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Abstract

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Keywords

Analysts' forecasts; AIFRS; Forecast errors; Intangible assets

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We examine whether financial analysts' forecast accuracy differs between the pre- and post- adoption of Australian Equivalents to the International Financial Reporting Standards (AIFRS). We find that forecast accuracy has improved after Australia adopted AIFRS. As a secondary objective, this paper also investigates the role of financial analysts in reducing information asymmetry in today's Australian capital market. We find weak evidence that more analysts following a stock do not help to improve forecast accuracy by bringing more firm-specific information to the market.

Keywords: Analysts' forecasts; AIFRS; Forecast errors; Intangible assets.

JEL Classification: M41, M49, G14, G19.

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1. Introduction

Financial analysts are viewed as important information intermediaries within capital markets (Beaver 1998). Regulators and other market participants view analysts' activities as increasing the information efficiency of security prices because of their expertise and knowledge in firm valuation (Frankel, Kothari & Weber 2006). In particular, it is important to highlight that financial reports are rarely seen as providing a full picture to value a company, not only from the fact that financial reports do not capture all of the growth potential of a firm, but also that accounting standards can sometimes limit the usefulness of some information. One example that is often highlighted is that most investment in intangibles is considered an expense rather than an asset in the balance sheet. This accounting treatment of expensing most investment in intangibles tends to undervalue the assets reported on the balance sheet. These limitations in financial reports reduce the ability of investors to assess the earnings potential of intangible-rich firms. Therefore there is a tendency for financial analysts to track and follow more intangible-rich firms, as it is these firms that tend to be harder to value.

In this paper we investigate directly whether forecast accuracy has changed after Australia's adoption of the International Financial Reporting Standards (IFRS). This is important because there has been some debate about the implication of the adoption of IFRS in Australia (see, for example, Jones, Rahman & Wolnizer 2004). Some research has argued that the adoption of IFRS takes Australia to a more restrictive regime and reduces the quality of financial reporting (see Matolcsy & Wyatt 2006; Ritter & Wells 2006).

On the other hand, the Commonwealth Government[1] and the Financial Reporting Council[2] (FRC) expect significant benefits from the adoption of IFRS; such as improved access to international capital markets, more transparent and understandable standards, improved communication with investors, and higher quality financial reports (see FRC 2002; CLERP 9 2002; Jones & Higgins 2006). We contribute to this debate by examining whether analysts' forecast accuracy has changed from the pre-AIFRS period (2002-2004) to the post-AIFRS period (2005-2007). The results of our research (after controlling for relevant factors) show increased forecast accuracy in the post-AIFRS period. The increase in forecast accuracy of financial analysts – who are considered as important information intermediaries in the financial market – provides some evidence of the possible positive effect of AIFRS on the users of financial reports in Australia.

As a secondary objective, we investigate directly whether financial analysts can reduce information asymmetry in the Australian capital market by improving forecast accuracy. We do this by investigating whether more analysts following a firm improve forecast accuracy by producing more firm-specific information to the market The next section of this paper provides a brief literature review examining the potential impact of AIFRS, and develops the paper's hypotheses. Section 3 discusses the data used and Section 4 covers the research

[1] Australia's move to IFRS was initiated by the Commonwealth Government as part of its Corporate Law Economic Reform Program (CLERP). CLERP No. 9 'Corporate Disclosure: Strengthening the Financial Reporting Framework' (released in September 2002) recommended that IFRS be adopted by the Australian Accounting Standard Board (AASB) by January 2005. CLERP 9 was the ninth in a series of corporate legislative reforms introduced by the federal government (Brown & Tarca 2005).

[2] The Financial Reporting Council (FRC) has the prime responsibility for accounting regulation in Australia. FRC members are appointed by the treasurer. Although the FRC is responsible for overall policy direction in accounting regulation, the development of accounting standards is the responsibility of the Australian Accounting Standards Board (Haswell & McKinnon 2003).

design employed for the empirical analysis, which are described in Section 5. The final section presents the summary and concluding remarks.

2. Literature Review and Hypothesis Development

This paper evaluates the impact of financial reports of Australian companies abiding by AIFRS since 2005. This takes Australia from its own accounting standard-setting regime to a new regime. The adoption of AIFRS has proven highly controversial in Australia, and it has led to the emergence of a lively debate on the benefits and costs of AIFRS. The major concerns relate to the widespread perception that AIFRS are of a lower quality than the local Australian accounting standards (Walker & Jones 2003). Many of the claimed benefits of adopting AIFRS proposed by the Government in its CLERP initiatives (such as the provision of higher quality accounting standards), are questioned in various research papers (see Haswell & McKinnon 2003; Lonergan 2003).

