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[*Articles*]

- Hans-Michael Trautwein, Globalization, Fragmentation and the Evolution of Economic Thinking 1**
- Peter Docherty, Responding to Financial Crises: Why Didn't Keynes Make Greater Use of the Bagehot Principle in the *Treatise on Money*? 21**
- Paolo Piacentini, Post-pandemic "Post-war": The Warnings for the Near Future from a Distant Past 46**
- Kenshiro Ninomiya, Debt Burden, Wealth and Confidence 73**
- Masako Tsujimura and Kazusuke Tsujimura, To Raise, or not to Raise, That is the Question: Loanable Funds Theory of Interest Revisited 98**

[Book Reviews]

Heinz D. Kurz and Neri Salvadori: *Competition, Value and Distribution in Classical Economics*, London and New York: Routledge, 2022, pp. xii + 334

Antonio D'Agata 122

Anna M. Carabelli, *Keynes on Uncertainty and Tragic Happiness: Complexity and Expectations*, London: Palgrave Macmillan, 2021, pp. vii + 182

Yasuhiro Sakai 126

Louis-Philippe Rochon, Marcin Czachor, Gracjan Robert Bachurewicz eds., *Kalecki and Kaleckian Economics: Understanding the Economics of Michał Kalecki and His Legacy after 50 Years*, London and New York: Routledge, 2021, pp.ix+182

Takeshi Ikeda 134

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I-IX

***Responding to Financial Crises: Why Didn't Keynes Make
Greater Use of the Bagehot Principle in the Treatise on Money?***

Peter Docherty*

Abstract

In the Treatise on Money, Keynes outlines a theory of cycles that includes the case of financially-induced asset price inflation in which banks provide credit to speculators who over-extend themselves. This can lead to bubbles which, after bursting, generate economic downturns. While Keynes has something to say in the Treatise about how central banks ought to respond to the possibility of economic fluctuations, he does not cite Walter Bagehot's principle of lending freely to solvent banks in a crisis, despite being aware of Bagehot's analysis in Lombard Street. This paper highlights the surprising nature of this omission on first inspection by comparing the treatment of financial crises in the Treatise with that in Lombard Street, and finding a significant degree of similarity. But it also offers a possible explanation for Keynes's omission of the Bagehot principle by suggesting that Keynes advocated an alternative that made an appeal to this principle unnecessary. Rather than advocating Bagehot's prudential policy of accumulating a banking reserve that could be deployed ex post once a crisis occurs, Keynes recommended the ex ante use of monetary policy to prevent crises from occurring in the first place. By maintaining Bank Rate at the natural rate of interest, investment and saving can be kept in balance, which not only leads to stable prices within the theoretical framework of the Treatise, it also makes the trade cycle and financial crises obsolete. A comparison of the policy responses to financial crises in Keynes's Treatise and Bagehot's Lombard Street thus raises the question of the respective roles played by prudential regulation and monetary policy in dealing with this phenomenon, a question of enduring relevance.

Keywords: Financial Crises, Bank Reserves, Central Banking, Lender of Last Resort

JEL Classification Number: B31; E12; G21; G28

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I. Introduction

In the *Treatise on Money*, Keynes provides a detailed consideration of the trade cycle, an important aspect of which is the possibility of financial crisis that has the potential to adversely affect the banking system. Keynes provides a rich treatment of the banking system in the *Treatise*, both in terms of its role in money supply determination and in terms of the role it plays in financing investment and speculative activity. Despite the fact that he clearly offers a negative evaluation of cyclical collapse, he makes no mention of Bagehot's principle of providing assistance to banks in times of financial crisis. This seems surprising on first inspection, given both the almost universal regard in which the Bagehot principle has come to be held (Goodhart 1999; and Bignon *et al.* 2012) and Keynes's clear familiarity with this principle (Moggridge 1992, p.440).

This paper seeks to investigate the extent to which Keynes's failure to mention the Bagehot principle in the *Treatise* is surprising and to identify the possible reasons for such an omission. It is set out as follows. Section 2 examines the nature and causes of cycles and financial crises in the *Treatise*. Section 3 undertakes a similar exercise for *Lombard Street* and compares this to Keynes's treatment in the *Treatise*. Section 4 then explores the policy responses to crises offered by Keynes and Bagehot, and suggests an explanation for Keynes's failure to mention the Bagehot principle in the *Treatise*. Section 5 summarises and concludes.

II. Economic Cycles and Crises in the *Treatise*

In the preface to the English edition of the *Treatise*, Keynes states that the principal objective of that work was to outline a theory of the dynamic processes by which the price level is determined, and to explain how an economy moves from one equilibrium price level to another (Keynes 1971a, pp.xvii). In one sense this might be understood as a revision of the Quantity Theory approach to price determination which Knut Wicksell had also attempted some thirty years earlier.¹ The possibility of economic cycles and financial crises essentially

¹ Keynes restates his objective of explaining the dynamics of price level determination and movement at the beginning of Chapter 10 in Volume 1 of the *Treatise*, the chapter in which he derives and explains the fundamental equations (Keynes 1971a, p.120). On the same page, he contrasts this objective with "the forms of

emerges as a by-product of this principal objective. Keynes systematically considers the forces that can disturb an equilibrium price level, and whether those disturbances will be temporary, and genuinely cyclical in that the economy returns to its initial equilibrium once the disturbance has dissipated, or whether they will be permanent with the economy settling to a new equilibrium at a different price level. It will, therefore, be valuable to briefly review the central theoretical pillars of Keynes's approach in the *Treatise* before focusing more specifically on the issue of cycles and crises.

A number of detailed expositions of the core theoretical structure of the *Treatise* are available in the literature (see, for example, Patinkin 1977, pp.33-42; Milgate 1982, pp.163-167; and Dimand 1988, pp.21-44) but we draw here directly on Keynes's own exposition in Chapter 10 of that work. The economy envisioned in this chapter has a closed, two sector structure made up of a consumption goods sector and a capital goods sector with no government. This industrial structure is integrated with a well-developed set of financial markets that includes both debt and equity instruments. The celebrated *fundamental equations* constitute the theoretical centre of this framework. These equations express the price of consumption goods and the average price of all goods (capital as well as consumption goods) respectively, as the outcome of interactions between various macroeconomic flows. The conceptual framework of the *Treatise* is thus built around an understanding of the circular flow of income that later came to be associated with *The General Theory*.² This circular flow is illustrated in Figure 1. Total income in the economy, expressed in nominal terms, is represented by E . Keynes divides this not by factor-type but by firm-type. Incomes paid by firms producing consumption goods is represented by C' while incomes paid by firms producing capital goods (which Keynes calls *investment* goods) is

the quantity theory . . . on which we have been brought up", suggesting a connection between his approach and these other "forms". This connection is repeated more explicitly on p.125 of the same chapter where he notes the "purely formal" nature of the fundamental equations which he suggests is shared by "*other* versions of the quantity theory of money" (italics added). It is thus reasonable to interpret the *Treatise* as a modification of the Quantity Theory. See Hirai (2007, pp.330-331) for further discussion of how the Quantity Theory is regarded in the *Treatise*. Docherty (1995, pp.21-22) examines a similar attitude on the part of Wicksell in *Interest and Prices* where Wicksell essentially embraces the overall conclusions of the Quantity Theory but outlines how these conclusions can be more carefully justified, which his own analysis demonstrates. Keynes, of course, draws a strong comparison between his own approach to monetary economics and price determination in the *Treatise* and Wicksell's analysis in *Interest and Prices* (Keynes 1971a, p.167).

