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Changes in value relevance of accounting information upon IFRS adoption: Evidence from Australia

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Abstract
We investigate whether the adoption of IFRS increases the value relevance of accounting information for firms listed on the Australian Securities Exchange. Using a longitudinal study that covers pre-IFRS and post-IFRS periods during 1990–2008, we find that earnings become more value-relevant whereas the book value of equity does not. This impact is concentrated in the subsamples of industrial firms, both large and small, and firms reporting an AGAAP-IFRS accounting reconciliation upon IFRS adoption. Consistent with an increase in the value relevance of earnings, earnings also become more persistent around IFRS adoption. Our study suggests that even for a country categorized by strong investor protection and high-quality financial reporting and enforcement, IFRS adoption affects the associations between accounting information and market value.

JEL Classification: **M40, M41**

Keywords
Accounting information, IFRS, value relevance

1. Introduction

It has been claimed that International Financial Reporting Standards (IFRS) adoption improves the functioning of global capital markets by providing comparable and high-quality information to investors (Barth, 2008). It has also been argued that IFRS promise more accurate, comprehensive and timely financial statement information than national standards, particularly if the standards

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they replace have been influenced by national legal, political and taxation agendas (Ball, 2006). Given that many countries and firms have devoted extensive resources to IFRS adoption, it is important to test these claims. Furthermore, it is important for managers, accounting report preparers, regulators and investors to draw upon national experiences to gain insight regarding whether IFRS adoption improves accounting information to investors for valuation purposes.

Prior research investigates, *inter alia*, the extent to which voluntary or mandatory IFRS adoption affects the properties of reported accounting numbers (Barth et al., 2008); firms' cost of capital (Daske et al., 2008); disclosure quality (Daske and Gebhardt, 2006); and the value relevance of accounting numbers in either a single jurisdictional setting (Chalmers et al., 2008; Gjerde et al., 2008; Horton and Serafeim, 2010) or a multi-jurisdictional setting (Barth et al., 2008; Clarkson et al., 2010). Studies generally find that adopting IFRS is associated with decreased earnings management and timelier loss recognition. However, evidence of enhanced value relevance of IFRS accounting information is country-specific. While Australian evidence suggests that the combined relevance of book value of equity (BVE) and earnings (NI) has altered little with IFRS adoption (Chalmers et al., 2008; Clarkson et al., 2010; Goodwin et al., 2008), evidence from the European Union is less consistent.

Our research adds to the growing literature investigating the impact of IFRS adoption in a variety of countries and contexts by investigating the research question: Is mandatory IFRS adoption by firms listed on the Australian Securities Exchange associated with a change in the value relevance of accounting information? Undoubtedly, IFRS changed the reporting practices for many financial transactions, including goodwill and other intangibles, financial instruments, taxation and share-based payments. However, we have no *a priori* expectations regarding how the changed accounting requirements, in aggregate, may alter the value relevance of BVE and NI given that there has been no universally agreed position regarding whether and how IFRS prepared financial reports will be more useful than those prepared in accordance with Australian GAAP (AGAAP).

Our main contributions are twofold. First, we extend the existing research by taking a longitudinal perspective in a single jurisdiction, where the research setting enhances the power of our tests to detect changes in value relevance. Second, our consideration of differences in associations between price and accounting information according to (i) whether firms report IFRS-AGAAP reconciliation differences, (ii) firm size, (iii) industry affiliation, and (iv) earnings persistence, provide initial evidence of factors plausibly related to IFRS effects.

Financial reporting outcomes are not determined solely by the quality of accounting standards (Ball et al., 2003; Leuz and Wysocki, 2008) and restricting our sample to a single jurisdictional setting enhances the power of our tests by controlling for internationally varying and confounding factors (Holthausen, 2009). Soderstrom and Sun (2007) discuss methodological issues contributing to the mixed evidence on IFRS adoption value relevance. The issues they identify include selection bias due to samples comprising firms voluntarily adopting IFRS before its mandatory introduction, and omitted variables related to varying institutional settings (for example, legal, political, ownership and tax systems). Our relatively homogenous setting, in which early adoption of IFRS was not permitted, avoids such issues.

Ball (2006) argues that the likelihood of IFRS producing better investment information, relative to national standards, is enhanced for continental European countries. Existing studies indicate that IFRS led to accounting quality improvements in such countries (Christensen et al., 2008; Lourenco and Curto, 2010). However, Daske et al. (2008) find that the capital market benefits of IFRS adoption occur only in countries with transparent financial reporting and strong legal enforcement of financial reporting requirements. Studies also find that a shareholder-orientated regulatory system produces more value relevant accounting information (Alford et al., 1993; Ali and Hwang, 2000; Ball et al., 2000; Hung, 2000). Australia fits these institutional descriptions, and our study

facilitates an international comparison of IFRS adoption effects. Exploring whether IFRS makes accounting information more value-relevant in Australia's institutional setting is an empirical question of interest to both domestic and international accounting information users, managers, accounting researchers, practitioners and regulators.

Prior Australian cross-sectional research generally finds that IFRS adoption has not enhanced the association between accounting information and firm value. These studies relate to the adoption period only, and use comparative AGAAP and IFRS accounting information reported by firms when they adopted IFRS (Chalmers et al., 2008, Clarkson et al., 2010) or investigate the value relevance of reconciliation items for that year (Goodwin et al., 2008). In contrast, we use a longitudinal design that differentiates pre-IFRS, transition and IFRS periods to explore changes in the associations over time. A benefit of this approach is that our results can be compared not only with those of prior Australian studies, but also with those of studies investigating IFRS benefits for investors in other countries, to better understand the effects of country-specific factors on IFRS impact.

Our results indicate that the association between accounting information and share prices changes around the time of IFRS adoption. In particular, the book value of earnings gains value relevance when firms transition to IFRS, and retains the higher value relevance into the IFRS period. Interestingly, the change in the information conveyed by accounting numbers appears to commence one year *preceding* IFRS adoption, consistent with firms managing their AGAAP accounting decisions in anticipation of IFRS. In contrast, while the book value of equity remains significant, it does not increase its association with share prices after IFRS adoption. Only firms reporting non-zero differences between IFRS and AGAAP measures of shareholders' equity or earnings exhibit a change in the association between share prices and accounting information. As such, there does not appear to be a whole-of-market effect solely due to the introduction of IFRS or other temporally clustered events. The effect is concentrated among industrial firms, both large and small.

Importantly, the timing and nature of increases in the value relevance of earnings is concurrent with increases in the persistence of earnings. Based on regressions using one-year lags of earnings and abnormal earnings, we find that earnings become more persistent and relevant in their association with both future earnings and future cash flows from 2005 (year of IFRS adoption) onwards, compared with previous years.

While the generalizability of our results to other countries will vary, the results nonetheless suggest that for countries with strong investor protection and high-quality financial reporting and enforcement, IFRS adoption affects the value relevance of accounting information according to the impact of IFRS adoption on earnings, especially earnings persistence, and differentially across industries.

The remainder of the paper is organized as follows. In the next section we specify the research question to be investigated, describe the regulatory background to the study, and review the most relevant literature. In section 3 we discuss the research design, sample and data. In section 4 we report and analyse our results, and we conclude in section 5.

2. Background

2.1 Regulatory background

Whether and when firms should adopt IFRS to replace national GAAP and embrace a global set of accounting standards is a strategic and governance issue that has dominated regulatory debate within the global business community for the last decade. In 1996, the Australian Accounting Standards Board (AASB) resolved to pursue the development of an internationally accepted set of accounting standards with a short to medium-term aim of ensuring that compliance with AASB

standards achieved compliance with international accounting standards (IAS).[1] Then, in April 2002, the AASB issued Policy Statement 4 *International Convergence and Harmonization Policy,*[2] reaffirming its international convergence objective.