The adoption of AIFRS has changed the recognition and measurement practices for investment in some intangible assets. Under the previous Australian GAAP (AGAAP), internally generated goodwill was not recognised and purchased goodwill was capitalised. Moreover, the purchased goodwill was amortised over a maximum period of 20 years. Under the AIFRS, goodwill is subject to an impairment test. Under the AGAAP both internally generated and purchased identifiable intangible assets could be recognised. AIFRS classifies the expenditure on internally generated intangibles into research phases and development phases (AASB 138). Expenditure on research must be expensed in the current period. Expenditure incurred in the development phase may be capitalised if it satisfies conditions related to the completion, technical feasibility and saleability of the asset (AASB 138). Some internally generated identifiable intangibles that could previously be recognised as assets under the AGAAP (e.g. mastheads, publishing rights, brands and customer lists) are not allowable as assets under AIFRS. Intangible assets must be tested for impairment and written down if their value is impaired under the AIFRS. Capitalised identifiable intangibles can now be revalued only if the fair value is determined by reference to an active market.

Ritter and Wells (2006) raise the concern that the restrictive rules of AIFRS will remove some identifiable internally generated intangible assets from the balance sheet. This means that management is prevented from recognising internally generated intangible assets such as brand, mastheads and customer loyalty. Investment by companies in such intangibles is likely to be an important factor in driving future performance (Webster 1999). Prior evidence suggests that discretionary disclosure of internally generated capitalised intangible assets is useful to investors (Lev 2001; Wyatt 2005). Thus, in the post-AIFRS period, the financial reports are likely to provide less information about investment in intangibles, and this may potentially reduce analysts' ability to make accurate earnings forecasts.

Australia had its own accounting standard-setting arrangements before adopting the AIFRS. Australian accounting standards were largely high-quality accounting standards and even considered to be similar to IFRS (Ashbaugh & Pincus 2001). In 1996, Australia also took the initiative to harmonise its own accounting standards with the IFRS. So the adoption of the AIFRS in 2005 may not have brought a substantial change in accounting practices in Australia. This calls into question the concern raised by some of the potentially reduced usefulness of financial statements in the post-AIFRS period. However, whether the AIFRS adoption improves or damages financial reporting in Australia is open to empirical investigation. This paper provides evidence on the debate by focusing on analysts' forecast errors in the pre-AIFRS (2002-2004) and post-AIFRS (2005-2007) periods. Our null hypothesis is:

H1: Earnings forecast accuracy has not changed in the post-AIFRS period from the pre-AIFRS period.

This study will therefore contribute to the growing literature that provides empirical evidence on the impact of the AIFRS in Australia. Using AIFRS and AGAAP measures of goodwill and identifiable intangible assets available in the financial reports of 2005[3], Chalmers, Clinch and Godfrey (2008) find evidence that AIFRS conveys incremental useful information (beyond that available in AGAAP) in relation to goodwill only. For total intangible assets, they do not find any evidence that the AIFRS provides information beyond that in AGAAP. In fact, they find evidence that AGAAP provides incremental information in relation to identifiable intangibles. Gallery, Cooper and Sweeting (2008) provide evidence that the quality of disclosures about the likely effects of AIFRS can be explained by audit quality, company-specific and industry-specific factors[4]. On the basis of information available in the 2004/05 and 2005/06 annual reports, Cheung, Evans and Wright (2008) compare the projected and realised impact of the introduction of AASB 138 in terms of reported intangible assets and key financial measures. They find that the reported AIFRS results are different to the forecast results for intangible assets and only the debt to equity ratio is significantly different under the AGAAP and AIFRS.

The second issue that this paper addresses is the role of financial analysts in reducing information asymmetry. Financial reports provide information about the earnings potential of a firm by disclosing its earnings, assets and liabilities. However, information available in financial reports is constrained by accounting standards. Accounting standards require the satisfaction of recognition rules to disclose items on financial statements. Accounting mostly recognises expenditure on intangibles (such as research and development, and advertising) as expenses. Most of the investments in internally generated intangibles (such as brand, customer loyalty and goodwill) are not shown on the balance sheet as assets even though firms invest in such intangibles to increase their future income. In order to recognise expenditure as an asset, it needs to be probable that future economic benefits will flow into the business. This probability test requires a high degree of certainty regarding the future economic benefits that will flow from the expenditure.

Unfortunately, it is sometimes hard to determine the amount and timing of economic benefits that will eventuate from investments in intangibles with any degree of certainty. Investments in intangibles (such as advertising expenditure), are often expensed in the current year, as it is hard to know when the pecuniary benefits will flow. There would effectively be a difficulty in matching the expenditure on intangibles to the resulting future income. As a result, this leads to most investments in intangibles being recognised as an expense in the year they occur. On the other hand, investments in tangible items (such as buildings and machinery) do not face the same difficulties since the amount and timing of economic benefits from such investments are far more easily measurable with greater certainty.

[3] AASB 1 *First-time adoption of Australian Equivalents to International Financial Reporting Standards* requires an entity to explain how the transition from AGAAP to AIFRS affects its financial statements.