² Such a conception of the circular flow had been used in a similar way by Wicksell in *Interest and Prices* (see Docherty 1995, pp.23-28). Given Keynes's acknowledgement of the similarity between his own work in the *Treatise* and Wicksell's analysis in *Interest and Prices* (*Treatise*, Volume I, p.167), it is not surprising to discover that the circular flow framework of the *Treatise* should have a conceptual precedent. In terms of the relationship between the *Treatise* and *Interest and Prices*, it is worth, though, heeding Hirai's (2007, p.329) reminder that Keynes was happy to criticise Wicksell as well as to praise him.

represented by I' . These incomes then constitute the cost of producing the relevant type of good, and total income in the economy is the sum of these firm-specific incomes: $E = C' + I'$.

The allocation of economy-wide nominal income by households between spending on consumption goods and saving, plays a key role in determining the price of consumption goods. The nominal value of consumption spending ($P \cdot R$) is the product of the unit price of consumption goods (P) and the real volume of those goods (R). The nominal value of

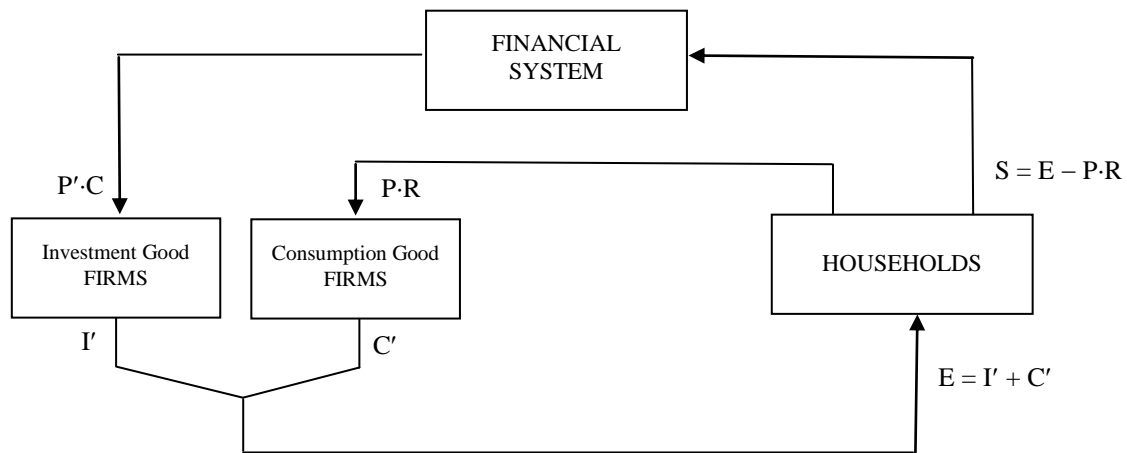


Figure 1: Expenditure Flows in the *Treatise*

investment goods output ($P' \cdot C$) is similarly the product of the unit price of investment goods (P') and the real volume of investment goods spending (C). Total output O is simply the sum of R and C where everything is measured in consumption good units. Saving, then, is economy wide income (E), less consumption spending ($P \cdot R$) and the price of consumption goods is given by equation (1) below. This is the *first fundamental equation* of the *Treatise*.

$$P = \frac{E}{O} + \frac{I' - S}{R} \quad (1)$$

According to this equation, the unit price of consumption goods is made up of two components. The first is simply the average cost of production across the economy which is identically equal to the total of all economy-wide incomes, E , divided by economy-wide output O measured in consumption good units. The second component is the degree to which the cost of producing investment goods exceeds total saving ($I' - S$) per unit of consumption goods produced (R). This follows because when $I' - S > 0$, some of the income earned in the investment goods sector (which is identically equal to the cost of producing investment goods, I') is not being saved, and is instead augmenting demand for consumption goods. It must thus

be the case that demand for consumption goods exceeds their full employment supply so that their price is driven up to the extent of this imbalance.³

The second fundamental equation gives the average price level across both sectors. Recognizing that this average price level (Π) is the weighted average of consumption good prices (P) and investment good prices (P'), gives the following expression:

$$\Pi = P \cdot \frac{R}{O} + P' \cdot \frac{C}{O} \quad (2)$$

Since total spending on investment I is simply the price of investment goods (P') multiplied by the volume of real sales (C), that is $I = P' \cdot C$, and since it was previously noted that $P \cdot R = E - S$, substitution of these expressions into equation (2) and minor rearranging gives the *second fundamental equation* as follows:

$$\Pi = \frac{E}{O} + \frac{I - S}{O} \quad (3)$$

Equation (2) also determines the average price level with two components. The first is again the average cost of production across the economy which is identical to the first component in equation (1). The second component is the degree to which investment spending (I , rather than the cost of producing investment goods, I') exceeds total saving ($I - S$) per unit of total output in the economy (O). This follows because when $I - S > 0$, total expenditure in the economy exceeds total income, and thus the value of what has been being produced, so that at full employment, there must be upward pressure on the average price level, Π . The second fundamental equation thus suggests that the average price of all goods in the economy will be stable and essentially equal to the cost of producing those goods (the first terms in equation (3))

³ Equation (1) can be formally derived from the definition of savings within the framework specified above, which is given as follows:

$$S = E - P \cdot R.$$

Noting that output O is made up of consumption goods production R and investment goods production, C , so that $O = R + C$, multiplying E in this expression by 1, factorising, and rearranging slightly gives:

$$P \cdot R = \frac{E \cdot R}{O} + \frac{E \cdot C}{O} - S$$

Recognising that C/O is the proportion of total output produced in the investment goods industry, so that the cost of production in this industry, defined above as I' , is $E \cdot (C/O)$, and dividing through the above equation by R gives:

$$P = \frac{E}{O} + \frac{I' - S}{R}$$

which is equation (1) above.

above), provided that the total amount of investment is equal to the total amount of saving. That is, prices will be stable provided the second term in equation (3) is equal to zero. We shall see below how this outcome is affected by the rate of interest, but for the moment we note that this constitutes the nature of macroeconomic equilibrium within the conceptual framework of the *Treatise*.

Keynes's treatment of economic cycles now emerges from a consideration of how the equilibrium specified in equations (1) and (3) can be disturbed. Such disturbances can be caused, according to Keynes, by two sets of factors: monetary and investment (or real). Changes arising from monetary factors, such as additional money supply or shifts in money demand of various kinds that "free-up" money for alternative uses, have permanent effects on the equilibria expressed in equations (1) and (3) above. Changes arising from investment factors are, however, inherently temporary, and thus cyclical in nature. They also have important monetary dimensions, but Keynes's treatment of cycles revolves largely around these investment factors.

