ELSEVIER

Pacific-Basin Finance Journal 8 (2000) 309–331

PACIFIC-BASIN FINANCE JOURNAL

www.elsevier.com/locate/econbase

# The accuracy of management dividend forecasts in Australia

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**Abstract**

Dividends have direct cash flow consequences for investors and are important for signalling reasons. Consequently, investors, analysts and managers typically forecast future dividends and report them in various ways. Yet the accuracy of dividend forecasts has been largely neglected in empirical finance. We examine the accuracy of managers' dividend forecasts in Australian IPO prospectuses (a companion paper examines the analysts' dividend forecasts). Managers' dividend forecasts are optimistically biased. Nevertheless, they are substantially more accurate and less biased than their earnings counterparts. Differences in retained ownership and the predictability of earnings help explain why some dividend forecasts are more accurate than others. 

*JEL classification:* G15; G38; M40

*Keywords:* Forecast accuracy; Dividend forecasts; Earnings forecasts; IPOs

## 1. Introduction

The relevance of forecasts depends on their accuracy and credibility. Previous Australian studies have found that earnings forecasts disclosed by IPO firms are inaccurate and optimistic (Lee et al., 1993), substantiating press comment that

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0927-538X/00/$ - see front matter 
PII: S0927-538X(00)00021-4

''Half of all floats in the past two and a half years have failed to meet directors earnings forecasts, raising concerns about the quality of information provided to investors'' (Australian Financial Review, 3 August 1994, pp. 1 and 22) and ''The Australian Securities Commission... criticised the profit forecasts included in some smaller companies prospectuses, describing them as unjustifiably optimistic'' (Australian Financial Review, 5 August 1997, p. 22).

We extend the literature on forecast accuracy to cover management dividend forecasts.[1] Two main research questions are addressed. First, are management dividend forecasts generally more accurate than earnings forecasts? We answer this question by examining the nature of earnings and dividend forecasts made simultaneously in an IPO prospectus. Second, why are some management dividend forecasts more accurate than others? We answer the second question by drawing on studies on the accuracy of earnings forecasts.

The main motivating factor driving this study is that, despite the importance of dividends to companies and their shareholders, dividend forecasts seem to have been a neglected if not forgotten area of empirical finance.[2] Given that dividends are an important source of information as well as cash flow to investors, dividend forecasts provided by managers must play a significant role in investment decisions.[3] Hence, the accuracy of managers' dividend forecasts, and factors that determine their accuracy, are worth knowing about.

Our sample consists of 172 IPO firms that provided a dividend forecast in their prospectus between 1984 and 1997. We conclude that dividend forecasts are less biased and substantially more accurate than their earnings counterparts, consistent with the view that earnings are generally more difficult to forecast. We also conclude that a management dividend forecast in an IPO prospectus is more accurate the greater the percentage of retained ownership after the IPO, the larger the issue size and the shorter the forecast horizon. Further, forecast accuracy deteriorated after the introduction of dividend imputation on 1 July 1987 but has improved since the Corporations Law took effect on 1 January 1991.

[1] A companion paper (Brown et al., 1998) reports similar findings for analysts' dividend forecasts.

[2] We are aware of only one published paper: Firth et al.'s (1995) study of earnings and dividend forecasts contained in Singaporean prospectuses (see discussion below).

[3] The value relevance of dividends, because of their signalling properties, was established by Lintner (1956). He concluded that, as the main determinant of a firm's dividend change decision is its future sustainable earnings, changes in dividends must convey information about changes in the firm's future earnings. Lintner's partial dividend adjustment model was later supported by Fama and Babiak (1968) and Shevlin (1982), the latter using Australian data. Event studies have further supported dividends as a signalling tool (e.g., Brown et al., 1977; Asquith and Mullins, 1983). Lobo et al. (1989) and others found that models which incorporate both earnings and dividend information can provide a more accurate forecast of future earnings than models that incorporate earnings information alone.

## 2. Prior studies

As far as we are aware, there has been no published Australian study on managers' dividend forecasts. Because of the obvious connection between dividends and earnings, the discussion in this section builds on some Australasian studies that have focused on the accuracy of management earnings forecasts contained in prospectuses.

In the 1970s, a substantial literature relating to the accuracy of management earnings forecasts was developed, initially in the UK and the US. It included studies of internal forecasts, forecasts published in annual or interim reports and in prospectuses, and forecasts made during a takeover bid. Australian research on management forecasts has been sparse, possibly due to the smaller size of the local economy and the reluctance of Australian managers to make their forecasts public. IPO firms are one type of firm that has published a sufficient number of management earnings forecasts to allow some empirical research to be done.

Dev and Webb (1972) used a sample of 212 UK profit forecasts made in prospectuses in 1968 and 1969, measuring accuracy by the ratio of reported profit to forecast profit. They argued that managers intentionally provide conservative forecasts, such that the published earnings forecasts are less than what they actually expect. Dev and Webb estimated the intentional bias is 12% of the published forecast. They showed that earnings forecasts in prospectuses were generally ''accurate''; 64% of the actual earnings exceeded the reported forecast by between 2% and 22%. However, the reliability of their results is hampered by the short time period (they used 2 years only), and their assumption that managers discount their ''true'' forecast when deciding what to report.

Blair and Taylor (1989) looked at Australian IPO firms between 1977 and 1986. They found 22% of Main Board and 14% of Second Board forecasts were within 10% of actual earnings for the forecast period. About 37% of predictions by Main Board companies yielded a forecast error of more than 50%, while half the predictions by Second Board companies were out by more than 100%. Blair and Taylor concluded that earnings forecasts are often ''inaccurate''. However, they did not detect a bias in either direction. Their study was limited by their relatively small sample: 49 Main Board and 14 Second Board IPOs.

Lee et al. (1993) extended Blair and Taylor's study to include forecasts from 1987 to 1989. Their sample of 98 earnings forecasts yielded similar results, with two-thirds of the forecasts being optimistic and the forecast exceeding actual earnings by 21.4% on average. A quarter of the forecasts exceeded actual earnings by more than a quarter of the total funds raised. Similar evidence was reported for New Zealand IPOs by Mak (1990), and Firth and Smith (1992). Jelic et al. (1998) studied mandatory earnings forecasts of 124 Malaysian IPO prospectuses issued between 1984 and 1989 and found differently. Instead of being optimistic, they found Malaysian managers under-predicted earnings by a third, on average. Similarly, Firth et al. (1995) found, for a sample of 128 Singaporean IPO

prospectuses issued between 1980 and 1993, that most companies later reported actual profits that exceeded their prospectus forecast by an average of 10%.

A number of the studies referred to above sought to explain the cause of the forecast inaccuracy. The firm specific factors usually considered are the length of the firm's operating history, its size, its growth opportunities, the size of the issue and the forecast horizon. Of these, Lee et al. (1993) found the forecast horizon and issue size to be significant. Intuitively, the longer the forecast horizon the less accurate the earnings forecast, because long-term earnings are inherently more difficult to predict; and that is what they found. However, larger issues were associated with *less* accurate earnings forecasts, which probably is not what we would expect. Firth and Smith (1992) and Firth et al. (1995) also found larger firms issued *less* accurate forecasts in New Zealand and Singapore, respectively. Firth and Smith explained this finding by arguing that large firms generally raise more funds. Consequently, their managers have more difficulty in monitoring the use of the funds, and have greater difficulty in predicting the firm's future earnings that flow from their deployment. Firth and Smith found the firm's age, the forecast horizon and the audit firm's reputation were not significantly related to the accuracy of the 89 forecasts they examined. However, the forecast horizon was a significant variable in Firth et al. (1995).

