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Accruals: Signalling or Misleading?
Evidence from New Zealand

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Acknowledgements

Abstract

Studies on earnings management usually hypothesise that managers manage accruals opportunistically. Few studies however, argue that managers can also use accruals to improve the value relevance of reported earnings to help investors better assess the firm's operating performance. While substantial evidence on managers' opportunistic behaviour on accruals has been documented in the literature, empirical evidence on the informativeness of accruals is scarce and inconclusive. The purpose of this thesis is to examine whether managers use accruals to communicate private information regarding the firm's operating performance, or as reported in the literature, use them for their own benefit.

This thesis finds that on average, firms reporting high earnings accompanied by high accruals have significantly negative subsequent period stock returns suggesting that these firms *manage* their accounting earnings. Focusing on stock dividend issues as an incentive to opportunistically increase accruals, the results are found to be consistent with the earnings management hypothesis. Stock dividend issuing firms are reported to significantly increase accruals in the issue year followed by poor earnings and stock price performances in the subsequent year. Moreover, discretionary accruals of the issuing firms are negatively correlated with both future earnings and abnormal stock returns. This evidence attempts to complement the earnings management literature. The analysis on the incentive to decrease accruals related to share repurchases, however, does not provide sufficient evidence to suggest that managers use their discretion to decrease accruals.

To investigate the hypothesis that managers use accruals to convey information regarding their firm's future profitability, this thesis employs the contemporaneous earnings and dividend announcements as the research setting. This choice was made to increase the likelihood of detecting the use of accruals as private information communication while simultaneously mitigating the likelihood of the opportunistic income smoothing hypothesis to explain the results. The evidence

strongly indicates that managers use both accruals and dividend increases as their private information communication regarding their firm's future profitability. Dividend increasing firms report positive accruals which are positively correlated with future profitability. This finding contributes to the literature by providing evidence on the accrual signalling hypothesis.

Overall, the results of this thesis suggest that, depending on the incentives, managers can use the discretion accorded under the Generally Accepted Accounting Principles (GAAP) in estimating accounting accrual, either to manage accruals opportunistically or to help investors better assess the firms' operating performance.

Chapter 1

Introduction

In accounting, cash basis and accrual basis accounting are the two methods used for recording financial transactions. The difference between the two accounting methods lies in the timing of recording the transactions. In cash accounting, revenues and expenses are recorded when cash is actually received from customers and paid to vendors. Small firms or individuals usually use this method because of its simplicity. However, as non cash financial transactions such as credit sales and credit purchases incurred during a period are recorded only when cash flows from these transactions occur, the amounts of revenues and expenses reported in financial reports are biased. As a result, reported earnings derived from this method do not represent the "true" earnings for that period.

In contrast, the accrual accounting system recognises financial transactions at the time they are incurred, irrespective of when cash is actually received or paid out. Revenues earned during a period are recognised and matched with related expenses incurred in the corresponding period. The basic purpose of recognizing revenues in the period when they occur and matching them with related expenses is to mitigate the revenue recognition and the mismatching problems inherent in cash accounting, thus making accounting numbers more accurate. Consequently, accounting numbers such as earnings and accounting ratios derived from accrual accounting are expected to be more relevant to stakeholders.

Revenues and expenses reported in an accounting period, however, are not always *perfectly* accurate. When financial transactions take more than one period to complete, a portion of revenues and expenses to be recognised in the transaction period needs to be estimated. For example, a service firm that sells services that take more than one period to complete and issues invoices to its customers when the services are completed, needs to estimate the apportionment of revenues and expenses to be recognised in the transaction period. Another

example is the estimation of bad debts. When goods or services are sold on credit, a portion of the receivables might not be collected and therefore be written off as bad debt expenses. As the amount of bad debts is not known in advance, the selling firm estimates the amount of debts it might not collect. The amounts of revenues and expenses estimated in the two examples above are termed accruals.

Under Generally Accepted Accounting Principles (GAAP), the estimation of accruals is subject to managerial discretion. Several studies hypothesise that managers could use their discretion to estimate accruals as a device to convey private information about their firm's future profitability (for example, Holthausen and Leftwich, 1983; Healy and Palepu, 1993, Subramanyam, 1996; Guay, Kothari and Watts, 1996). According to this view, when a firm's operating prospect is expected to increase due to, for example, a permanent increase in cash flows from positive NPV projects or better financial contracts, the firm's manager uses accruals to disclose this private information to the market.

Conflicts of interest between managers and stakeholders, however, could induce managers to use their discretion over accruals to manipulate earnings for their own benefit. Arthur Levitt Jr., the former chair of the SEC, for example, mentioned in his speech in 1998 that several firms use unrealistic assumptions in estimating liabilities for items such as sales returns, loan losses or warranty costs that consequently distorts the relevance of accounting earnings (Levitt, 1998). These opportunistic practices regarding accruals, called the "cookie jar" accounting reserves, allow managers to store accruals during good times and use them in bad times.

The literature currently identifies four incentives for managers to manipulate accruals. First, managers are likely to manipulate accruals to maximise their own compensation and to maintain their job security (Healy, 1985; Holthausen, Larcker and Sloan, 1995; DeFond and Park, 1997). Second, several firms close to breaking debt covenants have been found to manage accruals in order to avoid default or to reduce the likelihood of future covenant violations (DeFond and Jiambalvo, 1994; Sweeney, 1994). Third, several firms are reported to understate accruals to take

advantage of government regulations or to avoid regulatory scrutiny (Jones, 1991; Key, 1997; Navissi, 1999). Finally, several studies find evidence consistent with managers intentionally increasing accruals around equity issues (Teoh, Welch, and Wong, 1998a, 1998b; Rangan, 1998; Louis, 2004) and decreasing accruals prior to equity repurchases (Perry and Williams, 1994; Vafeas, Vlittis, Katranis and Ockree, 2003; Gong, Louis and Sun, 2006) in an attempt to manipulate the market's short term perception with respect to the firms' stock price.

While evidence of opportunistic discretion on accruals has been substantially documented in the literature, empirical evidence supporting the hypothesis that managers deliberately use accruals to communicate private information regarding future firm performance to the market is scarce and inconclusive (Subramanyam, 1996; Guay, et al., 1996; Louis and Robinson, 2005). The inconclusive evidence on the signalling hypothesis of accruals therefore raises the question as to whether managers use their discretion over accruals as a device to communicate information to the market, or mostly to benefit themselves as has been documented in the literature. This thesis addresses this question by using and exploring New Zealand data.

New Zealand data was used for three main reasons. First, prior studies on the signalling theory of accruals find that their results are consistent with both the signalling hypothesis and the opportunistic income smoothing hypothesis, which is the opposite of the signalling hypothesis. The lack of conclusive evidence is attributed either to the use of broad samples that allow the empirical results to be consistent with both of the competing hypotheses, or to the use of an inappropriate research setting in which managers are assumed to likely to signal. In New Zealand, firms typically announce earnings and dividends simultaneously. Such announcements are reported in the accounting and finance literature as a signalling event (Kane, Lee and Marcus, 1984; Emanuel, 1984; Easton, 1991; Leftwich and Zmijewski, 1994; Cheng and Leung, 2006). Therefore, the contemporaneous earnings and dividend increase announcements in New Zealand provide an opportunity to examine the hypothesis that managers are likely to use accruals to signal private information regarding future profitability to the market.

The results of this thesis purport to fill the gap in the literature by providing evidence on the signalling theory of accruals.

Second, studies on earnings management mostly use U.S. data. Until now there has been no study on earnings management in New Zealand except Navissi (1999), who finds that New Zealand manufacturing firms manipulated earnings downward in order to take advantage of the government price regulations in the early 1970s. New Zealand now tends to have a more restricted Generally Accepted Accounting Principles (GAPP) than that in 1972 (La Porta, Silanes, Shleifer and Vishny, 1998; Deegan and Samkin, 2004). As a result, the extent to which managers of New Zealand firms can manipulate earnings through accruals is probably more restricted than that in 1970s. The investigation of earnings management in New Zealand therefore is expected to yield some insights that could be useful to the Accounting Standards Review Board (ASRB), the standard setting body in New Zealand, and may also be of interest to other regulators in the Pacific-Basin region whose stock market environments are closer to that of New Zealand than to the United States.

Third, prior studies report that accruals have predictive power for future stock returns, known as the accrual anomaly, which is inconsistent with the efficient market hypothesis (for example, Sloan, 1996; Collins and Hribar, 2000; Xie, 2001). Two recent studies observe that the accrual anomaly is associated with the earnings management hypothesis and that this anomaly is not a global phenomenon (Chan, Chan, Jegadeesh and Lakonishok, 2006; Pincus, Rajgopal and Venkatachalam, 2007). This thesis examines the presence of the accrual anomaly in New Zealand and observes if this anomaly is consistent with the earnings management hypothesis. The results of this thesis, therefore, would provide valuable information for investors and corporations in New Zealand.