Keynes (1971a, p.252) identifies three types of investment-related credit cycles that can be initiated by such events as new technical discoveries, a shortage of houses due to population growth, or cheap money (Keynes 1971a, p.254). Each of these events will result in a desire by entrepreneurs to increase investment spending, and Keynes classifies the ensuing cycle depending on the nature of associated changes in demand for consumption goods and the composition of output. In the first type of cycle, the increase in investment spending may be associated with a reduction of consumption spending of the same amount, so that output is unchanged. In this case, productive resources will be shifted from the consumption goods sector to the capital goods sector. In the second type of cycle, the production of consumption goods is unchanged so that total output increases. This will require additional working capital to finance the additional investment spending. The third type of cycle is similar to the second, except that there is *increased* production of consumption goods (Keynes 1971a, p.252).

Keynes analyzes the cycles resulting from such increased investment spending in terms of a series of phases. In the *primary* phase for all crisis types, once the initiating cause has led to higher investment spending, there is a switch of employment from the consumption goods sector to the capital goods sector. While there is no immediate effect on prices, the price of consumption goods will increase once the effects of reduced employment in the consumption goods sector begin to be felt. Since the ratio of investment goods to total output (C/O) increases, the cost of producing investment goods increases and I' will be higher. This will

then lead to an increase in the price of consumption goods. Keynes (1971a, p.249) refers to this as “commodity inflation.”

In the secondary phase, what Keynes (1971a, p.253) calls “income inflation” emerges. Because the price of consumption goods has risen in the primary phase, entrepreneurs who had previously been holding stocks of finished consumption goods will earn “windfall profits” and this, along with the fact that the price of consumption goods is higher, will encourage increased production of consumption goods. But increased production of consumption goods requires producers in this sector to bid labor away from the investment goods sector, and this will drive up the wage rate, W . This will place further upwards pressure on the price of *all* goods. Increased prices also increase the transactions demand for bank deposits which will place upwards pressure on interest rates, other things equal (Keynes 1971a, p.259).

The further rise of prices in the secondary phase may also spark some associated financial activity depending on the precise attendant circumstances. Investment decisions by entrepreneurs in the consumption goods sector requires a comparison of rates of return on capital in that sector with the rate of interest on loans. Calculation of the first of these requires entrepreneurs to forecast future revenues from consumption goods production, and thus the expected course of consumption goods prices. There may be occasions when the rise of consumption goods prices in the secondary phase leads to “inaccurate forecasting” in the form of overly optimistic expectations of continued increases in these prices (Keynes 1971a, p.260). This may lead to over-investment, and a further bidding up of capital good prices as well. At the same time, financial speculators may make similar calculations about the value of security prices for firms producing consumption goods. Keynes had earlier in the *Treatise* described a situation in which securities markets were characterized by the presence of this kind of “bullish sentiment” in which:

. . . one section [of the public] is tempted by easy credit to borrow for the purpose of buying securities speculatively, [so that] security prices can be raised to a level at which another section of the public will prefer savings deposits . . . Thus the actual level of security prices is . . . the resultant of the degree of bullishness of opinion and the behaviour of the banking system. (*Treatise*, Vol. I, p.224)

Thus, in some circumstances, the secondary phase of the cycle can lead to speculative activity that produces an asset bubble in security prices as well as the effects described above.

Keynes (1971a, p.259) describes the third phase of the credit cycle as the “collapse.” As the producers of consumption goods eventually respond to their inaccurate expectations with increases in output that are too big, the price of consumption goods will tend to fall, and this

will generate new and unexpected losses. This will once again affect financial sentiment, and it will do this in two ways. Firstly, it will increase the prevalence of “bear views” and the demand for money will increase. Secondly, demand for capital goods will fall, causing the prices of these goods and underlying securities to fall as well (Keynes 1971a, pp.260-261). In the most benign case, the initial stimulus to investment will be reversed and the economy will gravitate back to its initial equilibrium.

It is worth noting the potential for speculative activity and the resulting asset price bubbles that this can create, to develop a periodic life of their own within the conceptual framework of the *Treatise*. Cycles might well begin their lives with shocks to real investment spending as described above, but the potential for financial activity to become detached from any real moorings it might have in the long run vision of the *Treatise*, and to take on a speculative character, is clear in Keynes’s analysis:

. . . the volume of trading in financial instruments, i.e. the activity of financial business, is not only highly variable but has no close connection with the volume of output whether of capital goods or of consumptions goods.

Nor does the price of existing securities depend at all closely over short periods either on the cost of production or on the price of new fixed capital. For existing securities largely consist of properties which cannot quickly be reproduced at all, and the capitalised value of the future income anticipated from the possession of quasi-monopolies of peculiar advantages of one kind or another. (*Treatise*, Vol. I, p.222)

And the potential for banks to finance such speculative positions is also clear:

On the other hand, there is another class of persons who borrow from the banks in order to finance a larger holding of securities than they can carry with their own resources. (*Treatise*, Vol. I, p.223)

The possibility thus exists for the development of highly leveraged positions in financial assets that drive up security prices within the framework of the *Treatise*. Given Keynes’s clear articulation of the “collapse” phase of the cycle, the possibility must also then be admitted of an unwinding of such asset price inflation, with consequent potential for defaults on bank loans, and the associated possibility of bank runs and threats to banking system stability. Keynes’s discussion of “prudent” bank behavior in Volume II of the *Treatise* implicitly admits of this possibility (Keynes 1971b, pp.46-47).

In addition, it isn’t simply cyclical activity which commences with real investment shocks that sets up the potential for financial crises of this type. As suggested above, Keynes also admits the possibility of disturbances to equilibrium from monetary sources, and while

leading to permanent changes in the price level, such disturbances may also cause speculation and asset price inflation of the type described above. And one of the causes of such disturbances is an alteration of bank reserves that enables banks to expand their lending (Keynes 1971a, p.235). Such additional resources will lead to a reduction in the money rate of interest charged by banks compared to returns on the ownership and use of real capital goods. This will stimulate investment spending, raise the prices of capital goods and thus the cost of producing capital goods, I' , so that the average price level increases (Keynes 1971a, p.236). But some of the additional loans that banks are able to furnish will be conveyed, under the right circumstances, to financial speculators, and the process of speculation and asset price inflation described above, may be set in train (Keynes 1971a, pp.239-40). Banks will thus have been placed in the situation where their own lending has led to circumstances which threaten stability of the banking system.