In contrast, Jelic et al. (1998) found only the firm's age and industry were significantly related to forecast accuracy. Other variables considered — firm size, forecast horizon, gearing, the proportion of shares retained by the previous owners and auditor reputation — were not significant.

Firth et al. (1995) extended their study of earnings forecasts to consider the determinants of the accuracy of dividend forecasts as well. Using OLS regressions, they found the forecast horizon, the issue size, leverage and the auditor's reputation were apparently significant, but only the forecast horizon and the issue size variables had the correct sign.

In sum, the empirical evidence shows that earnings forecasts by IPO firms are erroneous and optimistically biased. Blair and Taylor attributed the poor forecast accuracy of managers partly to a lack of the necessary expertise to foresee the impact of going public on the firm's performance, together with an incentive to provide optimistic forecasts to enhance the attractiveness of the issue. Factors expected to explain cross-sectional differences in forecast accuracy include retained ownership, issue size, the auditor's reputation, forecast horizon, gearing, length of operating history, leverage and growth opportunities. Of these, the significant variables appear to have been issue size and forecast horizon.

## 3. Hypotheses

### *3.1. Accuracy of dividend versus earnings forecasts*

The size of a firm's earnings depends largely on the nature of its investments. Since the investment decisions are made by the firm's manager-entrepreneurs, they

are usually regarded as being in a better position than ''outsiders'' to assess the firm's future earnings potential.

The finding that management earnings forecasts that are published are typically inaccurate is not surprising in light of the economic and regulatory environment, the latter placing numerous constraints on managers' discretion over the amount of earnings they report. For instance, earnings reported by Australian companies listed on the Australian Stock Exchange (ASX) must comply with accounting standards approved by the Australian Accounting Standards Board (AASB). Those standards have the force of the Corporations Law. In addition, uncontrollable aspects of the business environment in which the firm operates (such as the inflation rate, interest rate, exchange rate and consumer confidence) influence the firm's cost structure and the demand for its products. As a result, any sudden and unexpected change in this environment will impact on the firm's reported earnings and cause earnings forecasts to be inaccurate. Lee et al. (1993) found that most firms attribute their failure to meet their earnings forecasts to unforeseeable changes in economic factors and consumer confidence.

In contrast, managers have substantially greater discretion over the amount of dividends to distribute to shareholders. The main legal constraint is that dividends can be paid only out of the distributable profits of the firm (Section 201(1) of the Corporations Law). Subject to any other contracts (e.g., borrowing agreements), as long as distributable profits are available, managers can decide the amount of dividends to distribute (or recommend for distribution) to shareholders. Furthermore, due to the signalling properties of dividends, managers are conservative in their dividend policy, preferring a stable to a volatile dividend policy.[4] Dividend payments are more likely to be increased when the managers believe the future sustainable earnings of their firms have also increased. Therefore, we expect dividend forecasts set by managers to be more conservative and more accurate (exhibit less forecast error) than their earnings forecasts. Our first hypothesis is thus:

**H1.** The dividend forecast in a prospectus is typically less optimistically biased and more accurate than the earnings forecast.

### *3.2. Determinants of forecast accuracy*

#### *3.2.1. Managerial ownership*

Blair and Taylor (1989) argued that, to ensure a successful float and to maximise the proceeds from the offer, IPO managers might intentionally provide optimistic forecasts of the firm's future performance. An optimistic forecast, if

[4] See footnote 2.

credible, could increase the attractiveness of the investment opportunity and, hence, the likelihood of a successful float. However, an optimistic forecast might also inflate the market's expectation of the firm, leading to a decline in the firm's share price when the market subsequently discovered it was over-valued.

The possibility of a decline in share price is less likely to deter managers who retain little or no interest in the firm from providing optimistic forecasts, since their wealth is less affected by its post-IPO share market performance. However, as the percentage of the managers' shareholding increases, they will suffer more from any decline in the firm's share price. Escrow requirements reinforce this argument, since vendors shares typically cannot be sold until 12 to 18 months after listing. The prospect of future price declines when actual performance proves to be less than the forecast is likely to discourage them from intentionally providing optimistic forecasts. Thus, their prospectus forecasts, including their dividend forecasts, are likely to be more accurate.

**H2.** The higher the proportion of managerial ownership of the firm after the IPO, the more accurate the dividend (and earnings) forecast in the prospectus.

Some companies do not provide information on post-IPO managerial shareholdings in their prospectus. We proxy the proportion of managerial ownership (ALPHA) by the proportion of shares held by the original shareholders, after the IPO.

*3.2.2. Seasoned equity offerings*

The IPO literature supports underpricing as a signal of firm quality and credibility to the market (Grinblatt and Hwang, 1989; Welch, 1989; Jegadeesh et al., 1993). High quality firms underprice more and can recoup this signalling cost when they make a seasoned equity offering. Analogously, the firm and its management's credibility might be established and signalled through the provision of accurate forecasts. If so, then IPO managers who intend to raise additional equity capital in the not-too-distant future will provide more accurate dividend forecasts.

**H3.** IPO firms that intend later to issue seasoned equity provide more accurate dividend forecasts.

Williams (1996) indirectly addressed this issue by examining whether the accuracy of a manager's prior earnings forecasts affects security analysts' responses to the manager's current forecast. If the accuracy of managers' prior forecasts indeed influences their reputation for reliable and believable forecasts, then there should be a direct association between the accuracy of prior management forecasts and analysts' forecast revisions in response to the release of a new management forecast. Her results supported this conjecture.

To test H3, we assume that all firms making a seasoned equity offering within 3 years of the IPO had intended to do so at the time of the IPO. We capture this intention with a dummy variable (SEASONED), which takes a value of one for firms that returned to the market to raise more equity capital and zero otherwise. In testing this hypothesis, we also control for the effect of a ''package'' IPO (an offer of ordinary shares with options or warrants attached). Jain (1994) found that issuers of a package IPO were less likely to return to the market within 3 years, since additional capital was expected to be raised by the exercise of the options or warrants. In this paper, PACKAGE takes a value of one if the firm offered a package IPO and zero otherwise.

*3.2.3. The predictability of earnings*

It is accepted that dividends are related to the managers' beliefs about their firm's future sustainable earnings. The accuracy of a management dividend forecast is thus expected to depend on the predictability of the firm's future earnings. The more predictable the firm's future earnings, the easier it is to forecast its future dividends. As a result, the dividend forecast should be more accurate.

**H4.** The more predictable the firm's future earnings, the more accurate the dividend forecast in the prospectus.

As the predictability of earnings is not directly observable, we proxy it using firm size, the length of the forecast horizon, the length of the firm's operating history, the volatility of past earnings and the firm's assets-in-place.

