Reprint and Circular Series* (4):1-16.
- Jewett, Frank B. 1928. "Fifty Years of Science and Engineering." *American Bar Association Journal* 14 (8):460-464.
- Jewett, Frank B. 1936. "The Social Implications of Scientific Research in Electrical Communication." *Scientific Monthly* 43 (5):466-476.
- Jewett, Frank B. 1958 [1932]. "The Social Effects of Modern Science." *Science* 76:23-26.
- Jewett, Frank B., and Robert W. King. 1940. "Engineering Progress and the Social Order." *Nature* 146:824-828.

- Johnson, Kirk. 1984. "Technology's Dean: Elizabeth E. Bailey; A Computer Whiz at the Helm of Carnegie-Mellon." *New York Times*, 26 August 1984, 5. Available from: <https://www.nytimes.com/1984/08/26/business/technology-s-dean-elizabeth-e-bailey-computer-whiz-helm-carnegie-mellon.html> (accessed 2 November 2019).
- Johnston, Judy. 2000. "The New Public Management in Australia." *Administrative Theory and Praxis* 22 (2):345-368.
- Jones, Daniel Stedman 2012. *Masters of the Universe: Hayek, Friedman, and the Birth of Neoliberal Politics*. Princeton: Princeton University Press.
- Kahn, Alfred E. 1955. "Reviewed Work(s): The Role of Mergers in the Growth of Large Firms by J. Fred Weston." *Journal of Political Economy* 63 (1):81-82.
- Kahn, Alfred E. 1998. *Letting Go: Deregulating the Process of Deregulation, Or: Temptation of the Kleptocrats and the Political Economy of Regulatory Disingenuousness*, MSU Public Utilities Papers. East Lansing (MN): Michigan State University.
- Kaysen, Carl. 1953. "Reviewed Work(s): The Extent of Enterprise Monopoly in the United States, 1899-1939. By G. Warren Nutter." *The Journal of Business of the University of Chicago* 26 (1):55-56.
- Kelsey, Jane. 2017. "Regulatory Chill: Learnings from New Zealand's Plain Packaging Tobacco Law." *QUT Law Review* 17 (2):21-45.
- Kerin, Paul. 2010. "Hayek, Monopolies and Cartels in the 21st Century." In *The Multi-layered Hayek*, edited by Oliver Marc Hartwich, 27-44. Sydney: The Centre for Independent Studies.
- Kessides, Ioannis. 1991. "Entry and Market Contestability: The Evidence from the United States." In *Entry and Market Contestability: An International Comparison*, edited by P. A. Geroski and J. Schwalbach, 23-48. Oxford: Basil Blackwell.
- Khadem, Nassim 2020. "ATO Data Reveals One Third of Large Companies Pay No Tax." *ABC News*, 12 December 2019 updated 2 January 2020. Available from: <https://www.abc.net.au/news/2019-12-12/ato-corporate-tax-transparency-data-companies-no-tax-paid/11789048?nw=0> (accessed 18 April 2021).
- Khan, Lina M. 2017. "Amazon's Antitrust Paradox." *Yale Law Journal* 126:710-805.
- King, Stephen, and Graeme Samuel. 2015. "Competition Law Fix Could Seriously Harm Competition." *The Conversation*, 5 May 2015. Available from: <https://theconversation.com/competition-law-fix-could-seriously-harm-competition-41159> (accessed 12 January 2016).
- Kirman, Alan. 2006. "Demand Theory and General Equilibrium: From Explanation to Introspection: A Journey Down the Wrong Road." *History of Political Economy* 38 (5):246-280.
- Kirzner, Israel. 1988. "The Economic Calculation Debate: Lessons for Austrians." *The Review of Austrian Economics* 2:1-18.
- Kirzner, Israel. 2018. *Competition, Economic Planning and the Knowledge Problem*, edited by Peter Boettke and Frédéric Sautet. Edited by Peter Boettke and Frédéric Sautet, *The Collected Works of Israel M. Kirzner*. Carmel (IA): Liberty Fund.
- Klein, Naomi. 2007. *The Shock Doctrine: The Rise of Disaster Capitalism*. London: Allen Lane.
- Klein, Naomi. 2014. *This Changes Everything: Capitalism vs. the Climate*. Melbourne: Penguin / Random House.
- Kleinfield, Sonny. 1981. *The Biggest Company on Earth: A Profile of AT&T*. New York: Holt, Rinehart and Winston.
- Kline, Ronald. 2015. *The Cybernetics Moment: Or Why We Call Our Age the Information Age*. Baltimore: John Hopkins University Press.
- Knight, Sam. 2016. "How Uber Conquered London." *The Guardian*, 27 April 2016. Available from: <https://www.theguardian.com/technology/2016/apr/27/how-uber-conquered-london> (accessed 16 June 2016).
- Korosec, Kirsten 2020. "Lyft is Using Data From its Rideshare Drivers to Develop Self-Driving Cars." *Tech Crunch*, 24 June 2020. Available from: <https://techcrunch.com/2020/06/23/lyft-is-using-data-from-its-ride-share-drivers-to-develop-self-driving-cars/> (accessed 10 September 2021).

- Kotsko, Adam. 2018. *Neoliberalism's Demons: On the Political Theology of Late Capitalism*. Stanford (CA): Stanford University Press.
- Krašovec, Primož. 2013. "Neoliberal Epistemology – From the Impossibility of Knowing to Human Capital." *Filozofija I Društvo* 24 (4):63-83.
- Kraus, Constantine, and Alfred Duerig. 1988. *The Rape of Ma Bell: The Criminal Wrecking of the Best Telephone System in the World*. Secaucus (NJ): Lyle Stuart Inc.
- Kushnick, Bruce. 2006. "Nieman Watchdog: How the Baby Bells and the Government Destroyed Competition for DSL, Long Distance and Local Phone Service." *Nieman Foundation for Journalism*, 13 April 2006. Available from: http://www.niemanwatchdog.org/index.cfm?askthisid=196&fuseaction=ask_this.view (accessed 17 April 2021).
- Kusunoki, Shigeki 2015. "Hayek and Antitrust." *History of Economics Review* 61 (Winter):57-68.
- Laïdi, Zaki. 2007. *The Great Disruption* Translated by C. Turner. Cambridge: Polity Press.
- Laing, Gregory K. 2002. *Decision Making Under Sunk Costs*, School of Accounting and Finance, University of Wollongong, Wollongong.
- Lakatos, Csilla, and Franziska Ohnsorge. 2017. *Arm's-Length Trade: A Source of Post-Crisis Trade Weakness*, edited by World Bank. *Policy Research Working Paper*. Geneva: World Bank Group.