1.1. Organisation of this thesis
This thesis consists of 6 chapters. Chapter 2 presents a literature review on accruals which can be classified into three main groups of study. The first group argues that accruals can be used as a device to convey private information to the

market, known as the signalling hypothesis. The second group investigates the opportunistic use of accruals, recognised in the literature as earnings management. The third group examines the predictive power of accruals on stock returns, a phenomenon called the accrual anomaly.

Chapter 3 analyses the presence of the accrual anomaly in New Zealand. The results of this chapter show that the accrual anomaly does not occur in the New Zealand stock market during the full sample period but does occur during the period prior to the commencement of the Companies and Financial Reporting Acts 1993. This chapter, however, reports strong evidence of the cash flow anomaly, during the sample period. This finding contradicts the conjecture held in prior U.S. studies that, as accruals and cash flows are negatively correlated, the accrual and cash flows anomalies should coexist. This finding also confirms the results of Pincus et al. (2007) that, in countries other than the U.S., the accrual anomaly does not always coexist with the cash flow anomaly.

The absence of the accrual anomaly, however, does not imply that earnings management does not occur in New Zealand. High accrual firms are observed to generate significantly negative abnormal returns. This finding is consistent with managers of high accrual firms manipulate accruals to temporarily increase current period earnings. This issue is addressed in the next chapter.

Chapter 4 investigates opportunistic accruals increasing and accruals decreasing management in New Zealand. Prior studies on earnings management report that corporate events such as initial public offerings, seasonal equity offerings, stock swap mergers and stock repurchases, provide managers with incentives to manipulate earnings. Until now, however, there has been no study that examines earnings management in relation to stock dividend issues. For that reason, the first part of this chapter investigates accruals increasing management around stock dividend issues. This chapter finds that on average, accruals of stock dividend issuing firms increase in the issuing year and decrease to the pre issue level in the following year. Decomposing total accruals into their components, the analysis shows that the discretionary part of accruals is significantly and negatively

associated with the changes in future earning and stock abnormal returns. These results are consistent with the earnings management hypothesis that stock dividend issuing firms increase accruals in the issue year to temporarily influence the firms' stock price. These results will contribute to the earnings management literature by providing some evidence of earnings management around stock dividend issues.

The second part of chapter 4 examines accruals decreasing management using stock repurchase data. As conjectured in prior studies, managers of stock repurchasing firms have incentives to decrease accruals to lower firms' stock prices so that firms' stocks would be cheaper to buy. This section, however, finds no evidence of accruals decreasing management associated with on- and off-market share repurchases in New Zealand. While the average of announcement year total accruals of on-repurchasing firms is observed to be somewhat lower than that of pre event year accruals, the pattern of discretionary accruals is not consistent with the earnings management hypothesis. The average of announcement year discretionary accruals increases in the event year before dropping in the subsequent year. Likewise, although the patterns of the averages of total accruals and their discretionary components of off-market share repurchases seem to be more consistent with earnings management, the median of these variables are all positive.

Chapter 5 examines the hypothesis that managers deliberately use their discretion over accruals to communicate private information to the market. This chapter employs the contemporaneous earnings and dividend increase firm data as the research background in which the opportunistic earnings management hypothesis is less plausible to explain the results and, at the same time, increases the validity of the inference on the signalling hypothesis. The results show that the New Zealand market reacts positively and significantly to the contemporaneous earnings and dividend increase announcements. In addition, relative to those of dividend decreasing and dividend maintaining firms, total accruals, discretionary accruals and changes in future profitability of dividend increasing firms are reported to be positive. Further tests indicate that the positive discretionary accruals are

significantly and positively associated with firm future profitability. These findings are consistent with the hypothesis that managers use both accruals and dividends to communicate information about firm future profitability.

Chapter 6 concludes and provides a summary of the main findings of this thesis.

Chapter 2

Literature Review

Studies on accruals in the accounting and finance literature can be classified into three groups. The first group argues that managers may use accruals as an instrument to convey information to the market. The second group investigates managers' opportunistic discretion on accruals known as earnings management. The third group focuses on the predictive power of accruals for predicting stock returns, recognised in the literature as the accrual anomaly.

2.1. Accruals and signalling

Prior studies on earnings management argue that managers can use their discretion over accounting techniques as a means to enhance the communication of information in financial reports. For example, Holthausen and Leftwich (1983, p. 112) argue that, "managers can choose accounting techniques to provide reported earnings numbers that are good predictors of firms' cash flows". Healy and Palepu (1993) point specifically to managerial discretion over accruals as a device to convey information to the public. Healy and Palepu (1993, p. 2) remark that "Financial reporting is a potentially useful mechanism for managers to communicate with outside investors…..Because accrual accounting not only requires managers to record past events, but also to make forecasts of future effects of these events, financial statements have potential to convey managers' superior information".

Preliminary evidence on the signalling theory of accruals is reported in Wilson (1986) and Bowen, Burghstahler and Daley (1987). These studies examine the information content in accruals and report that total accruals have incremental information content beyond cash flows and earnings. Using a methodology similar to those studies, Subramanyam (1996) regresses contemporaneous stock returns on the components of accruals. He reports that the discretionary component of accruals is positively correlated with stock returns suggesting that discretionary accruals are priced by the market. In addition, Subramanyam observes that current

period discretionary accruals are significantly and positively correlated with future earnings and future cash flows. Based on these results, Subramanyam concludes that discretionary accruals provide information for predicting future profitability.

Guay et al. (1996) use discretionary accruals to examine which of the following: the opportunistic accrual management; the information theory of accruals; or the noise hypothesis, has the best explanation for managerial discretion over accruals. Guay et al. find that their results are consistent with the information theory and the opportunistic accrual behaviour but fail to distinguish between the two hypotheses. However, in a similar way to Subramanyam (1996), Guay et al. find that discretionary accruals are positively associated with stock returns.

The positive correlation between stock returns and discretionary accruals suggests that managers may deliberately use accruals as a device to convey private information to the market. Sankar and Subramanyam (2001) develop a model which shows that when managerial discretion is allowed by Generally Accepted Accounting Principles (GAAP), managers use this discretion to communicate their private information through reported earnings. Indirect support for this hypothesis is reported in Brooks (1996) and Kang (2005). Brooks examines the effects of earnings and dividend announcements on the asymmetric information level and finds that the level of information asymmetry falls at earnings announcements but not at dividend announcements. This evidence suggests that there is private information released at earnings announcements. The results reported in Kang (2005) suggest that managers use accruals as the device to release the information. Kang shows that the frequency of accruals-related disclosure increases the accuracy of analysts' forecasts and decreases the analysts' forecast dispersion on future earnings.

The positive associations between discretionary accruals, stock returns and future profitability reported in Subramanyam (1996) and Guay et al. (1996) are however, consistent not only with the information hypothesis of accruals, but also with the opportunistic income-smoothing hypothesis. DeFond and Park (1997) argue that in an attempt to maintain their job security, when current (future) period earnings are

poor (good), managers "borrow" earnings from the future by increasing accruals. On the other hand, when current (future) earnings are good (poor), managers decrease accruals to "save" current earnings for possible use in the future. As a result, according to the opportunistic income-smoothing hypothesis discretionary accruals are predicted to be positively correlated with future earnings.

The inconclusive evidence on the signalling hypothesis reported by Subramanyam (1996) and Guay et al. (1996) can be attributed to their use of broad sample data. To mitigate this problem, Louis and Robinson (2005) use stock split firm data as their research setting to examine the signalling hypothesis of accruals. Assuming that managers use discretionary accruals to signal and use stock splits to reinforce the signal, Louis and Robinson find a positive association between pre split discretionary accruals and the positive abnormal returns surrounding the split announcement dates. Based on this finding, Louis and Robinson conclude that managers use both discretionary accruals and stock split to communicate private information to the market.

Stock split announcements, however, are often contaminated by other company specific information around the event window. For example, Nayak and Prabhala (2001) observe that many stock split firms also contemporaneously announce dividends. Therefore it is not clear if the positive market reaction around the announcement dates, and the positive association between discretionary accruals prior to the events and positive abnormal returns, are attributed to the dividend announcements, or to the stock split signal. In addition to the contamination problem, Crawford, Franz and Lobo (2005) find that the costs of false signalling for stock splits are very small. As the credibility of a signal depends on the cost of the signal, the low costs for issuing a false signal undermine the validity of the signal in stock splits. The low costs of signalling for stock split suggest that firms split their stocks for reasons other than signalling about firm future profitability. Confirming this conjecture, Huang, Liano, and Pan (2006) report that except for dividend paying firms, firms that split their stocks have negative future profitability.