Large firms typically have more control over their market setting, enjoy comparative economies of scale and tend to be more diversified than smaller firms. These attributes are expected to make the earnings of larger firms less volatile and thus more predictable. Australasian evidence for this proposition is scarce, as noted already: Firth and Smith (1992) and Lee et al. (1993) found that large firms tend to make less (rather than more) accurate earnings forecasts. Nevertheless, we expect dividend forecasts of larger firms to be more accurate. Two measures of firm size are used in this study. They are the natural logarithm of the pro-forma market capitalisation of the firm's ordinary shares (LN–MKT–CAP) and the size of the issue itself (LN–ISS–SIZE). However, they are highly correlated and the results are presented mostly for the issue size variable. Because the sample extends over 14 years, the size measures are adjusted for inflation as measured by the Consumer Price Index (base mid-1998 = 100).

Forecast horizon, which is perhaps the most important determinant of forecast accuracy, can also proxy for the predictability of earnings. The shorter the forecast horizon, the less of the fiscal year that is unknown, thus making the prediction of the full year's earnings easier. Lee et al. (1993) supported this prediction in relation to prospectus earnings forecasts. The forecast horizon (HORIZON) is

measured by the number of calendar days from the prospectus date to the date of the announcement of the firm's Preliminary Final Statement, expressed as a fraction of a year.

The use of the length of operating history as a proxy for the predictability of earnings is based on Berlinger and Robbins (1986). They found that profits of companies with a shorter operating history are intrinsically more difficult to forecast. These firms are not as well established and their managers have fewer past results on which to base their forecasts. The age of the issuing firm, measured by the natural log of the number of years from the date of incorporation to the prospectus date (LN–AGE), is one proxy. Obviously, it underestimates the length of operating history where the vehicle used for listing is created specifically for that purpose some time after the underlying business was formed.

Another proxy for the predictability of earnings is the firm's assets-in-place. Myers (1977) argued that the value of a firm comprises both assets-in-place and growth opportunities. As firms with higher proportions of assets-in-place rely more on tangible assets to generate earnings, their earnings flows are expected to be more predictable and stable. This contrasts with firms with a higher proportion of their value in growth opportunities. They rely more on yet to be acquired assets for future earnings, which will naturally result in more uncertainty about those earnings. Therefore, the greater the proportion of a firm's value that consists of assets-in-place, the more predictable its earnings should be. These firms are expected to have lower dividend forecast errors because of the dividends–earnings nexus. We measure assets-in-place by the ratio of the pro-forma total tangible assets to total assets (TTA–TA). Following Lee et al. (1994), we measure growth opportunities (GROWTH) by one minus the ratio of net tangible assets per share to the IPO price. We also proxy it by the ratio of the book to market value of equity (BOOK–2–MKT).[5] We expect that the higher the proportion of growth opportunities implicit in the IPO price, the less predictable the firm's future earnings and dividends.

The volatility of the firm's past earnings is our final proxy for the predictability of its future earnings. The more volatile the firm's past earnings, the more uncertain its future earnings, making the prediction of future earnings more difficult. This proposition is implicitly supported by Waymire (1985), who argued that firms that voluntarily disclose management earnings forecasts are characterised by less volatile earnings, because their earnings are easier to predict. We measure earnings volatility by the standard deviation of the firm's past earnings. Though mathematically only two periods of earnings are necessary to calculate the standard deviation, we employ a cut-off period of 3 years. Three measures of earnings are investigated: net profit after tax (VLTY–NPR), profit before tax

[5] We prefer the ratio of book to market value of equity (rather than its inverse) because the book value of equity is sometimes negative for a restructured IPO.

(VLTY–PBT), and total revenue (VLTY–REV). To enhance comparability across firms, each volatility measure was deflated by the firm's market capitalisation, measured by the product of the number of shares outstanding after the IPO and the IPO price.

*3.2.4. Reputation effects*

Titman and Trueman (1986) proposed that the reputation of the firm's auditor can signal the quality of its financial statements. More reputable audit firms are associated with more precise financial information as they possess superior skills that can result in higher quality financial information being produced. Furthermore, more reputable audit firms are expected to face a greater expected loss, in the form of a loss of reputation, if the certified financial information is subsequently found to be incorrect. As a result, more care is taken by them when certifying financial information.

Chang and How (1993) and Lee et al. (1994) argued that if information certified by a more reputable audit firm is of higher quality, firms whose financial information was audited by more reputable auditors would disclose the information more frequently than others. We add that the forecasts provided by these firms should be more accurate as it is likely that the forecasts are based on the financial information provided by auditors. That is, high quality financial information allows management to predict more accurately. Further, in a study on the displacement of auditors at the time a firm goes public, Carpenter and Strawser (1971) refer to the auditor's reputation as a ''known stamp of financial reliability in order to achieve the greatest possible assurance management will indeed meet their objective'' (p. 59).

**H5.** The higher the reputation of the auditor, the more accurate the dividend forecast.

We proxy the auditor's reputation using a dichotomous variable (AUDITOR), which takes a value of one if the forecast was certified by a (former) Big Six accounting firm and zero otherwise.

We also test whether forecast accuracy is associated with the reputation of the expert who certifies the fairness and reasonableness of the forecasts in the prospectus. As with the auditor, we argue that the reputation of the expert who certifies the forecast information in the prospectus signals the quality of the forecast information. Specifically, dividend forecasts certified by more reputable experts are more accurate.

**H6.** The higher the reputation of the expert certifying the IPO forecast information, the more accurate the dividend forecast.

As most of the experts who certify forecasts in prospectuses are auditors, we proxy their reputation using a dichotomous variable (EXPERT). EXPERT takes a

value of one if the expert who certifies the forecast was a (former) Big Six accounting firm and zero otherwise.

The reputation of the underwriter may affect the accuracy of the forecast. High reputation underwriters have more to lose if they are associated with firms that have relatively inaccurate forecasts. This is particularly so after the introduction of the Corporations Law which, among other things, made it easier for issuers and experts to be held liable for inaccurate forecasts in the prospectus (see later). We proxy the underwriter's reputation by their market share, defined as the dollar value of all shares underwritten by the underwriter as a percentage of the total dollar value of all IPOs in the sample (UW–REPUTN).[6] We test whether underwritten IPOs have more accurate forecasts. Reputation effects predict they would. It is also possible that risky IPOs, which are expected to have less accurate forecasts, are not underwritten.[7] UNDRWRTN takes a value of one for underwritten IPOs and zero otherwise.

**H7.** The higher the reputation of the underwriter, the more accurate the dividend forecast.

### *3.3. Control variables*

#### *3.3.1. Dividend imputation*

The biggest tax reform affecting dividend payments in Australia during the sample period was the introduction of the dividend imputation system on 1 July 1987. Under this system, Australian resident shareholders are entitled to claim a tax credit (known as a franking credit) on any dividend paid out of a company's profits that have already been subject to Australian company tax. This system effectively eliminated the double taxation of dividends received by Australian resident taxpayers and thus increased the attractiveness of dividends relative to capital gains (Brown and Clarke, 1993; Bruckner et al., 1994).

The increased attractiveness of dividend payments as a form of shareholder return means that, since the introduction of the dividend imputation system, IPO firms have had more incentive to reveal their dividend policy to the market, in order to entice greater investor participation and ensure the success of the issue.

[6] Refer to How and Howe (1999) for a detailed description on the measurement of this reputation metric.