- Landau, Elizabeth 2017. "Economist Elizabeth E. Bailey *72 Looks Back on a Pioneering Career." *Princeton Alumni Weekly*. <https://paw.princeton.edu/article/economist-elizabeth-e-bailey-72-looks-back-pioneering-career> (accessed 2 November 2019).
- Lange, Oskar. 1936. "On the Economic Theory of Socialism: Part One." *The Review of Economic Studies* 4 (1):53-71.
- Lange, Oskar. 1937. "On the Economic Theory of Socialism: Part Two." *The Review of Economic Studies* 4 (2):123-142.
- Langley, Paul, and Andrew Leyshon. 2017. "Platform Capitalism: The Intermediation and Capitalization of Digital Economic Circulation." *Finance and Society* 3 (1):11-31.
- Lanier, Jaron. 2010. *You Are Not a Gadget: A Manifesto*. London: Allen Lane.
- Lanier, Jaron. 2014. *Who Owns Our Future?* London: Penguin Books.
- Latham, Earl. 1957. "Anthropomorphic Corporations, Elites, and Monopoly Power." *American Economic Review* 47 (2):303-310.
- Latour, Bruno. 1993. *We Have Never Been Modern* Translated by C. Porter. Cambridge (MA): Harvard University Press.
- Lavoie, Don. 1985a. *National Economic Planning: What is Left?* Washington (DC): Cato Institute.
- Lavoie, Don. 1985b. *Rivalry and Central Planning: The Socialist Calculation Debate Reconsidered*. Cambridge: Cambridge University Press.
- Lavoie, Don. 1986. "The Market as a Procedure for Discovery and Conveyance of Inarticulate Knowledge." *Comparative Economic Studies (Association for Comparative Economic Studies)* 28 (1):1-19.
- Lawson, Kirsten 2016. "Former Intensive Care Doctor Warns Government Against Merging Public Guardian and Trustee." *The Canberra Times*, 8 February 2016. Available from: <http://www.canberratimes.com.au/act-news/former-intensive-care-doctor-warns-government-against-merging-public-guardian-and-trustee-20160203-gmkxy.html>
- Lebergott, Stanley 1953. "Review: Has Monopoly Increased?" *The Review of Economics and Statistics* 35 (4):349-351.
- Lee, Frederic S., and Warren J. Samuels, eds. 1992. *The Heterodox Economics of Gardiner C. Means: A Collection*. New York: M. E. Sharpe.
- Lerner, Abba P. 1934. "The Concept of Monopoly and the Measurement of Monopoly Power." *Review of Economic Studies* 1 (3):157-175.
- Lewis, T. G. 1997. *The Friction-free Economy: Marketing Strategies for a Wired World*. New York: Harper Business.
- Liebowitz, Stan J. 2002. *Re-thinking the Network Economy: The True Forces That Drive the Digital Marketplace*. New York: Amacom.
- Lippincott, Benjamin. 1964 [1938]. "Introduction." In *On the Economic Theory of Socialism*, edited by Benjamin Lippincott. New York: McGraw-Hill Book Company.

- Lluria, Enrique, and Santiago Ramón y Cajal. 1910. *Super-Organic Evolution: Nature and the Social Problem* Translated by Rachel Challice and D. H. Lambert. London: Williams and Norgate.
- Lopatka, John. 1996. "Exclusion Now and in the Future: Examining Chicago School Orthodoxy." *Mississippi College Law Review* 17:27-36.
- Lynn, Barry C. 2010. *Cornered: The New Monopoly Capitalism and the Economics of Destruction*. Hoboken (NJ): John Wiley & Sons.
- Machlup, Fritz. 1961. "Patents and Inventive Effort." *Science* 133 (3463):1463-1466.
- Machlup, Fritz. 1967 [1952]. *The Political Economy of Monopoly: Business, Labor and Government Policies*. Baltimore: The John Hopkins Press.
- MacLean, Nancy. 2017. *Democracy in Chains: The Deep History of the Radical Right's Stealth Plan for America*. London: Scribe Publications.
- Mahmoudi, C., C. Müller-Schloer, and J. Hähner. 2009. "Marketplace-orientated Behaviour in Semantic Multi-criteria Decision Making Autonomous Systems". Paper read at *Architecture of Computing Systems - ARCS 2009: 22nd International Conference*, 10-13 March 2009, at Delft, The Netherlands (accessed 10-13 March 2009).
- Maney, Kevin. 2011. "Pioneering the Science of Information." In *Making the World Work Better: The Ideas That Shaped a Century and a Company*, edited by Kevin Maney, Steve Hamm and Jeffrey M. O'Brien. Upper Saddle River (NJ): IBM Press/Pearson.
- Mannheim, Karl. 1949 [1936]. *Ideology and Utopia: An Introduction to the Sociology of Knowledge* Translated by Louis Wirth and Edward Shils. London: Routledge & Kegan Paul Ltd.
- Mansoor, Iqbal. 2021. "Lyft Revenue and Usage Statistics (2021)." *Business of Apps*, 2 July 2021. Available from: <https://www.businessofapps.com/data/lyft-statistics/> (accessed 8 September 2021).
- Marchand, Roland. 1998. *Creating the Corporate Soul: The Rise of Public Relations and Corporate Imagery in American Big Business*. Berkeley (CA): The University of California Press.
- MarketLine. 2016. *Company Profile: Time Warner Inc*. London: MarketLine / Progressive Digital Media.
- MarketLine. 2018. *Company Profile: AT&T*. London: MarketLine / Progressive Digital Media.
- Martin, Edward W. 1874. *History of the Grange Movement or, the Farmers' War Against Monopolies: Part 1 Railroad Monopolies*. Chicago: National Publishing Company.
- Martin, Stephen. 2002. *Advanced Industrial Economics*. 2nd ed. Oxford: Blackwell.
- Marx, Karl. 2001 [1887]. *Capital: A Critique of Political Economy* Translated by Samuel Moore and Edward Aveling. Edited by Frederick Engels. Vol. One. London: The Electric Book Company Ltd
- McAfee, R Preston, Hugo M. Mialon, and Michael A. Williams. 2003. "Economic and Antitrust Barriers to Entry." 1-26. Available from: www.mcafee.com/Papers/PDF/Barriers2Entry.pdf (accessed 12 May 2020).
- Means, Gardiner. 1935. *Industrial Prices and Their Relative Inflexibility*. Washington (DC): Government Printing Office.