The positive association between the pre-split discretionary accruals and the abnormal returns documented by Louis and Robinson (2005) is also consistent with the opportunistic earnings management hypothesis. Managers have the incentive to increase accruals prior to stock splits, so that the post split stock price would be higher than that when earnings are not managed. This argument is empirically supported by Lakonishok and Lev (1987) who report that the median growth rates of earnings of splitting firms drop significantly after the events. Moreover, Louis and Robinson (2005) also report that the association between pre-split discretionary accruals and one-year ahead abnormal returns, though insignificant, is negative. Overall, this evidence is consistent with managers increasing accruals prior to stock splits to send a false signal to the market. When accruals reverse in the following period, the market adjusts its valuation on the firms' stock price accordingly. This issue is examined thoroughly in the first part of chapter 4.

2.2. Accruals and earnings management

Schipper (1989) defines earnings management as "a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gains" (p. 92). Earnings management occurs "when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers." (Healy and Wahlen, 1999, p.368).

Subject to Generally Accepted Accounting Principles (GAAP) rules, managers have discretion in estimating accruals. The discretion accorded under GAAP, however, provides room for managers to deliberately bias the estimates of accruals. That is, it is more likely that earnings management occurs through accruals than cashflows. Consequently, studies on earnings management typically hypothesise that managers manipulate the accrual component of earnings for their own benefit. In his review paper on capital market research in accounting, Kothari (2001, p. 161) states that "discretionary accruals and earnings management are used synonymously in the literature".

As earnings management is not easy to observe, to investigate the occurrence of earnings management, researchers usually examine accruals in relation to the incentive for earnings management. Four incentives to manipulate earnings are documented in the literature. The first incentive is related to management compensation. Healy (1985) argues that managers have the incentive to manipulate earnings through accruals to maximise their bonuses. He reports that when the upper bound bonus plan has been reached, firms with binding upper bound bonus plan tend to defer income that exceeds the upper bound by decreasing accruals. He also observes that firms are likely to decrease accruals when income is below the lower bound of the bonus plan. However, when income is between the bonus plan upper and lower bound, firms accelerate income by increasing accruals.

Gaver, Gaver and Austin (1995) and Holthausen et al. (1995) extend Healy's study by examining the discretionary part of accruals as the earnings management variable. Using the Jones (1991) model to analyse accruals, Gaver et al. (1995), however, find evidence inconsistent with Healy. Gaver et al. find that firms with earnings below (above) the lower bound have positive (negative) discretionary accruals. Although their results are inconsistent with Healy's bonus plan maximisation hypothesis, their results are still consistent with the opportunistic income smoothing theory, which hypothesises that managers attempt to smooth earnings to avoid an increase in their target earnings.

In their study, Holthausen et al. (1995) employ the modified Jones model proposed by Dechow, Sloan and Sweeney (1995) to estimate the discretionary part of accruals. Similar to Healy (1985), Holthausen et al. report that managers are likely to defer income when their bonuses are at their maximum. However, unlike Healy, they find no evidence of earnings management when earnings are below the threshold.

The second incentive for earnings management is associated with equity valuation. Theoretically, the role of financial managers is to maximise the wealth of the firm's

shareholders. Conflict of interest, however, might influence managers to act in a way that harms shareholders' wealth. Several corporate events such as equity issues and buybacks may provide incentives for managers to manage earnings in a way which results in expropriating the wealth of shareholders. Managers may decrease earnings prior to buybacks to send unfavourable news to the market so that firm stock price is unattractive to investors, thus lowering the buyback price. Similarly, managers may also increase earnings around equity issues to manipulate stock price to increase the proceeds from issuing equity.

The literature documents evidence consistent with the hypothesis that managers manipulate earnings around equity issues or buybacks in an attempt to opportunistically influence short term stock performance. For example, Perry and Williams (1994) document that management buyout firms report significantly negative discretionary accruals prior to the buyouts. Two recent studies find similar results for firms launching share repurchase programs. Vafeas et al. (2003) investigate the earnings performance of self tender offering firms and observe that pre offer total accruals and discretionary accruals of repurchasing firms are lower than those of control firms. In addition, Vafeas et al. also find that the average changes in discretionary accruals of the repurchasing firms are positive in the year after the offers. They report, however, that the increase in discretionary accruals after the offers is weakly significant. Gong, Louis and Sun (2006) examine the association between the operating and stock performance of open market share repurchasing firms and the earnings management hypothesis. Gong et al. (2006) observe that pre repurchase discretionary accruals of open market repurchasing firms are significantly negative. Consistent with earnings management, they find that the negative discretionary accruals significantly explain the positive future operating and stock performance of the repurchasing firms.

Rangan (1998) and Teoh et al., (1998a) examine whether managers manipulate earnings prior to seasoned equity offerings (SEO). These authors argue that seasoned equity offerings provide managers with an incentive to increase earnings surrounding the offers to portray a favourable picture of the firm in order to increase the proceeds from the offering. Rangan and Teoh et al. find that on

average, discretionary accruals of seasoned equity firms increase significantly in the quarters surrounding the offers. Consistent with the earnings management hypothesis, Rangan and Teoh et al. find that the firms' positive discretionary accruals in the issue year significantly explain the poor post issue stock performance.

Similar to the results on earnings management around seasoned equity offerings, Teoh et al., (1998b) report evidence consistent with earnings management in the context of initial public offerings (IPO). The same authors document that around the offers, initial public offering firms report higher accruals than those of non-issuers. More importantly, they also find that the pre issue positive discretionary accruals of the issuing firms are negatively associated with the poor post issue stock returns.

Louis (2004) argues that when managers decide to issue stock to finance an acquisition, they have an incentive to influence their firms' stock price by overstating earnings prior to the merger announcement. Using a performance adjusted discretionary accruals model, Louis observes that stock swap acquiring firms increase accruals in the quarter prior to a stock swap announcement. Louis also reports that future stock performance of stock acquirers is worse than that of cash acquirers. Consistent with managers manipulating earnings prior to stock swap mergers, Louis finds that the positive pre announcement discretionary accruals significantly explain the poor future stock performance of stock acquiring firms.

The third incentive associated with earnings management is related to government regulations. For example, Jones (1991) reports that, in an attempt to benefit from import relief regulations, managers understate earnings during import relief investigations by the United States International Trade Commission. Similarly, Key (1997) finds that US cable TV firms report income decreasing accruals during periods of congressional scrutiny to mitigate political scrutiny and potential regulations associated with the rates they charged to their customers for basic service. Employing New Zealand data, Navissi (1999) reports that New Zealand

manufacturing firms decreased earnings to take advantage of the Price Freeze Regulation introduced by the New Zealand government in the early 1970s.

The fourth incentive to manipulate earnings reported in the literature is related to debt covenants. The need to comply with the conditions in debt covenants is thought to provide incentives for firms that are close to breaking debt covenants to manipulate earnings either to avoid the costs of covenant violations or to reduce the restrictiveness of accounting-based constraints in debt agreements (Beneish, 2001, p. 8). Empirical results supporting this view, however, are mixed. DeFond and Jiambalvo (1994) examine a sample of default firms and report evidence consistent with managers increasing earnings prior to default to avoid covenant default. In contrast, Sweeney (1994) finds that managers increase earnings after the default. DeAngelo, DeAngelo and Skinner (1994), however, observe insignificant differences in the magnitude of accruals between binding and without binding covenant firms.

2.3. Accruals and stock returns (the accrual anomaly)

The predictive power of accruals on stock returns stems from the theoretical information content of current earnings in predicting stock returns (see for example, Beaver, 1998; White, Sondhi and Fried, 2002; Graham and Dodd, 2005). Empirical results on the association between earnings and stock returns are first reported in Ball and Brown (1968) who find that unexpected earnings changes are positively correlated with future stock returns. The findings of Ball and Brown have triggered numerous studies on the relationship between earnings and stock returns (for example, Beaver, Lambert and Morse, 1980; Freeman, Ohlson and Penman, 1982; Kormendi and Lipe, 1987; Lev, 1989; Beaver, 1998; Kothari, 2001; and Scott, 2003, among others).

According to Beaver (1998), the link between current earnings and stock returns depends on three assumptions being held. First, a stock price is assumed as a present value function of all expected future firm cash flows, namely future dividends. This relationship is the standard model for stock valuation in any finance textbook. Second, assuming that dividends are dependent on earnings, future

dividends are dependent on future earnings. It has long been documented in the finance literature that dividends are significantly associated with earnings (Fama and Babiak, 1968; Watts, 1973; Campbell and Shiller, 1988; Benartzi, Michaely and Thaler, 1997; Fama and French, 2000; Nissim and Ziv, 2001). Accordingly, a stock price can also be viewed as a function of the expected value of future earnings. Third, current earnings provide information not only about the current period of firm profitability but also information about future earnings. This assumption is empirically supported by Finger (1994), who finds that current earnings are significant predictors of future earnings one year ahead.

