Public regulatory reform and management earnings forecasts in a low private litigation environment

Dunstan, Keitha; Gallery, Gerry; Truong, Thu Phuong

Published in:
Accounting and Finance

DOI:
10.1111/j.1467-629X.2010.00376.x

Published: 01/06/2011

Document Version:
Peer reviewed version

Licence:
Other

Public Regulatory Reform and Management Earnings Forecasts in a Low Private Litigation Environment

Keitha Dunstan
School of Business
Bond University

Gerry Gallery
School of Accountancy
Queensland University of Technology

Thu Phuong Truong*
School of Accounting and Commercial Law
Victoria University of Wellington

*Corresponding author:
Telephone: +64 4 463 5233 – extn – 8961; Facsimile: +64 4 463 5076; Email: thuphuong.truong@vuw.ac.nz

Keywords: public regulatory reform, private litigation, continuous disclosure, management earnings forecasts
JEL Classifications: G14 and K22

Acknowledgements: The authors thank Michael Bradbury, Paul Dunmore, David Emanuel, Natalie Gallery, Stephen Taylor, Jilnaught Wong, Norman Wong and seminar participants at Queensland University of Technology, Massey University and the University of Auckland for their helpful comments. Special thanks to Peter Clarkson and two anonymous reviewers whose suggestions have considerably improved the paper.

Public Regulatory Reform and Management Earnings Forecasts in a Low Private Litigation Environment

Abstract

We examine the impact of continuous disclosure regulatory reform on the likelihood, frequency and qualitative characteristics of management earnings forecasts issued in New Zealand's low private litigation environment. Using a sample of 720 earnings forecasts issued by 94 firms listed on the New Zealand Exchange before and after the reform (1999 to 2005), we provide strong evidence of significant changes in forecasting behaviour in the post-reform period. Specifically, firms were more likely to issue earnings forecasts to pre-empt earnings announcements and, in contrast to findings in other legal settings, those earnings forecasts exhibited higher frequency and improved qualitative characteristics (better precision and accuracy). An important implication of our findings is that public regulatory reforms may have a greater benefit in a low private litigation environment and thus add to the global debate about the effectiveness of alternative public regulatory reforms of corporate requirements.

1 Introduction

In the wake of the global financial crisis the calls for greater public enforcement of corporate behaviour despite the lack of empirical evidence of the effectiveness of such regulatory intervention have amplified (Sacasa, 2008). However, recent regulatory reforms in the United States (the U.S.), such as the Sarbanes Oxley Act 2002, have been criticised on the basis of imposing significantly high costs on firms, especially when private enforcement through shareholder litigation may in some cases provide more efficient solutions than regulatory reform (Pasha, 2006). There has also been criticism of the effectiveness of private enforcement in the U.S. by researchers who suggest that high litigation costs associated with private enforcement have a negative impact on corporate behaviour (Rogers and Buskirk, 2009).[1]

A major impediment to investigating the relative merits of public enforcement versus private enforcement is the difficulty associated with isolating the separate impact of incremental public enforcement reform and private litigation. This is especially the case in the U.S. where the threat of both public and private enforcement is high. It may be possible that the net benefits from public enforcement are more easily identifiable where there is little private enforcement.

Similar to the other low private litigation environments, such as Australia and Canada, the effectiveness of private litigation taken by shareholders and others in New Zealand is impaired by the combination of high costs, a onerous burden of individual reliance proof and damages determined by judges rather than juries resulting in low damage awards (Macfarlane, 2008). This low private litigation environment is further exaggerated in New Zealand where contingent fees and alternative funding are prohibited. This results in the need for up-front

[1] Rogers and Buskirk (2009) find that high private litigation costs in the U.S. discourage good faith disclosures which they argue to be inconsistent with the belief that private enforcement enhances corporate transparency.

payments for litigation and an anti-litigious culture unique to New Zealand.[2] Therefore, the New Zealand context provides a unique opportunity to study the impact of incremental regulatory reform in a very low litigation environment with the absence of any viable private enforcement.

The Securities Markets Act 1988 was amended in 2002 as part of a broad reform of securities regulation in New Zealand to include statutory sanctions to support the New Zealand Exchange (NZX)'s continuous disclosure listing rules. The suggestion that New Zealand should follow the U.S. by instituting quarterly reporting was rejected. It was decided that it would be better for New Zealand to harmonise with Australia with the adoption of a mandatory continuous disclosure regime.

The amended Act requires NZX-listed firms to disclose any material information to investors as they arise. Failure to comply with the amended Act, and/or orders made by the Securities Commission in relation to continuous disclosure, can lead to civil penalties of up to $300,000 and criminal penalties of up to $30,000. The effectiveness of this reform has been questioned due to the lack of strong enforcement exercised by the NZX and the Securities Commission.[3]

Several New Zealand studies provide empirical evidence that suggests that this regulatory intervention has been effective. Studies addressing the capital market impacts of this reform document that the information component of the bid-ask spread for less liquid stocks, the dispersion of analysts' earnings forecasts and the stock market reaction to earnings announcements and earnings forecasts, all decreased in the post-reform period (Frijns *et al.*, 2008; Dunstan *et al.*, 2009; Huang *et al.*, 2009). Huang *et al.* (2009) investigate the impact of

[2] This anti-litigious culture is exemplified by the inception of the accident compensation scheme (1974), which bars any compensation for personal injuries or death (Todd, 2005). While this disallowance to sue for personal injuries or death does not impact on the rights of investors to sue for financial losses, this means that there are very few incidences of high damage awards to encourage litigation.

[3] To date, there are only a few instances of enforcement of the continuous disclosure requirements. These enforcements include RetailX Limited (Plus SMS Holdings Limited), Feltex Carpets Limited, Oyster Bay Marlborough Vineyards Limited, Media Technology Group Limited and Strategic Finance Limited.

this reform on corporate behaviour and find that firms increased the number of price-sensitive disclosures released to the market and improved the timeliness of their earnings announcements. Our study extends these studies by investigating the impact of this reform on the likelihood, frequency and qualitative characteristics of management earnings forecasts.[4]

The focus on management earnings forecasts provides the opportunity to examine one aspect of corporate disclosure which has been shown to be significant through the reduction of information asymmetry (Coller and Yohn, 1997) and cost of capital (Botosan, 1997) and the facilitation of "clarity and understanding" by investors (Graham *et al.*, 2005). In the area of corporate disclosure research, researchers have been attracted to the study of management earnings forecasts because they have a number of desirable properties that make them a superior disclosure proxy (Healy and Palepu, 2001; Karamanou and Vafeas, 2005). First, unlike one-off price sensitive events such as merger proposals, management earnings forecasts are generally applicable to all firms and can be readily evaluated *ex post* through periodic financial reports. Second, firms have discretion regarding the decision to provide earnings forecasts, the number and qualitative characteristics of earnings forecasts made which provide rich insights into the disclosure behaviour. In this study, management earnings forecasts are a good indicator to measure the impact of this reform because the NZX specifically requires the disclosure of a material change in a listed firm's financial forecast or expectation under its continuous disclosure rules.[5]

We examine the changes in the likelihood, frequency and qualitative characteristics (horizon, precision and accuracy) of management earnings forecasts, before and after the reform, using

[4] We define management earnings forecasts as all managerial disclosures predicting earnings prior to the release of corresponding earnings announcements.

[5] Under the NZX Listing Rule 10 Disclosure and Information, management earnings forecasts and any expected changes thereto are the first mentioned as important and relevant. While the NZX has recognised that there are situations where firms should legally be allowed to withhold material information by including the carve-out provisions, a firm is still required to release specific information when an earnings change is probable and/or it is necessary to prevent the development of a false market in a firm's securities.

a sample of 720 management earnings forecasts provided by 94 NZX-listed firms during the 31 January 1999 to 31 December 2005 financial reporting periods. Our results provide strong evidence of changes in management earnings forecast behaviour in the post-reform period after controlling for time-series dependency and firm-specific characteristics (i.e. firm performance, firm size, cross-listing status and growth prospects). Overall, firms were more likely to pre-empt earnings announcements with an earnings forecasts, and forecasting firms provided a greater number of earnings forecasts in the post-reform period. Further, firms were more likely to provide their earnings forecasts as non-routine disclosures after the reform.[6] Firms tended to delay the release of their earnings forecasts that might lead to the improvement in forecast precision and accuracy. Both forecast precision and accuracy have significantly improved after the reform became effective.

Our study contributes to the literature in several ways. First, published prior research on continuous disclosure has not studied such a comprehensive number of management earnings forecast characteristics before and after the introduction of statutory sanctions for continuous disclosure rules in a low private litigation environment. Second, our findings add to the evidence that the enhancement of public enforcement in New Zealand has had a positive impact on capital market characteristics and corporate behaviour. Third, our evidence contradicts the findings of the extant literature by failing to indentify an asymmetric treatment of good and bad earnings news.