- Merrett, Alexandra. 2015. "Explainer: What Is The Competition 'Effects Test'?" *The Conversation*, 1 April 2015. Available from: <https://theconversation.com/explainer-what-is-the-competition-effects-test-39424> (accessed 12 January 2016).
- Meyer, Robinson. 2018. Since 2016, Half of All Coral in the Great Barrier Reef Has Died. *The Atlantic*, 18 April 2018.
- Mikler, John. 2012. "Still Stalled on the Road to Neoliberal Globalization? The Endurance of National Varieties of Capitalism." In *Neoliberalism: Beyond the Free Market*, edited by Damien Cahill, Lindy Edwards and Frank Stilwell, 131-152. Cheltenham: Edward Elgar.
- Milgate, Murray. 1979. "On the Origin of the Notion of 'Intertemporal Equilibrium'." *Economica, New Series* 46 (181):1-10.
- Miller, Russell. 2015. "Competition Debate Must Move Beyond Effects Test Battle." *The Conversation*, 1 May 2015. Available from: <https://theconversation.com/competition-debate-must-move-beyond-effects-test-battle-41030> (accessed 12 January, 2016).
- Mirowski, Philip. 1989. *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics*. Cambridge: Cambridge University Press.

- Mirowski, Philip. 2002. *Machine Dreams: Economics Becomes a Cyborg Science*. Cambridge (NY): Cambridge University Press.
- Mirowski, Philip. 2004. *The Effortless Economy of Science?* Durham (NC): Duke University Press.
- Mirowski, Philip. 2007. “Markets Come to Bits: Evolution, Computation and Markomata In Economic Science.” *Journal of Economic Behavior and Organization* 63:209-242.
- Mirowski, Philip. 2011. *Science-Mart: Privatizing American Science*. Cambridge (MA): Harvard University Press.
- Mirowski, Philip. 2013. *Never Let a Serious Crisis Go to Waste: How Neoliberalism Survived the Financial Meltdown*. Verso Books.
- Mirowski, Philip. 2014. *The Political Movement that Dared not Speak its Own Name: The Neoliberal Thought Collective Under Erasure, Working Paper No. 23*. New York: Institute for New Economic Thinking.
- Mirowski, Philip. 2015. “Markets”. Paper presented at *The Terms of Media Conference*, at 17-19 June 2015, Leuphana University, Centre for Digital Cultures.
- Mirowski, Philip. 2015 [2009]. “Postface: Defining Neoliberalism.” In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, 417-455. Cambridge (MA): Harvard University Press.
- Mirowski, Philip. 2017. Hell is Truth Seen Too Late.
<https://www.youtube.com/watch?v=QBB4POvcH18>.
- Mirowski, Philip. 2018. “Polanyi vs Hayek?” *Globalizations* 15 (7):894–910.
- Mirowski, Philip. 2020. “The Neoliberal Ersatz Nobel Prize.” In *Nine Lives of Neoliberalism*, edited by Dieter Plehwe, Quinn Slobodian and Philip Mirowski, 219-254. London: Verso.
- Mirowski, Philip, and Edward Nik-Khah. 2017. *The Knowledge We Have Lost in Information: A History of Information in Modern Economics*. New York: Oxford University Press.
- Mirowski, Philip, and Dieter Plehwe, eds. 2009. *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*. 1st ed. Cambridge (MA): Harvard University Press.
- Mirowski, Philip, and Dieter Plehwe. 2015 [2009]a. “Preface.” In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, ix-xxiii. Cambridge (MA): Harvard University Press.
- Mirowski, Philip, and Dieter Plehwe, eds. 2015 [2009]b. *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*. Cambridge (MA): Harvard University Press.
- Mises, Ludwig von. 1935 [1920]. “Economic Calculation in the Socialist Commonwealth.” In *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism*, edited by Friedrich Hayek, 87-130. London: Routledge & Kegan Paul.
- Mises, Ludwig von. 1998 [1949]. *Human Action: A Treatise on Economics*. Auburn, Alabama: Ludwig von Mises Institute.
- Mises, Ludwig von. 2013 [1933]. *Epistemological Problems of Economics*, edited by Bettina Bien Greaves. Translated by George Reisman. Indianapolis: Liberty Fund, Inc.
- Mueller, Milton. 1997a. *Universal Service: Competition, Interconnection, and Monopoly in the Making of the American Telephone System*. Cambridge, London, Washington (DC): The MIT Press/The AEI Press.
- Mueller, Milton. 2010. *Networks and States: The Global Politics of Internet Governance*. Cambridge (MA): The MIT Press.
- Mueller, Milton Jr. 1997b. *Universal Service: Competition, Interconnection, and Monopoly in the Making of the American Telephone System*. Cambridge, London, Washington, D. C.: The MIT Press; The AEI Press.
- Murray, David, Kevin Davis, Craig Dunn, Carolyn Hewson, and Brian McNamee. 2014. *Financial System Inquiry: Final Report (Murray Report)*, edited by The Treasury. Canberra: The Treasury.
- National Commission of Audit. 1996. *Report to the Commonwealth Government*. Canberra: AGPS.
- National Commission of Audit. 2014. *Towards Responsible Government: The Report of the National Commission of Audit: Phase One*. Canberra: NCA.
- National Competition Policy Review. 1993. *National Competition Policy (Hilmer Report)*. Canberra: AGPS.

- National Research Council. 1946. *Industrial Research Laboratories of the United States, Including Consulting Research Laboratories*, edited by Compiled by Callie Hull. 8th ed. Washington, DC: The National Academies Press.
- Neate, Rupert. 2016. "AT&T Agrees to Buy Time Warner for \$85bn as Trump Slams Deal." *The Guardian*, 23 October 2016. Available from: <https://www.theguardian.com/media/2016/oct/22/att-buy-time-warner-donald-trump> (accessed 23 October 2016).
- Negroponte, Nicholas 1995. *Being Digital*. New York: Alfred A. Knopf.
- Newman, Maurice. 2007. "How Friedman Rallied Australian Free Thinkers." In *Milton Friedman: A Tribute: 12 March 2007*, edited by Greg Lindsay. Sydney: The Centre for Independent Studies.
- Nokia Bell Labs. 2016. The Bell Labs Shannon Conference on the Future of the Information Age, April 28-29, 2016. Murray Hill (NJ): Nokia.
- Norman, Neville. 1994. "Progress Under Pressure: The Evolution of Antitrust in Australia." *Review of Industrial Organization* 9 (5):527-545.
- North, Douglass C. 1977. "Markets and Other Allocation Systems in History: The Challenge of Karl Polanyi." *Journal of European Economic History* 6:703-716.