Meantime, the European Parliament passed a resolution on 12 March 2002 requiring all firms listed on European exchanges to follow IFRS when preparing their financial statements for the first full reporting period ending on or after 31 December 2005. Australia's Financial Reporting Council (FRC)[3] issued a similar edict in July 2002 for Australian domiciled firms, thus obligating the AASB to implement full convergence to IFRS. Thus, Australian firms, like European Union firms, became among the first, worldwide, to mandatorily adopt IFRS en masse. Probably the single most persuasive arguments the FRC considered in reaching its decision that Australia should adopt IFRS were that IFRS adoption would benefit capital markets by ensuring the quality of financial reporting in Australia is international best practice and by reducing firms' cost of equity capital.[4]

While the AASB had been converging AGAAP with IFRS, mandatory adoption of IFRS resulted in significant changes including accounting practices for goodwill, identifiable intangibles, impairment testing, share-based payments, taxation and financial instruments.[5]

2.2 Prior literature on value relevance of national GAAP and IFRS

Prior research demonstrates that different accounting policies imply different relevance of the resulting accounting information to investment decisions. This is demonstrated both in relation to international differences in accounting practices (Barth and Clinch, 1996) and in relation to intranational differences in accounting practices – either cross-sectional or over time (Barth and Clinch, 1998).

Preparing financial statements using international accounting standards (IAS) has long been permitted in some countries,[6] and a comprehensive literature compares the value relevance of information produced under national GAAP and IAS (Bartov et al., 2005; Barth et al., 2008; Hung and Subramanyam, 2007). Our study focuses on value relevance metrics of summary accounting measures in pre-IFRS, transition, and IFRS periods. For this reason, this is the focus of our literature review. Other attributes of changes in accounting quality pursuant to IFRS adoption that have been studied include the timeliness of loss recognition, earnings smoothing, magnitude of discretionary accruals (Barth et al., 2008; Paananen and Lin, 2009), market liquidity, Tobin's q and cost of capital (Daske et al., 2008) and disclosure quality (Daske and Gebhardt, 2006).

Using time series analysis and a returns-earnings model, Bartov et al. (2005) find the value relevance of earnings increases for their sample of German firms voluntarily switching from German GAAP to IAS.[7] However, Hung and Subramanyam (2007) find no evidence that IAS improve the combined value relevance of book value of equity and earnings for their sample of German firms adopting IAS for the first time during 1998–2002. The coefficients on book values of equity and earnings suggest that the former (latter) assumes a greater (lesser) valuation role using IAS than German GAAP. Barth et al. (2008) use price and return regressions to investigate changes in the value relevance of book value of equity and earnings for a sample of voluntary IAS adopters during 1994–2003 from 21 countries. They find evidence of a significant increase in the value relevance of both in the post-IAS adoption period, but for price regressions only.

Subsequent to the mandatory adoption of IFRS in some countries, research has focused on the valuation properties of IFRS accounting information. Some studies investigate value relevance by comparing the association with share prices of information in IFRS financial statements and local GAAP financial statements covering the same reporting period (Capkun et al., 2008; Chalmers et al., 2008; Clarkson et al., 2010; Gjerde et al., 2008).[8] Using a multi-jurisdictional setting and

observations from nine European countries, Capkun et al. (2008) find IFRS earnings are marginally value-relevant for all countries, but that the IFRS book value of equity has no incremental value relevance. In contrast Clarkson et al. (2010) document differential valuation effects for common law and code law countries. The value relevance of IFRS book value of equity and earnings for common law countries declines, whereas it changes marginally for code law countries. Chalmers et al. (2008) report no significant increase in the value relevance of combined earnings and book value of equity using IFRS information relative to local GAAP information for a sample of Australian firms.[9] Likewise, Gjerde et al. (2008) investigate Norwegian firms' restatements and find IFRS combined accounting information does not correlate more strongly with stock market values than local GAAP. However, they find marginal relevance for reconcilement adjustments to IFRS.

Other studies use earnings and equity reconciliation data to investigate the incremental value relevance of IFRS and local GAAP accounting information. For example, Horton and Serafeim (2010) find that reconciliation adjustments from UK GAAP to IFRS alter investors' beliefs about share prices of firms listed on the London Stock Exchange. The IFRS earnings coefficient is higher and the earnings reconciliation items exhibit incremental value relevance over UK GAAP earnings. In contrast, Goodwin et al. (2008) report no evidence of combined IFRS book value of equity and earnings being more value-relevant than local GAAP equivalents for Australian firms.

Akin to our study, other studies use a multi-period pre-post IFRS design to observe changes in the value relevance of accounting information in different accounting regimes (Lourenco and Curto, 2008; Paananen and Lin, 2009). Using two years of information either side of IFRS adoption, Lourenco and Curto (2008) run separate price regressions for firms from six European countries (France, Germany, Italy, Spain, Netherlands and UK). Comparing the R^2 values, they find that IFRS is more value-relevant in countries with high levels of shareholder protection (e.g. UK) than in countries with lower protection levels (e.g. Germany, Italy). Using a sample of German firms in the IAS regime (2000–2002), non-mandatory IFRS regime (2003–2004) and mandatory IFRS regime (2005–2006) respectively, Paananen and Lin (2009) find a decline in the value relevance of both book value of equity and earnings coinciding with the mandatory IFRS regime.

Our study contributes to this body of literature. In particular, we use a single country setting where there is strong shareholder protection, and where the timing and nature of the transition to IFRS is mandatory for all firms, not voluntary. This increases the power of our tests and removes the potential for IFRS adoption effects to be missed during periods when some firms might otherwise not have (voluntarily) adopted IFRS. We investigate both price and returns associations with reported accounting information. Our investigation considers the effect on the associations of IFRS-AGAAP reconciliation differences, firm size, and industry affiliation. Also, given that earnings persistence increases the value relevance of accounting information, we investigate whether earnings persistence increases with IFRS adoption.

3. Research design, sample and data

While there are alternative interpretations of the value relevance of accounting information to investors for valuation purposes (Francis and Schipper, 1999), consistent with Barth et al. (2001), we measure value relevance as the ability of equity book values (BVE) and reported earnings (NI) to capture information that affects share prices (PRC). We focus on the value relevance of both reported earnings and the book value of equity as IFRS adoption potentially affects both balance sheet and income statement information. Our investigation is based primarily on the following regression:

$$PRC_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \varepsilon_{it} \quad \text{(Model 1)}$$

PRC_{it} is share price per share for firm i measured three months following fiscal year t; BVE_{it} is the book value of equity per share for firm i at the end of period t; NI_{it} is earnings per share for firm i during period t; and the number of shares outstanding three months after the end of the fiscal year is used to calculate per share amounts. Since Australian listed firms were required to report current year and comparative financial statements under IFRS starting in fiscal years ending in the first full year following 31 December 2005, we define year t to include fiscal years that end in December of calendar year t–1 through November of calendar year t. In this way we are able to compare across years in a consistent manner for firms with different reporting dates.

We estimate Model 1 separately for each year and also for a pooled regression with data for our main results grouped for the following time periods: 1990–2004 (pre-IFRS period), 2005 (transition year) and 2006–2008 (IFRS period).[10] In estimating the pooled regression, we allow all coefficients (including intercepts) to vary across the three periods and compare the NI and BVE value relevance slope coefficients, β_1 and β_2, between the various periods. We then compare the estimates across the three periods. For pooled regressions, the standard errors are clustered by firm and year.

We obtain data from three sources: (1) reported financial statement items in *Huntleys Aspect Datalink*; (2) share prices and number of shares outstanding data on the *Australian Graduate School of Management Centre for Research in Finance* monthly share price file; and (3) IFRS-AGAAP differences for 2005 hand-collected from firms' financial statements. We use data for all available firm years for the period 1990–2008, yielding a maximum total sample of 20,025 firm-year observations across the 19-year test period. Analyses are based on fewer observations when particular data are unavailable. To counter possible data errors and over-influence of extreme observations we winsorize data used in regressions at the 1st and 99th percentiles.

Table 1 reports descriptive statistics, with Panel A describing the sample and Panel B describing each year. There is substantial variation in firm size across the full sample. The mean market capitalization is AUD$449.5m while the median is AUD$23.7m, indicating positive skewness. There is also a relatively large number of very small firms: the 5th percentile for market capitalization is only AUD$1.6m. Similar patterns are exhibited by shareholders' equity and total assets. Mean earnings is AUD$20.4m while the median is AUD$0.0m, indicating a high incidence of losses.[11] Table 1 Panel B indicates a general increase in the number of available observations across the sample period. The magnitudes of reported statistics for each variable also increase, but in 2008 the mean and median market capitalization and earnings decline relative to 2007, possibly reflecting the consequences of the global financial crisis.