[4] AASB 147 *Disclosing Impacts of Adopting AIFRS* required a two-step approach to the disclosure of the expected effects of AIFRS adoption. Reporting entities were required to provide a narrative explanation of the expected differences in accounting policies in their 2004 financial reports. In annual or interim financial reports ending on or after 30 June 2005, reporting entities were required to provide reliable information about the impacts on the financial report had it been prepared using the AIFRS (Gallery, Cooper & Sweeting 2008).

The accounting treatment of expensing most of the investments in intangibles makes the accounting earnings (profit) less representative of the real earnings of a firm. In particular, the profit of a firm will be understated in years in which large investments are made in intangibles. The profit of the firm will be overstated in subsequent years as economic benefits (i.e. income) will result from prior years' investment in intangibles but no expense will be charged against such income. Thus the accounting treatment of investments in intangibles makes the reported earnings volatile. This is referred to as the 'noise effect'. As a result, analysts may find it hard to predict earnings based on the recorded past earnings of firms who have a higher investment in intangibles. Previous empirical studies have already demonstrated a positive relationship between financial analysts' earnings forecast errors and the disclosure of 'noisier' information (Lobo, Kwon & Ndubizu 1998). Imhoff and Lobo (1992) conjecture that forecast dispersion in preannouncement analysts' earnings forecasts is a proxy for noise in the firm's earnings number.

The difficulty of predicting the earnings of intangible-rich companies is likely to increase the demand for analysts' earnings forecasts since analysts are seen to have a superior ability to assess the earnings potential of firms (Kwon 2002). Barth, Kasznik and McNichols (2001) show that more analysts follow intangible-rich companies in the United States (US) as there is an increased demand for earnings forecasts for these companies. Also, due to their potential high growth opportunity, intangible-rich firms are likely to attract more attention from investors, financial analysts, and the general investment community compared to other firms (Kwon 2002). If companies with a higher investment in intangibles undergo closer scrutiny by a larger number of financial analysts as objects of recommendation, this will increase the potential for more accurate information available for such companies (Kwon 2002). The availability of more accurate information, may in turn lead to a higher level of financial analysts' earnings forecast accuracy for intangible-rich firms. This is commonly referred to as the 'information effect', as documented by Greenstein and Sami (1994) when referring to more analysts following firms in the US.

From the above discussion, it can be seen that a higher investment in intangibles brings two competing effects; namely, the noise effect and the information effect. Although there is more demand for analysts to follow firms with high intangibles that could imply more accurate earnings forecasts, the reported earnings of such firms are also likely to be more unpredictable. In other words, this could lead the noise effect to dominate over the information effect as high intangible firms have more unrecognised assets and this makes it harder for analysts to accurately forecast earnings.

Givoly and Lakonishok (1979), Lys and Sohn (1990) and Francis and Soffer (1997) show that – on average – analysts' reports communicate important information to markets for valuation and trading purposes. Kim and Schroeder (1990) attribute security analysts' forecasting accuracy to their ability to incorporate relevant information other than that included in the historical earnings of a firm. When a firm goes through close scrutiny by more analysts, there is more information available about the firm. In particular, Kwon (2002) states that with the improvement in information technology and internet facilities, new information quickly flows through to the investment community. This availability of more information as a result of an increased analysts' following reduces earnings forecast error.

Brown, Taylor and Walter (1999) provided evidence in Australia between 1992 and 1996 that analyst forecast error is negatively related to the number of analysts following a firm. Therefore, we test to see if this relationship still holds, and following from Brown, Taylor and Walter (1999) we hypothesise that the forecast error is negatively related to the number of analysts following a firm:

H2: Earnings forecast error is negatively related to the number of analysts following a firm.

3. Sample and Data

The study focuses on the top 100 firms listed on the Australian Stock Exchange (ASX) in terms of market capitalisation between 2002 and 2007. All analysts' forecast earnings per share for each company from the start of 2002 until the end of 2007 are extracted from the Institutional Brokers Estimate System (I/B/E/S) database. To avoid any potential survivorship bias, companies which have been part of the ASX100 constituent list between 2002 and 2007 are incorporated in our research. There are 142 companies incorporated into the ASX100 constituent list between 2002 and 2007. At any given point in time, the ASX100 constituent list contains only 100 companies[5]. 77 companies are excluded from the study due to insufficient analyst forecast data before and/or after the introduction of AIFRS in Australia. This leaves us with 65 companies over a 6-year time period. We ignored year 2008 in our studies to avoid any potential confounding effects from the Global Financial Crisis which started at the beginning of July 2007. Also, given that some companies are not listed at the beginning of the sample period and some companies delisted during the study period, we had an unbalanced dataset. Our research covers 35 institutional brokers and 657 analysts who provide earnings estimates over the sample periods. In particular, we focussed on the "Detail History" document (Analyst Earnings Estimate History) provided by the I/B/E/S database. To maintain consistency, the actual earnings per share data for each company were also extracted from the I/B/E/S database. The initial sample contained 20,823 individual analyst forecast observations (EPS). Information about accounting variables such as total assets, total debt, intangible assets, research and development expenses, and total expenses were obtained from Thomson Financial databases. In addition, the Total Return Index (used to determine the stock price volatility) was downloaded from the Datastream Database[6].