While Keynes does not use the term “crisis” to describe the downturn phase of the cycle very frequently in the *Treatise*, he clearly regards this phase as posing a serious policy challenge for monetary authorities. This is most clearly demonstrated in Chapter 19 of Volume I where, having outlined the driving forces of the credit cycle in the previous two chapters, he provides some overall reflections on the cycle largely in response to Robertson’s assertion of the long term benefits that derive from its expansionary phase:

For there are enormous losses to be put on the other side ascribable to the cyclical deflations. The loss during the latter arises not only out of consumption at the expense of savings but also out of the loss of output due to involuntary unemployment (which is a greater evil than the overtime of the booms is a benefit). Not nearly enough weight is generally given to this great loss of wealth during a deflation ascribable partly to the loss of savings and partly due to the involuntary idleness of the factors of production. (*Treatise*, Vol. I, p.264)

Unemployment and lost output are thus important costs imposed by the cycle’s collapse that Keynes thinks should motivate a policy response. He also draws attention immediately following this argument to the distributive impact of inflation that transfers wealth from the laboring class to the entrepreneurial class over the course of the cycle. In addition, he provides a useful summary of the factors leading to a collapse of the credit cycle in this chapter which identifies an aspect of this phase that will be useful for comparing Bagehot’s treatment of crises to the perspective outlined in the *Treatise*:

The turn may come from a faltering of financial sentiment, due to some financiers, from prescience or from their experience of previous *crises*, seeing a little further ahead than the business world or the banking world. If so, the growth of “bear”

sentiment will, as we have seen, increase the requirements of financial circulation. It may be, therefore, the tendency of the financial circulation to increase, on the top of the increase in industrial circulation, which will break the back of the banking system and cause it at long last to impose a rate of interest, which is not only fully equal to the natural rate but, very likely in the changed circumstances, well above it. (*Treatise*, Vol. I, pp.272-273; italics added)

Thus, the deteriorating expectations of financial investors that develop as the boom phase of the cycle matures, causes them to re-balance their portfolios towards cash (increasing the “financial circulation” of money), which increases the rate of interest on bank loans above the natural rate, and brings high levels of investment spending to an end. The “collapse” or “crisis” phase (note that Keynes does use the term “crisis” here) is thus characterized by an increased demand for liquidity.

While cycles within the framework of the *Treatise* can be caused by either real or monetary factors, a common feature of all cycles is an initial imbalance between investment and saving, and Keynes explicitly acknowledges that disturbances of either kind can frequently occur alongside one another:

These different types of disturbance can exist simultaneously with one another and they can tend to produce one another . . . We shall see that there is a certain appropriateness in this description [of calling disturbances arising from a change in investment as *credit cycles*], because in this case we have an oscillation about an unchanged position of equilibrium and not a transition from one position of equilibrium to another. On the other hand, the oscillation is not necessarily of a strictly cyclical type, and its characteristics shade off into the not very dissimilar characteristics of the oscillations which attend any monetary change, including a transition from one position of equilibrium to another. (*Treatise*, Vol. I, pp.233-234)

These two observations will be important for a consideration of what Keynes regards as the appropriate policy response to crises later in the paper. We turn now to Bagehot’s treatment of cycles in *Lombard Street*.

III. Financial Crises in *Lombard Street*

Bagehot considers the nature and causes of economic and financial crises in Chapter VI of *Lombard Street* which is entitled “*Why Lombard Street is often dull, and sometimes extremely excited.*” Bagehot’s primary interest in cycles is the possibility that financial crises may be associated with them, and more particularly, that the downturn phase of the cycle may

generate a *panic* that could threaten banking system stability. This is because “an immense credit” rests on “a small cash reserve” in the English financial system (Bagehot 1873, p.122), so that any event which reduces trust and confidence in banking may lead to deposit withdrawal that exhausts reserves, and compromises the solvency of banking institutions.

Bagehot identifies three sources of such instability. Firstly, there are *exogenous* events, which Bagehot variously designates as “sudden events”, “accidental events” (p.122) or “changeable elements” (p.129) and these include such things as bad harvests, the possibility of foreign invasion, and the sudden failure of a trusted company (Bagehot 1873, p.122). Secondly, there are disturbing influences that may be generated from *within* the financial system itself:

But it is of great importance to point out that our industrial organisation is liable not only to *irregular external* accidents, but likewise to *regular internal* changes; that these changes make our credit system much more delicate at some times than at others; and that it is the recurrence of these periodical seasons of delicacy which has given rise to the notion that panics come according to a fixed rule, – that every ten years or so we must have one of them. (*Lombard Street*, p.123; italics added)

It must be noted that these first two sources of disruption can also be sources of growth and prosperity. A good harvest or newly discovered natural resources can generate economic expansion with increased production and employment, and a boom in trade. Similarly, argues Bagehot, when England’s highly developed banking system makes credit available to finance new commercial opportunities, this will also drive economic expansion. In this sense, these two “variable causes” [of instability] are also “causes of real prosperity” (Bagehot 1873, p.130). The third source of instability can also be a source of “apparent prosperity”, but it is even more likely than the first two factors to eventually cause instability: the phenomenon of financial speculation (Bagehot 1873, p.130). Let us examine more carefully how each of these three sources of potential instability operates in Bagehot’s thinking.

Bagehot’s initial consideration of economic cycles examines not only what the underlying cause of the cycle might be but how this cause is propagated across the entire economy so that all incomes rise and fall together. While Bagehot identifies *time* as the essential element in propagation (Bagehot 1873, p.124), his analysis might better be characterized in terms of the “division of labor” and the interconnectedness of incomes and expenditures that this division generates.

As has been explained, the fundamental cause is that under a system in which everyone is dependent on the labour of everyone else, the loss of one spreads and

multiplies through all, and spreads and multiplies the faster the higher the previous perfection of the system of divided labour, and the more nice and effectual the mode of interchange. (*Lombard Street*, pp.126-127)

Time enters the picture because it introduces a lag between production and sale. This can be understood in terms of how long it takes for sale to occur as an abstract possibility once goods have been produced, or more practically, in terms of how quickly particular buyers for a firm's product can be located (Bagehot 1873, p.124). In terms of the propagation of negative shocks, the effect of time is important because if an effect in one industry is sufficiently persistent, it will begin to be felt in other industries, whereas if it is short-lived, its effect will dissipate before any widespread impact is noticed (Bagehot 1873, p.127).

Within this context of economic interdependencies, *real* shocks can then generate both expansions and contractions, and some industries are more important than others in terms of the effects they can generate throughout the whole economic system:

The most common, and by far the most important, case where depression in one trade causes depression in all others, is that of depressed agriculture. (*Lombard Street*, p.127)

Especially when for two or three years harvests have been bad, and corn has been long dear, every industry is impoverished, and almost every one, by becoming poorer, makes every other poorer too. (*Lombard Street*, p.128)

But real shocks are not the only "changeable element" that can cause economic booms and, more importantly, busts:

Credit – the disposition of one man to trust another – is singularly varying. (*Lombard Street*, p.129)

And the effect of credit variations operate by virtue of the impact they have on the lags between production and sale that Bagehot earlier identifies:

And the state of credit is thus influential, because of the two principles which have just been explained. In a good state of credit, goods lie on hand much less time than when credit is bad; sales are quicker; intermediate dealers borrow easily to augment their trade, and so more and more goods are more quickly and more easily transmitted from the producer to the consumer. (*Lombard Street*, p.130)

Bagehot postpones explaining the way in which the state of credit operates to generate cycles until later in the chapter but this involves a similar set of concepts to those employed by Keynes in the *Treatise* though with less expositional clarity. In situations where business

prospects are “quiet” and “stagnant” there tends to be an excess of savings over the demand for loan capital and the rate of interest tends to be low (Bagehot 1873, pp.149, 154, 156). As time passes, the memory of previous difficulties fades and a “buoyant cheerfulness overflows in the mercantile world” (Bagehot 1873, pp.150-151).