4. Results and analysis

4.1 Value relevance of AGAAP and IFRS measures of equity and earnings

Table 2 reports summary statistics from estimating Model 1.[12] Panel A provides statistics for annual regressions. In each year, the coefficients on BVE and NI are highly significant and positive. Also, the model explains more than 60 percent of the variation in share prices for each year. The adjusted R^2 ranges from 0.616 to 0.799 in the pre-IFRS period, is 0.796 in the transitional year, and ranges from 0.746 to 0.786 in the IFRS period. Of more relevance to our

Table 1. Descriptive statistics

Panel A: Full sample period: 1990–2008 (AUD$m)

($m)	Mean	Median	Std dev	5th Percentile	95th Percentile	n
Market Capitalization	449.5	23.7	2486.6	1.6	1719.3	20025
Shareholders' Equity	221.7	15.7	941.0	1.0	987.9	20025
Total Assets	665.0	25.8	4432.1	1.5	2263.4	20025
Net Income	20.4	0.0	134.6	−12.4	90.8	20025

Panel B: Annual means and medians (AUD$m)

Year	Market Capitalization		Shareholders' Equity		Total Assets		Net Income		n
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	
1990	147.3	5.5	131.5	8.8	393.9	14.9	8.1	0.0	607
1991	192.2	6.1	144.6	8.3	440.9	13.9	7.7	−0.1	615
1992	195.6	7.9	155.7	8.6	509.4	15.8	2.4	0.0	633
1993	235.7	15.9	153.9	10.1	503.2	19.1	10.4	0.2	680
1994	225.0	20.5	148.5	13.2	456.3	23.1	13.2	0.6	817
1995	232.3	18.2	156.9	15.2	477.7	26.4	13.9	0.7	864
1996	272.9	21.8	163.5	16.3	505.8	29.4	15.7	0.6	903
1997	338.7	26.9	176.0	18.5	537.8	31.1	14.6	0.6	952
1998	335.2	20.1	188.7	18.8	600.7	33.2	14.3	0.2	954
1999	404.6	25.4	217.3	17.8	693.4	31.8	16.6	0.4	995
2000	418.9	27.8	216.0	17.4	676.5	29.9	16.1	0.2	1130
2001	463.3	16.7	213.7	14.9	643.8	24.3	15.3	−0.3	1191
2002	457.0	17.8	231.9	13.8	663.6	22.0	17.8	−0.4	1188
2003	478.0	24.3	256.5	13.2	745.9	21.3	18.5	−0.2	1181
2004	540.0	30.1	255.1	15.9	719.7	23.1	24.0	0.1	1296
2005	571.3	31.2	255.5	15.8	704.6	23.0	28.4	−0.1	1391
2006	678.7	40.6	265.1	18.5	787.9	27.2	33.9	−0.2	1421
2007	809.0	48.2	295.6	19.6	870.5	29.3	40.3	−0.3	1614
2008	591.5	24.8	302.6	23.3	933.1	31.8	28.7	−0.7	1593

Shareholders' Equity, Total Assets, and Net Income are as reported for firm fiscal years. Market capitalization is measured three months after a firm's fiscal year end. In panel B, year t is defined to include fiscal years that end in December$_{t-1}$ through November$_t$.

research question, there appears to be a distinct change in the coefficient on earnings (NI) around IFRS adoption. The year-by-year NI coefficient has increased from 2005 compared with the previous decade. For all years prior to IFRS transition except 2001 and 2002, the estimated NI coefficient (β_2) is less than 5.000, ranging from 1.472 (1992) to 4.768 in 1999 (β_2 is 5.461 (5.096) in 2001 (2002)). However, the coefficient exceeds 5.000 in all of the transition and IFRS years, ranging from 5.606 (2008) to 7.191 (2006). This clear increase in the value relevance of NI contrasts with the lack of evidence of such an increase in the value relevance of BVE. The BVE coefficient (β_1) exceeds 1.000 in each of the years 1995 to 2004, ranging from 1.034 to 1.459 during this period. The estimated coefficient drops to 1.060 in the 2005 transition year and 1.012 in 2006, which is lower than any year of the previous decade. In 2007, the BVE coefficient increases slightly to 1.131 but then drops back to 0.994 in 2008, the smallest coefficient since 1994.[13]

Table 2. Summary statistics for price regressions

$$PRC_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \varepsilon_{it}$$

Panel A: Annual regressions

	Constant		BVE		NI		Adj R^2	n
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat		
1990	0.173	1.64	0.737	5.83	2.282	5.39	0.616	607
1991	0.129	1.19	0.965	7.48	2.774	5.94	0.683	615
1992	0.095	0.82	1.028	6.99	1.472	1.53	0.668	633
1993	0.270	2.68	1.130	7.68	2.363	2.54	0.675	680
1994	0.330	3.90	0.954	6.98	3.202	3.49	0.686	817
1995	0.094	1.40	1.049	10.41	3.021	5.49	0.783	864
1996	0.063	0.89	1.320	11.81	2.438	3.48	0.766	903
1997	0.275	3.40	1.226	10.88	3.363	4.70	0.722	952
1998	0.185	2.81	1.115	11.97	3.959	6.66	0.749	954
1999	0.333	4.22	1.034	8.62	4.768	5.40	0.685	995
2000	0.352	4.54	1.099	10.75	3.974	5.71	0.621	1130
2001	0.303	4.33	1.073	11.25	5.461	8.24	0.701	1191
2002	0.256	3.15	1.140	8.52	5.096	5.92	0.751	1188
2003	0.140	2.66	1.459	15.35	3.035	4.38	0.799	1181
2004	0.236	4.80	1.284	11.44	4.568	5.47	0.786	1296
2005	0.345	7.08	1.060	9.98	6.490	7.58	0.796	1391
2006	0.399	7.94	1.012	9.20	7.191	8.98	0.786	1421
2007	0.486	9.60	1.131	11.06	5.970	7.80	0.746	1614
2008	0.222	4.84	0.994	11.95	5.606	8.80	0.770	1593

Panel B: Pooled regression

	1990–2004		2005		2006–2008	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Constant	0.205	5.23	0.345	7.07	0.374	10.29
BVE	1.145	20.53	1.060	9.99	1.046	15.89
NI	3.553	10.90	6.490	7.58	6.252	12.36
Adj R^2	0.731					
n	20025					

Panel C: Tests of coefficient equality

	BVE Coefficients		*NI Coefficients*	
	Chi-square	*p value*	Chi-square	*p value*
All equal	1.61	*0.448*	30.86	*0.000*
1990–2004 =2005	0.64	*0.423*	12.48	*0.000*
2005= 2006–2008	0.02	*0.886*	0.08	*0.771*
1990–2004 v 2006–2008	1.52	*0.218*	27.34	*0.000*

PRC is share price three months after a firm's fiscal year end. BVE is book value of equity per share. NI is net income per share. Year t is defined to include fiscal years that end in December$_{t-1}$ through November$_t$. The pooled regression is based on data pooled across years but with RHS variables multiplied by dummy variables formed for the 1990–2004, 2005 and 2006–2008 periods. For annual regressions White (1980) adjusted standard errors are employed. For pooled regressions standard errors are clustered by firm and year.

Table 2 Panel B reports summary statistics from a regression using data pooled across all years, but allowing coefficients to differ across the sub-periods: 1990–2004, 2005 and 2006–2008. The results confirm those reported in Panel A: the estimated NI coefficient (β_2) is higher in 2005 (6.490) and 2006–2008 (6.252) relative to 1990–2004 (3.553). Chi-square tests[14] (Table 2 Panel C) reject equality of the NI coefficients in the pre-IFRS and IFRS periods ($\chi^2 = 27.34, p < .000$) and the pre-IFRS period and transition period ($\chi^2 = 12.48, p < .000$). While the coefficient on BVE (β_1) in 1990–2004, 2005 and 2006–2008 appears to decline across these periods, being 1.145, 1.060 and 1.046 respectively, Panel C reports that BVE coefficients are not significantly different across any of the three periods ($\chi^2 = 1.61, p = .448$).

