# The impact of the Arthur Andersen and Ernst & Young merger on the Australian audit services market

David Kenneth Bond

School of Accounting – University of Technology, Sydney

PhD

2010

### **Certificate**

I	certify	that	this	thesis	has	not	already	been	submitted	for	any	degree	and	is	not
bo	eing sul	bmitt	ed as	s part o	of car	ndid	ature for	any c	ther degree	<del>2</del> .					

I also certify that the thesis has been written by me and that any help that I have received in preparing this thesis, and all sources used, have been acknowledged in this thesis.

Signature of Candidate		

Date: 13 January, 2010

Sydney

#### **Abstract**

The merger between Arthur Andersen (AA) and Ernst & Young (EY) in Australia was announced on the 16<sup>th</sup> May 2002. The merger was the culmination of seven months of speculation and drama surrounding the future of AA, following its involvement in the collapse of Enron in the United States of America (US). With the number of Big N firms having been reduced to four, concerns were raised over the impact of the merger on the competitiveness of the Australian audit services market (Boreham, 2002; Robertson, 2002; Hamilton et al., 2008).

The objective of the thesis is to evaluate the impact of the merger of AA and EY on the market for audit services in Australia. In this regard, consideration is given to two specific questions. First, whether the Australian audit services market became less competitive subsequent to the merger of AA and EY. Second, whether any benefits, either in relation to audit pricing or efficiency, accrued to the firms involved as a consequence of the merger. In order to address these objectives, the impact of the merger on Australian listed firms is examined. This was done for both the market as a whole, as well as for the clients of EY. The sample was drawn from the 1271 available firms on the Australian Stock Exchange (ASX) in 2002.

The results show that the audit services market in Australia is still competitive subsequent to the merger of AA and EY. This is so, even though the changes in concentration would suggest that anti-competitive effects could be occurring. One possible explanation for these findings is that the measures of market concentration as identified in the industrial organization literature are difficult to apply to audit firms. Additionally, the lack of benefit to EY from the merger, either through increased pricing or efficiency, may simply be due to 2002 being too early

for benefits to be realised, possibly due to the stickiness of audit service fees (Ferguson et al., 2005) or merger implementation issues (Lawrence and Glover, 1998).

#### **Acknowledgements**

This thesis was realised with the support and assistance of a number of people. First I would like to thank Prof. Donald Stokes, Dr. Jane Hamilton and A/Prof. Peter Wells for their tireless efforts and guidance in supervising me over the years. I'd also like to thank Prof. Stephen Taylor, Prof. Andrew Ferguson, Prof. Anne Wyatt and my three examiners for their comments and feedback. In addition, I appreciate the suggestions from participants in research workshops at The University of Technology, Sydney and ANCAAR (2007). The School of Accounting at the University of Technology, Sydney, (UTS) also provided valuable assistance and support and finally, Ms. Melinda Jollie put in a most diligent effort in proofreading the final version of this thesis.

To my family, thank you, and to Anna, I couldn't have done this without you.

## **Table of Contents**

Chapter 1 – Introduction	1
1.1 – Results.	6
1.2 – Structure	7
Chapter 2 – Theory and Hypotheses	8
2.1 – Introduction	8
2.2 – The nature of the firm and its implications for merger activity	9
2.2.1 – Revenue explanations	12
2.2.2 – Cost explanations	14
2.2.3 – Reactionary explanations	15
2.2.4 – Managerial explanations	16
2.2.5 – Risk explanations	17
2.3 – Recent mergers between large audit service providers	19
2.4 - The impact of the AA and EY merger on the market for audit services (H1)	20
2.5 - The impact of the AA and EY merger on clients of the merged entity (H2 and H3)	25
2.5.1 – The impact of the AA and EY merger on audit pricing (H2)	26
2.5.2 - The impact of the AA and EY merger on audit efficiency (H3)	28
2.6 - The impact of the AA and EY merger on former clients of AA (H4 and H5)	31
2.6.1 – Audit service fee impacts of former AA clients (H4)	33
2.6.2 – Audit efficiency impacts of former AA clients (H5)	34
2.7 – Conclusion	36
Chapter 3 – Research Method	40
3.1 – Introduction	40
3.2 - The impact of the AA and EY merger on the market for audit services (H1)	41
3.2.1 – Audit service fees (AF2002)	42
3.2.2 – Concentration (ΔConc)	44
3.2.3 – Estimated audit service fees (EstAF)	46
3.3 – The impact of the AA and EY merger on clients of the merged entity (H2 and H3)	47
3.3.1 – The impact of the AA and EY merger on audit pricing (H2)	47
3.3.2 - The impact of the AA and EY merger on audit efficiency (H3)	49
3.4 - The impact of the AA and EY merger on former clients of AA (H4 and H5)	50
3.4.1 – Audit service fee impacts of former AA clients (H4)	50