At this time, three “great causes” of boom conditions may simultaneously emerge: the availability of loanable capital; good credit (i.e. willingness of the banking system to lend with liberality); and increased profits derived from possibilities of employing labor and capital more effectively (Bagehot 1873, pp.149-150). This implies an increase in activity and what appears to be a movement to something like the idea of full employment, or what Bagehot calls “the full working of the industrial machine” (Bagehot 1873, p.152). Prices then begin to rise at this point in the cycle. This is linked in part to the associated idea of capacity constraints, especially with respect to the available supply of key resources such as coal and iron (Bagehot 1873, p.151), and partly because the economy becomes susceptible to real shocks from such events as bad harvests which increase the price of corn and thus prices generally (Bagehot 1873, p.152). This inflation leads in turn to additional demand for loanable capital which drives up the interest rate and reverses the expansionary trend.

In consequence, a long-continued low rate of interest is almost always followed by a rapid rise in that rate. Till the available trade is found [loanable capital] lies idle, and can scarcely be lent at all; some of it is not lent. But the moment the available trade is discovered – the moment that prices have risen – the demand for loanable capital becomes keen. (*Lombard Street*, p.154)

A little excess [of loanable capital] therefore forces down the rate of interest very much. But if that low rate of interest should cause, or should aid in causing, a great growth of trade, the rise is sure to be quick, and is apt to be violent A great increase in the borrowing demands of English commerce almost always changes an excess of loanable capital above the demand to a greater deficiency below the demand. That deficiency causes adversity, or apparent adversity, in trade, just as, and in the same manner, that the previous excess caused prosperity, or apparent prosperity. It causes a fall of price that runs through society; that fall causes a decline of activity and a diminution of profits – a painful contraction instead of the previous pleasant expansion. (*Lombard Street*, pp.155-156)

Credit thus plays an important part in this process since its availability or lack of availability conditions the expansion or otherwise of activity. As Bagehot argues, in periods immediately following a contraction, credit is hard to obtain, but in periods of buoyancy, it is more readily available (Bagehot 1873, p.149).

There is also a third and final “variable cause” that drives economic cycles: the possibility of speculation in “specious investments” (Bagehot 1873, pp.130, 136-137). This kind of activity is driven by two sets of forces according to Bagehot. The first is a kind of “search for yield” effect when there is a surplus of savings over business opportunities, and interest rates are consequently low (Bagehot 1873, p.131). This coincides with the increased availability of “specious” schemes when there is excess capital that cannot easily find productive investment. Those who devise such schemes will recognize the greater likelihood of investors being willing to support them in such circumstances, and more schemes will, therefore, be offered (Bagehot 1873, p.133). The second set of forces is linked with upturns of the first two types when prices begin to rise and expectations of strong returns become widespread. Under these circumstances, it becomes even easier to market specious schemes given the greater importance of the capital gain component of their overall returns:

The fact is, that the owners of savings not finding, in adequate quantities, their usual kind of investments, rush into anything that promises speciously, and when they find that these specious investments can be disposed of at high profit, they rush into them more and more. The first taste is for high interest, but that taste soon becomes secondary. There is a second appetite for large gains to be made by selling the principal which is to yield the interest. So long as such sales can be effected the mania continues; when it ceases to be possible to effect them, ruin begins. (*Lombard Street*, pp.136-137)

We thus have three broad causes of economic cycles in Bagehot’s analysis that have the potential to end in financial crisis: those that are driven by real events such as bad harvests or the collapse of significant institutions of business and commerce; those that are driven by an improvement in the state of credit that enables businesses to access additional finance and expand investment spending; and those based on financial speculation that drive up asset prices and generate expectations of high returns. Each of these causes may generate an economic boom, but in each case, the driving causes will inevitably reach a limit after which they will work in the opposite fashion, leading to a downturn. Bagehot does not, however, see these causes so much as forces that always operate in isolation from one another but as frequently interacting and occurring together in similar fashion to Keynes.

What can then transform a cyclical economic downturn into a fully blown financial crisis is the “delicate” nature of banking. When a significant downturn occurs, it is common for there to be an increased demand for cash (Bagehot 1873, p.17). Since much of this cash is deposited in banks, a significant demand for cash and thus deposit withdrawal can exhaust

bank reserves, cause banks to call in loans, and call into question the solvency of these key financial institutions. This of course would cause a panic to spread, and the effect will be replicated across the financial system, causing the entire banking system to collapse with associated implications for ongoing economic depression.

Bagehot's treatment of cycles and crises thus has a number of features in common with Keynes's treatment of these phenomena in the *Treatise*. It involves a degree of over-investment by firms that inflates commodity prices and raises profits, reinforcing the incentive for expansion. It involves the provision of finance to firms by the banking sector that allows the expansion to proceed. It entertains a role for financial speculation in the upswing that adds an extra impetus to optimism and bullish sentiment. It thus identifies a range of causes for fluctuations but acknowledges the possibility that more than one of these causes can operate at any given time. Given these similarities in how Keynes and Bagehot *understand* crises, it is somewhat surprising that there is so little similarity in the policies they recommend for responding to crises. We turn in the next section to consider why this might be the case.

IV. Responding to Crises: Keynes and Bagehot Compared

It is not simply the case that Keynes and Bagehot understand cycles and crises in broadly similar ways, they also both provide negative evaluations of the effects which result from crises. This suggests that some form of policy response is indeed required to address these negative effects, but as previously observed, it is precisely at this point that their treatments diverge. Bagehot outlines a response for which he has become famous, but Keynes, writing more than fifty years after Bagehot's articulation of this response, makes no mention of it.

There are two aspects to Bagehot's response. The first is that the possibility of crisis which he outlines in Chapter VI of *Lombard Street* makes the accumulation of a substantial banking reserve of crucial importance. This point is made at the end of that analysis in Chapter VI:

When we understand that Lombard Street is subject to severe alternations of opposite causes, we should cease to be surprised at its seeming cycles. We should cease too to be surprised at the sudden panics. During the period of reaction and adversity, just even at the last instant of prosperity, the whole structure is delicate . . . we can also thoroughly comprehend the cardinal importance of always retaining a great banking reserve. (*Lombard Street*, pp.158-159)

The need for reserves is directly related to this “delicateness” of fractional reserve banking that Bagehot stresses throughout *Lombard Street*. It is perhaps most clearly outlined in the book’s opening chapter. Bagehot there articulates a link between growth, investment and “borrowed capital” which is mediated by the banking system. England’s development of a sophisticated financial system in the form of fractional reserve banking was thus important for its economic development in Bagehot’s eyes. But this exposed the country to serious danger since any increase in general economic uncertainty and more particularly any loss of confidence in the ability of banks to repay deposits in cash (particularly gold), would lead to an increase in bank withdrawals, and banks would find themselves unable to satisfy this demand by the very nature of fractional reserves. Reserves thus had to be large enough to satisfy initial increases in demand for cash at the beginning of a panic. This would then alleviate the crisis of confidence and calm the panic:

But in exact proportion to the power of this system is its delicacy – I should hardly say too much if I said its *danger*. Only our familiarity blinds us to the marvellous nature of the system. There never was so much borrowed money collected in the world as is now collected in London. Of the many millions in Lombard street, infinitely the greater proportion is held by bankers or others on short notice or on demand; that is to say, the owners could ask for it all any day they please: in a *panic* some of them do ask for some of it. If any large fraction of that money really was demanded, our banking system and our industrial system too would be in great *danger*. (*Lombard Street*, p.17; italics added)

But England’s system was such that the banking reserve was not held by individual banks against their own liabilities but was concentrated at the Bank of England which held a larger reserve that effectively served the whole banking system. While Bagehot thought that the ideal system was one where each bank kept its own reserve (Goodhart 1988, p.14), he accepted the reality of a single reserve, and this led to the second aspect of his response to the possibility of crisis:

Theory suggests, and experience proves, that in a panic the holders of the ultimate Bank reserve (whether one bank or many) should lend to all that bring good securities quickly, freely, and readily. By that policy they allay a panic; by every other policy they intensify it. (*Lombard Street*, p.173)

Nothing, therefore, can be more certain than that the Bank of England has in this respect no peculiar privilege; that it is simply in the position of a Bank keeping the

Banking reserve of the country; that it must in time of panic . . . advance freely and vigorously to the public out of that reserve. (*Lombard Street*, p.196)

Since the Bank of England was the single repository of the reserve, it was essential that it lend out that reserve and distribute funds to those banks that needed liquidity when panic struck. Only this would allay the fears of depositors, prevent the spread of panic, and avoid the collapse of individual banks or indeed of the whole system. Bagehot did, however, specify two rules that he thought should govern this distribution of the reserve:

The end is to stay the panic; and the advances should, if possible, stay the panic. And for this purpose there are two rules: – First. That these loans should only be made at a very high rate of interest. This will operate as a heavy fine on unreasonable timidity, and will prevent the greatest number of applications by persons who do not require it . . . Secondly. That at this rate these advances should be made on all banking good securities, and as largely as the public ask for them. (*Lombard Street*, p.197)

This idea that the Bank of England should lend freely in time of crisis albeit it at a “penalty” rate of interest (*cf.* Humphrey 1992, p.572) and only against good security, came to be known as the *Bagehot principle* and was characterized as the *lender of last resort* function of central banks (Fetter 1965, pp.272-275; Bignon *et al.* 2012, p.581).

While a number of writers have pointed out that Henry Thornton and others had articulated principles similar to this well before *Lombard Street* was published (see, for example, Perlman 1992, p.612; and Goodhart 1999, p.340), it became most strongly associated with Bagehot’s name, and this association was well and truly in place by the time that Keynes published the *Treatise* (see, for example, Sayers 1938, p.112 and Hawtrey 1962, p.117). But, as suggested above, Keynes’s analysis of cycles and crises in the *Treatise* makes no explicit reference to the Bagehot principle.

The reason for Keynes’s failure to cite Bagehot was clearly not because he was unaware of *Lombard Street*. Moggridge (1992, pp.95n, 198) provides evidence that Keynes reported to Alfred Marshall in 1905 that *Lombard Street* had been part of his undergraduate reading program at Cambridge. In addition to this, Keynes was invited by *The Banker* magazine in 1926 to write a reflection on *Lombard Street* as part of the commemoration of the 100th anniversary of Bagehot’s birth (Moggridge 1992, p.440). That reflection, published in March 1926, cited the Bagehot principle identified above, as not only Bagehot’s chief contribution in the area of banking but as one of considerable importance:

It was Bagehot who first insisted that by force of circumstances, whether we like it or nor, the Bank of England had become a national institution with national responsibilities, and could no longer function with primary regard to the profits of its shareholders. The fundamental duties of the Bank of England, according to Bagehot, were three – to operate with a degree of caution and impartiality beyond what could be required of an ordinary enterprising business, to maintain and build up the reserve in ordinary times, and to use the reserve without stint of limitation in time of panic. Bagehot's right policy in times of panic was perhaps, his most characteristic and significant contribution to the practice of the day. (*Keynes* 1981, p.467)

He then cites a passage from Chapter II of *Lombard Street* that expresses the importance of reserves and the principle that they should be lent to stay a panic (*cf.* Bagehot 1873, p.53) after which he provides this assessment:

It was Bagehot who hammered this hard truth into the hard heads of the City of London, who made it part of British tradition and prejudice. No other principle or practice has contributed more than this one – for no other financial centre has ever learnt it – to the prestige and leadership of London. (*Keynes* 1981, p.468)

Keynes was thus well aware of the Bagehot principle and had clearly given it considerable thought precisely during a period when he was working on the *Treatise* (see Moggridge 1992, pp.440-441). This makes the omission of any reference to the principle in the *Treatise* all the more intriguing. We must ask then, why it might have been the case that despite Keynes's familiarity with the Bagehot principle and its seeming relevance to issues addressed in the *Treatise*, that he makes no reference to it in his analysis.

There appear to be two immediate factors that might explain this omission. The first, and perhaps the most important, is that Keynes offers an *alternative* to the Bagehot principle for addressing the problems posed by cycles. This alternative was the weapon of monetary policy in the form of manipulating Bank Rate to prevent the occurrence of cycles and crises.

It should be recalled that the primary objective of the *Treatise* was to outline a theory of the dynamic processes by which the price level is determined (*Keynes* 1971a, pp. xvii, 120) and to explain how the economy moves from one equilibrium price level to another. It was argued above that the possibility of economic cycles and financial crises emerges as part of this analysis. Keynes systematically considers the forces that can disturb an equilibrium, and he divides those forces into changes arising from monetary factors and changes arising from investment factors. It was also observed earlier that this analysis had two important aspects.

Firstly, different types of cycle can occur together, so that cycles generated by changes in investment (or by real causes) can eventually entail financial speculation. Secondly, all initiating booms, according to Keynes, will involve an imbalance of investment over saving. This suggests that *maintaining* equality between investment and saving may be the most effective way to avoid cycles, downturns and crises, and this can be achieved, argued Keynes, via the impact that interest rates have on investment spending. This possibility can be seen in the quotation below where having outlined the nature of credit cycles arising from investment shocks in Chapter 18 of Volume 1, Keynes concludes with the following consideration:

All of this presumes of course that the banking system has been behaving according to the principles which have in fact governed it hitherto, and that it lies either outside its purpose or outside its power so to fix and maintain the effective bank rate as to keep saving and investment at an approximate equality throughout. For if it were to manage the currency successfully according to the latter criterion, the credit cycle would not occur at all. (*Treatise*, Vol. I, pp.261-262)

Thus, if the investment-savings balance *is* maintained, the cycle will *not* occur. Such a balance is, of course, also central to the question of chief concern in the *Treatise*, that of price determination. When investment and saving are equal, prices are stable. When they are not, price changes will occur:

If we start from a position of equilibrium, then – provided that efficiency earnings are stable – the condition for the continued stability of price levels is that the total volume of money should vary in such a way that the effect of the corresponding volume of bank lending on the market rate of interest is to keep the value of new investment at an equality with current saving. (*Treatise*, Vol. I, p.197)

And this balance or equality is a function of the rate of interest, principally operating by its effect on investment. The rate of interest at which investment and saving are equal is, of course, the *natural rate* which Wicksell (1898) had defined just over thirty years earlier in *Interest and Prices* and which Keynes explicitly recognises:

Wicksell conceives of the existence of a “natural rate of interest”, which he defines as being the rate which is “neutral” in its effect on the price of goods, tending neither to raise nor to lower them . . . It follows that if the actual rate of interest is lower than this prices will have a rising tendency, and conversely if the actual rate is higher. (*Treatise*, Vol. I, p.176)

It is this rate that operates for Keynes as an implicit “target” for Bank Rate since it will deliver stable prices and an absence of cyclical economic behaviour:

The experiences of the post-war period led many of us to advocate stability of the price level as the best possible objective of practical policy. Amongst other things, this would mean an attempt on the part of the banking authorities to eliminate the credit cycle at all costs. (*Treatise*, Vol. I, p.263)

Clearly if monetary policy is able to maintain Bank Rate at the natural rate, there will be no need for the deployment of reserves to support banks under pressure of withdrawals in a panic. Investment and savings will be equal, prices will be stable, and there will, therefore, be no inducement for the development of cycles or the emergence of financial speculation.⁴

While Bagehot had considered the possibility of varying interest rates in connection with the management of the banking reserve, this was quite different from Keynes’s analysis just considered. In Chapter II of *Lombard Street*, Bagehot distinguishes between the effect on the banking reserve of external drains and internal drains. In the former case, it may be required for the Bank of England to raise Bank Rate in order to attract cash (in the form of gold) and prevent any further run down in the reserve due to a balance of payments deficit (Bagehot 1973, pp.45-46; cf. Humphrey 1992, p.572).⁵ Internal drains are governed by a different set

⁴ The confidence in monetary policy implied by Keynes’s approach in the *Treatise* stands, of course, in marked contrast to his treatment of monetary policy in *The General Theory*. In the latter work, investment is largely determined by a similar set of forces to those outlined in the *Treatise* but with greater emphasis placed on the nature of entrepreneurial expectations and their volatility. For example: “It is important to understand the dependence of the marginal efficiency of a given stock of capital on changes in expectation, because it is chiefly this dependence which renders the marginal efficiency of capital subject to the somewhat violent fluctuations which are the explanation of the trade cycle” (Keynes 1973, pp.143-144). This suggests that it might be difficult for the central bank to restrain a boom when entrepreneurial expectations are particularly bullish or optimistic without considerable increases in the policy rate. But Keynes’s skepticism in *The General Theory* about the effectiveness of monetary policy is particularly apparent with respect to the possibility of stimulating a depressed economy: “. . . the collapse in the marginal efficiency of capital may be so complete that no practicable reduction in the rate of interest will be enough [to aid recovery] . . . it is not so easy to revive the marginal efficiency of capital, determined as it is, by the uncontrollable and disobedient psychology of the business world” (Keynes 1973, pp.316-317). See Docherty (2011, pp.528-533) for a more extended treatment of Keynes’s approach to monetary policy in *The General Theory*. This contrast in his attitude to the effectiveness of monetary policy with respect to economic and financial crises in the *Treatise* and *The General Theory* suggests that there may also be some value in a careful comparison of his analysis of crises in these two works.

⁵ Sayers (1951, p.110) frames this use of Bank Rate as an *alternative* to the holding of a larger reserve. But even here, the nature of this alternative is different to that advocated by Keynes. If the objective is to hold a reserve adequate for dealing with the possibility of a bank panic, and the actual reserve is falling because of an adverse balance of payments position, restoration of the reserve to an adequate size can be achieved in two ways. First, by holding Bank Rate constant and taking actions, such as reduced lending, that allow the reserve to be replenished. Second, by raising Bank Rate to attract more reserves internationally as described above. Thus,

of forces since lending freely to stay an associated panic can be done via the issue of bank notes. These should ultimately be convertible into gold, argues Bagehot, but it will very often be the case that these issues, being legal tender, act to alleviate the panic and are never redeemed for gold.

A further connection of the rate of interest to the banking reserve is Bagehot's recommendation that lending from the reserve be offered at a high rate of interest. The object of this move is explicitly to discourage those at the margin of uncertainty from unnecessarily exchanging bank deposits for cash (whether gold or paper) and placing additional strain on the reserve. It is, however, an ex-post measure that is quite different to Keynes's recommendation of using monetary policy to prevent a crisis.

A second factor that might account for Keynes's failure to cite the Bagehot principle in the *Treatise* is his assessment that the likelihood of it being invoked was small. In Chapter 25 of Volume II, Keynes considers the relationship between bank money (including deposits) and reserves as it affects the quantity of money in circulation. This is essentially an exploration of the money supply multiplier conception of money supply determination. As part of this exploration, Keynes considers the influence of the amount of reserves that banks keep in relation to deposit liabilities. This of course is precisely the ratio that is relevant to Bagehot's argument for the importance of reserves, and it is at this point that we might have expected Keynes to have made some reference to the work of Bagehot. But there is no such reference, and instead, Keynes suggests that the need for reserves had diminished in recent times:

It must also be the case that the cash reserves which a bank habitually keeps, in virtue of law or binding custom, are in excess of the maximum which it requires for the convenient transaction of business. In former times this was not always the case. It is not the case everywhere today. But the diminished use of cash, as compared with cheques, the greater rapidity of the means of transport from headquarters, and *the improbability of a serious "run" by the depositors of the banks* (at any rate in England in the case of the "Big Five") to turn their deposits into cash, have combined to reduce the amount of cash in proportion to their deposits which the banks strictly need as till money. (*Treatise*, Vol. II, p.48; Italics added)

It is not that banks should keep zero reserves in Keynes's view. On the previous page, he had accepted that "prudence" and "reputation" demanded the holding of an appropriate reserve:

Sayers argues, building reserves and manipulating Bank Rate may be seen as alternatives, but this does not involve the Investment-Savings balance or elimination of the trade cycle in the way that Keynes advocates in the *Treatise*.

To let the ratio fall below the figure which has been fixed upon as that which is recommended by considerations of prudence and of reputation would be a sign of weakness or, at least, weakmindedness; (*Treatise*, Vol. II, p.47)

But the size of that reserve is much reduced because, among other things, the probability of runs is much reduced. Thus, even taking account of the fact that Bagehot conceived of the reserve as being held centrally at the Bank of England rather than at individual banks, and that Keynes in the above quotation is considering the latter rather than the former, the need for a reserve held *anywhere* is reduced because the probably of bank runs is lower.