The one-year forward earnings forecasts – made within 30 days after the release of annual financial statements – are used in this study. This means, for example, that if a company releases its annual financial statement for the fiscal year ending June 30th 2002 on the 1st August 2002, that we collected individual analyst forecast data available between 1st August and 30th August 2002. This ensures that analysts impound in their forecast the information from the financial report of the year prior to the forecast year. In the event that the same analyst provided more than one forecast during the 30 days period, only the first forecast was incorporated in our study. This ensured that our results were not driven by those analysts who consistently update their forecast earnings. The reason of having a cut-off point of 30 days after the release of annual financial statement is that we wanted to make sure analysts get the time to read and reflect on the information of the financial reports in their forecasts. The larger the time gap between the reporting date and the analyst forecasting date, the greater the effects of other information sources (in addition to information available in the annual financial reports) integrated with the forecast data. For example, analysts making forecasts in December 2002 may consider other information surrounding the first 6 months of the fiscal year (July to December 2002).

4. Research Design

We used a panel regression model across the 65 companies over the 2002-2007 time period. Specifically, a cross-section firm fixed effects estimation is used in the panel data analysis in

[5] Technically speaking, the constituent list can be updated on a monthly basis.
[6] The stock price volatility is calculated based on the weekly changes in Total Return Index.

order to take into account the impact of unobserved factors on the dependent variable across different companies. In particular, the forecast error for a company may not only be connected to financial variables like total assets or intangible assets, but may also correlate with industry effects and individual company characteristics, such as management expertise and historical reputation, which are not captured by any financial variables. Thus, including a different intercept for every cross-section in the panel data analysis eliminated possible omitted variable bias from the panel regression results. To minimise potential autocorrelation problems, we used White's correction to cross-section standard errors to allow for general contemporaneous correlations between the company residuals in the panel model. Also, we utilised the Generalised Least Squares (GLS) method to correct for the cross-section heteroscedasticity issue.

Following Ali, Klein and Rosenfield (1992) the unsigned forecast error, FE_{it}, for company i at time t is constructed as follows:

$$FE_{it} = | \, (\textit{Mean forecast } EPS_{it} - \textit{Actual } EPS_{it}) / \textit{Actual } EPS_{it} \, | \qquad (1)$$

To test H1 and H2, we estimate the following panel regression model:

$$FE_{it} = \alpha_0 + u_i + \beta_1 IFRS_{it} + \beta_2 NOA_{it} + \beta_3 TA_{it} + \beta_4 TDTA_{it} + \beta_5 MVBV_{it} + \beta_6 INTTA_{it} + \beta_7 RDTEXP_{it} + \beta_8 STDEV_{it} + \beta_9 ROE_{it} + e_{it} \qquad (2)$$

t=2002, 2003, … , 2007; i=company 1, 2, ... , 65

Where:

u_i = fixed effect for company i

$IFRS_{it}$ = 1 if company i adopted the IFRS at time t and 0 otherwise

NOA_{it} = number of analysts who generate forecasts of earnings (analysts' following) for company i at time t

TA_{it} = natural logarithm of total assets for company i at time t

$TDTA_{it}$ = total debt divided by total assets (leverage ratio) for company i at time t

$MVBV_{it}$ = market value of equity divided by book value of equity for company i at time t

$INTTA_{it}$ = intangible assets recorded on the balance sheet divided by total assets for company i at time t

$RDTEXP_{it}$ = research & development expenditure divided by total expenses for company i at time t

$STDEV_{it}$ = standard deviation of weekly stock returns for company i at time t

ROE_{it} = return on equity for company i at time t

e_{it} = residual for company i at time t

The coefficient β_1 for the variable IFRS measures the relationship of forecast errors between pre-AIFRS and post-AIFRS periods as stated in Hypothesis 1. A statistically significant positive (negative) sign for β_1 indicates that the forecast error has increased (decreased) in the post-AIFRS period. The coefficient β_2 for the variable NOA measures the relationship between forecast error and number of analysts following a firm as stated in Hypothesis 2. A statistically significant positive sign for β_2 indicates that the forecast error is higher for firms which are followed by more analysts (the domination of the noise effect over the information effect). A statistically significant negative sign for β_2 indicates the domination of the information effect over the noise effect.

Consistent with previous literature, 7 control variables are also incorporated in the panel data analysis. The 7 control variables are: size, leverage, growth opportunity, capitalised intangible assets, research and development expenditure (R&D), business risk and profitability. We explain the importance of each of these control variables below.