To test the robustness of our findings that earnings become more value-relevant in the IFRS period whereas the book value of equity does not, we perform two additional analyses (untabulated). First, we use a subsample of firms with data available for each year spanning 1990–2008. Estimating Model 1 using these 6,354 observations produces qualitatively similar results. The coefficient on BVE (NI) is 1.177, 1.076 and 0.958 (3.925, 7.109 and 7.130) in 1990–2004, 2005 and 2006–2008 respectively. The BVE (NI) coefficients are not (are) significantly different across the sub-periods. Second, we restrict the analysis to the period 2000–2008 only, recognizing that the stability of the model could be challenged over the longer (1990–2008) period. Again, the results are consistent with those reported in Table 2.

We next conduct a preliminary analysis to investigate whether several variables found to be significant in explaining accounting choices or the effects of accounting are associated with the apparent changes in the value relevance of earnings. In particular, we examine the IFRS impact on reported accounting measures and explore the persistence of earnings in the pre-IFRS and IFRS periods. Further, we consider the impact of firm size and industry on changes in the association between share prices and accounting information in the different regimes.

4.2 IFRS impact on reported accounting measures

Australia's harmonization policy during 1996 to 2002 resulted in around 50 percent of Australian accounting standards being harmonized with international accounting standards. However, in many instances the harmonized standards continued to diverge from international accounting standards in order to accommodate local conditions or to promote best practice as perceived by the AASB (Haswell and McKinnon, 2003).

Differences in the associations between AGAAP and IFRS reported accounting information and share prices can reflect any of several factors, including better investment information being provided by one system, or differences in capital market understanding of information. If IFRS represent best international practice and capital markets are sophisticated in their understanding of reported accounting information, it is expected that larger differences between financial position and performance measures produced under IFRS and AGAAP generate greater improvements in the quality of financial reporting. Arguably, an improvement could arise via recognition of previously unrecognized accounting information (e.g. share-based payments, derivative financial instruments) and the timelier recognition of economic gains and losses due to more use of fair value accounting. We explore whether the apparent change in the association between share prices and accounting information, particularly earnings, depends upon the extent to which IFRS adoption is likely to affect firms' accounting information.

The year 2005 is, by construction, the fiscal year immediately prior to IFRS adoption for all firms in the sample. Hence, the Table 2 results indicating a change in 2005 data relative to patterns of prior years raise the possibility that reported AGAAP-based accounting amounts in

2005 'anticipate' the adoption of IFRS. That is, it is possible that managers anticipated the imminent change to IFRS and modified their AGAAP-based reported numbers in 2005 to be similar to those that would be reported if IFRS were used, despite a prohibition on early IFRS adoption. Alternatively, the apparent shift in coefficients that begins in 2005 could reflect an economic change unrelated to IFRS adoption. To investigate these explanations, we conduct two additional analyses.

First, we estimate Model 1 using comparative prior year data disclosed by firms in their 2006 financial statements but relating to the 2005 fiscal year. These hand-collected comparative numbers for 2005, reported under IFRS, are compared with the AGAAP numbers reported in 2005. Thus, we are able to compare regressions using alternative sets of data for the same year (2005). Estimated coefficients that differ between AGAAP and IFRS versions of the regression would be inconsistent with managers 'anticipating' IFRS adoption in 2005.

Table 3 provides descriptive statistics for IFRS-AGAAP differences in 2005. All figures are expressed relative to AGAAP shareholders' equity. IFRS shareholders' equity is, on average, 3.5 percent lower than AGAAP shareholders' equity, although the median difference is zero, indicating that several large negative differences pull down the average. In addition, 27.6 percent of sample firms report no difference between IFRS and AGAAP shareholders' equity. In contrast, the differences for net income are more dispersed (std dev = 0.640 compared with 0.317). The average net income difference is only 1.5 percent of AGAAP shareholders' equity, and again the median difference is zero. Nineteen percent of firms reported no difference between 2005 IFRS and AGAAP net income. Total assets (liabilities) under IFRS are, on average, 0.4 (3.8) percent higher than the AGAAP figure, with a median difference of zero. Thirty-four percent (50 percent) of firms reported no difference between 2005 IFRS and AGAAP total assets (total liabilities). This analysis potentially understates the IFRS-AGAAP differences in 2005 given that some IFRS standards were grandfathered (e.g. business combinations), with firms not required to make retrospective adjustments for their 2005 comparative year.

Table 4 reports summary results from three Model 1 regressions using 2005 data. The first regression uses financial statement data taken from *Huntleys Aspect Datalink*, as per Table 2. The second regression is based on the subsample of firms with hand-collected reconciliation data

Table 3. Summary of descriptive statistics for IFRS-AGAAP differences in 2005 (number of observations = 1205)

	Mean	Median	Std dev	5th Percentile	95th Percentile	Proportion with zero difference
Shareholders' Equity	−0.035	0.000	0.317	−0.294	0.080	0.276
Net Income	0.015	0.000	0.640	−0.113	0.094	0.189
Total Assets	0.004	0.000	0.376	−0.222	0.162	0.341
Total Liabilities	0.038	0.000	0.223	−0.014	0.165	0.504
Property, Plant & Equipment	−0.008	0.000	0.157	−0.089	0.020	0.700
Intangible Assets	0.006	0.000	0.232	−0.033	0.097	0.594
Other Assets	0.007	0.000	0.329	−0.187	0.168	0.397
Provisions	−0.004	0.000	0.047	−0.035	0.018	0.637
Other Liabilities	0.042	0.000	0.223	−0.017	0.192	0.458

IFRS-AGAAP differences are relative to AGAAP Shareholders' Equity reported for the 2005 fiscal year. 2005 is defined to include fiscal firm years that end in December 2004 through November 2005. The analysis is based on comparative numbers for 2005, reported under IFRS, compared with the AGAAP numbers reported in 2005.

Table 4. Summary statistics for regressions of share price on IFRS and AGAAP book value of equity and net income for 2005

$$PRC_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \varepsilon_{it}$$

	AGAAP (from Table 2)		AGAAP (reconciliation subsample)		IFRS (reconciliation subsample)	
	Coefficient	*t*-stat	Coefficient	*t*-stat	Coefficient	*t*-stat
Constant	0.345	7.08	0.317	6.60	0.318	6.79
BVE	1.060	9.98	1.080	8.84	1.024	7.50
NI	6.490	7.58	7.105	7.22	8.353	8.00
Adj R^2	0.796		0.771		0.777	
n	1391		1205		1205	

PRC is share price three months after a firm's fiscal year end. BVE is book value of equity per share. NI is net income per share. Year *t* is defined to include fiscal years that end in December$_{t-1}$ through November$_t$. Reconciliation subsample refers to firms with available IFRS-AGAAP reconciliation data for 2005. The smaller number of observations in the reconciliation sample is due to data unavailability, and to omitting firms with large differences (greater than 1 percent of 2005 AGAAP shareholders' equity) between AGAAP shareholders' equity or net income as taken from *Huntleys Aspect Datalink* versus hand-collected from firms' financial statements. White (1980) adjusted standard errors are employed.

available in 2006 financial statements for the 2005 comparative year.[15] The estimated coefficient for BVE (β_1) is approximately the same in the two regressions based on AGAAP, namely 1.060 and 1.080. The coefficient on earnings (β_2) is higher on the reduced sample of reconciliation hand-collected data, relative to the Table 2 data (7.105 and 6.490 respectively), reinforcing the Table 2 results that show the coefficients for 2005 differ from prior years.

The third regression reported in Table 4 is based on comparative 'prior year' IFRS amounts reported in 2006 but pertaining to the 2005 year. The BVE (NI) coefficient is 1.024 (8.353) compared to 1.080 (7.105) for the AGAAP reconciliation subsample. Consistent with the results in Chalmers et al. (2008) and Clarkson et al. (2010) there is little difference between estimated coefficients based on AGAAP and IFRS numbers, although the regression results based on IFRS numbers are closer to those reported in Table 2 Panel B for 2006–2008. Thus, the results in Table 4 are consistent with firms reporting AGAAP numbers in 2005 which 'anticipate' IFRS adoption.