3.4.2 – Audit efficiency impacts of former AA clients (H5)	51
3.5 – Conclusion	52
Chapter 4 – Sample and Descriptive Statistics	55
4.1 – Introduction	55
4.2 – Sample selection	55
4.2.1 – The impact of the AA and EY merger on the market for audit services (H1)	56
4.2.2 - Pricing impacts of the AA and EY merger on clients of the merged entity	
(H2 and H4)	57
4.2.3 - Efficiency impacts of the AA and EY merger on clients of the merged entity	
(H3 and H5)	57
4.3 – Descriptive statistics	58
4.3.1 – The impact of the AA and EY merger on the market for audit services (H1)	58
4.3.2 - The impact of the AA and EY merger on audit pricing (H2)	59
4.3.3 - The impact of the AA and EY merger on audit efficiency (H3)	60
4.3.4 - The impact of the AA and EY merger on clients of AA (H4 and H5)	61
4.3.4.1 – Audit service fee impacts of former AA clients (H4)	62
4.3.4.2 – Audit efficiency impacts of former AA clients (H5)	63
4.3.5 – Conclusion	64
Chapter 5 – Results	79
5.1 – Introduction	79
5.2 – The impact of the AA and EY merger on the market for audit services (H1)	79
5.3 – The impact of the AA and EY merger on audit pricing (H2)	81
5.4 – The impact of the AA and EY merger on audit efficiency (H3)	83
5.5 – The impact of the AA and EY merger on clients of AA (H4 and H5)	85
5.5.1 – Audit service fee impacts of former AA clients (H4)	86
5.5.2 – Audit efficiency impacts of former AA clients (H5)	87
5.6 – Sensitivities	89
5.7 – Conclusion	94
Chapter 6 – Conclusion	106
Ribliography	200

## **Tables**

	2.1 – Audit Firm Concentration Studies	37
	2.2 – Audit Firm Merger Competitive Effect Studies	39
	3.1 – Change in Audit Service Fees 2001 – 2002	54
	4.1 – Sample Selection	66
	4.2 – Distribution of Sample across GICS Industry Codes	68
	4.3 – Descriptive Statistics for the Sample used in Hypothesis 1	73
	4.4 – Descriptive Statistics for the Sample used in Hypothesis 2	74
	4.5 – Descriptive Statistics for the Sample used in Hypothesis 3	76
	4.6 – Descriptive Statistics for the Sample used in Hypothesis 4	77
	4.7 – Descriptive Statistics for the Sample used in Hypothesis 5	78
	5.1 – Results of Tests of the Competitiveness of the Australian Audit Service Market (H1)	).96
	5.2 – Results of Tests of the Audit Service Fee Benefits to EY Following the AA–EY Merger (H2)	98
	5.3 – Results of Tests of the Audit Efficiency Benefits to EY Following the AA–EY Merger (H3)	100
	5.4 – Results of Tests of the Audit Service Fee Benefits to EY Following the AA–EY Merger, Controlling for Former AA Clients (H4)	102
	5.5 – Results of Tests of the Audit Efficiency Benefits to EY Following the AA–EY Merger, Controlling for Former AA Clients (H5)	.104
4	Appendices	110
	1 – Results using the audit service fee model	
	A1.1 – Descriptive statistics for the sample used in Hypothesis 1 (audit service fee model)	111
	A1.2 – Results of tests of the competitiveness of the Australian audit service market (H1) using the audit service fee model	113
	A1.3 – Descriptive statistics for the sample used in Hypothesis 2 (audit service fee model)	117
	A1.4 – Results of tests of the audit service fee benefits to EY following the AA–EY merger (H2) using the audit service fee model	119
	A1.5 – Descriptive statistics for the sample used in Hypothesis 4 (audit service fee model)	121
	A1.6 – Results of tests of the audit service fee benefits to EY following the AA–EY merger, controlling for former AA clients (H4) using the audit service fee model	.122