Size

Lang and Lundholm (1996) argue that trading in securities is less costly for large firms with a large market value of equity. This increases the incentive for analysts to follow these firms. Barron et al. (2002) show a positive association between firm size and the quantity of information available to analysts. Thus, we control for firm size in our analyses using the natural logarithm of total assets (TA). We expect a negative relationship between firm size and analysts' forecast error.

Leverage

Total debt divided by total assets (TDTA) reflects the financial risk of a firm. As a firm's debt increases, the task of accurately evaluating its debt-paying ability becomes more complex. To forecast company earnings, financial analysts would have to consider the inflation rate, interest rate, current and future operating cash flows and other relevant variables (Kwon 2002). These complexities would lead to a greater deviation among analysts' earnings forecasts. We expect a positive relationship between leverage as measured by total debt divided by total asset (TDTA) and forecast error.

Growth Opportunity

Analysts invest resources to know more about high-growth firms, as there is a higher demand for private information about such firms (Bhushan 1989; O'Brien and Bhushan 1990). The market value of equity divided by book value of equity (MVBV) is used as a proxy for growth opportunities. High growth firms may provide additional information using various methods (such as press releases, company websites and an annual general meeting) to inform potential investors about their growth potential. This higher level of information may help analysts to make better earnings forecasts. A negative coefficient for the growth proxy will provide evidence of the information effect brought by a greater level of voluntary disclosure by these firms.

Intangible Assets and Research and Development Expenditure

The accounting standard requires the satisfaction of certain conditions in order to capitalise investments in intangibles. These recognition conditions often take most of the investment in intangibles out of the balance sheet. However, some investments in intangibles (such as purchased goodwill, patents, copyrights and trademarks) are recorded on the balance sheet. These investments in intangibles are important for analysts as they reflect the future earnings potential of firms. Consistent with previous research, intangible assets divided by total assets (INTTA)[7] and research & development expenditure divided by total expenses (RDTEXP) were incorporated into the panel data analysis (see Barron et al. 2002).

Business Risk and Profitability

Consistent with previous research (see Brown, Taylor & Walter 1999) we control for business risk. One would expect that the higher the business risk of a company, the more difficult it is to forecast the company's earnings. We take the standard deviation of weekly stock returns (STDEV) as a measure of uncertainty in the market about a particular stock. The forecast error is expected to be higher for stocks with higher uncertainty. Also, the standard deviation of the stock returns also indirectly reflects the market condition (macro-economic factor) and company specific information (micro-economic factor) for a given financial year. This will ensure that the panel regression results are not driven or influenced by a time factor or market economic conditions.

Previous studies have indicated that the profitability of a business will influence the level of disclosure of a company (Wallace & Naser 1995; Inchausti 1997; Owusu-Ansah 1998; Owusu-Ansah & Yeoh 2005; Gallery, Cooper & Sweeting 2008). The higher the profitability of a business, the more information will be disclosed to the public to minimise the undervaluation of the company's shares. One could expect that the level of disclosure would influence analysts' forecast errors. Typically, the return on shareholders' equity (ROE) is used as a proxy for company profitability.

5. Empirical Results

Descriptive Statistics

The descriptive statistics of the dependent variable forecast error (FE) and all independent variables are provided in Table 1 (see Appendices for all tables). The mean of FE is greater than the median indicating that the distribution of forecast errors is positively skewed. With the exception of intangible assets (INTTA) and research & development expenditure (RDTEXP), the mean and median of all other independent variables are not greatly different[8]. The high (mean and median) return on equity (ROE) is partly driven by the outstanding companies' performances in the financial year ended 2006. We also analysed the correlation matrix (Table 2) of all independent variables to ensure that there was no serious multicollinearity problem in the sample. From this, the highest correlation obtained was between market to book value of equity (MVBV) and research and development expenditure

[7] Our study utilises Thomson ONE Banker as the primary data source. Here, the database classifies goodwill as part of intangible assets.

[8] The mean and median of unscaled total assets are significantly different. However the mean and median of natural logarithm of total assets (TA) are not significantly different. The natural logarithm of total assets is used in the panel regression model.

(RDTEXP) at 40%. The correlation is statistically significant at a level of 5%. Given that many growth firms tend to invest more heavily in research & development, it is not surprising to find a positive relationship between these two variables (MVBV & RDTEXP). Also, the size of the company (TA) seems to be moderately correlated with several other control variables. For example, large companies (high TA) tend to have lower growth opportunities (low MVBV) and invest less in R&D (low RDTEXP & INTTA). In addition, large companies usually have a lower business risk (low STDEV). Therefore we conclude that the size of the company (TA) has a negative relationship with the four other control variables (MVBV, RDTEXP, INTTA & STDEV).

Panel Data Analysis

The results of the panel data analysis are presented in Table 3 (see Appendices for all tables). To provide a robustness check for the results in our model, different permutations of the regression model are presented in Table 4 that utilise different combinations of the control variables. Technically, if the results for β_1 and β_2 are significant, then they should remain consistent even when we change the set of control variables in the model. To minimise the potential multicollinearity problem, we drop the total assets (TA) as a control variable in most of the equations.