Keynes thus appears to take a completely different approach in the *Treatise* to the framing of policies for addressing the possibility of financial crises compared to Bagehot. Bagehot's strategy is for reserves to be built up during the boom phase of economic cycles and then deployed with liberality during the early stages of any subsequent panic. This policy is essentially an *ex post* one that takes the periodic occurrence of crises as given, and responds to those crises in a way that is sensibly dictated by the dynamics of uncertainty and fear that are likely to make a panic worse. Preparation that occurs before the crisis in the accumulation of an adequate reserve essentially constitutes a form of self-imposed *prudential regulation*.

In contrast, Keynes's principal strategy in the *Treatise* for addressing financial crises is an *ex ante* strategy that relies on monetary policy rather than prudential regulation. This approach fits within Keynes's broader theoretical framework of explaining the price level and the dynamics of changes in the price level where the relationship between investment and saving is at the centre. But since the trade cycle and the possibility of financial crises are explained as a by-product of this broader theoretical question, an alternative solution to the problem of responding to crises is suggested. Keynes's policy is for the Bank of England to keep Bank Rate as close as possible to the natural rate of interest so that cycles and crises are *prevented*. Keynes does not reject the need for bank reserves, and given his praise for Bagehot's contribution in the 1926 article in *The Banker* it would seem that he would have been likely to have supported the deployment of reserves if a panic were to eventuate. But a successful policy along the lines of his broad analysis in the *Treatise* would clearly make such a measure redundant. Keynes thus appears to omit any reference to the Bagehot principle in the *Treatise* because he has in mind an alternative approach of the *ex ante*

prevention of crises using monetary policy rather than the *ex post* deployment of reserves built up under prudential self-regulation.

V. Conclusion

In the *Treatise on Money*, Keynes provides a detailed consideration of the trade cycle, an important aspect of which is the possibility of financial crisis that has the potential to adversely affect the banking system. Given the prominent place in the development of monetary and financial thought of Bagehot's analysis of this same issue, and his formulation of what has come to be thought of as the *lender of last resort* function of central banks, it is somewhat surprising that Keynes does not make reference to Bagehot's principle in an any considered way in the *Treatise*.

This paper has highlighted the surprising nature of this omission on first inspection by comparing the treatment of cycles and crises in the *Treatise* and *Lombard Street*. Substantial similarity between these approaches was found despite the fact that Keynes's theoretical vision in the *Treatise* is broader and his analysis is substantially more detailed than that in *Lombard Street*. The omission is even more surprising given that Keynes had published an appreciation of *Lombard Street* around the time that he was working on the first volume of the *Treatise*, and that this appreciation stresses the importance of the banking reserve and its effective deployment in a panic. But the paper has also suggested a possible explanation for this omission. It seems that Keynes offers an *alternative* to Bagehot's stress on the importance of a banking reserve that makes the latter redundant. Rather than Bagehot's prudential approach to accumulating a banking reserve that is deployed *ex post* once a crisis has occurred, Keynes recommended the *ex ante* use of monetary policy to *prevent* crises in the first place. By maintaining Bank Rate at the natural rate of interest, investment and saving are kept in balance, which not only leads to stable prices within the theoretical framework of the *Treatise*, it also makes the trade cycle and financial crises obsolete.

A comparison of the policy responses to financial crises in Keynes's *Treatise* and Bagehot's *Lombard Street* thus raises the question of the respective roles of prudential regulation and monetary policy in dealing with this phenomenon, a question of enduring relevance. Further work might explore how Keynes's perspective on this question was affected by his move from the theoretical framework of the *Treatise* to that of the *General*

Theory, especially given his skepticism about the effectiveness of monetary policy in the latter work (see Docherty 2011, p.530).

References

- Bagehot, W. (1873). *Lombard Street: A Description of the Money Market*. New York: John Wiley and Sons. [Republished 2000.]
- Bignon, V., Flandreau, M. and Ugolini, S. (2012). “Bagehot for Beginners: The Making of Lender-of-Last-Resort Operations in the Mid-Nineteenth Century”, *Economic History Review* 65-2: 580-608.
- Dimand, R.W. (1988). *The Origins of the Keynesian Revolution: The Development of Keynes’s Theory of Employment and Output*. Aldershot, England: Edward Elgar.
- Docherty, P. (1995). “Endogeneity in Wicksell’s Monetary Theory”, *History of Economics Review* 23 (Winter): 20-36.
- Docherty, P. (2011). “Keynes’s Analysis of Economic Crises and Monetary Policy in the *General Theory*: Its Relevance after 75 Years”, *Review of Political Economy* 23-4: 521-36.
- Fetter, F.W. (1965). *Development of British Monetary Orthodoxy, 1797-1875*. Cambridge, Massachusetts: Harvard University Press.
- Goodhart, C.A.E. (1999). “Myths about the Lender of Last Resort”, *International Finance* 2-3: 339-60.
- Goodhart, C. (1988). *The Evolution of Central Banks*, Cambridge, Massachusetts: MIT Press.
- Hawtrey, R.G. (1962). *The Art of Central Banking*, Second edition (First edition 1932), London: Routledge.
- Hirai, T. (2007). “How Did Keynes Transform His Theory from the *Tract* into the *Treatise*? – Consideration through Primary Material”, *European Journal of the History of Economic Thought* 14-2: 325-48.
- Humphrey, T.M. (1992). “Lender of Last Resort”, in P. Newman, M. Milgate and J. Eatwell (eds.), *The New Palgrave Dictionary of Money and Finance*, Volume 2. London: Macmillan, 571-73.
- Keynes, J.M. (1971a). *A Treatise on Money – The Pure Theory of Money, The Collected Writings of John Maynard Keynes*, Volume V, edited by D. Moggridge. London: Macmillan, [originally published 1930].
- Keynes, J.M. (1971b). *A Treatise on Money – The Applied Theory of Money, The Collected Writings of John Maynard Keynes*, Volume VI, edited by D. Moggridge. London: Macmillan, [originally published 1930].
- Keynes, J.M. (1973). *The General Theory of Employment Interest and Money, The Collected Writings of John Maynard Keynes*, Volume VII, edited by D. Moggridge. London: Macmillan, [originally published 1936].

- Keynes, J.M. (1981). *Activities 1922-1929 – The Return to Gold and Industry Policy, The Collected Writings of John Maynard Keynes*, Volume XIX, edited by D. Moggridge. London: Macmillan.
- Milgate, M. (1982). *Capital and Employment: A Study of Keynes's Economics*. London: Academic Press.
- Moggridge, D.E. (1992). *Maynard Keynes: An Economist's Biography*. London: Routledge.
- Patinkin, D. (1977). *Keynes's Monetary Thought: A Study of Its Development*. Durham, NC: Duke University Press.
- Perlman, M. (1992). "Lombard Street", in P. Newman, M. Milgate and J. Eatwell, (eds.), *The New Palgrave Dictionary of Money and Finance*, Volume 2, London: Macmillan, 612-13.
- Sayers, R.S. (1938). *Modern Banking*, First edition. London: Oxford University Press.
- Sayers, R.S. (1951). "The Development of Central Banking after Bagehot", *Economic History Review* 4-1: 109-16.
- Wicksell K. (1898). *Interest and Prices: A Study of the Causes Regulating the Value of Money*, translated by R.F. Kahn (1936), reprinted 1965. New York: Augustus M. Kelley.

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