The remainder of the study is organised as follows. Section 2 summarises relevant disclosure and management earnings forecast literature and describes the research hypotheses. An

[6] Firms may release earnings forecasts via routine events such as mandatory periodic financial reports, chairman's addresses at the Annual General Meeting (AGM) and letters to shareholders. Firm may alternatively release earnings forecasts via non-routine events at anytime throughout the year (Chan *et al.*, 2007). The timely release of non-routine earnings forecasts ensures a fully informed market; therefore, the change in the likelihood and frequency of non-routine management earnings forecasts provides further evidence for the impact of this continuous disclosure reform on management earnings forecast behaviour.

overview of the research design is provided in section 3. Section 4 presents the results and the study concludes in section 5.

2 Literature Review and Hypothesis Development

The disclosure literature[7] suggests that managers' decisions to disclose information, including earnings forecasts[8], can involve significant benefits (i.e. less information asymmetry, lower cost of capital and better "clarity and understanding" by investors) as well as costs (i.e. proprietary, litigation and reputation costs). Therefore, managers will balance these benefits and costs in deciding the optimal level of disclosure for their firms. The intervention of a public regulatory reform will act as an external shock to this disclosure equilibrium. The impact of this type of shock will vary depending on the type of regulatory reform involved and other environmental factors including the current effectiveness of existing private enforcement.

The strong culture of private litigation prevailing in the U.S. means that the effectiveness of a public regulatory reform on corporate disclosure behaviour may be either diminished or augmented by the threat of strong private enforcement. Two important U.S. public reforms which have been investigated by researchers are the Private Securities Litigation Reform Act 1995 (PSLRA) and the Regulation Fair Disclosure 2000 (Reg FD).[9] Johnson *et al.* (2001) examine the impact of the PSLRA on management earnings forecasts. These authors were concerned that there may be a negative impact from the extended safe harbour provided which could protect firms from litigation due to providing inaccurate earnings forecasts. However, they failed to find empirical evidence that there had been negative impact on the

[7] See Healy and Palepu (2001) and Verrecchia (2001) for reviews of the disclosure literature.
[8] See Cameron (1986), King *et al.* (1990) and Hirst *et al.* (2008) for reviews of the management earnings forecast literature.
[9] The PSLRA introduces a statutory "safe harbour" for forward-looking statements provided in good faith and the Reg FD effectively bans firms from selectively disclosing information.

quantity and quality of management earnings forecasts. Other authors examining the Reg FD also had concerns that there might be an unintended negative impact on corporate disclosure behaviour. Specifically, there might be an information-chilling effect where firms might become reluctant to publicly disclose information for fear of litigation as these public disclosures might be later used against them. Again, their empirical findings do not support this information-chilling expectation as they find no discernable negative impact of the reform on the level of voluntary disclosure (Bailey *et al.*, 2003; Heflin *et al.*, 2003). An exception from these findings is provided by Wang (2007) who finds that firms with lower information asymmetry and higher proprietary information costs did reduce their level of voluntary disclosure in response to the imposition of the Reg FD. These empirical findings suggest that in the U.S. the extent of a firm's exposure to private litigation risk is an important determinant of corporate disclosure strategies even where there has been a significant regulatory reform.

In Australia, where private litigation risk has traditionally been lower than in the U.S., it is possible that the threat of private enforcement has less impact on the corporate reaction to public reforms. Research findings are generally supportive of a positive impact on corporate disclosure behaviour as the strength of public enforcement increases over time. Brown *et al.* (1999) examine the capital market impact of the Australian continuous disclosure reform and find that there was an increase in the frequency of price-sensitive disclosures made by firms listed on the Australian Securities Exchange (ASX). However, the increase was confined to smaller firms and for those that were more likely to reveal bad news. In a later study, Chan *et al.* (2007) contend that the increased enforcement action by the ASIC in relation to the Australian continuous disclosure reform significantly increased the level of non-routine earnings forecasts in the period after 1 January 2000. However, their findings are mainly driven by bad news non-routine earnings forecasts. These consistent asymmetric findings between bad and good news firms in both Brown *et al.* (1999) and Chan *et al.* (2007), which

are similar to most prior U.S. disclosure research (e.g. Skinner, 1994), are interesting given the fact that Australia also has relatively low private litigation risk compared to that of the U.S.[10]

New Zealand researchers have examined the impact of public reforms on corporate disclosure behaviour in their low private litigation environment. Owusu-Ansah and Yeoh (2005) investigate the effect of the Financial Reporting Act 1993 on the mandatory disclosure practices of NZX-listed firms. They provide strong evidence that the statutory backing of financial reporting standards enhances the quality of corporate disclosure compliance. The impact of the Securities Markets Amendment Act 2002 was examined by Huang *et al.* (2009). They find that firms released a greater number of price-sensitive disclosures to the market in the post-reform period.

The intention of the continuous disclosure reform in New Zealand is to create a fully informed environment where firms update the market with all material information on a timely basis (Securities Markets Amendment Act 2002, Section 19A). Given the prevailing weakness of private enforcement in New Zealand, the threat of more severe sanctions for not continually updating the market with material information may be expected to be sufficient to drive firms to adjust their disclosure strategies, including the release of earnings forecasts. If firms respond to the threat of increased public enforcement provided by this reform, we expect to observe an increase in both the likelihood of firms providing earnings forecasts and the number of earnings forecasts released by each firm to the NZX in the post-reform period.

The effectiveness of this reform has been challenged due to little evidence of strong enforcement by either the NZX or the Securities Commission. Penalties for breaches of the

[10] This empirical evidence is contrary to expectations that the asymmetric treatment of bad and good news would not prevail in the low private litigation environment of Australia. Further evidence of the anomalous asymmetric treatment of news content is observed in the studies by Gallery *et al.* (2002) and Gallery *et al.* (2010).

continuous disclosure requirements have not extended beyond public censure and/or NZX fines and none has led to further action by the Securities Commission. Generally, if a firm is queried for a suspected failure to comply with continuous disclosure rules and is required to issue new information by the NZX and/or the Securities Commission, there is a low likelihood of further action.[11] Further weakness of this reform was that the liability for continuous disclosure breaches lay only against the firm concerned, not its directors or officers.[12] This created an irony in the case of a firm in liquidation, as further action would mean fines against aggrieved shareholders for breaches of regulations designed to protect the interests of the shareholders.[13]

Given this lack of enforcement, it could be argued that the Act's provisions are merely corrective, rather than punitive or preventive (McGill, 2004). However, it cannot be assumed that earlier non-compliance is due to weak enforcement power. There may be a learning effect associated with the reform. Anecdotal evidence indicates that firms were struggling with interpreting and meeting the continuous disclosure requirements (Gaynor, 2003). With respect to management earnings forecasts, Gaynor (2003) suggests three factors, which effectively deter firms from forecasting earnings on a timely basis. First, firms are reluctant to provide downward earnings forecast revisions until the last moment due to either the hope of a turnaround to be achieved or to avoid unnecessary negative reaction by investors. Second, firms have difficulty in distinguishing between an aberration and a trend in sales and earnings. Third, firms may find it difficult to provide earnings forecasts outside their normal half-yearly budget cycle.

[11] To date, only the NZX has publicly acted on continuous disclosure breaches possibly because under the Memorandum of Understanding with the NZX, the Securities Commission will only intervene where it is unsatisfied with the NZX's resolution.

[12] This impediment has been effectively resolved from 29 February 2008 with the amendments to the continuous disclosures in the Securities Markets Act, which give the Securities Commission the power to seek pecuniary penalties and compensation from individual directors or officers involved in any continuous disclosure breaches.

[13] Refer to the Securities Commission's decision on the cases of Feltex Carpets Limited and Plus SMS Holdings Limited where they provide this as the explanation for lack of further action.

Due to the strength of views regarding the likely impact of the reform, we state our hypotheses regarding the forecast likelihood and frequency in the null form.

H1: There is no change in the likelihood that firms issue management earnings forecasts (overall and non-routine) in the post-reform period.

H2: There is no change in the frequency of management earnings forecasts (overall and non-routine) issued by firms in the post-reform period.

Following the decision to release the earnings forecasts to the market, firms must then decide on the qualitative characteristics of the earnings forecasts they are reporting (King *et al.*, 1990). Three key qualitative characteristics of earnings forecasts are forecast horizon, forecast precision and forecast accuracy (Hirst *et al.*, 2008).[14]

Prior research on management earnings forecasts documents significant variation in forecast characteristics across different jurisdictions which might be explained by differences in private litigation risk. Specifically, there is consistent evidence that firms from lower private litigation risk countries are more likely to provide more timely and more precise earnings forecasts (Baginski *et al.*, 2002; Frost, 2004). Interestingly, while prior research consistently shows that forecast precision is lower in countries with higher private litigation risks, Chan *et al.* (2007) find forecast precision has increased after an increase in enforcement threats in Australia. In addition, Japanese firms consistently issued over-optimistic earnings forecasts as they face no obvious legal sanctions (Kato *et al.*, 2009).

Consistent with the regulatory intention of creating a more informed market, we would expect that if the reform has been effective, firms will improve the quality of their disclosure. However, critics of the reform and its apparent lack of enforcement do not expect to see

[14] Forecast horizon, precision and accuracy capture the timeliness, specificity and accuracy of the firms' earnings forecasts, respectively.

changes in the qualitative characteristics of firms' earnings forecasts. Also, prior research documents the trade-off between forecast horizon and forecast precision and accuracy (Hirst *et al.*, 2008). Therefore, it is difficult to predict the impact of the reform on forecast horizon and its subsequent impact on forecast precision and accuracy.