Also, given that some small companies may have a lower number of analysts following them, the mean of forecast EPS may not be the most appropriate measure of central tendency. The impact of one extreme forecast EPS can have a significant impact on the mean calculation for the dataset with a low number of observations. The median of forecast EPS may be more useful than the mean when there are extreme values in the dataset. To minimise potential problems related to mean calculation and to improve the robustness of the analysis, the median of forecast EPS is also used to calculate the forecast error. The panel data analysis results using the median forecast EPS are presented in Table 4. This secondary set of results will again provide a robustness check for any conclusions we make in regard to β_1 and β_2.

As shown in both Table 3 and Table 4, the F-statistics are statistically significant across all 16 equations. In addition, the coefficient for AIFRS dummy β_1 is negative and statistically significant for all equations. Indeed, the β_1 is statistically significant at 99% confidence level (p-value < 0.01) for 13 of the 16 regressions across Tables 3 and 4. The negative coefficient β_1 implies that analysts' forecast error has decreased in the post-AIFRS period as compared to the pre-AIFRS period. The result provides some evidence that the adoption of AIFRS has improved the quality of the financial reports to the extent that analysts are able to make a better prediction about the future profitability of the companies. This result is consistent with the findings of Ashbaugh and Pincus (2001). Focusing mainly on Swiss, French and Canadian companies, Ashbaugh and Pincus (2001) find that the accuracy of analysts' forecasts increases after firms voluntarily adopted the IFRS. Putting the potential sample bias inherent in voluntary adoption aside, this study supports the view that the adoption of IFRS reduces the burden upon financial analysts to understand different accounting standards and lessens their need to make adjustments in order to improve forecast accuracy. This can be argued to have reduced the cost of processing financial information by analysts and is likely to induce greater stock market efficiency.

On the other hand, analysts' following is positively correlated with forecast error. The positive coefficient β_2 is statistically significant across all 16 regressions. The positive relationship indicates that analysts' forecast error increases as more analysts start to follow a firm. The result contrasts Brown, Taylor and Walter's (1999) study. It indicates that information effect generated by a higher number of analysts does not offset the noise effect due to unrecognised intangibles. However, given that the coefficient of β_2 is relatively small

(less than 0.01), one may argue that the economic significance of the analysts' following is negligible.

As for the control variables, two control variables are statistically significant across Table 3 and Table 4. The growth effect (MVBV) has the predicted negative relation with forecast error. Consistent with the literature (Bhushan 1989; O'Brien and Bhushan 1990), there is an incentive for growth firms to provide more private information to the market. This will in turn reduce the information asymmetry between investors and the firm. The higher level of information provided by the growth firms will help analysts to make better earnings forecasts. Also, consistent with our expectation, the higher the business risk of a company, the more difficult it is to forecast the companysearnings. There is a strong positive relationship between the uncertainty of the business (STDEV) and the forecast error.

6. Conclusion

This paper has analysed two issues that can have an important bearing on the accuracy of earnings forecasts in the Australian capital market. The first is whether the adoption of AIFRS may have led to any change in the accuracy of earnings forecasts. The results from our analysis support the Financial Reporting Council's expectation that the introduction of AIFRS would increase the reporting quality in Australia, inasmuch as it has improved analysts' forecasts. The reduction in forecast error in the post-AIFRS period compared to the same in the pre-AIFRS period has important implications for financial reporting practices in Australia as it provides evidence of the increased usefulness of financial statements after the adoption of AIFRS. The statistically significant coefficient for the IFRS dummy variable for pre- and post-AIFRS periods reflects the increased forecast accuracy in the post-AIFRS period after controlling for the other relevant factors. Financial analysts act as important information intermediaries in the financial market. They are one of the important and informed users of financial reports. The relative improvement in the accuracy of analysts' forecasts does show a positive side to the adoption of the new accounting standards.

The second item that this paper focussed on was whether there is a significant relationship between the number of analysts that follow a firm and the forecast error. We did not find support for Brown, Taylor and Walter's (1999) earlier work of a negative relationship between forecast error and number of analysts following a firm. Rather, this paper provides evidence that the more analysts following a stock do not help to improve forecast accuracy by bringing more firm specific information to the market.

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Appendices

Table 1
Descriptive Statistics

	FE	NOA	TA	TDTA	MVBV	INTTA	RDTEXP	STDEV	ROE
Mean	0.1872	4.4777	8.6146	24.8043	3.8023	0.1699	0.0073	0.2373	22.0577
Median	0.1034	4.0000	8.3494	25.9241	2.6430	0.0762	0.0000	0.2179	20.9781
Maximum	2.3347	13.0000	13.2417	79.0069	47.5050	0.7777	0.2155	1.0408	483.1395
Minimum	0.0003	1.0000	4.9994	0.0000	0.4961	0.0000	0.0000	0.1074	-63.7398
Std. Dev.	0.2896	2.1491	1.7193	12.8889	4.2691	0.2192	0.0273	0.0931	38.7135

This study uses the one-year forward earnings forecast (FE) that is made within 30 days after the release of annual financial statement. FE is the unsigned forecast error of company earnings. FE=|(Mean forecast EPS – Actual EPS)/Actual EPS|.