- North, Douglass C. 2009. "A Recommendation on How to Intelligently Approach Emerging Problems in Intellectual Property Systems." *Review of Law & Economics* 5 (3):1131-1133.
- Nutter, G. Warren. 1951. *The Extent of Enterprise Monopoly in the United States 1899-1939: A Quantitative Study of Some Aspects of Monopoly*. Chicago: University of Chicago Press.
- Nutter, G. Warren, and Henry Einhorn. 1969. *Enterprise Monopoly in the United States: 1899-1958*. New York: Columbia University Press.
- OECD. 1996. *The Knowledge-based Economy*. Vol. OCDE/GD(96)102. Paris: OECD Publishing.
- OECD. 2016. *Social Impact Bonds: State of Play & Lessons Learnt, OECD Working Papers*. Paris: OECD.
- OECD Directorate for Financial and Enterprise Affairs Competition Committee. 2018. *Market Concentration: Issues Paper by the Secretariat*. Paris: OECD.
- Office of Government Information Technology. 1998. *Government OnLine* Canberra: OGIT.
- Office of Social Impact Investment. 2015. *Social Impact Investment Policy: Leading the Way in Delivering Better Outcomes for the People of NSW*. Sydney: NSW Government.
- Oğuz, Fuat. 2010. "Hayek on Tacit Knowledge." *Journal of Institutional Economics* 6 (2):145-165.
- Ordoover, Janusz, and Robert Willig. 1985. "Antitrust for High-Technology Industries: Assessing Research Joint Ventures and Mergers." *Journal of Law and Economics* 28 (2):311-333.
- Osborne, David, and Ted Gaebler. 1993 [1992]. *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*. New York: Plume.
- Packer, Herbert L. 1963. *The State of Research in Antitrust Law*. New Haven: Walter E. Meyer Research Institute of Law.
- Parer, Warwick 2002. *Towards a Truly National and Efficient Energy Market: Final Report (Parer Report)*. Canberra: Council of Australian Governments (CoAG) Energy Market Review.
- Paul, Ellen Frankel. 2004. "Hayek on Monopoly and Antitrust in the Crucible of United States v. Microsoft." *New York University Journal of Law and Liberty* 1:167-204.
- Peck, Jamie. 2010. *Constructions of Neoliberal Reason*. Oxford: Oxford University Press.
- Peever, David, Robert Hill, Peter Leahy, Jim McDowell, and Lindsay Tanner. 2015. *First Principles Review: Creating One Defence, Report of the First Principles Review Team*. Canberra: Department of Defence.
- Pellizzoni, Luigi, and Marja Ylönen, eds. 2012. *Neoliberalism and Technoscience: Critical Assessments*. Farnham (England): Ashgate.
- Perkins, Miki, and Mike Foley. 2020. "Logging Returns to NSW Native Forests Hit by Bushfires." *The Sydney Morning Herald*, 1 May 2020. Available from: <https://www.smh.com.au/national/logging-returns-to-native-forests-hit-by-bushfires-20200501-p54ots.html>
- Perrakis, Stylianos 1982. "Reviewed Work(s): Contestable Markets and the Theory of Industry Structure by William J. Baumol, John C. Panzar and Robert D. Willig." *The Canadian Journal of Economics / Revue canadienne d'Economique* 15 (4):774-780.

- Persky, Joseph. 1991. "Lange and von Mises, Large-scale Enterprises, and the Economic Case for Socialism." *Journal of Economic Perspectives* 5 (4):229-236.
- Peteraf, Margaret, and Randal Reed. 1994. "Pricing and Performance in Monopoly Airline Markets." *The Journal of Law & Economics* 37 (1):193-213.
- Peters, Gerhard, and John T. Woolley. 1977. "Jimmy Carter: Civil Aeronautics Board Nomination of Elizabeth E. Bailey to be a Member." *The American Presidency Project*. <https://www.presidency.ucsb.edu/documents/civil-aeronautics-board-nomination-elizabeth-e-bailey-be-member> (accessed 2 November 2019).
- Peterson Institute for International Economics. 2021. "About PIIE." Available from: <https://www.piie.com/about-piie> (accessed 11 March 2021).
- Phillips-Fein, Kim. 2009. *Invisible Hands: The Businessmen's Crusade Against the New Deal*. New York: W. W. Norton.
- Phillips-Fein, Kim. 2015 [2009]. "Business Conservatives and the Mont Pèlerin Society." In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Plehwe Dieter, 280-301. Cambridge (MA): Harvard University Press. Original edition, 2009.
- Pigou, Arthur C. 1960 [1932]. *The Economics of Welfare*. 4th ed. London: Macmillan & Co Ltd.
- Piketty, Thomas. 2014. *Capital in the Twenty-First Century* Translated by Arthur Goldhammer. Cambridge (MA): Belknap Press.
- Pincus, Jonathan. 1984. "Protection and Structural Change from a Contestable Market Perspective." *Australian Economic Review* 17 (3):79-89.
- Pincus, Jonathan. 2016. "Socialism in Six Colonies: The Aftermath." In *Only in Australia: The History, Politics and Economics of Australian Exceptionalism*, edited by William Coleman, 166-187. Oxford: Oxford University Press.
- Plant, Arnold. 1932. "Trends in Business Administration." *Economica* (35):45-62.
- Plantin, Jean-Christophe, Paul N. Edwards, Carl Lagoze, and Christian Sandvig. 2018. "Infrastructure Studies Meet Platform Studies in the Age of Google and Facebook." *New Media and Society* 20 (1):293-310.
- Plehwe, Dieter, and Bernhard Walpen. 2006. "Between Network and Complex Organization." In *Neoliberal Hegemony: A Global Critique*, edited by Dieter Plehwe, Bernhard Walpen and Gisela Neunhöffer, 27-50. New York: Routledge.
- Point to Point Transport Taskforce. 2015. *Report to the Minister for Transport and Infrastructure (Sturgess Report)*. Sydney: NSW Government.
- Polanyi, Karl. 2001 [1944]. *The Great Transformation: The Political and Economic Origins of Our Time*. Boston (MA): Beacon Press.
- Polgreen, P, F. Nelson, and G. Neumann. 2007. "Use of Prediction Markets to Forecast Infectious Disease Activity." *Clinical Infectious Diseases* 44 (2):272-279.
- Porter, Michael E. 1998 [1990]. *The Competitive Advantage of Nations: With a New Introduction*. 2nd ed. Basingstoke: Macmillan Press.