Given the ambiguity about how the reform has impacted on the qualitative characteristics of earnings forecasts: horizon, precision and accuracy. We again state our hypotheses in the null form.

> *H3: There is no change in the horizon of management earnings forecasts issued by firms in the post-reform period.*
>
> *H4: There is no change in the precision of management earnings forecasts issued by firms in the post-reform period.*
>
> *H5: There is no change in the accuracy of management earnings forecasts issued by firms in the post-reform period.*

3 Research Design

3.1 Study Period and Sample

The selected study period is an eight-year period encompassing all announcements made by firms regarding the financial years ending between 31 January 1999 and 31 December 2005. This period is approximately four and a half years before and three and a half years after the reform's enforcement date of 1 December 2002. The study period avoids any contamination that may arise from the introduction of the Securities Legislation Bill in early 2006. All NZX-listed firms that survive at least for the period from 28 September 1999 to 13 September 2004

are included in the sample. As detailed in Table 1, this selection process identifies 94 firms with 24,243 announcements to the NZX containing 720 earnings forecasts.[15]

[INSERT TABLE 1 HERE]

3.2 Data Sources and Classification of Management Earnings Forecasts

The NZX listing status is extracted from the Company Information section of the IRG database. The cross-listing status and listing date information are taken directly from NZX helpline services. Earnings and other financial accounting information are obtained from the Datastream database or the Financial Information section of the IRG database. All disclosure data are extracted from announcements recorded in the Company Announcements section of the IRG database.

The identified earnings forecasts are coded according to the underlying event (routine or non-routine) associated with the announcements. Routine event announcements are defined as periodic announcements common to all firms required under the NZX listing rules or are in common practice. They include all mandatory periodic financial reports (e.g. preliminary final, annual, half-yearly and quarterly reports) and other periodic releases associated with repetitive events (e.g. chairman's addresses at the AGM, letters to shareholders). All other announcements are considered non-routine events. Earnings forecasts are further classified according to their content (bad, neutral and good news), horizon, precision (qualitative, open-ended, range and point estimates) and accuracy.

Earnings forecasts are classified as good (bad) news if the content reveals favourable (unfavourable) earnings prospects relative to the previous earnings announcement or the most recent earnings forecast if one has been provided since the previous earnings announcement.

[15] All 24,243 announcements are carefully read to identify announcements containing earnings forecasts. These 720 earnings forecasts include both forecasts of half-yearly and annual earnings.

Earnings forecasts are coded as neutral if the forecast indicates no expected change in earnings.

Forecast horizon captures the timeliness of the earnings forecasts. Assuming that the earnings forecasts are accurate, a longer forecast horizon provides investors with information on a timelier basis. We follow Baginski *et al.* (2002) by defining forecast horizon as the number of calendar days until financial year-end, regardless of whether the earnings forecast is related to half-yearly or annual period.

Forecast precision is defined as the level of specificity in the earnings forecasts. We follow Ajinkya *et al.* (2005) by using an ordinal coding scheme where precision is coded as 0, 1, 2 and 3 for qualitative, open-ended, range and point estimates, respectively. Qualitative forecasts are those where firms provide a general impression (non-numeric) expectation about performance (e.g. we expect improved earnings performance this year). Open-ended forecasts are forecasts where firms specify a lower or an upper bound for the expected firm performance (e.g. profit will be greater than $5 million or profit will be lower than $2 million). Range forecasts contain a numerical range of expected firm performance (e.g. profit will be between $1.1 and $1.3 million). Point forecasts are the most specific, indicating a single numerical figure about expected performance (e.g. profit will be $1.2 million).

Forecast error is employed to measure the accuracy level of range and point earnings forecasts. Consistent with Ajinkya *et al.* (2005), we define forecast error as the absolute value of the difference between forecasted and actual earnings deflated by share price at the beginning of the financial year.

3.3 Hypothesis Testing Procedures

The hypotheses are tested using univariate methods, and due to the expected interactions across constructs, multivariate methods are employed to jointly test the hypotheses and to control for firm-specific and forecast-specific characteristics expected to impact on forecast likelihood, frequency and qualitative characteristics of earnings forecasts. In the multivariate procedures, we estimate random effects logistic/Poisson/linear[16], multinomial and ordered logit regression models to make inferences about the hypothesised relationships and to control for firm-specific attributes, heterogeneity bias and non-independence across observations. The model specifications are as follows.

$$FCAST1_{i,t}/FCAST2_{i,t} = a_0 + a_1REFORM_{i,t} + a_2ECSIGN_{i,t} + a_3ECHANGE_{i,t} + a_4SIZE_{i,t} + a_5XLIST_{i,t} + a_6MVBV_{i,t} + \alpha_{i,t} \quad (1)$$

$$FNUM1_{i,t}/FNUM2_{i,t} = b_0 + b_1REFORM_{i,t} + b_2ECSIGN_{i,t} + b_3ECHANGE_{i,t} + b_4SIZE_{i,t} + b_5XLIST_{i,t} + b_6MVBV_{i,t} + \beta_{i,t} \quad (2)$$

$$FHORIZON_{i,t} = c_0 + c_1REFORM_{i,t} + c_2BAD_{i,t} + c_3GOOD_{i,t} + c_4ECHANGE_{i,t} + c_5SIZE_{i,t} + c_6XLIST_{i,t} + c_7MVBV_{i,t} + c_8FNUM1_{i,t} + \gamma_{i,t} \quad (3)$$

$$PRECISE1_{i,t} = d_0 + d_1REFORM_{i,t} + d_2BAD_{i,t} + d_3GOOD_{i,t} + d_4ECHANGE_{i,t} + d_5SIZE_{i,t} + d_6XLIST_{i,t} + d_7MVBV_{i,t} + d_8NREVENT_{i,t} + d_9FHORIZON_{i,t} + \mu_{i,t} \quad (4)$$

$$ERROR_{i,t} = e_0 + e_1REFORM_{i,t} + e_2BAD_{i,t} + e_3GOOD_{i,t} + e_4ECHANGE_{i,t} + e_5SIZE_{i,t} + e_6XLIST_{i,t} + e_7MVBV_{i,t} + e_8PRECISE2_{i,t} + e_9FHORIZON_{i,t} + \theta_{i,t} \quad (5)$$

where:

FCAST1 = a dichotomous variable taking the value of 1 if the current financial year's earnings announcement is pre-empted by at least one earnings forecast and 0 otherwise.

FCAST2 = an ordinal variable taking the value of 2, 1 and 0 if the current financial year's earnings announcement is pre-empted by, at least a non-routine earnings forecast, exclusively routine earnings forecast, or no earnings forecast, respectively.

FNUM1 = the number of earnings forecasts released between the actual release dates of the mandatory earnings announcements for the prior and the current year.

FNUM2 = the number of non-routine earnings forecasts released between the actual release dates of the mandatory earnings announcements for the prior and the current year.

[16] For the linear regression model, the results from a random effects/fixed effects/OLS regression model are reported depending on the results of the Breusch and Pagan Lagrangian Multiplier and Hausman tests.

FHORIZON = the number of calendar days between the release date of the first earnings forecast and the corresponding financial reporting date.

PRECISE1 = the level of forecast precision, coded as 0, 1, 2 and 3 for qualitative, open-ended, range and point forecasts, respectively. *PRECISE2* (in model 5) takes the value of 0 and 1 for range and point earnings forecasts, respectively.

ERROR = the natural logarithm of the absolute value of the forecast error measured by the difference between forecasted and actual earnings deflated by share price at the beginning of the financial year. Only the last range and point forecasts for the period are used.[17]

REFORM = a dichotomous variable taking the value of 1 if the current financial year ends in the post-reform period and 0 otherwise. Significant coefficients of this variable for models 1 to 5 will provide evidence on the hypothesised relationships.

ECSIGN = a dichotomous variable taking the value of 1 for a positive current period earnings per share change and 0 otherwise.

BAD = a dichotomous variable taking the value of 1 if the earnings forecast indicates an expected negative change in current year earnings and 0 otherwise (good and neutral forecasts).

GOOD = a dichotomous variable taking the value of 1 of the earnings forecast indicates an expected positive change in current year earnings and 0 otherwise (bad and neutral forecasts).

ECHANGE = the natural logarithm of the absolute value of percentage change in earnings per share deflated by share price at the beginning of the financial year.

SIZE = the natural logarithm of the total assets at the end of the current financial year.[18]

XLIST = a dichotomous variable taking the value of 1 if the firm is cross-listed on a foreign exchange and 0 otherwise.

MVBV = the natural logarithm of the market value of equity divided by the book value of equity at the end of the current financial year.

NREVENT = a dichotomous variable taking the value of 1 if the earnings forecast is released through a non-routine announcement and 0 otherwise.

Models 1 to 5 are used to test the changes in forecast likelihood (H1), frequency (H2), horizon (H3), precision (H4) and accuracy (H5) in the post-reform period, respectively.