NOA is the number of analysts who generate forecasts of company earnings. TA is the natural logarithm of total assets (in millions). TDTA is equal to total debt divided by total assets. MVBV is the market value of equity divided by book value of equity. INTTA is the intangible assets recorded on the balance sheet divided by total assets. RDTEXP is research and development expenditure divided by total expenses. STDEV is the standard deviation of weekly stock returns. ROE is the return on equity. ROE represents net income (all operating and non-operating income and expense, income taxes and extraordinary items) after preference dividend divided by total common equity. Common equity represents common shareholders' investment in a company. Total number of observations is 381.

Table 2
Correlation Matrix

	TA	*TDTA*	*MVBV*	*INTTA*	*RDTEXP*	*STDEV*	*ROE*
TA	1.00						
TDTA	-0.01	1.00					
MVBV	-0.26***	0.10*	1.00				
INTTA	-0.29***	0.30***	-0.03	1.00			
RDTEXP	-0.28***	0.02	0.40**	0.02	1.00		
STDEV	-0.31***	-0.02	0.08	-0.08	0.21***	1.00	
ROE	-0.05	-0.05	0.17***	-0.04	0.03	-0.07	1.00

***indicates the correlation is significant at the 1% level, **indicates the correlation is significant at the 5% level and *indicates the correlation is significant at the 10% level.

NOA is the number of analysts who generate forecasts of company earnings. TA is the natural logarithm of total assets (in millions). TDTA is equal to total debt divided by total assets. MVBV is the market value of equity divided by book value of equity. INTTA is the intangible assets recorded on the balance sheet divided by total assets. RDTEXP is research and development expenditure divided by total expenses. STDEV is the standard deviation of weekly stock returns. ROE is the return on equity. ROE represents net income (all operating and non-operating income and expense, income taxes and extraordinary items) after preference dividend divided by total common equity. Common equity represents common shareholders' investment in a company.

Table 3
Panel Data Regression Results using Mean Forecast Estimates

FE_{it} = | (Mean forecast EPS_{it} – Actual EPS_{it}) / Actual EPS_{it} |
$FE_{it} = \alpha_0 + u_i + \beta_1 IFRS_{it} + \beta_2 NOA_{it} + \beta_3 TA_{it} + \beta_4 TDTA_{it} + \beta_5 MVBV_{it} + \beta_6 INTTA_{it} + \beta_7 RDTEXP_{it} + \beta_8 STDEV_{it} + \beta_9 ROE_{it} + e_{it}$

		IFRS β_1	*NOA* β_2	*TA* β_3	*TDTA* β_4	*MVBV* β_5	*INTTA* β_6	*RDTEXP* β_7	*STDEV* β_8	*ROE* β_9	F-statistic	*adj* R^2
Equation 1	Coefficient	-0.0118*	0.0044**	-0.0246**	0.0010	-0.0031***	0.0554	-1.3127	0.317***	0.0002	3.4074***	0.3162
	p-value	0.0838	0.0193	0.0221	0.2377	0.0029	0.3444	0.1427	0.0010	0.2899	0.0000	
Equation 2	Coefficient	-0.0204***	0.0050***		0.0008	-0.0022***	0.0336	-1.2663	0.324***	0.0002	3.4125***	0.3137
	p-value	0.0020	0.0041		0.3557	0.0052	0.5256	0.1623	0.0008	0.3063	0.0000	
Equation 3	Coefficient	-0.0232***	0.0053***		0.0008		0.0475	-1.5679	0.3288***	0.0001	3.4872***	0.3173
	p-value	0.0011	0.0025		0.3813		0.3299	0.1004	0.0002	0.4288	0.0000	
Equation 4	Coefficient	-0.0196***	0.0046***		0.0009	-0.0026***		-1.3059	0.3182***	0.0002	3.4414***	0.3133
	p-value	0.0023	0.0069		0.3080	0.0028		0.1010	0.0004	0.2534	0.0000	
Equation 5	Coefficient	-0.0199***	0.0042***		0.0010	-0.0035***			0.3401***	0.0002	3.4585***	0.3117
	p-value	0.0019	0.0089		0.2375	0.0004			0.0000	0.1605	0.0000	
Equation 6	Coefficient	-0.0213***	0.0063***	-0.0145	0.0014**	-0.0046***					3.4351***	0.3060
	p-value	0.0000	0.0004	0.1160	0.0123	0.0013					0.0000	
Equation 7	Coefficient	-0.018**	0.0055***						0.3784***	0.0003*	3.4685***	0.3058
	p-value	0.0101	0.0000						0.0000	0.0561	0.0000	
Equation 8	Coefficient	-0.0215***	0.0083***								3.2195***	0.2772
	p-value	0.0006	0.0000								0.0000	