- Porter, Michael G. 2014. "Gough Whitlam the Thwarted Globaliser and Market Reformer." *Australian Financial Review*, 22 October 2014. Available from: <https://www.afr.com/politics/federal/gough-whitlam-the-thwarted-globaliser-and-market-reformer-20141021-11a6d7> (accessed 6 April 2021).
- Posner, Richard. 1969. "Natural Monopoly and its Regulation." *Stanford Law Journal* 21 (3):548-643.
- Posner, Richard. 1976. *Antitrust Law: An Economic Perspective*. Chicago: University of Chicago Press.
- Posner, Richard. 1979. "The Chicago School of Antitrust Analysis." *University of Pennsylvania Law Review* 127 (4):925-948.
- Posner, Richard. 2005. "Hayek, Law, and Cognition." *New York University Journal of Law and Liberty* 1:147-165.
- Productivity Commission. 2001. *Telecommunications Competition Regulation: Inquiry Report*. Canberra: Productivity Commission.
- Productivity Commission. 2004. *ICT Use and Productivity: A Synthesis from Studies of Australian Firms, Commission Research Paper*. Canberra: Productivity Commission.

- Productivity Commission. 2005. *Review of National Competition Policy Reforms*. Melbourne: Productivity Commission.
- Productivity Commission. 2010. *Bilateral and Regional Trade Agreements, Research Report*. Canberra: Productivity Commission.
- Productivity Commission. 2014. *Submission to the Competition Policy Review*. Canberra: Productivity Commission.
- Productivity Commission. 2016. *Digital Disruption: What do Governments Need to Do?, Commission Research Paper*. Canberra: Productivity Commission.
- Productivity Commission. 2017. *Data Availability and Use: Commission Inquiry Report*. Canberra: Productivity Commission.
- Productivity Commission. 2020. *Foreign Investment in Australia, Commission Research Paper*. Canberra: Productivity Commission.
- Ptak, Ralf. 2015 [2009]. "Neoliberalism in Germany: Revisiting the Ordoliberal Foundations of the Social Market Economy." In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, 98-138. Cambridge (MA): Harvard University Press.
- Pusey, Michael. 1991. *Economic Rationalism in Canberra: A Nation Building State Changes its Mind*. Cambridge: Cambridge University Press.
- Pusey, Michael. 2018. "Economic Rationalism in Canberra 25 Years On?" *Journal of Sociology* 54 (1):12-17.
- Queensland Commission of Audit. 2013. *Final Report*. Vol. 1. Brisbane: Queensland Government.
- Rahl, James A. 1955. "Antitrust Policy in Distribution." *University of Pennsylvania Law Review* 104:185-221.
- RAND Corporation. 1994-2019. "A Brief History of RAND." Available from: <https://www.rand.org/about/history/a-brief-history-of-rand.html> (accessed 2 January 2019).
- RAND National Security Research Division. 2015. *Contestability Frameworks: An International Horizon Scan*. Santa Monica (CA): RAND Corporation.
- Reich, Leonard S. 1980. "Industrial Research and the Pursuit of Corporate Security: The Early Years of Bell Labs." *The Business History Review* 54 (4):504-529.
- Reich, Robert. 1984 [1983]. *The Next American Frontier*. Harmondsworth, England: Penguin Books.
- Rid, Thomas. 2016. *Rise of the Machines: The Lost History of Cybernetics*. Melbourne: Scribe.
- Robbins, Lionel. 1932. *An Essay on the Nature and Significance of Economic Science*. London: Macmillan & Co.
- Robbins, Lionel. 1934. *The Great Depression*. London: Macmillan and Co.
- Robinson, Joan. 1976 [1969]. *The Economics of Imperfect Competition*. 2nd ed. London: Macmillan / St Martin's Press. Original edition, 1st edition 1933.
- Robinson, Joan. 1977. "What are the Questions?" *Journal of Economic Literature* 15 (4):1318.
- Rochet, Jean-Charles, and Jean Tirole. 2003. "Platform Competition In Two-Sided Markets." *Journal of the European Economics Association* 1 (4):990-1029.
- Rochlin, Gene I. 1997. *Trapped in the Net: The Unanticipated Consequences of Computerization*. Princeton (NJ): Princeton University Press.
- Rockefeller, David. 2002. *Memoirs*. New York: Random House.
- Rostow, Eugene V. 1968. *President's Task Force on Communications Policy: Final Report*. Edited by President's Task Force on Communications Policy. Washington (DC): President's Task Force on Communications Policy.
- Round, David. 1994. "Twenty Years of Modern Antitrust in Australia: She'll Be Right, Mate." *Review of Industrial Organization* 9 (5):459-473.
- Rowe, Frederick. 1984. "The Decline of Antitrust and the Delusions of Models: The Faustian Pact of Law and Economics." *The Georgetown Law Journal* 72:1511-1570.
- Russel, Daniel R. 2014. *Transatlantic Interests In Asia, Talk given at Chatham House, Royal Institute of International Affairs, London, c14 January 2014*: US Embassy and Consulates.

- Sacks, David Harris. 1995. "The Countervailing of Benefits: Monopoly, Liberty, and Benevolence in Elizabethan England." In *Tudor Political Culture*, edited by Dale Hoak, 272-291. Cambridge: Cambridge University Press.
- Sadler, Denham. 2020. "BCG Gets Another \$300k Pay Rise from DTA." *InnovationAus*, 2 September 2020. Available from: <https://www.innovationaus.com/bcg-gets-another-300k-pay-rise-from-dta/> (accessed 30 April 2021).
- Samuelson, Paul. 1967. "The Monopolistic Competition Revolution." In *Monopolistic Competition Theory: Studies in Impact: Essays in Honour of Edward H. Chamberlin*, edited by Robert E. Kuenne, 105-138. New York: John Wiley & Sons Inc.
- Sauvé, Pierre. 1996. "Services and the International Contestability of Markets." *Transnational Corporations* 5 (1):37-56.
- Sauvé, Pierre, and Robert Stern. 2000. *GATS 2000: New Directions in Services Trade Liberalization*. Washington: The Brookings Institute.
- Schechner, Sam, Douglas MacMillan, and Nick Kostov. 2016. "Uber Suffers Blow in Legal Fights." *Dow Jones Institutional News*, 10 June 2016. Available from: <http://ezproxy.lib.uts.edu.au/login?url=https://search.proquest.com/docview/2015301404?accountid=17095> (accessed 6 March 2020).
- Schliesser, Eric. 2012. "Inventing Paradigms, Monopoly, Methodology, and Mythology at 'Chicago': Nutter, Stigler, and Milton Friedman." *Studies in History and Philosophy of Science* 43:160-171.