The three forecast characteristics *FHORIZON*, *PRECISE1 (PRECISE2)*, and *ERROR* have been shown to interact with each other[19] (Hirst *et al.*, 2008); therefore, we include *FHORIZON* in model 4 and *FHORIZON* and *PRECISE2* in model 5 as control variables. *FNUM1* is included in model 3 since the forecast horizon of the first earnings forecast is expected to be longer for firm-years where a greater number of earnings forecasts are

[17] Consistent with Hirst *et al.* (2008), the *ERROR* model only focuses on the range and point earnings forecasts.
[18] Similar results are obtained when we use the market value of equity (*MVE*) as an alternative size proxy.
[19] Forecast precision and accuracy need to be jointly examined with forecast horizon as there is a potential trade-off between forecast horizon and forecast precision and accuracy. As more of the financial reporting period elapses and less time remains before the release of periodic reports, firms will possess more information and be more certain about the eventual outcome.

observed. The independent variables *ECSIGN, BAD, GOOD*[20], *ECHANGE*[21], *SIZE*[22], and *MVBV* are those that have been commonly used in prior management earnings forecast research (Hirst *et al.*, 2008) and control for firm-specific factors that lead to differences in forecasting behaviour across firms independently of the existing disclosure regime. Consistent with Hossain *et al.* (1995), the *XLIST* variable is included as a number of NZX-listed firms are cross-listed on the other foreign exchanges where more onerous disclosure rules have existed prior to the reform.[23] As cross-listed firms are not expected to have significantly changed their disclosure strategies in the post-reform period, this group of firms provide a natural control from which to compare the impact of the new rules on non-cross-listed firms.

4 Results

4.1 Univariate Analysis

Table 2 displays the number of firm-years where earnings announcements are pre-empted by earnings forecasts and extends the analysis to the materiality of earnings changes. Overall, the number of firms years pre-empted by at least one earnings forecast has significantly increased

[20] Prior research findings on management earnings forecasts are generally consistent with the litigation cost hypothesis (Skinner, 1994, 1997). According to this hypothesis, management earnings forecasts are more likely to occur when there are large negative earnings surprises in an environment where the private litigation cost is high. In support of this hypothesis, Baginski *et al.* (2002) reveal that Canadian firms, which operated in a less litigious environment compared to their U.S. counterparts, released more earnings forecasts when earnings were increasing while U.S. firms were relatively more likely to issue earnings forecasts during periods when earnings were decreasing. Therefore, we seek to investigate this issue by controlling for the earnings change direction and forecast news as any asymmetric treatment of positive and negative earnings expectations would also be inconsistent with the provisions of the continuous disclosure reform.

[21] When investors and analysts are surprised by the large earnings changes, firms face greater potential litigation and reputation impairment costs; therefore, the magnitude of the expected earnings change is likely to be an important factor influencing firms' disclosure decisions (Kasznik and Lev, 1995). These costs are likely to increase after the passage of the regulatory reform. Therefore, we control for the magnitude of earnings changes.

[22] Prior research finds that larger firms issue more management earnings forecasts (Cox, 1985; Waymire, 1985).

[23] For example, the Australian continuous disclosure regime has become increasingly more onerous since 1994 and the U.S. listing rules require quarterly reporting and Form 8-K filings for certain one-off events. These disclosure rules and the associated litigation risk for non-compliance might lead to fewer earnings forecasts and observed variation in the qualitative characteristics of these earnings forecasts relative to non-cross-listed firms. Alternatively, it could be argued that cross-listed firms exposed to the Australian continuous disclosure system have more, not fewer, earnings forecasts. However, after retesting all models excluding those cross-listed on the ASX, the results for *XLIST* remained substantially similar to the main findings.

from 163 (47.66%) to 187 (64.48%) (*Chi-square* = 17.971).[24] Interestingly, this increase is mainly attributable to firms with positive earnings change below the 10 percent materiality threshold and negative earnings change below the 5 percent materiality threshold.

[INSERT TABLE 2 HERE]

Additionally, Table 3 shows that the change in the forecast likelihood is due to an increase in the change in the non-routine forecast likelihood (*FCAST2* in Panel A) rather than routine forecast likelihood. These results are consistent with Chan *et al.*'s (2007) Australian findings of no increase in routine management earnings forecasts following regulatory changes and increased enforcement action.

Table 3, Panel B indicates a marginal decline in the forecast horizons of the first earnings forecasts in the post-reform period.[25] Forecast precision has significantly improved with a noticeable decline in qualitative forecasts (from 70.1% to 45.35%) and the increase in each of the three types of quantitative forecasts (from 7.97% to 11.22%, from 3.65% to 13.60%, and from 18.27% to 29.83% for open-ended, range and point forecasts, respectively). As shown in Table 3, Panel C, there is also a significant improvement in the accuracy of last range and point earnings forecasts with their forecast error declining from a mean of 0.219 to 0.017.

Table 3, Panel A also presents summary statistics for firm-specific and other forecast characteristics used as control variables in the multivariate analysis. With the exception of growth prospects (*MVBV)*, earnings change sign (*ECSIGN)*, earnings change magnitude (*ECHANGE*), assets (*SIZE*) and cross-listing status (*XLIST*) remained relatively stable and insignificantly different across the pre/post-reform periods. In the sample of 720 earnings

[24] The average number of overall (non-routine) forecasts has increased from 1.846 to 2.241 (0.258 to 0.529) (see Table 3). Also, multiple forecasts increased. Firm-years pre-empted by 1, 2, 3, 4, 5 and 6 earnings forecasts in the pre- (post-) reform period are 71, 58, 23, 10, 1 and 0 (60, 57, 46, 15, 7 and 2), respectively.

[25] As measuring the change in forecast horizon for multiple forecasters is problematic, we only focus on the first earnings forecast in the financial year.

forecasts, 141 (19.58%) are associated with non-routine announcements which is far greater than those produced by Australian firms with an analyst following (Chan *et al.*, 2007). Also, the frequency of bad news earnings forecasts (16.94% before and 18.62% after the reform is much lower than those reported in other jurisdictions.[26]

[INSERT TABLE 3 HERE]

The univariate results show that the introduction of the continuous disclosure reform is associated with an increase in forecast likelihood, frequency, precision and accuracy, thus leading to preliminary rejection of H1, H2, H4 and H5. Despite a marginal decline, the forecast horizon statistically remained stable across the reform, which implies that H3 cannot be rejected.

4.2 Multivariate Analysis

The results from estimating the multiple regression models used to jointly test the hypothesised relationships are presented in Tables 4 to 10.[27] These are supplemented with results from estimating sub-sample models based on the direction of earnings changes (negative/positive) and news content (bad/neutral/good news).

4.2.1 The Likelihood of Firms Issuing Management Earnings Forecasts

Table 4 reports the results for the *FCAST1* model. *FCAST1* captures firms' decision to pre-empt an earnings announcement with an earnings forecast. The *REFORM* coefficient is significantly positive (*p-value* < 0.05) in the full sample and the two earnings change sub-samples. Therefore, H1 is rejected.

[26] Chan *et al.* (2007) document that in Australia, 22.1 percent are bad news and Baginski *et al.* (2002) show that 35.1 percent and 35.7 percent are bad news in the U.S. and Canada, respectively.
[27] Prior to estimating the regression models, variables with extreme values were winsorised (to a maximum of 1 percent of the sample observations). Also, bivariate correlations were conducted and none appear to be sufficiently large to suggest multicollinearity.

Table 4 also presents the regression results from estimating the multinomial logit model. The dependent variable *FCAST2* takes the value of 2, 1 or 0 if the current financial year's earnings announcement is pre-empted by, at least one non-routine earnings forecast, exclusively routine earnings forecast, or no earnings forecast, respectively. The results again show a significant negative *REFORM* coefficient for the 0/1 comparison for the full sample (*p-value* = 0.029) and negative earnings change sub-sample (*p-value* = 0.074) and a significant positive *REFORM* coefficient for the 2/1 comparison for the full sample (*p-value* = 0.000) and positive earnings change sub-sample (*p-value* = 0.000).[28] Untabulated results also show a significantly positive coefficient for the 2/0 comparison.

Thus, these results indicate that in the post-reform period, firms were more likely to pre-empt their earnings announcements with an earnings forecast (either through routine or non-routine announcements) and were more likely to pre-empt through a non-routine than through a routine announcement. Therefore, H1 is rejected.

Further evidence from the *FCAST1* model reveals significant coefficients for the firm-specific attribute control variables. Larger positive earnings changes are associated with an increased likelihood of earnings forecasts. Larger firms were more likely to pre-empt their earnings announcements with earnings forecasts which is consistent with Cox (1985) and Waymire (1985). Cross-listed firms with positive earnings changes provided fewer earnings forecasts.[29] The results for firm-specific attribute control variables in *FCAST2* model are generally similar to those reported in *FCAST1* model.

[INSERT TABLE 4 HERE]

[28] The *FCAST2* results differ from Chan *et al.* (2007) who document that legislative changes and increased enforcement action were followed by a significant increase in the disclosure of only bad news non-routine management earnings forecasts.

[29] Further analysis shows that quarterly reporting may have contributed to the lower forecast likelihood for cross-listed firms as untabulated results reveal a significantly positive relationship between cross-listing status and the issuance of quarterly reports.