[7] This is similar to the proposition put forward in Carter and Manaster (1990), where prestigious underwriters avoid firms with high ex ante uncertainty in order to increase the precision of estimates of issuing firm particulars, and to maintain their reputation.

As a result, the frequency of dividend forecasts in IPO prospectuses is expected to have increased since 1 July 1987.

The effect of dividend imputation on the accuracy of dividend forecasts in prospectuses is hard to predict. It is possible that prospectus dividend forecasts became more accurate because their increasing importance would ensure that more care was taken when making each forecast. But it is also possible that this attractive feature of dividends encouraged issuers to employ it as a means to generate investor interest in an otherwise unattractive public offer. In this case, dividend forecasts, particularly those made after the introduction of dividend imputation but before the introduction of the Corporations Law, could on average have become less accurate and more optimistic. They could also have become less accurate if dividends have become more volatile, as would be the case if companies have responded positively to shareholder pressure to pay out franked dividends rather than retaining them. We control for the impact of dividend imputation on the accuracy of dividend forecasts by using a dummy variable (IMPUTATION). It takes a value of one if the forecast is made after the introduction of the dividend imputation system and zero otherwise.

### *3.3.2. Corporations law*

Prior to 1991, the uniform state Companies Codes and Act specified a checklist approach to prospectus approval by the regulator, with Section 98 spelling out the required content of a prospectus. The provision of forecast information was not required. In January 1991, the Corporations Law was introduced, bringing with it a number of important changes that are likely to have affected the frequency and accuracy of prospectus dividend forecasts made subsequently.

First, the checklist approach was replaced by a general disclosure requirement under Section 1022. That general requirement created uncertainty about the type of information to be disclosed.[8] IPO prospectuses issued after 1 January 1991 are thus expected to have provided more information than previously, to avoid the possibility of breaching the law. As a result, the provision of forecast information in a prospectus, including a dividend forecast, is expected to have become more frequent since 1991.

[8] One such uncertainty concerns the provision of forecast information. Although the provision of forecasts is not expressly required, Section 1022(1)(a) requires the disclosure of such information as would allow an informed assessment of the prospects of the corporation. The legislation did not provide the exact meaning of the word ‘‘prospects’’. In Pancontinental Mining Industries vs. Goldfields (1995) 13 ACLC 577, a case involving takeovers, one judge stated in his obiter dicta that under the new legislation the provision of forecast information is essential. However, the ASC Practice Note 67 No. 2 specifically states that ‘‘when directors consider that they do not have a reasonable basis for a reliable forecast, then (a) no forecast should be included, and (b) a forecast will not be required by Section 996 or Section 1022 of the Law’’.

Second, as more information is expected to have been provided since 1991, the costs involved in preparing a prospectus would have increased.[9] As a result, raising finance through the IPO process became too costly for some smaller firms. In other words, firms raising capital from an IPO since 1991 are expected to have been larger than those prior to 1991.

Third, because the new legislation made it easier for issuers and experts to be held liable for inaccurate forecasts, we expect more time and effort have been spent in ensuring that the forecast information is correct from 1991 onwards.[10] Consequently, prospectus dividend forecasts should have become more accurate.

We use a dummy variable to control for the changing statutory regime. This variable (CORP–LAW) has a value of one if the forecast was made after the introduction of the Corporations Law in 1991 and zero otherwise.

### *3.3.3. Industry sector*

Although there has not been any systematic evidence that industry characteristics influence the accuracy of prospectus forecasts in Australia, it is plausible that they do. This is because each industry faces a different kind of competition and complexity that may make it easier for firms in some industries to forecast more accurately. For instance, firms in the finance sector are intrinsically different from others as they tend not to undertake any form of manufacturing and instead rely primarily on investments for their income. To account for this, we introduce a dummy variable (FIN–IND), which takes a value of one if the forecasting firm is from ASX industry codes 16–20 (investment/finance) and is zero otherwise.

[9] This was recognised by the Lonergan Committee in its Prospectus Law Reform Report, prepared by Lonergan et al. (1992), with the cost taking the form of additional time taken to decide the type of information to include, and that incurred in obtaining legal advice about the content of the prospectus. Note that the Lonergan Committee fully supported the general disclosure approach, believing that it would lead to more relevant information being disclosed. Furthermore, a general requirement is more adaptable to changes in the market, and can promote capital market efficiency. Although the Lonergan Committee fully supported the need to provide forecast information in the prospectus, it recommended against making such disclosure mandatory on the ground that some companies may find forecasting future performance more difficult than others. This is consistent with ASC Practice Note 67.

[10] Section 1006(2) made almost everyone who is involved in the preparation of the prospectus potentially liable for the losses of investors who act on the information. However, the recent Federal Government's Corporate Law Economic Reform Program (CLERP) proposed that professional advisers to the preparation of the prospectus be responsible only for statements directly attributable to them, rather than the entire document (Black et al., 1998). In the event that a prospectus includes forecast information, Section 765 of the Corporations Law casts the onus on those making the forecast to prove, on the balance of probabilities, that the forecast was made on reasonable grounds. By transferring the onus of proof from the plaintiff to the forecast provider, the law placed a greater burden on forecasters, since they now may become liable for losses suffered by investors even though a causal link between the damages suffered and the forecast statement cannot be established.

## 4. Data

The data used in the study are obtained from IPO prospectuses issued between 1 January 1984 and 31 December 1997. Mining companies are excluded as they rarely provide forecasts in their prospectuses. We also excluded companies that had previously been listed on the ASX, foreign-based companies, privatised government business enterprises and companies for which we could not obtain the relevant prospectus. This screening process reduced the sample to 427 firms. We then collected specific information about the terms of the IPO, the firm's date of incorporation, historical earnings and revenue items (to estimate earnings volatility), its pro-forma issued capital and net tangible assets per share, the name of the audit firm which certifies the forecast information, whether the firm made a seasoned equity issue within 3 years of the IPO, and so forth.

Summary information about the IPOs is contained in Tables 1–4. Only 168 of the 430 firms in our sample provided usable dividend forecasts. In the 1980s, more than half the sample did not furnish either a dividend or an earnings forecast, while the position was reversed in the 1990s. Currently, about 70% of Australian IPO prospectuses contain an earnings or a dividend forecast; typically they contain both. The majority (70%) of the firms that did not provide a dividend forecast were listed before the share market crash of October 1987.