- Schoenbaum, Thomas. 1996. "The Concept of Market Contestability and New Agenda of the Multilateral Trading System." *Insights: American Society of International Law* 1 (2).
- Schumpeter, Joseph. 1947 [1943]. *Capitalism, Socialism, and Democracy*. 5th ed. London: Unwin University Books. Original edition, 1942.
- Schwartz, Marius. 1986. "The Nature and Scope of Contestability Theory." *Oxford Economic Papers* 38:37-57.
- Schwartz, Marius, and Robert Reynolds. 1983. "Contestable Markets: An Uprising in the Theory of Industry Structure: Comment." *The American Economic Review* 73 (3):488-490.
- Self, Peter. 1975. *Econocrats and the Policy Process: The Politics and Philosophy of Cost-benefit Analysis*. London: Macmillan.
- Sharkey, William. 1982. *The Theory of Natural Monopoly*. Cambridge: Cambridge University Press.
- Sharkey, William. 1995. "Network Models in Economics." In *Network Routing: Handbooks in Operations Research and Management Science*, edited by Michael. O. Ball, Tom Magnanti, Clyde Monma and George Nemhauser, 713-765. Amsterdam: Elsevier Science B.V. .
- Shearmur, Jeremy. 1996. *Hayek and After: Hayekian Liberalism as a Research Programme*. London: Routledge.
- Shepherd, William G. 1984. "'Contestability' vs. Competition." *American Economic Review* 74:572-587.
- Shepherd, William G. 1988. "Three Efficiency School Hypotheses about Market Power." *The Antitrust Bulletin* 33:395-415.
- Shepherd, William G. 1995. "Competition vs. Contestability: Once More." *Land Economics* 71 (3):200-309.
- Shetty, Sameepa. 2021. "Uber's Self-Driving Cars Are A Key To Its Path To Profitability." *CNBC*, 28 January 2020. Available from: <https://www.cnn.com/2020/01/28/ubers-self-driving-cars-are-a-key-to-its-path-to-profitability.html> (accessed 10 September 2021).
- Shooshan III, Harry. 1984. "The Bell Breakup: Putting It Into Perspective." In *Disconnecting Bell: The Impact of the AT&T Divestiture*, edited by Harry Shooshan III, 8-22. New York: Pergamon Press.
- Simon, Herbert A. 1996. *The Sciences of the Artificial*. 3rd ed. Cambridge (MA): The MIT Press.
- Simons, Henry. 1948 [1934]. "A Positive Program for Laissez Faire." In *Economic Policy for a Free Society*, edited by Henry Simons, 40-77. Chicago: University of Chicago Press.
- Slobodian, Quinn. 2018. *Globalists: The End of Empire and the Birth of Neoliberalism*. Cambridge (MA): Harvard University Press.

- Slobodian, Quinn 2020. "The Law of the Sea of Ignorance: F. A. Hayek, Fritz Machlup, and other Neoliberals Confront the Intellectual Property Problem." In *Nine Lives of Neoliberalism*, edited by Dieter Plehwe, Quinn Slobodian and Philip Mirowski, 69-92. London: Verso.
- SMH editors. 2007. "A Reign of Error." *The Sydney Morning Herald*, 3 February 2007. Available from: <https://www.smh.com.au/business/a-reign-of-error-20070203-gdpe30.html>
- Smith, Adam. 2007 [1776]. *An Inquiry Into the Nature and Causes of the Wealth of Nations*, edited by Jonathan B Wight. Petersfield (UK): Harriman House.
- Smith, Bradley F. 1993. *The Ultra-magic Deals: And the Most Secret Special Relationship 1940-1946*. Novato, CA: Presidio.
- Soni, Jimmy, and Rob Goodman. 2017. *A Mind at Play: How Claude Shannon Invented the Information Age*. New York: Simon & Schuster.
- Spar, Debora L. 2001. *Ruling the Waves: Cycles of Discovery, Chaos, and Wealth from the Compass to the Internet*. New York: Harcourt.
- Spence, A. Michael. 1983. "Contestable Markets and the Theory of Industry Structure: A Review Article." *Journal of Economic Literature* XXI (September):981-990.
- Sraffa, Piero 1926. "The Laws of Returns under Competitive Conditions." *The Economic Journal* 36 (144):535-550.
- Srnicek, Nick. 2016. *Platform Capitalism, Theory Redux*. Cambridge: Polity Press.
- Srnicek, Nick. 2017. "The Challenges of Platform Capitalism: Understanding the Logic of a New Business Model." *Juncture* 24 (4):254-257.
- Steiner, Yves. 2015 [2009]. "The Neoliberals Confront the Trade Unions." In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, 181-203. Cambridge (MA): Harvard University Press.
- Stigler, George. 1965. "The Economist and the State." *The American Economic Review* 55 (1):1-18.
- Stigler, George. 1968. *The Organization of Industry*. Homewood (IL): Richard D. Irwin.
- Stigler, George. 1971. "The Theory of Economic Regulation." *Bell Journal of Economics and Management Science* 2 (1):3-21.
- Stiglitz, Joseph. 2002. *Globalization and its Discontents*. London: Allen Lane.
- Stiglitz, Joseph. 2013 [2012]. *The Price of Inequality: How Today's Divided Society Endangers Our Future*. New York: W. W. Norton.
- Stocking Sr, George W. 1954. "Reviewed Work: The Role of Mergers in the Growth of Large Firms by J. Fred Weston." *The Journal of Finance* 9 (4):431-434.
- Stone, Alan. 1989. *Wrong Number: The Breakup of AT&T*. New York: Basic Books.
- Stone, Alan. 1997. *How America Got On-Line: Politics, Markets and the Revolution in Telecommunications*. Armonk (NY): M. E. Sharpe.
- Strange, Susan. 1988. *States and Markets*. London: Pinter Publishers.
- Strange, Susan. 1996. *The Retreat of the State: The Diffusion of Power in the World Economy*. Cambridge: Cambridge University Press.
- Strange, Susan. 1997 [1986]. *Casino Capitalism*. Manchester: Manchester University Press.
- Sturgess, Gary L. 1996. "Virtual Government: What Will Remain Inside the Public Sector?" *Australian Journal of Public Administration* 5 (3):59-73.
- Sturgess, Gary L. 2012. *Diversity and Contestability in the Public Service Economy*. Sydney: NSW Business Chamber.
- Sturgess, Gary L. 2015. *Contestability in Public Services: An Alternative to Outsourcing*. Melbourne: Australian and New Zealand School of Government.