4.2.2 The Frequency of Management Earnings Forecasts Issued by Firms

Table 5 presents the results for the *FNUM1* model. *FNUM1* measures the number of earnings forecasts released per financial year. The *REFORM* coefficient is significantly positive for the overall sample and the two negative and positive earnings change sub-samples (*p-value* < 0.01), thus rejecting H2. Similar results are evident for the *FNUM2* model.[30] The results further indicate that larger firms were more likely to provide more earnings forecasts and firms with a greater magnitude of earnings changes provide more non-routine earnings forecasts. Also, firms with positive earnings change and more growth prospects tended to provide more non-routine earnings forecasts.

[INSERT TABLE 5 HERE]

4.2.3 The Horizon of Management Earnings Forecasts Issued by Firms

Table 6 provides results from estimating the *FHORIZON* model. *FHORIZON* captures the timeliness of the first earnings forecast prior to the release of the corresponding earnings announcement. The *REFORM* coefficient is marginally significant (*p-value* = 0.095) which indicates a marginal decline in the timeliness of earnings forecasts following the reform, just marginally rejecting H3. None of the earnings news sub-samples supports this finding. The finding of a shorter forecast horizon is inconsistent with the expectation that the reform improves the timeliness of earnings forecasts. However, if firms are now delaying earnings guidance in order to improve other forecast characteristics such as precision and accuracy as suggested by Gaynor (2003), the decline in forecast horizon could still be consistent with the reform objectives.

[30] Untabulated results show that the distributions for *FNUM1* and *FNUM2* are highly positively skewed. *FNUM1* and *FNUM2* clearly do not appear to follow a normal distribution. The Shapiro-Wilk tests also confirm this. Therefore a count data model such as Poisson model would be more appropriate for the testing of *FNUM1* and *FNUM2*.

Table 6 further shows that good news earnings forecasts are marginally associated with longer forecast horizon; larger firms with bad and good news tended to delay earnings forecasts; cross-listed firms with good news tended to issue earnings forecasts of longer horizon; and firms with more growth prospects were more likely to delay the issuance of bad news earnings forecasts. As expected the forecast horizon tended to be longer in all three earnings news sub-samples where there are a greater number of earnings forecasts issued per financial year.

[INSERT TABLE 6 HERE]

4.2.4 The Precision of Management Earnings Forecasts

Table 7 presents results obtained from estimating the forecast precision *PRECISE1* model. The results reveal a significant positive *REFORM* coefficient (*p-value* = 0.000) for the full sample indicating that forecast precision has increased after the reform, thus rejecting H4. This finding is only supported by the bad and good news earnings forecast sub-samples.[31]

Further evidence in Table 7 is the highly negative *GOOD* coefficient which suggests that good news earnings forecasts were less precise than bad or neutral news ones. Firms with larger earnings change issued their neutral earnings forecasts in a less precise form. Larger firms facing bad news expectations were more likely to release less precise forecasts and cross-listed firms with bad and good news tended to issue more precise forecasts. Firms with higher growth prospects tended to provide neutral and good news earnings forecasts in a more precise form. In addition, earnings forecasts issued in conjunction with non-routine announcements and those with shorter horizon tended to be more precise.

[INSERT TABLE 7 HERE]

[31] Similar results are obtained when we collapse *PRECISE1* into two categories: qualitative and quantitative (open-ended, range and point) earnings forecasts and employ a random effects logit model.

4.2.5 The Accuracy of Management Earnings Forecasts

Table 8 shows the results from estimating the *ERROR* model where *ERROR* captures the magnitude of forecast deviation – a measure of forecast accuracy of the last range and point earnings forecasts. The results reveal a significant negative *REFORM* coefficient (*p-value* = 0.005), indicating that forecast error has declined following the reform; therefore, H5 is rejected. This result is primarily driven by the neutral news sub-sample.[32]

Larger expected earnings changes are associated with larger earnings forecast error, except for neutral news sub-sample where larger expected earnings changes are associated with smaller earnings forecast error. Larger firms were more likely to have smaller forecast errors; however, this finding only holds for the full sample and good news sub-sample. Earnings forecasts issued by cross-listed firms are associated with larger forecast error for the full sample, but not for the sub-samples. Earnings forecasts associated with higher precision level (for the full sample and good news sub-sample) and shorter horizon (for the full sample) tended to have smaller forecast error.

[INSERT TABLE 8 HERE]

4.3 Sensitivity Analysis

Ten sensitivity tests are undertaken to ensure the robustness of the results to various conditions and alternate specifications of variable constructs. Details of these tests are summarised in Table 9.

[INSERT TABLE 9 HERE]

[32] We also examine forecast bias as measured by the signed forecast error and the untabulated results provide no evidence of a change in either positive or negative forecast bias in the pre- or post-reform period.

Overall, the sensitivity analysis shows that the main findings, with one exception regarding model 3 – forecast horizon, are robust to various alternative conditions and specifications. For model 3 – forecast horizon, the sensitivity tests to control for prior forecast reputation and to exclude ASX-listed firms document no change in forecast horizon after the reform which is different from the main findings.

5. Conclusion

The objective of our study has been to investigate the impact of the continuous disclosure reform on a range of management earnings forecast characteristics: likelihood, frequency, horizon, precision and accuracy in New Zealand where a low private litigation environment prevails. Using a sample of 720 management earnings forecasts provided by 94 NZX-listed firms during the financial reporting periods ending between 31 January 1999 and 31 December 2005, we provide strong evidence of significant changes in management forecasting behaviour in the post-reform period. Specifically, there has been an increase in the likelihood that firms issue an earnings forecast (overall and non-routine), the frequency of earnings forecasts issued by firms (overall and non-routine), and the precision and the accuracy of earnings forecasts.

Our findings lend support to prior New Zealand evidence that this enhancement of public regulation in New Zealand has had a positive impact on corporate behaviour. Given the low private litigation environment in New Zealand, it is reasonable to conclude that the changes we observe are due to the increase in public regulation inherent in the continuous disclosure reform. It is interesting that this public reform has had an impact on corporate behaviour given the lack of strong evidence on active enforcement of the reform. A possible interpretation is that public regulatory reforms are able to have a greater benefit in circumstances where private enforcement is a less viable alternative. If this is so, our findings

have implications for other low private litigation jurisdictions and contribute to the debate regarding the value of further regulatory reform internationally.

A further finding of our study is that the changes in forecasting behaviour after the continuous disclosure reform in New Zealand were observed for both good and bad news disclosing firms. This lack of asymmetric treatment of good and bad news is different from prior research on continuous disclosure. For instance, while Brown *et al.* (1999) find an increase in the number of price-sensitive disclosures in the post-reform period only for ASX-listed firms with poor share price performance and Chan *et al.* (2007) document an increase in only bad news non-routine management earnings forecasts after an increase in enforcement intensity, our study finds that the likelihood and frequency of management earnings forecasts significantly increased in the post-reform period regardless of the direction of earnings performance. This apparent difference in research findings between New Zealand and Australia may suggest that the private litigation environment in New Zealand could be even lower than that of the Australian counterpart.

The major limitation of this study is the small sample within a small but largely unique jurisdiction; therefore, the generalisability of our findings is limited. In addition, given that the sample firms must survive a minimum of five years, the results might not be representative of firms which did not survive the sample period.

This study adds to the evidence that firm specific characteristics play an important role in the determination of management earnings forecasting behaviour. While we have included numerous firm characteristics as control variables, we have not considered and leave open for further research the role of corporate governance in determining regulatory compliance decisions.

References

Ajinkya, B., S. Bhojraj, and P. Sengupta, 2005, The association between outside directors, institutional Investors and the properties of management earnings forecasts, *Journal of Accounting Research*, 43(3), 343-376.

Baginski, S. P., J. M. Hassell, and M. D. Kimbrough, 2002, The effect of legal environment on voluntary disclosure: Evidence from management earnings forecasts issued in U.S. and Canadian markets, *The Accounting Review*, 77(1), 25-50.

Bailey, W., H. Li, C. X. Mao, and R. Zhong, 2003, Regulation Fair Disclosure and earnings information: Market, analyst, and corporate responses, *The Journal of Finance*, 58(6), 2487-2514.

Botosan, C. A., 1997, Disclosure level and the cost of equity capital, *The Accounting Review*, 72(3), 323-349.

Brown, P., S. L. Taylor, and T. S. Walter, 1999, The impact of statutory sanctions on the level and information content of voluntary corporate disclosure, *Abacus*, 35(2), 138-162.

Cameron, A. B., 1986, A review of management's earnings forecast research, *Journal of Accounting Literature*, 5, 57-81.

Chan, H., R. Faff, Y. K. Ho, and A. Ramsay, 2007, Management earnings forecasts in a continuous disclosure environment, *Pacific Accounting Review*, 19(1), 5-30.

Coller, M. and T. L. Yohn, 1997, Management forecasts and information asymmetry: An examination of bid-ask spreads, *Journal of Accounting Research*, 35(2), 181-181.

Cox, C. T., 1985, Further evidence on the representativeness of management earnings forecasts, *The Accounting Review*, 60(4), 692-701.