To further investigate whether the apparent shift in estimated coefficients in 2005 relates to the adoption of IFRS rather than to some unspecified economic change, we divide our sample into firm year observations for firms that did not report differences between AGAAP and IFRS BVE or NI for 2005 (n = 1958) and those that reported differences (n = 10,552).[15] We employ the same data for 2005 underlying Table 4 to separate the subsamples and use Model 2 to investigate the coefficient shift.

$$PRC_{it} = + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 BVE_{it} * NODIFF_i + \beta_4 NI_{it} * NODIFF_i + \varepsilon_{it} \quad \text{(Model 2)}$$

All variables are as previously defined and $NODIFF_i$ is an indicator variable set to 1 if firm i reports no AGAAP-IFRS reconciliation difference in both 2005 NI and BVE. In Model 2, β_3 and β_4 represent the change in the value relevance of BVE and NI respectively, for firms reporting zero difference between AGAAP and IFRS. Consistent with the previous analysis, we regress share

price on book value of equity per share and net income per share over the 1990–2008 period, allowing coefficients to vary across the 1990–2004, 2005 and 2006–2008 sub-periods.

Table 5 Panel A reports summary regression results. In each sub-period β_3 and β_4 are negative, suggesting that the association between BVE and NI and PRC is stronger for firms with non-zero AGAAP-IFRS differences than for other firms. The NI coefficients for firms with non-zero (zero)[16] differences are 4.148, 8.132 and 7.195 (0.790, 3.705, 0.106) in the pre-IFRS, transition to IFRS and IFRS periods respectively. The BVE coefficients for firms with non-zero (zero)[17] differences are 1.069, 0.950 and 0.941 (0.685, 0.801 and 0.922) in the pre-IFRS, transition to IFRS and IFRS periods respectively.

Table 5. Summary statistics for regressions of share price on book value of equity and net income according to whether firms report IFRS-AGAAP differences in 2005

$$PRC_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 BVE_{it} * NODIFF_i + \beta_4 NI_{it} * NODIFF_i + \varepsilon_{it}$$

Panel A: Pooled regressions

	1990–2004		2005		2006–2008	
	Coefficient	*t*-stat	Coefficient	*t*-stat	Coefficient	*t*-stat
Constant	0.275	5.93	0.332	7.35	0.409	9.85
BVE	1.069	13.58	0.950	7.39	0.941	10.89
NI	4.148	8.07	8.132	6.56	7.195	10.67
BVE*NODIFF	−0.384	−3.77	−0.149	−1.08	−0.019	−0.11
NI*NODIFF	−3.358	−5.83	−4.427	−3.03	−7.089	−6.46
Adj R^2	0.682					
n	12510					

Panel B: Tests of coefficient equality

	BVE Coefficients		NI Coefficients	
	Chi-square	*p value*	Chi-square	*p value*
Firms with non-zero AGAAP-IFRS differences				
All equal	1.519	*0.468*	24.499	*0.000*
1990–2004 = 2005	0.874	*0.350*	11.652	*0.001*
2005 = 2006–2008	0.006	*0.940*	0.653	*0.419*
1990–2004 v 2006–2008	1.368	*0.242*	19.851	*0.000*
Firms with zero AGAAP-IFRS reconciliation differences				
All equal	2.043	*0.360*	14.796	*0.001*
1990–2004 = 2005	1.058	*0.304*	10.812	*0.001*
2005 = 2006–2008	0.377	*0.539*	11.653	*0.001*
1990–2004 v 2006–2008	1.507	*0.220*	0.504	*0.478*

PRC is share price three months after a firm's fiscal year end. BVE is book value of equity per share. NI is net income per share. NODIFF is an indicator variable set equal to 1 if firm *i* did not report an AGAAP-IFRS reconciliation difference in both 2005 net income and shareholders' equity (n = 1958); else 0 (n = 10552). Year *t* is defined to include fiscal years that end in December$_{t-1}$ through November$_t$. Market capitalization is measured three months after a firm's fiscal year end. Pooled regressions are based on data pooled across years but with RHS variables multiplied by dummy variables formed for the 1990–2004, 2005 and 2006–2008 periods. Standard errors are clustered by firm and year.

Table 5 Panel B reports tests of the equality of the BVE and NI coefficients across sub-periods for firms with zero and non-zero AGAAP-IFRS differences. Consistent with our previous analysis, the BVE coefficients for both firm categories are not significantly different across the sub-periods. Conversely, Table 5 Panel B reveals significantly different NI coefficients for firms reporting non-zero AGAAP-IFRS differences across 1990–2004 versus 2005 and 1990–2004 versus 2006–2008. The χ^2statistics (p-values) are 11.652 (p = .001) and 19.851 (p < .000) respectively. There is no significant difference in the NI coefficients for firms reporting zero AGAAP-IFRS differences in 1990–2004 versus 2006–2008 (χ^2 = 0.504, p = .478). These results suggest, as predicted, that only firms reporting non-zero AGAAP-IFRS differences experience change in the association between price and earnings upon IFRS adoption.

4.3 Earnings persistence

Ohlson (1995), among others, suggests that the association between firm values and accounting numbers reflects the persistence of earnings. Consistent with our findings, earnings that are more persistent will be reflected in a higher estimated NI coefficient and a lower estimated BVE coefficient in Model 1. Given this finding and our evidence of greater earnings value relevance in the IFRS period relative to prior periods, we investigate if earnings persistence has increased with IFRS adoption. An increase is likely if reported IFRS earnings reflect underlying economic circumstances that have continuing effects into the future, as should occur if earnings reflect trends in fair value changes. However, the IFRS association with earnings persistence is particularly interesting to explore given the counter-argument that IFRS earnings are likely to be more volatile than AGAAP reported earnings because of the IFRS emphasis upon fair values.[19] To further investigate explanations for the increase in earnings coefficients post-IFRS adoption (see Table 2) we estimate earnings persistence prior, and subsequent, to IFRS adoption using Models 3 and 4 which map net income at time t to net income and cash flow from operations at t+1.

$$NI_{it+1} = \alpha + \beta_1 NI_{it} + \varepsilon_{it+1} \quad \text{(Model 3)}$$

$$CFO_{it+1} = \alpha + \beta_1 NI_{it} + \varepsilon_{it+1} \quad \text{(Model 4)}$$

NI_{it} is net income per share for fiscal year t; NI_{it+1} is net income per share for fiscal year t+1; and CFO_{it+1} is cash flow from operations per share for fiscal year t+1. The number of shares outstanding three months after the end of the fiscal year is used to calculate per share amounts.

Table 6 Panel A reports summary statistics for Model 3. We pool all firm years but allow coefficients to vary across the periods 1990–2004, 2005, and 2006–2008. The coefficient β_1 is 0.668, 0.909 and 0.832 in each of these periods respectively. This indicates that reported earnings persistence is higher in 2005 and 2006–2008 than in prior years. Table 6 Panel A chi-square tests reject equality of NI coefficient (β_1) across the sub-periods 1990–2004 versus 2005 (χ^2 = 21.02, p < .000) and 1990–2004 versus 2006–2008 (χ^2 = 19.60, p < .000). However, β_1 is not statistically different for 2005 versus 2006–2008 (χ^2 = 2.40, p = .121). Consistent results are reported in Table 6 Panel B where cash flow from operations is the dependent variable. In Model 4, the NI coefficient (β_1) is 0.783, 0.939 and 0.846 in pre-IFRS, transitional, and IFRS periods respectively. β_1 is statistically different for 1990–2004 versus 2005 (χ^2 = 3.05, p = .081). The results presented in Table 6 are consistent with increased earnings persistence on IFRS adoption partially explaining the increased association between share prices and earnings.