Some firms forecast earnings or dividends for several years after the IPO; the maximum number was six fiscal years. Table 2 indicates the frequency with which

Table 1
Frequency distribution of IPO firms, by year of listing and whether the prospectus included a dividend or earnings forecast; 430 Australian IPOs between 1984 and 1997

| Year | All IPOs | EPS forecasts | | DPS forecasts | | EPS and DPS forecasts | | Forecasts omitted | |
|---|---|---|---|---|---|---|---|---|---|
| | *N* | *N* | % | *N* | % | *N* | % | *N* | % |
| 1984 | 10 | 3 | 30 | 3 | 30 | 2 | 20 | 6 | 60 |
| 1985 | 38 | 15 | 40 | 5 | 13 | 4 | 11 | 22 | 58 |
| 1986 | 65 | 34 | 52 | 15 | 23 | 11 | 17 | 27 | 42 |
| 1987 | 119 | 44 | 37 | 21 | 18 | 17 | 14 | 71 | 59 |
| 1988 | 16 | 7 | 44 | 2 | 13 | 2 | 13 | 9 | 56 |
| 1989 | 14 | 10 | 72 | 6 | 43 | 5 | 36 | 3 | 21 |
| 1990 | 1 | 1 | 100 | 1 | 100 | 1 | 100 | 0 | 0 |
| 1991 | 4 | 1 | 25 | 1 | 25 | 1 | 25 | 3 | 75 |
| 1992 | 16 | 14 | 88 | 13 | 81 | 13 | 81 | 2 | 12 |
| 1993 | 44 | 37 | 84 | 36 | 82 | 36 | 82 | 7 | 16 |
| 1994 | 47 | 35 | 74 | 33 | 70 | 33 | 70 | 12 | 26 |
| 1995 | 12 | 11 | 92 | 6 | 50 | 6 | 50 | 1 | 8 |
| 1996 | 16 | 11 | 69 | 11 | 69 | 11 | 69 | 5 | 31 |
| 1997 | 28 | 20 | 71 | 19 | 68 | 19 | 68 | 8 | 29 |
| Total | 430 | 243 | 57 | 172 | 40 | 161 | 38 | 176 | 40 |

Table 2
Frequency distribution of IPO firms that forecast future dividends, by year of listing and the fiscal year of the dividend forecast; 430 Australian IPOs between 1984 and 1997

| Year | All IPOs | Dividend forecast | No. forecasts by fiscal year (FY1 is current year) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *N* | *N* | FY1 | FY2 | FY3 | FY4 | FY5 | FY1–FY5 |
| 1984 | 10 | 3 | 3 | – | – | – | – | 3 |
| 1985 | 38 | 5 | 5 | – | – | – | – | 5 |
| 1986 | 65 | 15 | 15 | 3 | 1 | 1 | 1 | 21 |
| 1987 | 119 | 21 | 20 | 6 | 1 | – | – | 27 |
| 1988 | 16 | 2 | 2 | – | – | – | – | 2 |
| 1989 | 14 | 6 | 6 | 1 | 1 | 1 | – | 9 |
| 1990 | 1 | 1 | 1 | 1 | 1 | 1 | – | 4 |
| 1991 | 4 | 1 | 1 | 1 | – | – | – | 2 |
| 1992 | 16 | 13 | 13 | 8 | 1 | 1 | – | 23 |
| 1993 | 44 | 36 | 36 | 17 | 5 | – | – | 58 |
| 1994 | 47 | 33 | 32 | 20 | 4 | 1 | 1 | 58 |
| 1995 | 12 | 6 | 6 | 3 | 1 | – | – | 10 |
| 1996 | 16 | 11 | 11 | 6 | – | – | – | 17 |
| 1997 | 28 | 19 | 19 | 5 | – | – | – | 24 |
| Total | 430 | 172 | 170 | 71 | 15 | 5 | 2 | 263 |

multiple-year dividend forecasts, for up to 5 years ahead, were made. On average, firms that forecast their DPS extended their forecasts for 1.3 years. However, we include only one forecast for each IPO in our data analysis, to avoid unnecessary dependency in the sample. When deciding which forecast to include, we took into account data availability, estimation efficiency that would result from greater variance in the forecast horizon (which statistically is the most significant explanation for variance in the firms' forecast accuracy), and the need to avoid the risk of survivorship bias if we always took the longest forecast horizon that was available for each IPO. Our judgment was to take the longest horizon up to a maximum of

Table 3
Frequency of dividend forecasts, by industry sector; 172 Australian IPOs with dividend forecasts between 1984 and 1997

| Industry | DPS forecast | | No DPS forecast | |
|---|---|---|---|---|
| | No. | % | No. | % |
| Sector A: Engineering/Construction (codes 6, 7, 10 and 11) | 34 | 20 | 27 | 10 |
| Sector B: Consumer Oriented (codes 8, 9, 12, 13, 14 and 15) | 52 | 30 | 28 | 11 |
| Sector C: Diversified Industries (codes 21, 22 and 23) | 61 | 36 | 105 | 41 |
| Sector D: Investment/Finance (codes 16, 17, 18, 19 and 20) | 14 | 8 | 96 | 37 |
| Sector E: Leisure/Tourism (code 24) | 11 | 6 | 2 | 1 |
| Total | 172 | 100 | 258 | 100 |

Table 4
Descriptive statistics; 168 Australian IPOs with dividend forecasts between 1984 and 1997

| Variable | Mean | S.D. | Minimum | Maximum | *N* | Label |
|---|---|---|---|---|---|---|
| ALPHA | 0.48 | 0.24 | 0 | 0.94 | 168 | Retained Ownership |
| AUDITOR | 0.69 | 0.46 | 0 | 1 | 168 | Big 6/Non-Big 6 (dummy) |
| BOOK_2_MKT | 0.75 | 0.34 | 0.11 | 1.85 | 168 | Ratio of BVE to MVE |
| CORP_LAW | 0.70 | 0.46 | 0 | 1 | 168 | Pre/Post Corporations Law (dummy) |
| DPSABSERR | 2.91 | 4.09 | 0 | 21.92 | 168 | abs(DPS FE/IPO Price)*100 |
| DPSERROR | −1.57 | 4.03 | −16.5 | 11 | 168 | (DPS FE/IPO Price)*100 |
| DPSRELERR | 38.97 | 45.55 | 0 | 300 | 162 | abs(DPS FE/ DPS Forecast)*100 |
| EPSABSERR | 11.43 | 21.85 | 0 | 150 | 156 | abs(EPS FE/IPO Price)*100 |
| EPSERROR | −5.07 | 16.39 | −97.3 | 28.4 | 156 | (EPS FE/IPO Price)*100 |
| EPSRELERR | 79.47 | 146.6 | 0 | 1309 | 156 | abs(EPS FE/EPS Forecast)*100 |
| EXPERT | 0.86 | 0.34 | 0 | 1 | 168 | Experts Report in Prospectus (dummy) |
| FIN_IND | 0.08 | 0.28 | 0 | 1 | 168 | Finance Industry (Codes 16–20; dummy) |
| GROWTH | 0.65 | 0.57 | −0.68 | 3.74 | 168 | 1−(NTA Per Share/IPO Price) |
| HORIZON | 1.28 | 0.64 | 0.23 | 3.27 | 168 | Forecast Horizon (Years, Prospectus to Announcement Date) |
| IMPUTATION | 0.80 | 0.40 | 0 | 1 | 168 | Pre/Post Dividend Imputation (dummy) |
| LN_AGE | 0.85 | 1.96 | −5.90 | 4.38 | 168 | LN of Years from Incorp to Prospectus |
| LN_ISS_SIZE | 16.46 | 1.34 | 13.26 | 20.11 | 168 | LN of CPI-adjusted Issue Size |
| LN_MKT_CAP | 17.24 | 1.28 | 14.34 | 20.71 | 168 | LN of CPI-adjusted Market Cap (based on IPO Price) |
| PACKAGE | 0.11 | 0.31 | 0 | 1 | 168 | Package IPO (warrants attached; dummy) |
| SEASONED | 0.36 | 0.48 | 0 | 1 | 143 | Further Issue Within 3 Years (dummy) |
| TTA_TA | 0.72 | 0.31 | 0 | 1 | 168 | Tangible Assets/Total Assets |
| UNDRWRTN | 0.86 | 0.34 | 0 | 1 | 168 | IPO Underwritten (dummy) |
| UW_REPUTN | 3.02 | 3.12 | 0.03 | 12.17 | 145 | Underwriter's market share (%) |
| VLTY_PBT | 0.04 | 0.05 | 0 | 0.36 | 76 | Volatility Pre-tax Profit (deflated by MVE) |
| VLTY_NPR | 0.04 | 0.03 | 0 | 0.19 | 78 | Volatility Profit After Tax/MVE |
| VLTY_REV | 0.25 | 0.40 | 0 | 2.98 | 105 | Volatility Total Revenue/MVE |

the third fiscal year (FY3), where the current year is denoted by FY1. As a result, the sample contains 96 forecasts for FY1, 57 for FY2 and 15 for FY3. Not all of the 168 cases are used in each test, because of missing data.