Dunstan, K., G. Gallery, and T. P. Truong, 2009, The impact of disclosure reform and alternative sources of earnings-related information on the market reaction to firm-based earnings-related disclosures, Working paper (Victoria University of Wellington, Wellington, New Zealand).

Frankel, R., M. McNichols, and G. P. Wilson, 1995, Discretionary disclosure and external financing, *The Accounting Review*, 70(1), 135-150.

Frijns, B., A. Gilbert, and A. Tourani-Rad, 2008, Insider trading, regulation, and the components of the bid-ask spread, *The Journal of Financial Research*, 31(3), 225-246.

Frost, C. A., 2004, Characteristics and information value of corporate disclosures of forward looking information in global equity markets, Working paper (State University of New York at Buffalo, New York, the United States).

Gallery, G., N. Gallery, and C. M. G. Hsu, 2002, The association between management and analysts' earnings forecasts in the Australian continuous disclosure environment, Working paper (Queensland University of Technology, Brisbane, Australia).

Gallery, G., C. Guo, and J. Nelson, 2010, The impact of litigation risk on disclosure timeliness, Working paper (Queensland University of Technology, Brisbane, Australia).

Gaynor, B., 2003, Warning signs disclose problems, *The New Zealand Herald*, February 22.

Golding, G. and N. Kalfus, 2004, The continuous evolution of Australia's continuous disclosure laws, *Company and Securities Law Journal*, 22, 385-426.

Graham, J. R., C. R. Harvey, and S. Rajgopal, 2005, The economic implications of corporate financial reporting, *Journal of Accounting and Economics*, 40, 3-73.

Healy, P. M. and K. G. Palepu, 2001, Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature, *Journal of Accounting and Economics*, 31, 405-440.

Heflin, F., K. R. Subramanyam, and Y. Zhang, 2003, Regulation FD and the financial information environment: Early evidence, *The Accounting Review*, 78(1), 1-37.

Hirst, E., L. Koonce, and S. Venkataraman, 2008, Management earnings forecasts: A review and framework, *Accounting Horizons*, 22(3), 315-338.

Hossain, M., M. H. B. Perera, and A. R. Rahman, 1995, Voluntary disclosure in the annual reports of New Zealand companies, *Journal of International Financial Management and Accounting*, 6(1), 69-87.

Huang, M., A. Marsden, and R. Poskitt, 2009, The impact of disclosure reform on the NZX's financial information environment, *Pacific-Basin Finance Journal*, 17, 460-478.

Johnson, M. F., R. Kasznik, and K. K. Nelson, 2001, The impact of securities litigation reform on the disclosure of forward-looking information by high technology firms, *Journal of Accounting Research*, 39(2), 297-327.

Karamanou, I. and N. Vafeas, 2005, The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis, *Journal of Accounting Research*, 43(3), 453-486.

Kasznik, R. and B. Lev, 1995, To warn or not to warn: Management disclosures in the face of an earnings surprise, *The Accounting Review*, 70(1), 113-134.

Kato, K., D. J. Skinner, and M. Kunimura, 2009, Management forecasts in Japan: An empirical study of forecasts that are effectively mandated, *The Accounting Review*, 84(5), 1575-1606.

King, R., G. Pownall, and G. Waymire, 1990, Expectations adjustments via timely management forecasts: Review, synthesis, and suggestions for future research, *Journal of Accounting Literature*, 9, 113-144.

Macfarlane, H., 2008, *Investor losses: A fruitful ground for class actions* [Online], available: http://www.heskethhenry.co.nz/News/archive/5.html accessed 05 August 2008.

McGill, N., 2004, The ethical dilemma of continuous disclosure, *Asia Pacific Law Review*, 12(2), 191-215.

New Zealand Exchange Limited, 2003, NZSX and NZDX Listing Rule 10 Disclosure and Information.

Owusu-Ansah, S. and J. Yeoh, 2005, The effect of legislation on corporate disclosures practices, *Abacus*, 41(1), 92-109.

Pasha, S., 2006, *Corporate compliance rules challenged* [Online], available: http://money.cnn.com/2006/03/21/news/companies/compliance_complaints/index.htm accessed 22 June 2009.

Rogers, J. L. and A. V. Buskirk, 2009, Shareholder litigation and changes in disclosure behaviour, *Journal of Accounting and Economics*, 47, 136-156.

Rogers, J. L. and P. C. Stocken, 2005, Credibility of management earnings forecasts, *The Accounting Review*, 80(4), 1233-1260.

Sacasa, N., 2008, Preventing future crises: Priorities for regulatory reform after the meltdown, *Finance & Development*, 45(4), 11-14.

Skinner, D. J., 1994, Why firms voluntarily disclose bad news, *Journal of Accounting Research*, 32(1), 38-60.

Skinner, D. J., 1997, Earnings disclosures and stockholder lawsuits, *Journal of Accounting and Economics*, 23, 249-282.

Todd, S., 2005, Accident compensation and the common law, in *The Law of Torts in New Zealand*, edited by S. Todd, Thomson Brookers, Wellington.

Verrecchia, R. E., 2001, Essays on disclosure, *Journal of Accounting and Economics*, 31, 97-180.

Wang, I. Y., 2007, Private earnings guidance and its implications for disclosure regulation, *The Accounting Review*, 82(5), 1299-1332.

Waymire, G., 1985, Earnings volatility and voluntary management forecast disclosure, *Journal of Accounting Research*, 23(1), 268-295.

Table 1
Sample Selection Procedure

Selecting criteria	Number of observations
Sample firms	
Total firms listed on NZX as at 3 December 2004	197
Less firms listed on NZX as at 3 December 2004 without IRG data	(44)
Less firms not surviving at least for the period from 28 September 1999 to 13 September 2004	(59)
Total firms in the final sample	94
Sample firm-years and announcements	
Total firm-years by 94 firms	655*
Less firm-years with missing announcements or unusable earnings data for the firms	(23)
Total firm-years in the final sample	632**
Total announcements in the final sample	24,243
Less announcements not containing earnings forecasts	(23,523)
Total announcements containing earnings forecasts in the final sample	720

* Total firm-years include all firm-years with financial reporting dates ending between 31 January 1999 and 31 December 2005.
** Among 632 firm-years (342 pre- and 290 post-reform), there are 350 firm-years (163 pre- and 187 post-reform) of which earnings announcements are pre-empted by one earnings forecasts.

Table 2
Earnings Forecasts Classified by Negative and Positive Earnings Change Partitions

		All Firm-years		Pre-Reform Period		Post-Reform Period		Difference between Pre- and Post-Reform % of Pre-empted Firm-years	*Chi-square* Statistic
	Earnings Change	No. of Firm-years	No. (%) of Pre-empted Firm-years	No. of Firm-years	No. (%) of Pre-empted Firm-years	No. of Firm-years	No. (%) of Pre-empted Firm-years		
Negative	=<-0.1	68	34 (50.00%)	35	16 (45.71%)	33	18 (54.55%)	8.84%	0.530
	-0.1 to –0.05	42	21 (50.00%)	26	12 (46.15%)	16	9 (56.25%)	10.10%	0.404
	-0.05 to –0.01	84	47 (55.95%)	50	24 (48.00%)	34	23 (67.65%)	19.65%	3.170^
	-0.01 to 0	57	30 (52.63%)	24	9 (37.50%)	33	21 (63.64%)	26.14%	3.807^
Positive	0 to 0.01	79	39 (49.37%)	40	16 (40.00%)	39	23 (58.97%)	18.97%	2.844^
	0.01 to 0.05	146	92 (63.01%)	76	41 (53.95%)	70	51 (72.86%)	18.91%	5.591*
	0.05 to 0.1	53	33 (62.26%)	36	18 (50.00%)	17	15 (88.24%)	38.24%	7.185**
	>=0.1	103	54 (52.43%)	55	27 (49.09%)	48	27 (56.25%)	7.16%	0.527
N		632	350 (55.38%)	342	163 (47.66%)	290	187 (64.48%)	16.82%	17.971**

^, *, ** Significant at the 0.1, 0.05, and 0.01 levels, respectively. N is the number of firm-years with financial reporting dates ending between 31 January 1999 and 31 December 2005 for 94 firms (655 less 23 missing firm-years). An earnings forecast is an announcement made to the NZX pre-empting a current financial year's earnings announcement. A firm-year is classified as a pre-reform (post-reform) firm-year if its financial reporting date ends before (after) 1 December 2002. Earnings Change is the change in yearly earnings per share deflated by share price at the beginning of the current financial year.