The predictive power of current earnings with regard to future earnings, however, depends on the permanence of the components of current earnings. Earnings consist of cash and accrual components. Unlike cash flows, accruals are temporary and will reverse in the following period(s). Prior studies report that when future earnings are regressed on accruals and cash flows, the coefficients of accruals are statistically smaller than those of cash flows suggesting that when accruals are high (low) relative to cash flows, earnings performance is unlikely (likely) to persist (Sloan, 1996; Bradshaw, Richardson and Sloan, 2001; Barth and Hutton, 2004). The temporary nature of accruals may thus explain both the weak predictive power of current earnings on future earnings (see Lev, 1989, for a review) and the mean reversion of changes in earnings (Brooks and Buckmaster, 1976; Elgers and Lo, 1994; Fama and French, 2000).

Market participants, however, seem to act as if they fixate on accounting earnings and do not distinguish the different effects of the accruals and cash flows components of current earnings on future earnings. As a result, the market seems to underweigh the persistence of cash flows and to overweigh the persistence of the accruals component of current earnings. Accordingly, the market tends to overprice high accruals (low cash flows) stocks and to underprice low accruals (high cash flows) stocks. Thus, the market's mispricing of the earnings' components creates an opportunity to profit from an arbitrage investment strategy involving a short position in the highest accrual (lowest cash flows) firm portfolio and simultaneously holding a long position in the lowest accrual (highest cash

flows) firm portfolio. Sloan (1996) shows that an accrual-based investment strategy can generate 10.4 percent annual abnormal return.

The predictability of stock returns based on the level of accruals is a contradiction to the efficient market hypothesis and is recognised in the literature as the accrual anomaly. This anomaly is reported to be robust to the three factor Fama and French model and is distinct from the post announcement drift anomaly (Houge and Loughran, 2000; Collins and Hribar, 2000). Xie (2001). Several studies (Xie, 2001; Chan et al., 2006; Pincus et al., 2007) observe that the accrual anomaly is mainly attributed to the discretionary part of accruals. In contrast, Desai, Rajgopal and Venkatachalam (2004) argue that the accrual anomaly is actually the value-glamour anomaly in disguise. They show that when the ratio of operating cash flows deflated by share price is used as an additional control variable, the abnormal return from the accrual anomaly disappears.

The positive abnormal return from the accrual anomaly derives mainly from negative future stock performance of high accrual firms. Although the literature documents considerable evidence on this anomaly, the results in Bradshaw, Richardson and Sloan (2001) indicate that market participants are unaware of the reversal effect of high accruals on stock prices. Bradshaw et al. (2001) observe that analysts and auditors do not communicate information about low quality earnings associated with high accruals to investors. On the contrary, Barth and Hutton (2004) find that analyst earnings forecast revisions reflect information about accruals. However, (similar to Bradshaw et al.), they find that investors do not anticipate this problem when evaluating firms' operating performance.

Pincus et al. (2007) report that the accrual anomaly is not a global phenomenon. Pincus et al. find that the occurrence of this anomaly is related to specific legal and market characteristics of a country. In addition, Pincus et al. and Chan et al. (2006) find that the accrual anomaly is associated or is consistent with earnings management. Until now, there has been no study that examines the presence of this anomaly in the New Zealand stock market. This is the subject of investigation in the next chapter.

Chapter 3

Accrual or Cash Flow Anomaly? Evidence from the New Zealand Stock Market

3.1. Introduction

The accounting and finance literature provides extensive evidence that the magnitude of accruals (cash flows) component in current earnings is negatively (positively) correlated with future stock return. This anomaly apparently occurs because market participants use current reported earnings to forecast future earnings but seem to be uninformed of the difference in persistence between the accruals and cash flows components of current earnings into future earnings. Accruals are less persistent than cash flows (Bradshaw et al., 2001; Barth and Hutton, 2004). Consequently, when current earnings are accompanied by high accruals (cash flows), the persistence of current earnings is low (high) which results in lower (higher) than expected future earnings. When future earnings are lower (higher) than expected, investors react negatively (positively) to the earnings announcements. Thus, the market tends to overprice (underprice) high accrual (cash flow) stocks and underprice (overprice) low accrual (cash flow) stocks. This market fixation on earnings provides an opportunity to profit from an arbitrage investment strategy. A hedge trading strategy, taking a short (long) position in high accrual (cash flow) firms and a long (short) position in low accrual (cash flow) firms, would generate a positive and significant abnormal investment return.

The accrual anomaly was first documented by Sloan (1996). Sloan finds that the predictability of stock returns is correlated with the different persistence of the accruals and cash flows components of current earnings. Sloan shows that accruals reverse to their mean quicker than cash flows and are negatively correlated with future stock returns. Further, he observes that low (high) accrual stocks generate positive (negative) abnormal future returns and a hedge strategy that exploits this anomaly generates a significant annual abnormal return of 10.4 percent. Because accruals and cash flows are negatively correlated, Sloan argues that a trading strategy of simultaneously buying high cash flows stocks and selling

low cash flows stocks will also generate a positive abnormal return. He postulates that the cash flow anomaly coexists with the accrual anomaly.

Collins and Hribar (2000) and Houge and Lougran (2000) provide further evidence of the coexistence of the accrual and the cash flow anomaly. Collins and Hribar (2000) report that these two anomalies are robust using quarterly data instead of annual data and are distinct from the post-earnings announcement drift anomaly. Houge and Loughran (2000) show that these two anomalies are robust when applying the three factor model of Fama and French (1993). They report, however, that the characteristics of accrual stocks are different from those of cash flow stocks, and that the accrual anomaly arises primarily from the poor performance of high accrual stocks.

Xie (2001) contends that the accruals mispricing reported by Sloan (1996) can be attributed to the discretionary part of accruals. Xie reports that the market overprices the discretionary part of accruals more than the nondiscretionary part. The term "discretionary accruals" is used synonymously with "earnings management" in the literature (Kothari, 2001). The mispricing of discretionary accruals (Xie, 2001) combined with the lower persistence of accruals on future earnings (Sloan, 1996) and the poor performance of high accrual stocks (Houge and Loughran, 2000) indicate that the accrual anomaly may arise from earnings management. Indeed, two recent studies by Pincus et al. (2007) and Chan et al. (2006) report that this anomaly is consistent with earnings management hypothesis.

Kothari, Sabino and Zach (2005) and Kraft, Leone and Wasley (2004), however, find that prior studies on the accrual anomaly suffer from sample selection bias. Kraft et al. (2004) show that the accrual anomaly and the cash flow anomaly are attributed to firms with buy and hold annual returns of more than 200%. After eliminating these outliers, which account for less than 1% of total observations, they find that both low and high accrual portfolios generate negative abnormal returns. Further, the magnitude of the abnormal return of the accrual strategy is reduced to 1.7%. They also report that the high cash flow portfolio abnormal return

is reduced from 3.3% to 1.1%. The abnormal return of the hedge strategy based on cash flows, however, is still positive at 23%.

In addition to the sample selection problem, the accrual anomaly documented in the U.S. is not a global phenomenon. Pincus et al. (2007) examine the presence of the accrual and the cash flow anomalies in 20 countries. They find that the presence of one of these anomalies does not imply the coexistence of the other anomaly. They report that the accrual anomaly, but not the cash flow anomaly, occurs in four countries (the U.S., the U.K., Canada and Australia), while the opposite is true in eight other countries. Furthermore, Pincus et al. report that the accrual anomaly tends to occur in countries with certain institutional and accounting structures. They find that the occurrence of the accrual anomaly is correlated with extensive use of accruals accounting, with a common law tradition, with weak shareholder protection and with low share-ownership concentration.

The present study is motivated by three questions:

First, as reported by Pincus et al. (2007) and Chan et el. (2006), the accrual anomaly is significantly correlated with earnings management. Therefore, observing the presence of this anomaly in the New Zealand stock market provides preliminary evidence on the managers' opportunistic behaviour over accruals.