Table 3 contains the frequency of dividend forecasts, by industry sector. While investment, finance, and property firms make up 37% of all non-dividend forecast-

ing firms, they constitute only 8% of all dividend forecasting firms. The absence of forecasts by firms in these industries may be because their performance is harder to predict. Firms in the construction and consumer-oriented industries constitute 50% of dividend forecasting firms but only 21% of non-dividend forecasting firms, indicating that firms in relatively stable industries are more likely to provide dividend forecasts.

Since the introduction of the Corporations Law in 1991, IPO firms have more frequently provided dividend forecasts (see Tables 1 and 2). Before then, about 20% provided dividend forecasts (53 of the 260 sample members). This figure is much lower than that reported for earnings forecasts (51% in Chang and How, 1993). Since 1 January 1991, the proportion of IPO firms that provided dividend forecasts is 71% (119 of the 167 in the sample). Firms going public after the introduction of dividend imputation in July 1987 have been significantly more likely to provide dividend forecasts, but this univariate result is driven by the changes that took place following the introduction of the Corporations Law.[11]

### *4.1. General profile of sample analysed*

Table 4 has descriptive statistics for the reduced sample of 168 IPOs with a dividend forecast. The average retained ownership (ALPHA) was 48%. The two size measures are the log of the firm's market capitalisation (LN–MKT–CAP) and of the offer size (LN–ISS–SIZE). The geometric means of the CPI-adjusted market capitalisation and issue size are of the order of $30 million and $15 million (in 1998 prices), respectively. The forecast horizon (HORIZON) averaged 1.3 years, or 470 days, while the firm's geometric mean age (from their date of incorporation to their prospectus date) was 8.5 years. About 72% of firm value was in the form of assets-in-place for the average forecaster in our sample (TTA–TA). The average for GROWTH and BOOK–2–MKT is 0.65 and 0.75, respectively. The means of the dummy variables indicate the proportions of the sample that: were audited by a Big 6 firm (69%); were listed post the Corporations Law (70%); were Investment, Finance or Property firms (8%); were listed after the introduction of dividend imputation (80%); had warrants attached to the shares (11%); were followed by a further equity issue within 3 years (36%); and were underwritten (86%).

Where the prospectus contained at least 3 years historical data, we calculated the standard deviation of total revenue and profit before and after tax, as additional proxies for the precision of the firm's information environment. The requirement of at least 3 years history substantially reduces the sample size, as indicated by the number of cases for the volatility variables in Table 4.

[11] From the introduction of dividend imputation until the Corporations Law took effect, 26 of the 132 IPO firms in our sample (20%) included a dividend forecast in their prospectus.

## 5. Results

### 5.1. Accuracy and bias

Our first hypothesis is that the dividend forecast in a prospectus is typically more accurate and less optimistically biased[12] than the corresponding earnings forecast. We measure the forecast error by the difference between the actual (per share) figure and the forecast figure, deflated by the IPO share price. The absolute forecast error measures forecast accuracy; the signed forecast error measures the bias. Note that forecast errors deflated by the offer price are likely to give results that are biased toward finding greater errors for earnings forecasts than for the corresponding dividend forecasts. As earnings forecast errors are typically larger than dividend forecast errors in absolute terms (because the dividend payout ratio is mostly less than one), deflating both by the same scale (price) is likely to make earnings forecast errors appear larger even where, in relative terms, they are not.[13] One way to adjust for the differences in the scale of dividends and earnings is to deflate the forecast error by the product of the relevant market average yield on the prospectus date and the IPO price.

An overview of the relative accuracy of dividend and earnings forecast errors is presented in Table 5, which contains a set of related sample tests for both the overall period and the four sub-periods: before and after the introduction of dividend imputation, and before and after the introduction of the Corporations Law. Panel A contains the results when the absolute forecast error is deflated by the IPO price, while Panel B contains the results when the deflator is the product of the relevant (i.e., dividend or earnings) yield, sourced from Datastream, and the IPO price. The unequivocal conclusion is that, although the forecast errors are correlated (since mid-1987, the product moment correlation has been about 0.6), dividend forecasts are substantially more accurate (four times, on average, according to Panel A) than their earnings counterparts. The dividend payout ratio has averaged about 60% since mid-1987. Panel B shows that, for the whole sample, dividend forecasts have been 2.5 times as accurate after adjusting for the market average payout ratio on the prospectus date. Our explanation for the greater accuracy is that managers can exercise more control over the dividend payout than they can over reported earnings.

[12] We are interpreting bias in the ex post sense; i.e., a forecast is ex post optimistically biased when it exceeds the actual result.

[13] An alternative would be to deflate each forecast error by the forecast figure itself. However, six companies forecast no dividend would be paid (in which case, the relative forecast error is undefined). For the remaining 162 cases, the relative forecast errors suggest that dividend forecasts are about twice as accurate as earnings forecasts (see Table 4, DPSERLERR and EPSRELERR).

Table 5
Paired comparison tests of the relative accuracy of dividend and earnings forecasts. Sample is 156 Australian IPO prospectuses, containing both dividend and earnings forecasts, that were issued between 1984 and 1997
In Panel A, the denominator in each case is the IPO Price. In Panel B, it is the product of the IPO Price and the respective (i.e., dividend or earnings) yield, measured in percentage terms, on the prospectus date. The *t*-statistic is a test of the hypothesis that the mean forecast errors are equal, as is the Wilcoxon *Z*-statistic. *r*(absFEs) is the simple (product–moment) correlation between the forecast errors.