Table 6. Summary statistics for regressions of year t+1 net income per share and cash flow from operations per share on year *t* net income per share

Panel A: Pooled regression– Net income per share

$$NI_{it+1} = \alpha + \beta_1 NI_{it} + \varepsilon_{it+1}$$

	1990–2004		2005		2006–2008	
	Coefficient	*t*-stat	Coefficient	*t*-stat	Coefficient	*t*-stat
Constant	0.021	11.78	0.026	6.84	0.009	3.15
NI	0.668	24.24	0.909	22.02	0.832	28.18
Adj R^2	0.480					
n	17562					

Tests of Coefficient Equality	Chi-square	*p value*
All equal	28.40	*0.000*
1990–2004 = 2005	21.02	*0.000*
2005 = 2006–2008	2.40	*0.121*
1990–2004 v 2006–2008	19.60	*0.000*

Panel B: Pooled regression – Cash flow from operations per share

$$CFO_{it+1} = \alpha + \beta_1 NI_{it} + \varepsilon_{it+1}$$

	1990–2004		2005		2006–2008	
	Coefficient	*t*-stat	Coefficient	*t*-stat	Coefficient	*t*-stat
Constant	0.080	20.23	0.044	8.79	0.029	6.25
NI	0.783	22.23	0.939	12.35	0.846	15.38
Adj R^2	0.375					
n	17248					

Tests of Coefficient Equality	Chi-square	*p value*
All equal	3.10	*0.212*
1990–2004 = 2005	3.05	*0.081*
2005 = 2006–2008	1.98	*0.159*
1990–2004 v 2006–2008	0.99	*0.319*

NI is net income per share. CFO is cash flow from operations per share. Year *t* is defined to include fiscal years that end in December$_{t-1}$ through November$_t$. Pooled regressions are based on data pooled across years but with RHS variables multiplied by dummy variables formed for the 1990–2004, 2005 and 2006–2008 periods. Standard errors are clustered by firm and year.

4.4 Firm size and industry effects

Conjecture regarding whether the effects of IFRS adoption depend on firm size and industry affiliation warrants an investigation of whether the change in the association between share prices and accounting information in an AGAAP regime versus an IFRS regime is associated with such characteristics.[20] We use Model 5 to explore these potential associations.

$$PRC_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 BVE_{it}*SMALL_{it} + \beta_4 NI_{it}*SMALL_{it} + \beta_5 BVE_{it}*MINING_{it} + \beta_6 NI_{it}*MINING_{it} + \beta_7 BVE_{it}*FINANCE_{it} + \beta_8 NI_{it}*FINANCE_{it} + \varepsilon_{it} \quad \text{(Model 5)}$$

All variables are as previously defined, with SMALL being an indicator variable set to 1 if firm *i* has a market capitalization less than AUD$50m in year *t* and MINING and FINANCE being indicator variables set to 1 if firm *i* is in the mining or finance sector respectively in year *t*. Our sample comprises 12,579 (7,446) small (large) firm observations. There are 8,610, 8,026 and 3,389 industrial, mining and finance firm sample observations respectively. Consistent with our prior analysis, we estimate a regression of share price on book value of equity per share and net income per share over the 1990–2008 period, allowing coefficients to vary across 1990–2004, 2005 and 2006–2008. Table 7 Panel A reports summary statistics for Model 5 pooled regressions for subsamples of firm-years based on firms' market capitalization and industry classification. Table 7 Panel B reports coefficient equality testing for these subsamples.

The regression results for book value of equity and earnings are mostly consistent with our Table 2 results. Analysing large firms, the BVE coefficients for industrial (β_1), mining ($\beta_1 + \beta_5$) and finance ($\beta_1 + \beta_7$) firms are not significantly different between any of the pre-IFRS, the transition and IFRS periods.[21] Similarly, the NI coefficients for large mining ($\beta_2 + \beta_6$) and large finance ($\beta_2 + \beta_8$) firms are not significantly different across the sub-periods. However, the NI coefficients (β_2) are statistically different for large industrial firms in 1990–2004 compared to 2005 ($\chi^2 = 4.82$, $p = .028$) and in 1990–2004 versus 2006–2008 ($\chi^2 = 10.97$, $p = .001$).[22] This suggests that the increased value relevance of earnings associated with transitioning to IFRS is prevalent in large firms and attributable to the large industrial firms rather than large firms operating in the mining or finance industry.

Our analysis also suggests that the limited impact of IFRS adoption on the value relevance of book value of equity is evident for small firms.[23] The BVE coefficients for small industrial ($\beta_1 + \beta_3$) and finance ($\beta_1 + \beta_3 + \beta_7$) firms are not statistically different across the sub-periods. A difference is evident in BVE coefficients for small mining firms ($\beta_1 + \beta_3 + \beta_5$) in 1990–2004 versus 2005 ($\chi^2 = 3.47, p = .063$) only. However, this seems to be a transitioning effect as there is no statistically significant difference in mining firms' BVE coefficients for 1990–2004 and 2006–2008.

Consistent with the large firm results, it is small industrial firms that register an increase in earnings value relevance.[24] The NI coefficients for small industrial firms ($\beta_2 + \beta_4$), are significantly different between 1990–2004 and 2005 ($\chi^2 = 12.52$, $p < .000$) and 1990–2004 and 2006–2008 ($\chi^2 = 3.75, p = .053$). A transitioning difference is detected for small finance firms with the NI coefficient increasing significantly in 2005 relative to 1990–2004. However, the coefficient reduces in 2006–2008 relative to 2005 to a value that is not statistically distinguishable from its pre-IFRS value. Small mining firms exhibit no significant difference in their NI coefficients across the pre-IFRS and IFRS periods.

These results imply that the increased relevance for earnings upon IFRS adoption does not depend on firms' market capitalization. Both small and large firms demonstrate increased relevance for earnings. While small firms may not have as many items affected by accounting changes pursuant to IFRS adoption, their changes may be material.

In our sample, industry effects are evident, with the change in association between earnings and share price concentrated in the industrial sector. The impact of IFRS adoption on the association between share price and accounting information for mining and finance firms is limited. Accounting practices significantly affected by IFRS adoption include accounting for goodwill and other

Table 7. Summary statistics for size and industry effects in price regressions

$$PRC_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 BVE_{it}*SMALL_{it} + \beta_4 NI_{it}*SMALL_{it} + \beta_5 BVE_{it}* MINING_{it} + \beta_6 NI_{it}* MINING_{it} + \beta_7 BVE_{it}*FINANCE_{it} + \beta_8 NI_{it}*FINANCE_{it} + \varepsilon_{it}$$

Panel A: Pooled regression

	1990–2004		2005		2006–2008	
	Coefficient	*t*-stat	Coefficient	*t*-stat	Coefficient	*t*-stat
Constant	0.198	4.36	0.296	6.34	0.309	8.04
BVE	1.199	14.98	1.053	6.34	1.010	9.92
NI	4.847	8.33	7.660	5.30	7.813	8.90
BVE*SMALL	−0.214	−1.66	0.041	0.25	−0.109	−0.58
NI*SMALL	−3.966	−7.11	−2.670	−1.63	−4.806	−5.02
BVE*MINING	−0.121	−1.19	0.204	0.81	0.180	1.10
NI*MINING	0.237	0.42	−3.351	−1.80	−1.531	−1.37
BVE*FINANCE	−0.281	−2.19	−0.280	−1.32	−0.161	−1.38
NI*FINANCE	1.779	2.19	1.544	0.73	−0.494	−0.47
Adj R^2	0.759					
n	20025					

Panel B: Tests of coefficient equality

	BVE Coefficients		NI Coefficients	
	Chi-square	*p value*	Chi-square	*p value*
Large firms				
Industrial firms	β_1		β_2	
All equal	2.78	*0.249*	12.70	*0.002*
1990–2004 = 2005	0.81	*0.367*	4.82	*0.028*
2005 = 2006–2008	0.07	*0.797*	0.01	*0.909*
1990–2004 v 2006–2008	2.62	*0.105*	10.97	*0.001*
Mining firms	$\beta_1 + \beta_5$		$\beta_2 + \beta_6$	
All equal	1.04	*0.594*	2.63	*0.269*
1990–2004 = 2005	0.87	*0.352*	0.32	*0.574*
2005 = 2006–2008	0.11	*0.738*	1.82	*0.177*
1990–2004 v 2006–2008	0.52	*0.469*	1.84	*0.175*
Finance firms	$\beta_1 + \beta_7$		$\beta_2 + \beta_8$	
All equal	0.61	*0.738*	2.11	*0.347*
1990–2004 =2005	0.61	*0.435*	2.11	*0.146*
2005 = 2006–2008	0.27	*0.603*	1.42	*0.233*
1990–2004 v 2006–2008	0.23	*0.629*	0.48	*0.489*