Second, as discussed by Pincus et al. (2007) the occurrence of the accrual anomaly is not a global phenomenon and seems to be related with a country's legal system and corporate governance. New Zealand's institutional and accounting structures provide a setting in which the accrual anomaly is likely to occur. New Zealand is a common law country, it allows extensive use of accruals accounting (Hung, 2000) and at the same time it has a rather weak shareholders protection apparatus in place (La Porta et al., 1998; and Walker, 2003)[1]. Particularly, prior to 1993, New Zealand corporate governance was poor due to the

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[1] Although the "antidirector" index for New Zealand is relatively high at 4 based on La Porta et al. (1998) the securities regulation regime is notoriously weak. According to Kusnadi and Wei (2006), the New Zealand public enforcement index which measures the power of the capital market supervisory agency in regulating and enforcing the securities laws, is relatively low at 0.40 compared to Australia at 0.90 and below the average public enforcement index for Asia Pacific region at 0.59.

inadequacies of its existing legislation at the time (Seebold, 1993; Quigg and Land, 1994). These shortcomings included insufficient disclosure requirements, lack of protection of minority shareholders, weak insider trading regulation and frequent abuse of controlling shareholdings (Quigg and Land, 1994, p. 40). Claims of poor compliance with the NZ accounting standards had also been frequently reported (Bradbury and Van Zijl, 2005). Although Statements of Standard Accounting Practice (SSAPs) were in place, prior to 1993 there was not sufficient legal backing to ensure its implementation. These problems urged New Zealand to review and change its corporate laws. The Companies Act 1993 enhances directors' duties and increases directors' responsibilities (Seebold, 1993; Quigg and Land, 1994). In addition, the Financial Reporting Act 1993 (FRA93) was introduced to provide a legal backing to ensure that financial reports are made in compliance with the accounting standards.

This chapter will test the impact of the introduction of these regulations on the presence of accrual anomaly in New Zealand. As the accrual anomaly is a contradiction to the efficient market hypothesis, it would be interesting to see if this anomaly occurs in New Zealand. Evidence that confirms the existence or non-existence of this anomaly, therefore, would contribute to the literature and could be of interest to New Zealand investors and regulators.

Third, Pincus et al. (2007) report evidence that the occurrence of accruals mispricing does not imply cash flows mispricing occurs, or vice versa. The lack of cross-country evidence on the coexistence of the accruals and the cash flows anomalies casts doubt on the coexistence hypothesis of the two anomalies. As the characteristics of the accruals-based portfolios are different from those of cash flows-based portfolios (Houge and Loughran, 2000), this evidence suggests that the two anomalies may not be due to the exact same reasons even if accruals and cash flows are negatively correlated. Therefore evidence on or against the coexistence of these anomalies would indicate whether both of these anomalies arise from the same cause, or each from a different cause.

This chapter employs data from 1987 to 2003 and applies a data-selection procedure similar to that suggested by Kraft et al. (2004). Contrary to prior studies, accruals are found to be not associated, on average, with future returns. The abnormal return based on the accrual strategy is 2.56% but not statistically significant. The positive abnormal return from the accrual strategy arises mostly from the negative returns of high accrual firms. The abnormal return of high accrual firms is -4.13% and statistically significant, while the abnormal return of low accrual firms is -1.57% but statistically insignificant. The significantly negative abnormal return of the high accrual stocks indicates that investors overvalue accruals in high earnings firms. Further, a similar abnormal return pattern is observed when firms are sorted based on two discretionary accrual models. As discretionary accruals are positively correlated with firms' earnings, the negative stock returns of high accruals firms are consistent with the earnings management hypothesis.

Sorting firms based on the magnitude of cash flows, however, presents a different picture. Cash flows are positively and significantly related to future returns. The average abnormal return of high (low) cash flow firms is significantly positive (negative). A hedge strategy, simultaneously taking a long position in the high cash flow portfolio and a short position in the low cash flow portfolio, generates a significantly positive abnormal return of 16%. It is further observed that the characteristics of cash flow-sorted portfolios are different from those based on accruals. Both extremes, (high and low), of accrual portfolios consist of small firms while only the low cash flow firms consist of small firms.

The rest of this chapter is organised as follows. Section 3.2 formulates the hypotheses to be tested, describes the sample selection process and the research method. The results are reported in section 3.3. Section 3.4 concludes the chapter.

3.2. Research Design

3.2.1. Hypothesis

Prior studies on the accrual anomaly report that market participants do not take into account the difference between the persistence of accruals and the persistence of cash flows in current earnings when forecasting future earnings (Sloan, 1996; Bradshaw et al., 2001). Instead, they focus only on current earnings and are "surprised" when future earnings performance is lower (higher) than expected. Sloan (1996) and Bradshaw et al. (2001) examine the relation between future earnings and the components of current earnings. They find that both the coefficient of accruals and the coefficient of cash flows are statistically significant and lie between 0 and 1 which mean that the two components contribute to the mean reversion of earnings. The coefficient of accruals, however, is smaller than that of cash flows indicating that the mean reversion of accruals is faster than for cash flows.

Current earnings performance, when accompanied by high accruals, therefore sees a quicker mean reversion than when accompanied by high cash flows. As a result, firms with high earnings attributed to high accruals (cash flows), *ceteris paribus*, will end up with lower (higher) future earnings. The accrual anomaly arises because investors do not price the different persistence of accruals and cash flows. Therefore, to examine the presence of the accrual anomaly, the first hypothesis is:

> H_1: The performance of current earnings that is mainly attributed to accruals is less persistent than when it is mainly attributed to the cash flows component of earnings.

The accrual anomaly arises because the market incorrectly prices accruals and cash flows as if they have the same persistence on future earnings. As accruals are less persistent than cash flows, the market seems to overprice (underprice) accruals (cash flows). Therefore the second hypothesis is:

> $H_{2(i)}$: The market overprices the accruals component of current earnings.

$H_{2(ii)}$: The market underprices the cash flows component of current earnings.

When future earnings are unexpectedly lower (higher) the market reacts negatively (positively) to the earnings announcement. The higher the accruals component in current earnings, the bigger the earnings surprise and the more negative is the market's reaction to the earnings surprise.

Sloan (1996) suggests that, because accruals and cash flows are negatively correlated, the accrual strategy can also be expressed in terms of the magnitude of cash flow. Houge and Loughran (2000) and Collins and Hribar (2000) find that the magnitude of cash flows (accruals) are positively (negatively) correlated with future stock returns. The predictive association between accruals (and cash flows) and future stock return then creates an arbitrage investment opportunity and leads to the third and fourth hypotheses:

> H_3: A trading strategy that takes a long position in the portfolio of low accruals firms and a short position in the portfolio of high accruals firms generates a positive abnormal return.

> H_4: A trading strategy that takes a long position in the portfolio of high cash flows firms and a short position in the portfolio of low cash flows firms generates a positive abnormal return.

Pincus et al. (2007) find that the occurrence of the accrual anomaly in a country does not always imply that the cash flow anomaly coexists, or vice versa. They report that the accrual anomaly is present in the U.S., U.K., Canada and Australia, but they find no evidence of the presence of the cash flow anomaly in these countries. On the other hand, they do not find the accrual anomaly in other countries in their sample but instead find the presence of the cash flow anomaly. This evidence shows that the cash flow anomaly is more pervasive across different countries. Their results also indicate that the two anomalies may not coexist. Thus the fifth hypothesis is:

H_5**:** The accrual anomaly coexists with the cash flows anomaly.

3.2.2. Methodology

Austin and Bradbury (1995) and Hribar and Collins (2002) report that computing accruals directly from statements of cash flows is a more precise measure of accruals and avoids measurement errors in estimating accruals using the balance sheet approach. This approach has been adopted extensively in the literature[2]. Accordingly, the cash flow approach is employed to measure accruals. Accruals are calculated as the difference between earnings and operating cash flows. Operating cash flows data are obtained from the statements of cash flows. Earnings are measured as operating income after depreciation but before interest expense, taxes and special items. All the three variables (earnings, cash flows and accruals) are standardised by the average of the beginning and end of the fiscal year book value of total assets.

Company statements of cash flows prior to 1991 are not available from Datex[3]. Therefore, this study applies a balance sheet approach for the period from 1987 to 1991 (as employed by Sloan, 1996; Houge and Loughran, 2000; and Desai et al., 2004) in computing total accruals[4]:

$$Accruals = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD - \Delta TP) - Dep \qquad (3.1)$$

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[2] See for example, Subramanyam (1996), Teoh et al. (1998a and 1998b), Collins and Hribar (2000), Klein (2002), Desai et al. (2004), Chan et al. (2006), Pincus et al. (2006) and Coulton, Taylor and Taylor (2005).

[3] Although Statement of Standard Accounting Practice (SSAP) 10 explicitly requires firms to report cash flows statements, due to poor legal backing, lots of companies did not comply with this accounting standard (Bradbury and Van Zijl, 2005). This problem was resolved with the introduction of the Financial Reporting Act 1993 that requires firms to include a cash flow statement in their financial reports.

[4] The results are similar when data prior to 1991 are deleted and the analysis is done based only on the accruals estimated from the cash flow approach. The results are not reported but available from the author.

ΔCA is the change in current assets. ΔCash is the change in cash or cash equivalent. ΔCL is the change in current liabilities. ΔSTD is the change in debt included in current liabilities. ΔTP is the change in tax payables, and Dep is the depreciation and amortization expense.