| FE metric | Whole period | Pre-imputation | Post-imputation | Pre-Corp. Law | Post-Corp. Law |
|---|---|---|---|---|---|
| *Panel A: Absolute Forecast Error / IPO Price* | | | | | |
| Mean DPSFE | 2.91 | 3.42 | 2.90 | 4.41 | 2.53 |
| Mean EPSFE | 11.43 | 14.06 | 10.90 | 14.80 | 10.34 |
| *t*-statistic | −5.36 | −2.45 | −4.75 | −3.20 | −4.33 |
| *N* | 156 | 26 | 130 | 38 | 118 |
| DPSFE > EPSFE | 25 | 7 | 18 | 9 | 16 |
| DPSFE < EPSFE | 130 | 19 | 111 | 29 | 101 |
| Wilcoxon *Z* | −8.04 | −2.93 | −7.74 | −3.84 | −7.42 |
| *r*(absFEs) | 0.59 | 0.48 | 0.61 | 0.53 | 0.62 |
| *Panel B: Absolute Forecast Error / (IPO Price * Avg. % Yield)* | | | | | |
| Mean DPSFE | 0.85 | 0.99 | 0.82 | 1.20 | 0.73 |
| Mean EPSFE | 2.10 | 1.84 | 2.15 | 1.93 | 2.15 |
| *t*-statistic | −4.13 | −1.58 | −3.83 | −1.81 | −3.75 |
| *N* | 156 | 26 | 130 | 38 | 118 |
| DPSFE > EPSFE | 41 | 11 | 30 | 16 | 25 |
| DPSFE < EPSFE | 114 | 15 | 99 | 22 | 92 |
| Wilcoxon *Z* | −5.72 | −0.70 | −6.06 | −0.86 | −6.23 |
| *r*(absFEs) | 0.56 | 0.56 | 0.56 | 0.53 | 0.60 |

Both the dividend and earnings forecasts are optimistically biased, although perhaps not as strongly biased as the critics have suggested. The mean dividend forecast error is −1.57% of the IPO price, which again is of the order of a quarter of the mean earnings forecast error, which is −5.07%. To place these numbers in perspective, the average forecast dividend payout ratio was 54%, so the mean dividend forecast error is somewhat less than we would expect if the bias was of the same order. Of the 168 cases for which we have a dividend forecast, 43% over-predicted the amount of the dividend (18% omitted a previously forecast dividend), 32% predicted the dividend correctly, and 25% under-predicted it.[14] The corresponding figures for the 156 earnings forecasts are 54%, 1% and 45%. Similar results are observed across the four different time periods (before and after the introduction of (i) Dividend Imputation and (ii) the Corporations Law).[15]

[14] Six sample members forecast they would not pay a dividend (one did). Of the 162 that forecast they would pay a dividend, 30 (19%) did not.
[15] These results are not reported in detail but they are available from the authors.

We conclude that, consistent with our first hypothesis, dividend forecasts are on average less optimistic than their earnings counterparts. Moreover, dividend forecasts are substantially more accurate.

### 5.2. Determinants of forecast accuracy

Here, we examine the ability of the various variables to explain simultaneously why some forecasts are more accurate than others. We focus on testing hypotheses H2–H7.

Table 6 reports OLS regression results where the dependent variables are the absolute dividend and earnings forecast errors deflated by the IPO price. There are two sets of explanatory variables, those ''included'' and those ''excluded''. The first set comprises variables found to be consistent with our hypotheses at the 10% significance level or better. The second set comprises other variables we investigated but found they did not add significant explanatory power. The *t*-statistics for the excluded variables are the values that would be obtained were they included as an additional explanatory variable. All of the *t*-statistics in Table 6 are based on White's (1980) heteroscedasticity-consistent standard errors.

Dividend forecasts made by firms with a higher level of managerial shareholding tend to be more accurate, thereby supporting H2 (ALPHA is significant at 5% and has a negative coefficient). However, the association is weaker compared to the earnings regression. H3 predicts that firms that plan to return to the market within 3 years to raise more equity capital tend to issue more accurate dividend forecasts. H3 is not supported, after controlling for the possible future cash infusion into the firm through the exercise of options issued at the IPO (PACKAGE). The results show that the coefficients of SEASONED and PACKAGE are not statistically significant. The failure of SEASONED to yield significant results may be due to its inability to capture an IPO firm's intentions with respect to a seasoned equity issue at a later date.

H4 predicts that forecast errors diminish as the future earnings performance becomes more predictable. Our results show that short-term forecasts are significantly more accurate (HORIZON is significant at better than the 1% level). Also, as expected, larger issuers forecast future earnings with greater accuracy (the coefficient of LN–ISS–SIZE in the earnings regression is negative and strongly significant); but dividend forecast accuracy is only weakly related to issue size. No other proxy for earnings predictability — including the firm's age, its ratio of tangible assets to total assets, the extent of growth opportunities captured in the IPO price and the volatility of its earnings — adds significantly to the regression's explanatory power. Taking the evidence as a whole, though, H4 is strongly supported. The accuracy of management dividend (and earnings) forecasts does increase with the predictability of future earnings, the most important determinant being the length of the forecast horizon.

Table 6
OLS regression estimates of the determinants of dividend and earnings forecast accuracy. The absolute values of the dividend and earnings forecast errors (deflated by the IPO price) are regressed on selected attributes of 168 Australian firms that issued an IPO prospectus, containing a dividend forecast, between 1984 and 1997

The *t*-statistics are based on White's (1980) heteroscedasticity-consistent standard errors. The coefficients and *t*-statistics for the excluded variables are the values that would be obtained were they included as the sole additional explanatory variable. *** denotes the variable is significant at the 1% level, ** at the 5% level and * at the 10% level, based on the appropriate one or two-tailed test.

| | DPS FE | | EPS FE | |
|---|---|---|---|---|
| | Coefficient | *t*-statistic | Coefficient | *t*-statistic |
| *Variables included* | | | | |
| (Constant) | 0.060 | 1.63 | 0.740 | 3.72*** |
| ALPHA | −0.027 | −2.24** | −0.187 | −2.88*** |
| AUDITOR | | | −0.085 | −2.05** |
| CORP_LAW | −0.032 | −2.83*** | −0.070 | −1.76** |
| EXPERT | 0.023 | 2.22** | | |
| HORIZON | 0.029 | 4.60*** | 0.130 | 4.23*** |
| LN_ISS_SIZE | −0.003 | −1.36* | −0.036 | −3.28*** |
| Adjusted $R^2$ | 0.27 | | 0.25 | |
| *N* | 168 | | 156 | |
| *Variables excluded* | | | | |
| AUDITOR | −0.002 | −0.43 | | |
| BK_2_MKT | 0.002 | 0.29 | −0.015 | −0.33 |
| DEBT_TTA | −6E−05 | −0.37 | 0.001 | 1.01 |
| EXPERT | | | 0.039 | 0.90 |
| FIN_IND | −0.005 | −0.55 | 0.075 | 0.67 |
| GROWTH | −0.001 | −0.17 | 0.047 | 1.38 |
| IMPUTATION | 0.015 | 0.92 | 0.009 | 0.13 |
| LN_AGE | −1E−04 | −0.09 | −0.009 | −1.09 |
| PACKAGE | −0.002 | −0.25 | 0.100 | 1.44 |
| SEASONED | −0.004 | −0.66 | −0.001 | −0.04 |
| TTA_TA | −0.018 | −1.20 | −0.168 | −1.86 |
| UW_REPUTN | 0.002 | 1.77 | 0.004 | 0.99 |
| UNDRWRTN | 0.010 | 1.16 | 0.025 | 0.60 |
| VLTY_PBT | −0.016 | −0.23 | 0.133 | 0.66 |

Contrary to H6, the expert's reputation is associated with less accurate forecasts, with the association being significant for dividend forecasts. The accuracy of earnings forecasts, on the other hand, is negatively related to the auditor's reputation as we predicted in H5. Specifically, high reputation auditors are strongly associated with significantly more accurate earnings forecasts. We do not find support for H7 on the reputation effects of the underwriter. Apart from dividend forecasts, forecast accuracy is independent of the underwriter's reputation and whether an underwriter was involved in the public offering. For dividend forecasts, UW_REPUTN has a significant positive coefficient, contrary to our

prediction. It may be that the expertise of the underwriter is more highly demanded for complex issues, whose prospects are more difficult to predict accurately.[16]

The additional burden created by the Corporations Law on issuers and experts has encouraged them to take greater care when providing forecasts. As a result, dividend forecasts have become more accurate (CORP–LAW has a negative coefficient and is significant at the 1% level). We find the same effect with respect to earnings forecasts, although the significance is reduced to 5%. Dividend forecasts made before the introduction of dividend imputation were more accurate (coefficient of DIV–IMP is positive) but the result is not statistically significant. Forecast accuracy is not significantly different for financial institutions relative to other firms (coefficient of FIN–IND is not significant), which may reflect the relatively small number of finance sector firms that publish prospectus forecasts (see above).