Table 7. *(continued)*

$$PRC_{it} = \alpha + \beta_1 BVE_{it} + \beta_2 NI_{it} + \beta_3 BVE_{it} * SMALL_{it} + \beta_4 NI_{it} * SMALL_{it} + \beta_5 BVE_{it} * MINING_{it} + \beta_6 NI_{it} * MINING_{it} + \beta_7 BVE_{it} * FINANCE_{it} + \beta_8 NI_{it} * FINANCE_{it} + \varepsilon_{it}$$

Panel B (continued): **Tests of coefficient equality**

	BVE Coefficients		NI Coefficients	
	Chi-square	*p value*	Chi-square	*p value*
Small firms				
Industrial firms	$\beta_1 + \beta_3$		$\beta_2 + \beta_4$	
All equal	1.31	*0.520*	12.52	*0.002*
1990–2004 =2005	0.55	*0.460*	12.52	*0.000*
2005 = 2006–2008	1.16	*0.282*	3.32	*0.068*
1990–2004 v 2006–2008	0.19	*0.659*	3.75	*0.053*
Mining firms	$\beta_1 + \beta_3 + \beta_5$		$\beta_2 + \beta_4 + \beta_6$	
All equal	3.53	*0.171*	0.15	*0.927*
1990–2004 =2005	3.47	*0.063*	0.09	*0.770*
2005 = 2006–2008	0.76	*0.385*	0.01	*0.922*
1990–2004 v 2006–2008	0.95	*0.330*	0.13	*0.723*
Finance firms	$\beta_1 + \beta_3 + \beta_7$		$\beta_2 + \beta_4 + \beta_8$	
All equal	0.21	*0.901*	4.74	*0.094*
1990–2004 =2005	0.20	*0.655*	2.87	*0.090*
2005 = 2006–2008	0.10	*0.758*	4.69	*0.030*
1990–2004 v 2006–2008	0.02	*0.878*	0.01	*0.906*

PRC is share price three months after a firm's fiscal year end. BVE is book value of equity per share. NI is net income per share. SMALL is an indicator variable set equal to 1 if firm *i* has market capitalization less than AUD$50m in year *t*. MINING and FINANCE are indicator variables set equal to 1 if firm *i* is in the relevant sector in year *t*. We use AGSM Industry codes to determine industry membership. Year *t* is defined to include fiscal years that end in December$_{t-1}$ through November$_t$. Market capitalization is measured three months after a firm's fiscal year end. Pooled regressions are based on data pooled across years but with RHS variables multiplied by dummy variables formed for the 1990–2004, 2005 and 2006–2008 periods. Standard errors are clustered by firm and year.

intangibles, income tax, financial instruments and share-based payments with IFRS effects not uniform across industries (Goodwin et al., 2008). A plausible potential explanation for our results is that, collectively, these items are more common and material in industrial firms.[25]

4.5 Return models

Because price regressions can suffer from scale effects (Barth and Kallapur, 1996; Brown et al., 1999) that can be reduced by return models, we conduct sensitivity tests employing a return model, based on the following regression:

$$RET_{it} = \alpha + \beta_1 NI_{it} + \beta_2 \Delta NI_{it} + \varepsilon_{it} \qquad \text{(Model 6)}$$

RET_{it} is return for firm i for the 12-month period ending three months following fiscal year t; NI_{it} is earnings scaled by beginning market capitalization; and ΔNI_{it} is NI_{it} less NI_{it-1}.

The yearly regressions reported in Table 8 Panel A show that the coefficient on NI is positive in the years immediately prior to and after the IFRS adoption year. The NI coefficient is 0.044 in 2005, increases to 0.178 in 2006, declines to 0.075 in 2007, and reverts back to 0.257 in 2008. In the previous decade (1995–2004), the NI coefficient was as large as 0.517, and negative on two

Table 8. Summary statistics for return regressions

$$RET_{it} = \alpha + \beta_1 NI_{it} + \beta_2 \Delta NI_{it} + \varepsilon_{it}$$

Panel A: Annual regressions

	Constant		NI		ΔNI		Adj R^2	n
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat		
1990	0.026	0.29	0.022	0.22	0.032	0.52	0.039	353
1991	−0.024	−0.36	0.085	0.92	0.242	2.89	0.104	355
1992	0.210	3.96	0.029	0.31	0.144	2.11	0.026	406
1993	−0.106	−1.21	−0.054	−0.38	0.224	2.70	0.063	476
1994	0.121	3.15	0.095	0.65	0.300	2.46	0.116	575
1995	−0.159	−6.79	0.507	6.06	−0.084	−2.11	0.099	664
1996	0.323	4.26	0.286	2.25	0.205	2.24	0.047	743
1997	0.375	2.83	0.232	1.32	0.217	2.38	0.026	780
1998	−0.172	−12.86	0.375	5.17	−0.064	−1.62	0.078	778
1999	−0.928	−7.12	−0.171	−1.89	0.301	3.86	0.058	780
2000	0.656	2.70	−0.069	−0.67	0.306	2.99	0.029	823
2001	−0.223	−8.66	0.517	8.46	−0.067	−1.67	0.160	908
2002	0.263	7.72	0.270	6.17	0.138	4.00	0.069	966
2003	0.135	5.07	0.083	1.03	0.144	2.96	0.062	983
2004	−1.245	−5.16	0.356	4.10	0.105	1.46	0.095	1030
2005	0.023	0.11	0.044	0.33	0.254	2.22	0.014	1116
2006	0.309	3.72	0.178	1.30	0.335	2.73	0.041	1183
2007	0.007	0.04	0.075	0.61	0.193	1.67	0.008	1291
2008	0.005	0.07	0.257	5.68	0.091	2.97	0.064	1377

Panel B: Pooled regression

	1990–2004		2005		2006–2008	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Constant	0.017	2.47	−0.210	−9.25	−0.010	−0.90
NI	0.112	4.85	0.052	0.40	0.160	2.45
ΔNI	0.185	9.90	0.253	2.22	0.198	3.49
Adj R^2	0.130					
n	15587					

RET is annual return measured to three months after a firm's fiscal year end. NI is net income per share and ΔNI is $NI_t - NI_{t-1}$. Both NI and ΔNI are deflated by beginning of year share price. The pooled regression is based on data pooled across years but with RHS variables multiplied by dummy variables formed for the 1990–2004, 2005 and 2006–2008 periods. For annual regressions White (1980) adjusted standard errors are employed. For pooled regressions standard errors are clustered by firm and year.

occasions. The ΔNI coefficient increases in 2005 and 2006 relative to immediately previous years. Since 2001, the coefficient did not exceed 0.144 until the IFRS transition year. The summary statistics presented in Table 8 Panel B from a regression using data pooled across all years, but allowing coefficients to differ across the sub-periods 1990–2004, 2005 and 2006–2008, suggest the estimated NI coefficient decreased from 1990–2004 during the 2005 transition period, and then increased in the 2006–2008 period, to exceed its pre-IFRS magnitude. For ΔNI, the estimated coefficient increases in 2005. While declining to 0.198 for 2006–2008, this is nonetheless higher than the estimated coefficient for the 1990–2004 period (0.185). Overall, while there is some suggestion of an increased coefficient on earnings after IFRS adoption using a return model, the noisiness of the data makes inferences less robust.

5. Conclusion

In this paper, we investigate whether the association between firms' share prices and shareholders' equity and reported earnings differs for periods prior to, including, and subsequent to the adoption of IFRS by Australian firms. Our results suggest that the value relevance of shareholders' equity remains consistent across the pre-IFRS, transition and IFRS periods. However, the value relevance of earnings increases upon IFRS adoption. Interestingly, there is evidence of change occurring in the transition year *prior to* adoption, consistent with firms anticipating the likely effect of IFRS adoption in their accounting choices under AGAAP in 2005. Investigating the changes in the statistical associations reveals that the earnings changes identified are attributable to both small and large industrial firms and firms that report IFRS-AGAAP differences in either shareholders' equity or earnings in 2005.