Following Sloan (1996) this chapter uses two models in estimating the persistence of current earnings and their components on future earnings.

$$Earnings_{i,t+1} = \alpha_1 + \alpha_2 Earnings_{it} + \varepsilon_{i,t+1} \qquad (3.2)$$

$$Earnings_{i,t+1} = \beta_0 + \beta_1 Cashflows_{it} + \beta_2 Accruals_{it} + \varepsilon_{i,t+1} \qquad (3.3)$$

Model (3.2) estimates the average persistence of current earnings on future earnings. The accrual anomaly arises from the different persistence of accruals and cash flows components of earnings. Model (3.3) breaks current earnings into accruals and cash flows components of earnings. This model does not restrict the accrual and the cash flow components of current earnings to be equal to examine the different persistence of accruals and cash flows components of current earnings. The smaller the component of accruals or cash flows compared to the other, the faster it is to revert to its mean, indicating lower persistence of the component.

To test the market's pricing on accruals and cash flows, this study employs the Mishkin (1983) test and the hedge portfolio test. These tests have been frequently used in studies on the accrual anomaly (Sloan, 1996, Collins and Hribar, 2000, Xie, 2001 and Pincus et al., 2007) to examine whether the market efficiently prices the accruals and the cash flows components of earnings.

3.2.2.1. Mishkin test

Mishkin (1983) provides a framework to test for the existence of the accrual anomaly. As in prior studies, the following regressions are jointly estimated:

$$Earnings_{i,t+1} = \alpha_1 + \beta_1 Earnings_{it} + \varepsilon_{i,t+1} \tag{3.4a}$$

$$AR_{i,t+1} = \gamma_1(Earnings_{i,t+1} - \alpha_1 - \beta_1^* Earnings_{it}) + \upsilon_{i,t+1} \tag{3.4b}$$

and

$$Earnings_{i,t+1} = \beta_0 + \beta_1 Cashflows_{it} + \beta_2 Accruals_{it} + \varepsilon_{i,t+1} \tag{3.4c}$$

$$AR_{i,t+1} = \gamma_1(Earnings_{i,t+1} - \beta_0 - \beta_1^* Cashflows_{it} - \beta_2^* Accruals_{it}) + \upsilon_{i,t+1} \tag{3.4d}$$

AR is a stock's abnormal return defined as the difference between the stock return and the size matched portfolio return. γ_1 in equation (3.4a) and (3.4b) represents the earnings response coefficient. The idea is to figure out if investors assign a higher valuation coefficient to accruals than the one expected in the association between accruals and future earnings. If markets are efficient, the two coefficients are expected to be not statistically different from each other. Accruals (cash flows) mispricing is observed if the market assigns a significantly larger or smaller coefficient than implied in the association between accruals (cash flows) and future earnings. For example, the market underprices current earnings if β_1 in equation (3.4a) is larger than β_1^* in equation (3.4b).

The Mishkin (1983) test is carried out first by estimating the two regressions jointly using an iterative weighted nonlinear least squares method to obtain the coefficient estimates. Then the joint regressions are re-estimated by imposing the constraints $\beta_j = \beta_j^*$, j = 1,2. To test this restriction, a likelihood statistic ratio, which is asymptotically $\chi^2(q)$ distributed, is applied:

$$2*N*Ln\left(\frac{SSR^c}{SSR^u}\right) \tag{3.5}$$

N = number of observation

q = number of restrictions

SSR^c = sum of squared residuals of the constrained regression

SSR^u = sum of squared residuals of the unconstrained regression

3.2.2.2. Hedge portfolio test

To conduct a hedge portfolio test, stocks are grouped into five categories based on the magnitude of accruals and cash flows. Stock returns are computed as the buy and hold returns that are measured beginning from four months after the end of the firms' fiscal years[5]. Prior studies find that although more than one year ahead abnormal stock returns are positive, these returns are not significantly different from zero. Due to sample size constraints, this study limits future stock return horizons to a one year ahead stock returns. These portfolios are rebalanced every year. To generate the benchmark portfolio returns, five equally weighted portfolios are constructed based on the market value of the firms. The buy and hold returns of these portfolios are calculated within each group. Following similar studies on the accrual anomaly, the abnormal stock return is defined as the difference between the stock return and the size matched portfolio return:

$$AR_{it} = R_{it} - R_{pt} \tag{3.6}$$

AR_{it} is the size adjusted returns of stock i, R_{it} is the raw return of the individual stock and R_{pt} is the size matched portfolio return.

3.2.3. Data

This study is conducted using all non financial firms listed on the New Zealand Stock Exchange with available data in the Datastream and the Datex financial company report files. The sample period is from 1987 to 2003. Firm-year observations that have insufficient data for the calculation of accruals as defined above as well as firms that change their fiscal year ends are excluded from the sample. This process results in a sample of 1,202 firm-year observations with the required financial statement and share price data. In order to avoid any data errors and the effects of outliers, this study follows Kraft et al. (2004), eliminating stocks

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[5] It is expected that firm financial reports are publicly available four months after the end of the firm's fiscal years (Alford, Jones & Zmijewski, 1994; Sloan, 1996).

with annual buy and hold returns of more than ±100% from the sample. The final sample is 189 firms with 1,127 firm-year observations.

3.3. Empirical results

3.3.1. The accrual and the cash flow anomalies

As reported in Panel A of Table 3.1, the coefficient of current earnings in model (3.2) is between 0 and 1 indicating that current earnings is mean reverting[6]. Pincus et al. (2007) report the cross-country range of mean reversion of earnings is between 0.6 and 0.8. The mean reversion of NZ firms' earnings is within this range ($\alpha_2 = 0.71$).

Table 3.1
The Persistence of Accruals and Cash Components of Earnings

Panel A. $Earnings_{i,t+1} = \alpha_t + \alpha_2 Earnings_{it} + \varepsilon_{i,t+1}$

α_1	α_2	Adj. R^2
0.00	0.71	30.76%
(0.49)	(20.62)***	

Panel B. $Earnings_{i,t+1} = \beta_0 + \beta_1 Cashflows_{it} + \beta_2 Accruals_{it} + \varepsilon_{i,t+1}$

α_1	β_1	β_2	Adj. R^2
-0.01	0.95	0.54	34.25%
(-1.78)	(20.26)***	(13.23)***	

F test: $\beta_1 = \beta_2$	47.71
p-value	0.000***

Note: The dependent variable is one-year ahead earnings, the explanatory variables are cash flows and accruals. Earnings are measured as operating income after depreciation but before interest expense, taxes and special items. Cash Flows are operating cash flows. Accruals are the difference between earnings and cash flows. All variables are deflated by average total assets. Sample period is from 1987 to 2003. Unavailability of one-year ahead future earnings data for some firms reduce the sample size to 956 firm year observations. Two-tail t statistics are in parentheses.
***=significant at 1%

The results in panel B of Table 3.1 show that both accruals and cash flows components of current earnings significantly explain future earnings. The

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[6] Beaver (1970) and Freeman, Ohlson and Penman (1982) report that accounting earnings are mean reverting, implying that α_2 is less than unity.

coefficient of accruals (0.54) is however smaller than the coefficient of cash flows (0.94) and less than unity which means that accruals are mean reverting faster than cash flows. An F test confirms that the coefficient of accruals is smaller than the coefficient of cash flows. This evidence supports H_1 that accruals are less persistent than cash flows in shaping future earnings.

Table 3. 2
Results from the Iterative Weighted Non-Linear Least Squares
Regressions of the Stock Price Reaction to Information in Earnings
and the Components of Current Earnings

Panel A. Test on the Pricing of Current Earnings

$$Earnings_{i,t+1} = \alpha_t + \beta_1 Earnings_{it} + \varepsilon_{i,t+1}$$

$$AR_{i,t+1} = \gamma_1(Earnings_{i,t+1} - \alpha_1 - \beta_1^* Earnings_{it}) + \upsilon_{i,t+1}$$

	β_1	β_1^*
	0.71	0.21

L: $\beta_1 = \beta_1^*$	19.38
	(0.000)***

Panel B. Test on the Pricing of the Components of Current Earnings

$$Earnings_{i,t+1} = \beta_0 + \beta_1 Cashflows_{it} + \beta_2 Accruals_{it} + \varepsilon_{i,t+1}$$

$$AR_{i,t+1} = \gamma_1(Earnings_{i,t+1} - \beta_0 - \beta_1^* Cashflows_{it} - \beta_2^* Accruals_{it}) + \upsilon_{i,t+1}$$

	β_1	β_1^*	β_2	β_2^*
	0.94	0.14	0.54	0.30

L: $\beta_1 = \beta_1^*$	27.30
	(0.000)***

L: $\beta_2 = \beta_2^*$	2.75
	(0.0973)*

Note: Earnings are measured as operating income after depreciation but before interest expense, taxes and special items. Cash Flows are operating cash flows. Accruals are the difference between earnings and cash flows. Abnormal return is computed as the stock's buy and hold annual raw return minus the size-matched buy and hold annual portfolio return. Sample period is from 1987 to 2003. Unavailability of one-year ahead future earnings data for some firms reduce the sample size to 956 firm year observations. L = 2*n*ln(SSR^c/SSR^u). p-values are in parentheses.
***=significant at 1%
*=significant at 10%

The results from the Mishkin test reported in Panel A of Table 3.2 indicate that on average the NZ market underprices current earnings ($\beta_1 > \beta^*_1$). This underpricing of current earnings is attributed to the underpricing of both accruals and cash flows components of earnings (see Panel B). The underpricing of accruals is inconsistent with $H_{2(i)}$ but the underpricing of cash flows is as predicted by $H_{2(ii)}$. The underpricing of both accruals and cash flows is not unique to New Zealand, but as reported by Pincus et al. (2007), it does occur in other countries as well.