The adjusted *R*-square values in Table 6 show that, for this sample, 27% of the variance in the accuracy of management dividend forecasts in prospectuses (25% for earnings forecasts) is explained by the variables in the model.

## 6. Conclusion

We provide evidence on the accuracy of Australian dividend forecasts in prospectuses. Managers' dividend forecasts, like their earnings forecasts, are on average upwardly biased. However, dividend forecasts are substantially more accurate and less biased than their earnings counterparts. These results were expected, given that managers have more discretion over the amount of dividends to distribute than over the amount of earnings to report.

The accuracy of a dividend forecast increases with the proportion of retained ownership in the IPO firm and the predictability of its future earnings. Furthermore, the introduction of the Corporations Law seems to have ushered in a period when management forecasts have become more accurate.

## Acknowledgements

The authors are grateful for the comments of their colleagues at The University of Western Australia and of participants and discussants at the 1998 AAANZ

[16] The underwriter's preference for high quality auditors has previously been documented by Balvers et al. (1988). We test the interaction of the reputation of the underwriter and auditor using the product of the two reputation variables. Although not reported, we do not find support for the interaction reputation effect on forecast accuracy.

Conference in Adelaide and the 1999 Annual PACAP/FMA Finance Conference in Singapore. Special thanks go to Mr. Aaron Adam of the Australian Securities and Investments Commission (Perth) for his kind assistance with the data.

## References

Asquith, P., Mullins, D.W., 1983. The impact of initiating dividend payments on shareholders wealth. Journal of Business 56, 77–96.

Balvers, R.J., McDonald, B., Miller, R.E., 1988. Underpricing of new issues and the choice of auditor as a signal of investment banker reputation. The Accounting Review 63, 605–622.

Berlinger, R.W., Robbins, W.B., 1986. Using forecasts and projections to raise capital. Journal of Accounting, Auditing and Finance 1, 347–352.

Black, A., Bostock, T., Golding, G., Healey, D., 1998. CLERP and the new Corporations Law. Butterworths, Sydney.

Blair, M., Taylor, S., 1989. Forecasting: the profit speaks. Chartered Accountant 6, 50–54.

Brown, P., Clarke, A., 1993. The ex-dividend day behaviour of Australian share prices before and after dividend imputation. Australian Journal of Management 18, 1–40.

Brown, P., Clarke, A., How, J.C.Y., Lim, K., 1998. The accuracy of analysts' dividend forecasts in Australia. WP98-95 Department of Accounting and Finance, University of Western Australia.

Brown, P., Finn, F., Hancock, P., 1977. Dividend changes, earnings reports and share prices: Some Australian findings. Australian Journal of Management 2, 127–147.

Bruckner, B., Dews, D., White, D., 1994. Capturing value from dividend imputation. McKinsey & Co.

Carpenter, C.G., Strawser, R.H., 1971. Displacement of auditors when clients go public. The Journal of Accountancy 131, 55–58.

Carter, R., Manaster, S., 1990. Initial public offerings and underwriter reputation. The Journal of Finance 45, 1045–1067.

Chang, M.L., How, J.C.Y., 1993. Voluntary forecast disclosure in the IPO market: From the costly contracting perspective. Unpublished working paper. Department of Accounting and Finance, University of Western Australia.

Dev, S., Webb, M., 1972. The accuracy of company profit forecasts. Journal of Business Finance 4, 26–35.

Fama, E.F., Babiak, H., 1968. Dividend policy: An empirical analysis. The Journal of the American Statistical Association 63, 1132–1161, December.

Firth, M., Smith, A., 1992. The accuracy of profits forecasts in initial public offering prospectuses. Accounting and Business Research 22, 239–247.

Firth, M., Kwok, B., Liau-Tan, C.K., Yeo, G., 1995. Accuracy of profit forecasts contained in IPO prospectuses. Accounting and Business Review 2, 55–83.

Grinblatt, M., Hwang, C.Y., 1989. Signalling and the pricing of new issues. The Journal of Finance 44, 393–420.

How, J.C.Y., Howe, J.S., 1999. The use of warrants in initial public offerings: Empirical evidence. WP99-112, Department of Accounting and Finance, University of Western Australia.

Jain, B., 1994. The underpricing of unit initial public offerings. The Quarterly Review of Economics and Finance 34, 309–325.

Jegadeesh, N., Weinstein, M., Welch, I., 1993. An empirical investigation of IPO returns and subsequent equity offerings. Journal of Financial Economics 34, 153–175.

Jelic, R., Saadouni, B., Briston, R., 1998. The accuracy of earnings forecasts in IPO prospectuses on the Kuala Lumpur Stock Exchange. Accounting and Business Research 29, 57–72.

Lee, P., Taylor, S., Yee, C., Yee, M., 1993. Prospectus earnings forecasts: Evidence and explanations. Australian Accounting Review 3, 21–32.

Lee, P., Taylor, S., Walter, T., 1994. The voluntary disclosure of forecast data by Australian IPOs, Working paper. The University of Sydney.

Lintner, J., 1956. Distributions of incomes of corporations among dividends, retained earnings and taxes. American Economic Review 46, 97–113.

Lobo, G.J., Nair, R.D., Song, I.M., 1989. Additional evidence on the information content of dividends. Journal of Business Finance and Accounting 13, 597–608.

Lonergan, W., Moores, S., O'Bryan, N., 1992. Prospectus law reform: Papers delivered at a BLEC forum held in May 1992.

Mak, Y.T., 1990. The accuracy and bias of profit forecasts in New Zealand prospectuses. Accounting Forum, 43–63.

Myers, S.C., 1977. Determinants of corporate borrowing. Journal of Financial Economics 5, 147–175.

Shevlin, T., 1982. Australian corporate dividend policy: Empirical evidence. Accounting and Finance 22, 1–22.

Titman, S., Trueman, B., 1986. Information quality and the valuation of new issues. Journal of Financial Economics 8, 159–172.

Waymire, G., 1985. Earnings volatility and voluntary management forecast disclosure. Journal of Accounting Research 33, 268–295.

Welch, I., 1989. Seasoned offerings, imitation costs, and the underpricing of initial public offerings. Journal of Finance 44, 421–449.

White, H., 1980. A heteroscedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity. Econometrica 48, 817–838.

Williams, P., 1996. The relation between a prior earnings forecast by management and analyst response to a current management forecast. The Accounting Review 71, 103–113.