2 -	Results using alternate EstAF
	$A2.1-Descriptive\ statistics\ for\ the\ sample\ used\ in\ Hypothesis\ 1\ (alternate\ EstAF)125$
	A2.2 – Results of tests of the competitiveness of the Australian audit service market (H1) using an alternate definition of EstAF126
	$A2.3-Descriptive\ statistics\ for\ the\ sample\ used\ in\ Hypothesis\ 2\ (alternate\ EstAF)128$
	A2.4 – Results of tests of the audit service fee benefits to EY following the AA–EY merger (H2) using an alternate definition of EstAF
	$A2.5-Descriptive\ statistics\ for\ the\ sample\ used\ in\ Hypothesis\ 4\ (alternate\ EstAF)130$
	A2.6 – Results of tests of the audit service fee benefits to EY following the AA–EY merger, controlling for former AA clients (H4) using an alternate definition of EstAF
3 -	– Results using alternate ΔConc
	A3.1 – Descriptive statistics for the sample used in Hypothesis 1 (alternate $\Delta Conc$ )134
	A3.2 – Results of tests of the competitiveness of the Australian audit service market (H1) using an alternate definition of EstAF
4 -	Results including level of concentration
	A4.1 – Descriptive statistics for the sample used in Hypothesis 1 (including Conc) 138
	A4.2 – Results of tests of the competitiveness of the Australian audit service market (H1) including Conc
5 -	– Results excluding outliers
	A5.1 – Descriptive statistics for the sample used in Hypothesis 3 (outliers removed)142
	A5.2 – Results of tests of the audit efficiency benefits to EY following the AA–EY merger (H3) with outliers removed
	A5.3 – Descriptive statistics for the sample used in Hypothesis 5 (outliers removed)144
	A5.4 – Results of tests of the audit efficiency benefits to EY following the AA–EY merger, controlling for former AA clients (H5) with outliers removed145
6 -	- Results using Ln(2002/2001)147
	A6.1 – Results of tests of the competitiveness of the Australian audit service market (H1) using a change fee model
	A6.2 – Results of tests of the audit service fee benefits to EY following the AA–EY merger (H2) using a change fee model
	A6.3 – Results of tests of the audit service fee benefits to EY following the AA–EY merger, controlling for former AA clients (H4) using a change fee model150

7 – Results partitioning by client size	152
A7.1 – Results of tests of the competitiveness of the Australian audit service market (H1) partitioning by client size	153
A7.2 – Results of tests of the audit service fee benefits to EY following the AA–EY merger (H2) partitioning by client size	155
A7.3 – Results of tests of the audit service fee benefits to EY following the AA–EY merger, controlling for former AA clients (H4) partitioning by client size	157
8 – Results using 2003 Data.	160
A8.1 – Descriptive statistics for the sample used in Hypothesis 1 using 2003 Data	161
A8.2 – Descriptive statistics for the sample used in Hypothesis 2 using 2003 Data	162
A8.3 – Descriptive statistics for the sample used in Hypothesis 3 using 2003 Data	164
A8.4 – Descriptive statistics for the sample used in Hypothesis 4 using 2003 Data	165
A8.5 – Descriptive statistics for the sample used in Hypothesis 5 using 2003 Data	166
A8.6 – Results of tests of the competitiveness of the Australian audit service market (H1) using the 2003 Data	167
A8.7 – Results of tests of the audit service fee benefits to EY following the AA–EY merger (H2) using 2003 Data	169
A8.8 – Results of tests of the audit efficiency benefits to EY following the AA–EY merger (H3) using 2003 Data	170
A8.9 – Results of tests of the audit service fee benefits to EY following the AA–EY merger, controlling for former AA clients (H4) using 2003 Data	171
A8.10–Results of tests of the audit efficiency benefits to EY following the AA–EY merger, controlling for former AA clients (H5) using 2003 Data	173
9 – Results using 2004 Data	175
A9.1 – Descriptive statistics for the sample used in Hypothesis 1 using 2004 Data	176
A9.2 – Descriptive statistics for the sample used in Hypothesis 2 using 2004 Data	177
A9.3 – Descriptive statistics for the sample used in Hypothesis 3 using 2004 Data	179
A9.4 – Descriptive statistics for the sample used in Hypothesis 4 using 2004 Data	180
A9.5 – Descriptive statistics for the sample used in Hypothesis 5 using 2004 Data	181
A9.6 – Results of tests of the competitiveness of the Australian audit service market (H1) using the 2004 Data	182
A9.7 – Results of tests of the audit service fee benefits to EY following the AA–EY merger (H2) using 2004 Data	184
A9.8 – Results of tests of the audit efficiency benefits to EY following the AA–EY merger (H3) using 2004 Data	185
A9.9 – Results of tests of the audit service fee benefits to EY following the AA–EY merger, controlling for former AA clients (H4) using 2004 Data	

A9.10–Results of tests of the audit efficiency benefits to EY following the AA–EY merger, controlling for former AA clients (H5) using 2004 Data	.188
10 – Results Excluding Non 30 June Year End Observations	.190
A10.1–Descriptive statistics for the sample used in Hypothesis 1 (excluding non 30 June)	.191
A10.2–Results of tests of the competitiveness of the Australian audit service market (H1) excluding non 30 June	. 192
A10.3–Results of tests of the audit service fee benefits to EY following the AA–EY merger (H2) excluding non 30 June	.194
A10.4–Results of tests of the audit efficiency benefits to EY following the AA–EY merger (H3) excluding non 30 June	.195
A10.5–Results of tests of the audit service fee benefits to EY following the AA–EY merger, controlling for former AA clients (H4) excluding non 30 June	.196
A10.6–Results of tests of the audit efficiency benefits to EY following the AA–EY merger, controlling for former AA clients (H5) excluding non 30 June	.198