Table 3.3 provides statistics of five portfolios of stocks sorted by the magnitude of accruals. Earnings are positively correlated with total accruals but cash flows are negatively correlated with total accruals. The average annual correlation between accruals and cash flows, however, is only -0.22. The magnitude of this correlation is much lower than that reported in prior studies which is typically more than -0.5.

Table 3.3
Mean Values of Selected Characteristics for Five Portfolios Formed
Annually Based on the Magnitude of Accruals

Portfolio	1	2	3	4	5
Earnings	-0.10	0.06	0.08	0.11	0.14
Cash Flows	0.12	0.10	0.08	0.07	-0.02
Accrual	-0.22	-0.04	0.01	0.04	0.17
Size	85.16	206.12	183.38	183.32	112.99
B/M	1.14	1.28	1.45	1.13	0.99
Raw Return	-2.15%	5.21%	2.82%	3.25%	4.90%
Abnormal Return	-1.57%	3.77%	0.85%	1.03%	-4.13%
	(-0.63)	(1.71)*	(0.44)	(0.53)	(-1.90)*
Hedge Abnormal Return	2.56%				
	(0.55)				
N	227	228	226	227	219

Note: Earnings are measured as operating income after depreciation but before interest expense, taxes and special items. Cash Flows are operating cash flows. Accruals are the difference between earnings and cash flows. All variables are deflated by average total assets. Size is market value of firms' equity and B/M is the book to market ratio of firms' equity. Book equity is total asset minus total liabilities. Raw return is defined as the buy and hold return calculated from 4 months after the end of the firm fiscal year. Abnormal return (AR) is the size-adjusted return measured as the difference between the stock return minus the size-matched portfolio return. The hedge portfolio consists of a long position in portfolio one (the lowest total accruals) and a short position in portfolio five (the highest total accruals). Sample consists of 1,127 firm years observations from 1987 to 2003. Two-tail t statistics are in parentheses.
*=significant at 10%

The inverted "U" shape pattern in the market value of the firms sorted by accruals shows that the two extreme portfolios consist of small stocks. A hedge portfolio strategy taking a long position in the lowest accrual portfolio and a short position in the highest portfolio should therefore eliminate the size-risk factor of the strategy.

The average abnormal return from the hedge strategy during the sample period is 2.56% per year but insignificant. This is inconsistent with H_3. The positive hedge return is derived mainly from the negative return of the high accrual portfolio. The abnormal return of the high accrual portfolio is -4.13% and statistically significant, while the abnormal return of the low portfolio is -1.57% but statistically insignificant[7]. This evidence confirms the results in prior studies that the positive abnormal return of the accrual strategy is mainly due to the poor performance of firms reporting high accruals (Houge and Loughran, 2000; Chan et al., 2006) and that the abnormal returns of both extreme accrual portfolios after excluding the outliers are negative (Kraft et al., 2004).
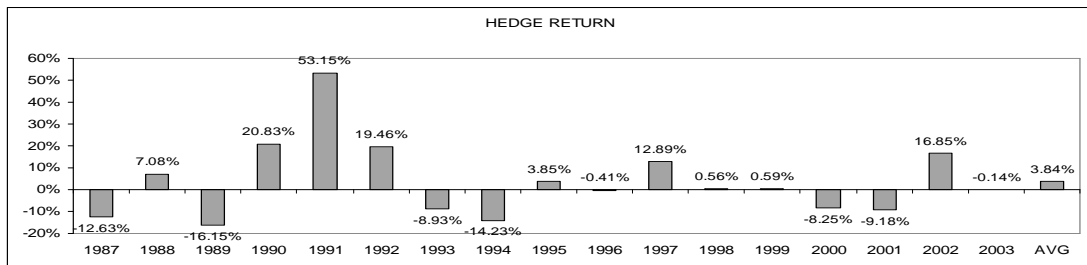
Figure 3.1
Abnormal Returns of the Trading Strategy Based on Accruals by Calendar Year
Abnormal returns are firms' size adjusted returns. The strategy's abnormal returns are based on going long on the lowest accrual portfolio and short on the highest accrual portfolio. Accruals are the difference between earnings and cash flows. All variables are deflated by average total assets. Sample consists of 1,127 firm years observations from 1987 to 2003.

Figure 3.1 shows that the accrual strategy generates positive abnormal returns in only 9 (53%) of 17 years during the sample period. The highest positive return is 53.15% in 1991 and the lowest abnormal return is -16.15% in 1989. This evidence

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[7] One possible explanation of why low accrual firms experience negative (but not statistically different from zero) abnormal return is that these firms do not engage in earnings decreasing management. Therefore, their accruals are not correlated with stock returns. This issue is explored in chapter 4.

shows that the extensive use of accruals in an accounting system and a country's legal tradition may not always be indicative of the possibility of occurrence of the accrual anomaly in a particular country as suggested by Pincus et al. (2007).

The (weakly) significant abnormal return of the high accrual portfolio indicates that investors overvalue high accrual stocks. When the Mishkin test is applied on high accrual stocks, the market is observed to significantly overprice accruals in the high accrual portfolio[8]. Table 3.3 shows that firms with high accruals are also firms with high earnings. As the investors seem to overvalue high accrual stocks, the poor performance of the high accrual portfolio provides a preliminary indication that when high earnings are accompanied by high accruals, managers of these firms engage in income increasing accruals.

To explore the possibility of income increasing management, the discretionary component of accruals needs to be estimated. This study employs two accrual models to measure discretionary accruals. The first measure is obtained from the cross-sectional modified Jones model (Dechow, Sloan and Sweeney, 1995):

$$TA_t = \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{\Delta REV_t - \Delta REC_t}{A_{t-1}}\right) + \alpha_3\left(\frac{PPE_t}{A_{t-1}}\right) + \phi_t \tag{3.7}$$

TA is accruals, A is total assets, ΔREV is the change in revenues, ΔREC is the change in account receivables and PPE is property plant and equipment. The nondiscretionary accruals (NDA) are the fitted values and the discretionary accruals (DA) are the residuals of the model. In this model, both sides of the equations are deflated by lagged total assets to mitigate heteroskedasticity problem (Kmenta, 1986, as cited in Jones, 1991).

The cross-sectional modified Jones model is chosen instead of the time series Jones model because the parameter estimates obtained from the cross sectional

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[8] Results are not reported. They are significant at the conventional level of 5%.

version of the modified Jones model are specified better and do not suffer from the survivorship bias as in the time series version (Subramanyam, 1996; and Bartov, Gul and Tsui, 2000). In addition, few New Zealand firms have a long series of historical data. Hence the cross sectional Jones model generates a larger sample and provides better power for the tests in this study. Although the modified Jones model may not perfect in partitioning discretionary and nondiscretionary accruals from total accruals, this model is widely used in the earnings management literature (Dechow et al., 1995; Guay et al., 1996).

The modified Jones model does not control for the effect of firm performance on accruals. Firms with high growth in performance are likely to report high accruals not attributed to earnings management. Consequently, the commonly used discretionary accrual models may be biased toward rejecting the null hypothesis of no earnings management. Kothari, Leone and Wasley (2005) report that the performance-matched discretionary accrual models and the Jones model with current Return on Assets (ROA_t) included as an additional regressor enhance the reliability of inferences from earnings management research. While Kothari et al. (2005) suggest that the performance-matched Jones or modified Jones models is a better measure of discretionary accruals than the Jones model with current Return on Assets (ROA_t) included as an additional regressor, the performance matched model is best applied to examine earnings management related to an event (e.g., an IPO or an SEO) where control firms are not expected to report the same degree of discretionary accruals. As this study does not examine a specific earnings management event but uses all firms available, employing the ROA-adjusted Jones model as the second measure of discretionary accruals is the best alternative to control the effect of firm performance in detecting earnings management. The performance controlled discretionary accruals are estimated from the following model:

$$TA_t = \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{\Delta REV_t}{A_{t-1}} \right) + \alpha_3 \left(\frac{PPE_t}{A_{t-1}} \right) + \alpha_4 ROA_t + \phi_t \tag{3.8}$$

The return on assets (ROA) is measured as earnings before interest and taxes divided by total assets (Bodie, Kane and Markus, 2002). The nondiscretionary accruals (NA) are the fitted values and the discretionary accruals (ABA) are the residuals of the model.