Table 3
Descriptive Statistics

Variables	Overall Sample Mean (Median) *Frequency* *(Percentage)*	Pre-Reform Period Mean (Median) *Frequency* *(Percentage)*	Post-Reform Period Mean (Median) *Frequency* *(Percentage)*	*t*-statistic (Mann Whitney *z*-statistic) *chi-square statistic*
Panel A: Descriptive statistics for all firm-years				
	N = 632	N = 342	N = 290	
|Earnings Change|	0.177 (0.037)	0.209 (0.040)	0.139 (0.031)	-1.643^ (-1.183)
ECHANGE	-3.323 (-3.306)	-3.239 (-3.214)	-3.422 (-3.474)	-1.351^ (-1.177)
Total Assets (millions)	3,118.1 (200.8)	3,019.0 (170.3)	3,202.1 (229.5)	0.133 (1.141)
SIZE	19.038 (19.118)	18.977 (18.953)	19.109 (19.252)	0.755 (1.145)
MVBV	0.376 (0.259)	0.290 (0.164)	0.477 (0.356)	2.947** (3.057**)
FNUM1 (350 forecasting firm-years)	2.057 (2)	1.846 (2)	2.241 (2)	3.529** (3.198**)
FNUM2 (350 forecasting firm-years	0.403 (0)	0.258 (0)	0.529 (0)	3.568** (4.250**)
FCAST1	*350 (55.38%)*	*163 (47.66%)*	*187 (64.48%)*	*17.971***
FCAST2	*103 (16.30%)*	*29 (8.48%)*	*74 (25.52%)*	*35.356***
ECSIGN	*381 (60.29%)*	*207 (60.53%)*	*174 (60.00%)*	*0.018*
XLIST	*162 (25.63%)*	*85 (24.85%)*	*77 (26.55%)*	*0.237*
Panel B: Descriptive statistics for all earnings forecasts				
	N = 720	N = 301	N = 419	
NREVENT (*non-routine*)	*141 (19.58%)*	*42 (13.95%)*	*99 (23.63%)*	*10.410***
PRECISE1 (*qualitative*)	*401 (55.69%)*	*211 (70.10%)*	*190 (45.35%)*	*48.864***
PRECISE1 (*open-ended*)	*71 (9.86%)*	*24 (7.97%)*	*47 (11.22%)*	
PRECISE1 (*range*)	*68 (9.44%)*	*11 (3.65%)*	*57 (13.60%)*	
PRECISE1 (*point*)	*180 (25.00%)*	*55 (18.27%)*	*125 (29.83%)*	
BAD (*bad news*)	*129 (17.92%)*	*51 (16.94%)*	*78 (18.62%)*	*0.333*
GOOD (*good news*)	*451 (62.64%)*	*197 (65.45%)*	*254 (60.62%)*	*1.745*
FHORIZON	190 (189)	200 (212)	183.3 (171)	-2.360** (-1.650^)
FHORIZON (*350 first earnings forecasts*)	243 (281)	243 (290)	243 (277)	-0.103 (-0.121)
Panel C: Descriptive statistics for all last range and point earnings forecasts				
	N = 131	N = 43	N = 88	
Error	0.083 (0.003)	0.219 (0.010)	0.017 (0.003)	-1.030 (-3.659**)
ERROR	-5.628 (-5.687)	-4.708 (-4.653)	-6.077 (-5.884)	-3.392** (-3.659**)
PRECISE2 (*point*)	*95 (72.52%)*	*35 (81.40%)*	*60 (68.18%)*	*2.531*
BAD (*bad news*)	*42 (32.06%)*	*10 (23.26%)*	*32 (36.36%)*	*2.279*
GOOD (*good news*)	*57 (43.51%)*	*19 (44.19%)*	*38 (43.18%)*	*0.012*
FHORIZON	100 (107)	124 (124)	89 (75)	-2.317* (-1.924^)

^, *, ** Characteristics are significantly different at the 0.1, 0.05, and 0.01 levels, respectively (two-tailed). The pre-reform period includes all firm-years with financial reporting dates ending between 31 January 1999 and 30 November 2002 and the post-reform period includes all those with financial reporting dates ending between 1 December 2002 and 31 December 2005. |Earnings Change| is the absolute value of percentage change in earnings per share deflated by share price at the beginning of the financial year. Total Assets is the total assets at the end of the current financial year. Error is the absolute value of forecast error measured by the difference of forecasted and actual earnings per share deflated by share price at the beginning of the financial year. See section 3.3 for definitions of dependent and independent variables.

Table 4
Factors Associated with the Likelihood of Firms Issuing Earnings Forecasts (Overall and Non-routine)

		Model 1 – *FCAST1*					Model 1 – *FCAST2*		
		All Firm-years	Negative Earnings Change	Positive Earnings Change			All Firm-years	Negative Earnings Change	Positive Earnings Change
Variable	Expected Sign	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Expected Sign	Comparison	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept		-7.264	-6.390	-6.610		0/1	3.372	3.963	2.772
		(0.004**)	(0.023*)	(0.023*)			(0.000**)	(0.005**)	(0.018*)
						2/1	-3.088	-2.102	-3.932
							(0.017*)	(0.285)	(0.023*)
REFORM	?	1.202	1.254	1.185	?	0/1	-0.396	-0.523	-0.319
		(0.000**)	(0.002**)	(0.000**)			(0.029*)	(0.074^)	(0.170)
					?	2/1	1.095	0.637	1.481
							(0.000**)	(0.103)	(0.000**)
ECSIGN	?	0.019			?	0/1	-0.280		
		(0.937)					(0.123)		
					?	2/1	-0.244		
							(0.319)		
ECHANGE	+	0.143	0.045	0.220	-	0/1	-0.063	-0.023	-0.093
		(0.044*)	(0.357)	(0.028*)			(0.124)	(0.394)	(0.095^)
					+	2/1	0.043	0.109	-0.009
							(0.278)	(0.162)	(0.465)
SIZE	+	0.408	0.342	0.390	-	0/1	-0.169	-0.192	-0.157
		(0.002**)	(0.011*)	(0.007**)			(0.001**)	(0.006**)	(0.008**)
					+	2/1	0.092	0.070	0.097
							(0.088^)	(0.248)	(0.147)
XLIST	-	-0.964	-0.865	-1.114	+	0/1	0.412	0.682	0.237
		(0.067^)	(0.114)	(0.073^)			(0.041*)	(0.039*)	(0.217)
					-	2/1	0.062	0.212	-0.055
							(0.424)	(0.338)	(0.450)
MVBV	+	0.008	-0.026	0.131	-	0/1	-0.058	-0.098	-0.053
		(0.486)	(0.466)	(0.334)			(0.309)	(0.292)	(0.367)
					+	2/1	0.129	-0.136	0.328
							(0.212)	(0.291)	(0.066^)
lnsig2u		1.692	1.471	1.681					
sigma_u		2.330	2.086	2.318					
rho		0.623	0.570	0.620					
Likelihood ratio test		162.350**	30.700**	73.060**					
Pseudo R^2							0.050	0.042	0.062
Model Chi-square		34.510**	12.740*	20.810**			64.180**	21.690**	47.850**
N		632	251	381			632	251	381

^, *, ** Significant at the 0.1, 0.05, and 0.01 levels. One-tailed (two-tailed) test is used when coefficient sign is predicted (not predicted). Random effects logistic regression model is used where the dependent variable is *FCAST1*. Multinomial logit regression model is used where the dependent variable is *FCAST2*. See section 3.3 for definitions of dependent and independent variables.

Table 5
Factors Associated with the Frequency of Earnings Forecasts (Overall and Non-routine) Issued by Firms

		Model 2 – *FNUM1*			Model 2 – *FNUM2*		
		All Firm-years	Negative Earnings Change	Positive Earnings Change	All Firm-years	Negative Earnings Change	Positive Earnings Change
Variable	Expected Sign	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept		-2.392	-2.528	-2.084	-6.405	-5.803	-6.677
		(0.029*)	(0.029*)	(0.078^)	(0.000**)	(0.002**)	(0.001**)
REFORM	?	0.490	0.445	0.544	1.042	0.792	1.290
		(0.000**)	(0.002**)	(0.000**)	(0.000**)	(0.009**)	(0.000**)
ECSIGN	?	0.022			-0.158		
		(0.781)			(0.376)		
ECHANGE	+	0.011	-0.013	0.017	0.096	0.072	0.074
		(0.356)	(0.389)	(0.328)	(0.045*)	(0.202)	(0.162)
SIZE	+	0.120	0.125	0.107	0.246	0.220	0.237
		(0.020*)	(0.022*)	(0.048*)	(0.002**)	(0.011*)	(0.012*)
XLIST	-	-0.017	-0.030	-0.182	-0.342	-0.150	-0.471
		(0.472)	(0.458)	(0.256)	(0.180)	(0.368)	(0.157)
MVBV	+	-0.077	-0.106	-0.005	0.052	-0.217	0.291
		(0.190)	(0.183)	(0.481)	(0.367)	(0.160)	(0.075^)
lnalpha		-0.242	-0.479	-0.343	-0.031	-0.273	0.123
alpha		0.786	0.620	0.710	0.970	0.761	1.131
Likelihood ratio test		240.560**	53.400**	110.540**	39.250**	5.330**	20.670**
Model Chi-square		46.620**	15.720**	33.920**	42.960**	12.730*	33.670**
N		632	251	381	632	251	381

^, *, ** Significant at the 0.1, 0.05, and 0.01 levels, respectively. One-tailed (two-tailed) test is used when coefficient sign is predicted (not predicted). Random effects Poisson model is used where the dependent variables are *FNUM1* and *FNUM2*. See section 3.3 for definitions of dependent and independent variables.