- Sylos-Labini, Paolo. 1962 [1956]. *Oligopoly and Technical Progress* Translated by Elizabeth Henderson. Cambridge (MA): Harvard University Press.
- Tamanaha, Brian Z. 2008. "The Dark Side of the Relationship Between the Rule of Law and Liberalism." *NYU Journal of Law and Liberty* 3:516-547.
- Taplin, Jonathan. 2017. *Move Fast and Break Things: How Facebook, Google, and Amazon Cornered Culture and Undermined Democracy*. New York: Back Bay Books.
- Tarde, Gabriel. 1903. *The Laws of Imitation* Translated by Elsie Clews Parsons. 2nd ed. New York: Henry Holt and Company.

- Taylor, Fred M. 1929. "The Guidance of Production in a Socialist State." *The American Economic Review* 19 (1):1-8.
- Teitelman, Robert. 1994. *Profits of Science: The American Marriage of Business and Technology*. New York: Basic Books.
- Teles, Steven. 2008. *The Rise of the Conservative Legal Movement: The Battle for the Control of the Law*. Princeton (NJ): Princeton University Press.
- Temin, Peter, and Louis Galambos. 1987. *The Fall of the Bell System: A Study in Prices and Politics*. Cambridge: Cambridge University Press.
- The Economist. 2016. "The Superstar Company: A Giant Problem." *The Economist*, 17 September 2016. Available from: <https://perma.cc/DNN2-YKL3> (accessed 10 May 2018).
- Thomas, Jim. 2019. Coase and the London School of Economics in the 1920s-1940. London: London School of Economics and Political Science.
- Thomson, Graeme. 1997. "Australia and New Zealand." In *Global Competition Policy*, edited by Edward Graham M. and J. David Richardson, 385-403. Washington (DC): Institute of International Economics.
- Tienhaara, Kyla. 2010. *Investor-State Dispute Settlement in the Trans-Pacific Partnership Agreement: Submission to the Department of Foreign Affairs and Trade*. Canberra: Australian National University.
- Tingle, Laura. 2015. "Political Amnesia: How We Forgot How to Govern." *Quarterly Essay* (61):1-86.
- Toffler, Alvin. 1971 [1970]. *Future Shock*. London: Bodley Head.
- Toffler, Alvin. 1980. *The Third Wave*. New York: William Morrow.
- Toffler, Alvin. 1985. *The Adaptive Corporation*. New York: McGraw-Hill Book Company.
- Tomazin, Farrah 2019. "Hundreds of Millions Lost from Vocational Scheme." *The Sydney Morning Herald* 7 December 2019. Available from: <https://www.smh.com.au/politics/federal/hundreds-of-millions-lost-from-vocational-scheme-20191206-p53hqk.html> (accessed 8 November 2020).
- Tong, Kurt. 2015. "The Future of US Economic Engagement in the Asia-Pacific: Address at the United States Studies Centre at the University of Sydney, 14 August 2015." *Australasian Journal of American Studies* 34 (2):3-22.
- Trans-Pacific Partnership Agreement. 2015. *Trans-Pacific Partnership Agreement 2015*. Canberra: <http://dfat.gov.au/trade/agreements/tpp/official-documents/Pages/official-documents.aspx>.
- Treasury, The. 2015a. *Australian Government Response to Competition Policy Review* Canberra: Treasury, The.
- Treasury, The. 2015b. *Improving Australia's Financial System: Government Response to the Financial System Inquiry*. Canberra: Treasury, The.
- Treasury, The. 2017. *Analysis of Wage Growth*. Canberra: Treasury, The.
- Tribe, Keith. 2015 [2009]. "Liberalism and Neoliberalism in Britain, 1930-1980." In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, 68-97. Cambridge (MA): Harvard University Press.
- Triffin, Robert. 1962 [1940]. *Monopolistic Competition and General Equilibrium Theory*. Cambridge (MA): Harvard University Press.
- Tunstall, W. Brooke. 1985. *Disconnecting Parties: Managing the Bell System Break-Up: An Inside View*. New York: McGraw-Hill.
- Turing, Alan. 1936. "Computable Numbers with an Application to the Entscheidungsproblem: A Correction". Paper presented at *London Mathematical Society*, at London, 230-265.
- Turing, Alan. 1950. "Computing Machinery and Intelligence." *Mind* 49:433-460.
- Uchicago News. 2017. "Uchicago Announces \$125 Million Gift to Support Economic Scholarship" *Uchicago News*, 1 November 2017. Available from: <https://news.uchicago.edu/story/uchicago-announces-125-million-gift-support-economic-scholarship> (accessed 24 April 2021).
- UNCTAD. 2019. "Fact Sheet on Investor-state Dispute Settlement Cases in 2018." *IIA Issues Note: International Investment Agreements* (2).

- Van den Hauwe, Ludwig M. P. 2011. "Hayek, Gödel, and the Case for Methodological Dualism." *Journal of Economic Methodology* 18 (4):387-407.
- Van Horn, Robert. 2011. "Chicago's Shifting Attitude Toward Concentrations of Business Power (1934-1962)." *Seattle University Law Review* 34 (4):1527-1544.
- Van Horn, Robert. 2013. "Hayek's Unacknowledged Disciple: An Exploration of the Political and Intellectual Relationship of F. A. Hayek and Aaron Director (1945-1950)." *Journal of the History of Economic Thought* 35 (3):271-290.
- Van Horn, Robert. 2015 [2009]. "Reinventing Monopoly and the Role of Corporations: The Roots of Chicago Law and Economics." In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, 204-237. Cambridge (MA): Harvard University Press.
- Van Horn, Robert. 2018. "Corporations and the Rise of Chicago Law and Economics." *Economy and Society* 47 (3):477-499.
- Van Horn, Robert, and Ross B. Emmett. 2014. "Two Trajectories of Democratic Capitalism in the Post-war Chicago School: Frank Knight Versus Aaron Director." *Cambridge Journal of Economics* 39 (5):1443-1455.
- Van Horn, Robert, and Philip Mirowski. 2015 [2009]. "The Rise of the Chicago School of Economics and the Birth of Neoliberalism." In *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective*, edited by Philip Mirowski and Dieter Plehwe, 139-178. Cambridge (MA): Harvard University Press.
- Van Horn, Robert, Philip Mirowski, and Thomas Stapleford, eds. 2011. *Building Chicago Economics: New Perspectives on the History of America's Most Powerful Economics Program*. Cambridge: Cambridge University Press.