***Indicates rejection of the null at the 1% level, **indicates rejection of the null at the 5% level and *indicates rejection of the null at the 10% level

The constant and fixed effect parameters are not presented in the table. White cross-section standard errors are used in the panel regressions to allow for general contemporaneous correlation between the company residuals. Cross-section weight is introduced in the regression (Generalised Least Squares method) to correct for the cross-section heteroscedasticity problem. IFRS is equal to 1 if the forecasts are in the post-IFRS period and 0 otherwise. NOA is the number of analysts who generate forecasts of company earnings. TA is the natural logarithm of total assets (in millions). TDTA is equal to total debt divided by total assets. MVBV is the market value of equity divided by book value of equity. INTTA is the intangible assets recorded on the balance sheet divided by total assets. RDTEXP is the research and development expenditure divided by total expenses. STDEV is the standard deviation of weekly stock returns. ROE is the return on equity.

Table 4
Panel Data Regression Results using Median Forecast Estimates

$FE_{it} = |\ (\ Median\ forecast\ EPS_{it} - Actual\ EPS_{it}\ )\ /\ Actual\ EPS_{it}\ |$

$FE_{it} = \alpha_0 + u_i + \beta_1\ IFRS_{it} + \beta_2\ NOA_{it} + \beta_3\ TA_{it} + \beta_4\ TDTA_{it} + \beta_5\ MVBV_{it} + \beta_6\ INTTA_{it} + \beta_7\ RDTEXP_{it} + \beta_8\ STDEV_{it} + \beta_9\ ROE_{it} + e_{it}$

		IFRS β_1	*NOA* β_2	*TA* β_3	*TDTA* β_4	*MVBV* β_5	*INTTA* β_6	*RDTEXP* β_7	*STDEV* β_8	*ROE* β_9	F-statistic	*adj* R^2
Equation 1	Coefficient	-0.0273***	0.0079***	-0.0061	0.0009	-0.0049***	-0.0055	-0.4596	0.2571***	0.0002	3.296***	0.3055
	p-value	0.0065	0.0001	0.5401	0.3151	0.0020	0.9202	0.6435	0.0000	0.1958	0.0000	
Equation 2	Coefficient	-0.0311***	0.0082***		0.0012	-0.0048***	-0.0351	-0.4185	0.2853***	0.0002	3.4000***	0.3120
	p-value	0.0053	0.0000		0.2422	0.0000	0.5041	0.6654	0.0000	0.3275	0.0000	
Equation 3	Coefficient	-0.0355***	0.0088***		0.001		-0.0053	-0.7374	0.2968***	0.0001	3.4517***	0.3136
	p-value	0.0027	0.0000		0.3029		0.9169	0.4858	0.0000	0.4868	0.0000	
Equation 4	Coefficient	-0.031***	0.0076***		0.0007	-0.0048***		-0.3925	0.2713***	0.0002	3.3745***	0.3068
	p-value	0.0020	0.0001		0.4329	0.0014		0.6781	0.0000	0.2505	0.0000	
Equation 5	Coefficient	-0.0314***	0.0075***		0.0008	-0.0050***			0.2789***	0.0002	3.4241***	0.3081
	p-value	0.0017	0.0001		0.4228	0.0012			0.0000	0.2271	0.0000	
Equation 6	Coefficient	-0.0336***	0.0099***	0.0059	0.0006	-0.0048***					3.6651***	0.3250
	p-value	0.0000	0.0000	0.4703	0.4074	0.0022					0.0000	
Equation 7	Coefficient	-0.0321***	0.0088***						0.3061***	0.0002	3.4343***	0.3023
	p-value	0.0022	0.0000						0.0000	0.1304	0.0000	
Equation 8	Coefficient	-0.0302**	0.0002***								3.5698***	0.3069
	p-value	0.0117	0.0000								0.0000	

***Indicates rejection of the null at the 1% level, **indicates rejection of the null at the 5% level and *indicates rejection of the null at the 10% level.

The constant and fixed effect parameters are not presented in the table. White cross-section standard errors are used in the panel regressions to allow for general contemporaneous correlation between the company residuals. Cross-section weight is introduced in the regression (Generalised Least Squares method) to correct the cross-section heteroscedasticity problem. IFRS is equal to 1 if the forecasts are in the post-IFRS period and 0 otherwise. NOA is the number of analysts who generate forecasts of company earnings. TA is the natural logarithm of total assets (in millions). TDTA is equal to total debt divided by total assets. MVBV is the market value of equity divided by book value of equity. INTTA is the intangible assets recorded on the balance sheet divided by total assets. RDTEXP is the research and development expenditure divided by total expenses. STDEV is the standard deviation of weekly stock returns. ROE is the return on equity.