Table 6
Factors Associated with Forecast Horizon
Model 3 – *FHORIZON*

Variable	Expected Sign	All Forecasts Coefficient (p-value)	Bad News Coefficient (p-value)	Neutral News Coefficient (p-value)	Good News Coefficient (p-value)
Intercept		268.971	364.418	1.495	291.535
		(0.000**)	(0.025*)	(0.995)	(0.000**)
REFORM	?	-13.374	-4.376	-19.421	-14.329
		(0.095^)	(0.850)	(0.492)	(0.113)
BAD	?	-8.469			
		(0.607)			
GOOD	?	23.527			
		(0.090^)			
ECHANGE	+	1.060	-5.265	-0.943	1.732
		(0.331)	(0.227)	(0.465)	(0.261)
SIZE	+	-5.967	-12.426	7.754	-5.786
		(0.017*)	(0.060^)	(0.281)	(0.033*)
XLIST	+	21.605	27.871	-15.243	22.343
		(0.035*)	(0.220)	(0.394)	(0.043*)
MVBV	?	1.366	-51.308	18.101	7.149
		(0.811)	(0.007**)	(0.525)	(0.246)
FNUM1	+	37.684	46.678	37.568	36.573
		(0.000**)	(0.000**)	(0.003**)	(0.000**)
Breusch and Pagan Lagrangian Multiplier Test		2.100			
Adjusted R^2		0.256	0.319	0.194	0.223
F-value		16.050**	4.990**	2.240^	13.670**
N		350	52	32	266

^, *, ** Significant at the 0.1, 0.05, and 0.01 levels. One-tailed (two-tailed) test is used when coefficient sign is predicted (not predicted). Linear regression models are used where the dependent variable is *FHORIZON*. See section 3.3 for definitions of dependent and independent variables.

Table 7
Factors Associated with Forecast Precision
Model 4 – *PRECISE1*

Variable	Expected Sign	All Forecasts Coefficient (p-value)	Bad News Coefficient (p-value)	Neutral News Coefficient (p-value)	Good News Coefficient (p-value)
REFORM	?	0.697 (0.000**)	1.555 (0.000**)	0.039 (0.915)	0.630 (0.005**)
BAD	?	-0.130 (0.604)			
GOOD	?	-1.011 (0.000**)			
ECHANGE	+	-0.014 (0.392)	-0.030 (0.395)	-0.177 (0.062^)	0.049 (0.233)
SIZE	+	-0.129 (0.018*)	-0.363 (0.005**)	-0.017 (0.453)	-0.092 (0.126)
XLIST	+	0.734 (0.001**)	0.722 (0.099^)	0.313 (0.279)	0.835 (0.004**)
MVBV	+	0.387 (0.001**)	-0.270 (0.182)	0.653 (0.014*)	0.479 (0.001**)
NREVENT	+	1.325 (0.000**)	1.623 (0.000**)	0.779 (0.103)	1.420 (0.000**)
FHORIZON	-	-0.003 (0.001**)	-0.001 (0.322)	-0.003 (0.114)	-0.004 (0.002**)
Estimated Cutpoint 1		-2.331	-6.170	0.198	-0.923
Estimated Cutpoint 2		-1.784	-5.590	0.551	-0.265
Estimated Cutpoint 3		-1.227	-4.633	0.874	0.287
Pseudo R^2		0.116	0.137	0.051	0.120
Model Chi-square		187.620**	45.040**	15.830*	111.470**
N		720	129	140	451

^, *, ** Significant at the 0.1, 0.05, and 0.01 levels. One-tailed (two-tailed) test is used when coefficient sign is predicted (not predicted). Ordered logit regression model is used where the dependent variable is *PRECISE1*. See section 3.3 for definitions of dependent and independent variables.

Table 8
Factors Associated with Forecast Error
Model 5 – *ERROR*

Variable	Expected Sign	All Forecasts Coefficient (p-value)	Bad News Coefficient (p-value)	Neutral News Coefficient (p-value)	Good News Coefficient (p-value)
Intercept		1.981	0.440	1.295	3.430
		(0.474)	(0.915)	(0.835)	(0.497)
REFORM	?	-1.136	-0.506	-2.621	-1.099
		(0.005**)	(0.493)	(0.013*)	(0.110)
BAD	?	-0.267			
		(0.612)			
GOOD	?	0.228			
		(0.646)			
ECHANGE	+	0.319	0.513	-0.386	0.549
		(0.002**)	(0.010**)	(0.083^)	(0.002**)
SIZE	-	-0.304	-0.224	-0.368	-0.331
		(0.012*)	(0.146)	(0.123)	(0.097^)
XLIST	-	0.767	0.370	0.391	0.896
		(0.062^)	(0.334)	(0.371)	(0.127)
MVBV	?	0.244	0.612	0.928	0.166
		(0.361)	(0.262)	(0.266)	(0.689)
PRECISE2	+	-0.792	-0.728	-1.176	-0.932
		(0.030*)	(0.147)	(0.146)	(0.087^)
FHORIZON	+	0.003	0.002	0.004	0.004
		(0.071^)	(0.293)	(0.221)	(0.154)
Breusch and Pagan Lagrangian Multiplier Test		0.500			
Adjusted R^2		0.194	0.106	0.141	0.189
F-value		4.480**	1.690	1.730	2.860*
N		131	42	32	57

^, *, ** Significant at the 0.1, 0.05, and 0.01 levels. One-tailed (two-tailed) test is used when coefficient sign is predicted (not predicted). Linear regression models are used where the dependent variable is *ERROR*. See section 3.3 for definitions of dependent and independent variables.

Table 9

Sensitivity Analysis

Sensitivity Tests	References	Results
Interaction variables between *REFORM* and one of the firm-specific characteristics, including *ECSIGN*, *ECHANGE*, *SIZE*, *XLIST* and *MVBV* are included in models 1 and 2.	Hirst *et al.* (2008)	The coefficients of all interaction variables are insignificant. The results obtained do not reveal any significant differences to the main findings previously reported.
ECHANGE_VOL (change in earnings per share volatility over the prior five financial years) is included in all five models.	Hirst *et al.* (2008)	The *ECHANGE_VOL* coefficient is positively significant in models 1 and 2 and negatively significant in model 3. Except for the *ECHANGE* coefficient losing its significance, other results are not significantly different from the main findings.
CAPITAL_RAISING (a dichotomous variable taking the value of 1 if the firm raises capital during the financial year and 0 otherwise) is included in models 1, 2 and 4.	Frankel *et al.* (1995)	The *CAPITAL_RAISING* coefficient is insignificant. Other results are not significant different from the main findings.
Dichotomous variables for six major industry categories: (1) materials, mining or energy, (2) technology, telecommunication or biotechnology, (3) financial services, (4) utilities, airports, airlines, ports or shipping, (5) manufacturing or healthcare and (6) consumer staples, are included in all five models.	Hirst *et al.* (2008)	Firms in the financial services industry tended to release fewer earnings forecasts. Firms in manufacturing and healthcare industry tended to issue more earnings forecasts. None of other industry dichotomous variables are associated with the forecast decision. None of the industry dichotomous variables are significant in models 3 to 5.
ACCURACY (a dichotomous variable taking the value of 1 if the earnings forecast is *ex post* shown to be accurate and 0 otherwise). A 10 percent materiality level is applied for range and point earnings forecasts.	-	The results do not reveal any significant improvement in the forecast accuracy in the post-reform period. The imposition of a subjective materiality threshold for quantitative earnings forecasts might have contributed to these contradictory findings.
CREDIBILITY (a dichotomous variable taking the value of 1 if firms pre-empt prior earnings announcements with accurate earnings forecasts and 0 otherwise) is included in all five models. Similar to *ACCURACY*, a 10 percent materiality level is applied for range and point earnings forecasts.	Rogers and Stocken (2005)	The forecast likelihood and frequency increased for firms with prior accurate earnings forecasts. Prior forecasting history had no impact on the qualitative characteristics of earnings forecasts made. Except for the *REFORM* coefficient in model 3 being no longer negative and significant, other results are consistent with the main findings.
All five models are retested after dropping firm-years that fall within six months of the effective date of the reform (i.e. approximately 12 months around 1 December 2002). Some firms might have either responded earlier or postponed their responses depending on the closeness of this date to their financial reporting dates; therefore our results might have been influenced by such behaviour.	Frijns *et al.* (2008)	The results are quantitatively similar to the main findings.
Models 3 to 5 are retested after dropping neutral news earnings forecasts. The *BAD* and *GOOD* variables are removed and *ENEWS* (a dichotomous variable taking the value of 1 for good news earnings forecasts and 0 otherwise) is included in these three models.	Hirst *et al.* (2008)	The results are quantitatively similar to the main findings.
All five models are retested after dropping ASX-listed firms. ASX-listed firms also faced increasing legal threat during the period 2001-2004 due to the corporate disasters of the early 2000s leading up to the CLERP9 reform in mid-2004; therefore, these confounding events might have confused our results.	Golding and Kalfus (2004) Huang *et al.* (2009)	Except for model 3 where the *REFORM* coefficient is no longer significant, similar results are obtained for all models. It is possible that the decline in forecast horizon in the post-reform period might be attributed to ASX-listed firms.
ANALYST (the number of analysts following the firm during the financial year) is included in all five models.	Hirst *et al.* (2008)	The *ANALYST* coefficient is insignificant in all five models. The results for the other variables remain unchanged.