- Van Horn, Robert, and Edward Nik-Khah. 2018. "'Planning' the Free Market." In *SAGE Handbook for Neoliberalism*, edited by Damien Cahill, Melinda Cooper, Martyn Konings and D. Primrose, 98-112. Thousand Oaks, CA: Sage.
- Vanian, Jonathan, and Declan Harty. 2021. "Uber and Lyft Prepare for an Epic Legal Battle." *Fortune*.
- Veblen, Thorstein. 1899. *The Theory of the Leisure Class*.
- Veblen, Thorstein. 1965 [1921]. *The Engineers and the Price System*. New York: Augustus M. Kelley.
- Walker, Bob, and Betty Con Walker. 2000. *Privatisation Sell Off or Sell Out?: The Australian Experience*. Sydney: ABC Books.
- Walker, Jeremy. 2020. *More Heat Than Life: The Tangled Roots of Ecology, Energy, and Economics*. Singapore: Palgrave Macmillan.
- Walker, Jeremy. 2021. "Freedom to Burn: Mining Propaganda, Fossil Capital and the Australian Neoliberals." In *Market Prophets from the Margins: Neoliberals East and South*, edited by Quinn Slobodian and Dieter Plehwe. New York: Zone Books.
- Walker, Jeremy, and Melinda Cooper. 2011. "Genealogies of Resilience: From Systems Ecology to the Political Economy of Crisis Adaptation." *Security Dialogue* 42 (2):143-160.
- Warner, Mark. 1999. "Competition Policy and GATS." In *GATS 2000: New Directions in Services and Trade Liberalization*, edited by Pierre Sauvé and Robert Stern, 364-398. Washington: Brookings Institute.
- Warren, Elizabeth. 2017. "Three Ways to Remake the American Economy for All." *The Guardian*, 7 December 2017. Available from: <https://www.theguardian.com/commentisfree/2017/dec/06/elizabeth-warren-monopolies-american-economy> (accessed 7 December 2017).
- Weiss, Linda. 2014. *America Inc.?: Innovation and Enterprise in the National Security State*. Ithaca: Cornell University Press.
- Weitzman, Martin. 1983. "Contestable Markets: An Uprising in the Theory of Industry Structure: Comment." *The American Economics Journal* 73 (3):486-487.
- Welchman, Gordon. 2016. *The Hut Six Story: Breaking the Enigma Codes*. 2nd ed. Cleobury Mortimer, Shropshire: M & M Baldwin.
- Weldon, Marcus. 2016. *Is Creation of Time the Next Shannon-Esque Disruptive Innovation?* Murray Hill (NJ): Nokia Bell Labs.

- West, Nigel. 1988 [1986]. *The Sigint Secrets: The Signals Intelligence War, 1900 to Today: Including the Persecution of Gordon Welchman*. New York: Quill William Morrow.
- Weston, J. Fred. 1953. *The Role of Mergers in the Growth of Large Firms*. Berkeley: University of California Press.
- Wettenhall, Roger. 2005. "Non-departmental Public Bodies." In *Howard's Second and Third Governments: Australian Commonwealth Administration 1998-2004*, edited by Chris Aulich and Roger Wettenhall, 77-102. Sydney: UNSW Press.
- Wharton School. 2021. "Elizabeth E. Bailey." *Wharton School Business Economics and Public Policy Department*. Available from: <https://bepp.wharton.upenn.edu/profile/baileye/> (accessed 6 June 2021).
- White, Harrison. 2002. *Markets from Networks: Socioeconomic Models of Production*. Princeton: Princeton University Press.
- Whyte, Jessica. 2019. "The Invisible Hand of Friedrich Hayek: Submission and Spontaneous Order." *Political Theory* 47 (2):156-184.
- Wilcox, Clair. 1952. "Reviewed Work(s): The Extent of Enterprise Monopoly in the United States, 1899-1939. by G. Warren Nutter." *Journal of the American Statistical Association* 47 (257):100-101.
- Wilf, Steven. 2008. "The Making of the Post-War Paradigm in American Intellectual Property Law." *The Columbia Journal of Law and the Arts* 31 (2):139-207.
- Williams, Raymond. 1983. *Towards 2000*. London: Chatto and Windus ; Hogarth Press.
- Williams, Raymond. 1985 [1983]. *Towards 2000*. Harmondsworth: Pelican Books. Reprint, [1983] Chatto and Windus ; Hogarth Press.
- Williamson, Oliver E. 1998. "Transaction Cost Economics and Organization Theory." In *Technology, Organization and Competitiveness: Perspectives on Industrial and Corporate Change*, edited by Giovanni Dosi, David J. Teece and Josef Chytry, 17-66. Oxford: Oxford University Press.
- Willig, Robert. 1980. "What Can Markets Control?" In *Perspectives on Postal Service Issues*, edited by Roger Sherman, 137-159. Washington: American Enterprise Institute for Public Policy Research.
- Wong, Samantha. 2021. "Market Share of the Leading Ride-Hailing Companies in the United States from September 2017 to July 2021." *Statista*, 7 September 2021. Available from: <https://www.statista.com/statistics/910704/market-share-of-rideshare-companies-united-states/> (accessed 8 September 2021).
- World Trade Organization. 2018. *Accession of Australia to the Agreement on Government Procurement: Decision of the Committee of 17 October 2018*. Edited by WTO: Committee on Government Procurement. Vol. GPA/CD/1, GPA/CD/1. Geneva: WTO.
- Young, Allison. 1999. "What Next for Labor Mobility Under GATS?" In *GATS 2000: New Directions in Services and Trade Liberalization*, edited by Pierre Sauvé and Robert Stern, 184-217. Washington: Brookings Institute.
- Young, Kevin L. 2012. "Transnational Regulatory Capture? An Empirical Examination of the Transnational Lobbying of the Basel Committee on Banking Supervision." *Review of International Political Economy* 19 (4):663-688.
- Yu, Serena, and Damian Oliver. 2015. *The Capture of Public Wealth by the For-Profit VET Sector: A Report Prepared for the Australian Education Union*. Sydney: Workplace Research Centre, The University of Sydney Business School.
- Zachary, G. Pascal 1997. *Endless Frontier: Vannevar Bush, Engineer of the American Century*. New York: Free Press / Simon & Schuster.
- Zamora, Daniel. 2016a. "Foucault, the Excluded, and the Neoliberal Erosion of the State." In *Foucault and Neoliberalism*, edited by Daniel Zamora and Michael Behrent. Cambridge: Polity Press.
- Zamora, Daniel. 2016b. "Introduction." In *Foucault and Neoliberalism*, edited by Daniel Zamora and Michael Behrent. Cambridge: Polity Press.