Significantly, levels of earnings persistence increase with the advent of IFRS. This implies that earnings, despite the potential for higher volatility under IFRS, are more persistent and hence more value-relevant upon IFRS adoption. Investors may perceive that increased volatility reflects underpinning economic circumstances and that earnings changes compound in their impact on future earnings. Our results provide evidence suggesting that increasing the prevalence of fair value measurement has enhanced earnings value relevance. While it is beyond the scope of this study, future research opportunities include exploring the underlying reasons for enhanced earnings value relevance. In particular, research could examine why enhanced relevance is reflected for earnings and not balance sheet values. Further, investigating how IFRS adoption affects the accounting for firms in different industries and how those accounting differences affect the value relevance of financial information presents an opportunity for future in-depth research into industry-related effects of IFRS adoption.

Overall, our results point to increased earnings persistence and an increase in the information content of earnings upon adoption of IFRS by Australian firms. While the generalizability of our study may be constrained, we identify that even for a country with a balance sheet-orientated conceptual framework, a common law legal system, a high level of shareholder protection, low conformity between taxation reporting and financial accounting, and principle-based accounting standards, IFRS adoption changes the association between share prices and accounting information.

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Notes

1 Australian Accounting Standards Board, 1996, Policy Statement 6 International Harmonization.
2 This policy statement merged and revised Policy Statement 4 Australia – New Zealand Harmonization Policy and Policy Statement 6 International Harmonization Policy to reflect changes arising from the reconstitution of the AASB, the International Accounting Standards Board (IASB) and the activities of the International Federation of Accountants Public Sector Committee (PSC).
3 The Financial Reporting Council (FRC) is responsible for providing broad oversight of the process for setting accounting and auditing standards in Australia.
4 FRC Bulletin 2002/4 issued 3 July 2002 Adoption of International Accounting Standards by 2005 available at www.frc.gov.au/bulletins/2002/04.asp.
5 See Chalmers and Godfrey (2006) for a summary of these changes.
6 International Accounting Standards (IAS) were the predecessors to IFRS.
7 Germany provides a rich setting to explore the value relevance of IAS given that since April 1998, and prior to the mandatory adoption of IFRS, exchange-listed German firms could elect to prepare financial statements in accordance with IAS, US GAAP, or German GAAP.
8 Firms presenting their first IFRS-compliant report were required to present comparative IFRS information for the year prior. Thus, for the year prior to IFRS adoption, the same set of transactions is portrayed under local GAAP and, with a one-year delay, under IFRS.
9 The primary interest of this study was the change in value relevance of reported intangibles moving from a pre-IFRS regime to an IFRS regime. Chalmers et al. (2008) find that IFRS goodwill (local GAAP-identifiable intangible assets) measures increase (decrease) in value relevance under IFRS, which is consistent with a goodwill impairment regime and a more conservative accounting treatment for identifiable intangibles having higher and lower valuation properties, respectively.
10 For their first full financial statements after 1 January 2005, firms listed on the Australian Securities Exchange (ASX) were required to adopt Australian equivalents to IFRS as a replacement for previous AGAAP. Australian equivalents to IFRS are identical in content to IFRS with the exception that IFRS are written for private sector for-profit entities, whereas Australian equivalents to IFRS include additional paragraphs relevant to public sector and not-for-profit entities.
11 Prior literature partly attributes findings of increasing incremental value relevance of book values relative to earnings to the increasing frequency of negative earnings (Collins et al., 1997). More than 50 percent of sample firms report losses in each of the years 2005 to 2008. In contrast, the percentage of firms reporting losses during 1990–2004 exceeded 50 percent in only five of 15 years. Untabulated statistics indicate that losses are mostly concentrated amongst smaller firms.
12 All regression results are based on White (1980).
13 Given the significant number of loss firms, we rerun Model 1 with the inclusion of an indicator variable, LOSS. LOSS takes the value 1 if a firm's net income is negative. As expected, the LOSS coefficients are negative for all periods. The changes in the coefficients for BVE and NI are qualitatively similar to those reported in Table 2.
14 For tests of coefficient equality, Chi-square (χ^2) tests are used since they employ the White (1980) residual variance-covariance matrix.
15 Table 4 indicates that the number of observations drops from 1391 (*Huntleys Aspect Datalink*) to 1205 (hand-collected data). This is due to some data being unavailable for hand collection from firms' annual reports.
16 Firms were required to report the differences between IFRS and AGAAP financial reporting numbers if those differences were material. Firms that did not report differences may have determined that the differences were insufficiently material to report, or may not have complied with the requirement to report the differences.

17 The NI coefficient for firms with non-zero (zero) reconciliation differences in AGAAP and IFRS is β_2 ($\beta_2 + \beta_4$).
18 The BVE coefficient for firms with non-zero (zero) reconciliation differences in AGAAP and IFRS is β_1 ($\beta_1 + \beta_3$).
19 The average standard deviation of NI for our three periods 1990–2004, 2005 and 2006–2008 is 0.243, 0.246 and 0.272 respectively. This suggests slightly increased earnings variation in the IFRS period relative to the prior periods. Increased earnings volatility could arise by virtue of IFRS requirements that include recognizing the market value of financial instruments, expensing stock-based compensation, expensing goodwill impairment rather than amortizing goodwill on a straight-line basis, and expensing other intangibles that AGAAP allowed to be capitalized and not amortized.
20 Analysing the major AGAAP-IFRS reconciling items, Goodwin and Ahmed (2006) report an increase in the number of adjustments to net income and equity with firm size. Goodwin et al. (2008) find large firms experience an increase in earnings while small firms experience a decrease, and large firms have a decrease in equity while small firms have no change. However, they find no association between accounting quality and firm size. Gaston et al. (2010) report that both the largest and smallest firms in their study are least affected by IFRS adoption, attributing this to economic operations of small firms which are less complicated and perhaps less affected by the change, and larger firms applying accounting policies closer to IFRS before its adoption.
21 Large firms' BVE coefficients in 1990–2004, 2005 and 2005–2008 are: 1.199, 1.053 and 1.010 for industrial firms (β_1); 1.078, 1.259 and 1.190 for mining firms ($\beta_1+\beta_5$); and 0.918, 0.773 and 0.849 for financial firms ($\beta_1+\beta_7$).
22 Large firms' NI coefficients in 1990–2004, 2005 and 2005–2008 are: 4.847, 7.660 and 7.813 for industrial firms (β_2); 5.084; 4.309 and 6.282 for mining firms ($\beta_2+\beta_6$); and 6.626, 9.204 and 7.319 for financial firms ($\beta_2+\beta_8$).
23 Small firms' BVE coefficients in 1990–2004, 2005 and 2005–2008 are: 0.985, 1.094 and 0.901 for industrial firms ($\beta_1+\beta_3$); 0.864, 1.298 and 1.081 for mining firms ($\beta_1+\beta_3+\beta_5$); and 0.704, 0.814 and 0.740 for financial firms ($\beta_1+\beta_3+\beta_7$).
24 Small firms' NI coefficients in 1990–2004, 2005 and 2005–2008 are: 0.881, 4.990 and 3.007 for industrial firms ($\beta_2+\beta_4$); 1.118, 1.639 and 1.476 for mining firms ($\beta_2+\beta_4+\beta_6$); and 2.660, 6.534 and 2.513 for financial firms ($\beta_2+\beta_4+\beta_8$).
25 Gallery et al. (2008) report that retail firms are affected by more standards, on average, than most other industries when adopting IFRS. Further, financial services firms are affected by fewer, more complex, standards than most other industries. Goodwin et al. (2008) note that: intangible adjustments are about twice as common in firms operating in sectors other than the mining and financial sectors; mining firms are most impacted by the initial recognition of restoration provisions and re-measurement of those provisions; and recognized unrealized gains and losses are almost three times as common in financial sector firms. Using a price levels model, their cross-sectional comparisons find significant results only for financial sector firms 'which favours the value relevance of AGAAP over IFRS'.

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