Table 3.4
Descriptive statistics of the discretionary accrual models

Panel A. The Modified Jones model

	1. Mean and t-Statistics for the Means of the Year-by-Year Regression Coefficients			
	Intercept	ΔREV-ΔREC	PPE	Adj. R^2
Mean	-274.4596	0.0720	0.0003	14.53%
t(Mn)	(-1.64)	(2.39)***	(0.01)	(2.75)***
	2. Means and Standards Deviation of the Regression Variables			
	Accruals	Intercept	ΔREV	ΔREC	PPE
Mean	-0.0125	0.0012	0.1238	0.0326	0.3521
SD	0.2481	0.0017	0.1743	0.0307	0.3872

Panel B. The ROA-adjusted Jones model

	1. Mean and t-Statistics for the Means of the Year-by-Year Regression Coefficients				
	Intercept	ΔREV	PPE	ROA	Adj. R^2
Mean	-104.6360	0.0299	-0.0563	0.4412	36.37%
t(Mn)	(-1.11)	(1.11)	(-2.13)**	(4.56)***	(5.78)***
	2. Means and Standards Deviation of the Regression Variables				
	Accruals	Intercept	ΔREV	PPE	ROA
Mean	-0.0125	0.0012	0.1238	0.3521	0.0600
SD	0.2481	0.0088	0.1743	0.3872	0.2157

Note: Accruals are defined as the difference between operating earnings and operating cash flows. Operating earnings are defined as the net income after depreciation. ΔREV is the change in total revenues. ΔREC is the change in total receivables. PPE is property, plant and equipment. ROA is net profit before interest and taxes. All variables are scaled by lagged total assets. Nondiscretionary (discretionary) accruals are the fitted values (residuals) of the modified Jones and the ROA-adjusted Jones models. Sample period is from 1987 to 2003. The final sample consists of 1,127 firm year observations. The means of the year-by-year regression coefficients are calculated as the average of the each-year regression coefficients. T-statistics for the means, t(Mn), is defined as the mean of the coefficient divided by its standard error (time series standard deviation of the coefficient divided by $(17)^{1/2}$. The table also shows the average (across years) of the means and standard deviation (SD) of the regression variables.
** siginificant at 5%
*** significant at 1%.

Table 3.4 presents the descriptive statistics of the coefficients and the variables used in the modified Jones and the ROA-adjusted Jones models. The means and the statistical significance of the coefficients are calculated following Fama-MacBeth (1973). The means of the regression coefficients are calculated as the

average (across years) of the regression coefficients and the t-statistics are defined as the mean divided by its standard error.

As reported in Panel A of Table 3.4, the mean coefficient of the change in revenues minus the change in receivables is 0.07 and statistically significant. The average adjusted R^2 of the modified Jones model is 15%. Panel B shows average coefficients from the ROA-adjusted Jones model. The coefficient of the change in revenues is positive but not significant. Consistent with prior studies in earnings management, the coefficient of PPE is negative and significant. The positive and significant coefficient of ROA is consistent with the hypothesis that ROA captures the performance effect on accruals. The performance of the ROA-adjusted Jones model, in terms of the adjusted R^2, is better than that of the modified Jones model. The adjusted R^2 of the ROA-adjusted Jones model is 36% and strongly significant.

Table 3.5
Portfolio Abnormal Returns Sorted Based on the Discretionary and Nondiscretionary Components of Accruals

Portfolio	1	2	3	4	5	Hedge
NDA	-2.69%	2.29%	-0.15%	-1.75%	2.22%	-4.91%
	(-1.06)	(1.14)	(-0.07)	(-0.82)	(1.09)	(-1.07)
NA	-7.29%	1.43%	4.75%	0.25%	0.64%	-7.93%
	(-2.98)***	(0.68)	(2.12)**	(0.14)	(0.29)	(-1.70)*
DA	0.91%	4.36%	-0.39%	-1.00%	-3.85%	4.76%
	(0.37)	(2.01)**	(-0.19)	(-0.54)	(-1.73)*	(1.01)
ABA	2.86%	1.80%	1.83%	-1.22%	-5.22%	8.08%
	(1.14)	(0.89)	(0.87)	(-0.58)	(-2.36)***	(1.72)*

Note: Abnormal return is the size-adjusted return measured as the difference between the buy and hold stock return calculated from 4 months after the end of the firm fiscal year minus the size-matched portfolio return. The hedge portfolio consists of a long position in portfolio one (the lowest component of accruals) and a short position in portfolio five (the highest component of accruals). NDA (DA) is the fitted (residual) value of the modified Jones model. NA (ABA) is the fitted (residual) value of the Jones model with current ROA as an additional regressor. Sample consists of 1,127 firm years observations from 1987 to 2003. Two-tail t statistics are in parentheses.
*=significant at 10%
**=significant at 5%
***=significant at 1%

Next, portfolios are sorted based on the magnitude of nondiscretionary and discretionary accruals. Nondiscretionary accruals are accruals that arise from normal business activity and discretionary accruals are accruals that arise from managers' discretion. Table 3.5 reports results of portfolio abnormal returns sorted

based on the nondiscretionary and the discretionary components of accruals. For portfolios sorted on the nondiscretionary component of accruals (NDA and NA), the patterns of abnormal returns across the quantile portfolios are inconsistent with the accrual anomaly. The abnormal returns of portfolio one (five) are both negative (positive). For portfolios sorted on the discretionary component of accruals (DA and ABA), the patterns of the abnormal returns are consistent with the accrual anomaly. The abnormal returns of portfolio one are both positive. On the other hand, the abnormal returns of portfolio five are significantly negative. The positive hedge abnormal return, however, is not significant for the modified Jones model and is slightly significant for the performance-adjusted Jones model. The significantly negative abnormal return of the high discretionary accruals firms therefore supports the hypothesis that managers of high accrual firms engage in earnings management.

As discussed earlier in the Introduction section, the Companies Act 1993 and the Financial Reporting Act 1993 (FRA93) were introduced to provide a legal backing to ensure that financial reports are made in compliance with the accounting standards. Based on visual inspection of Figure 3.1, it appears that the accrual anomaly is hardly visible after 1992. To formally test the effects of these regulations on the accrual anomaly, the sample is separated into two sample periods; the pre-acts period which is from 1987 to 1992 and the post-acts period from 1993 to 2003.

Table 3.6 reports results of the hedge abnormal return of portfolios sorted on the accruals and the discretionary component of accruals during the pre-acts period from 1987 to 1992 and the post-acts period from 1993 to 2003. For the period prior to the introduction of the Companies and the Financial Reporting Acts, the hedge abnormal returns of portfolios sorted on both measures of discretionary accruals are positive at around 12% and statistically significant. However, the abnormal return of the hedge strategy for the period after the Acts were introduced is not only smaller in magnitude but also statistically insignificant for both measures of discretionary accruals.

Prior to 1993, claims of poor compliance with the NZ accounting standards had been frequently reported (Bradbury and Van Zijl, 2005). The Financial Reporting Act provides a sufficient legal backing to the existing accounting standards but the Companies Act 1993 clearly states that the responsibility to comply with the standards is placed on the company directors. The absence of the accrual anomaly for the period after the introduction of these Acts suggests that the occurrence of this anomaly may also be related with corporate governance. For example, Klein (2002) finds that the magnitude of discretionary accruals is positively correlated with poor corporate governance. Examining the relation between the occurrence of the accrual anomaly and corporate governance is beyond the scope of this study and is left for future research.

Table 3.6
The Hedge Abnormal Return of Portfolios Sorted Based on Total Accruals and Discretionary Accruals

| Period | Hedge Abnormal Return | | | |
	Total Accruals	DA	ABA	N
87-03	2.56%	4.76%	8.08%	1,127
	(0.55)	(1.42)	(1.72)*	
87-92	10.34%	12.11%	12.58%	310
	(1.48)	(1.71)*	(1.77)*	
93-03	-0.38%	2.06%	6.41%	817
	(0.07)	(0.39)	(1.22)	

Note: Portfolios of stocks are sorted based on total accruals and discretionary accruals. Total accruals are the difference between earnings and cash flows. Earnings are measured as operating income after depreciation but before interest expense, taxes and special items. Cash Flows are operating cash flows. All variables are deflated by lagged total assets. Abnormal return is the size-adjusted return measured as the difference between the buy and hold stock return calculated from 4 months after the end of the firm fiscal year minus the size-matched portfolio return. The hedge portfolio consists of a long position in the lowest total accrual or discretionary accrual portfolio and a short position in the highest total accrual or discretionary accrual portfolio. DA is the residual value of the modified Jones model. ABA is the residual value of the Jones model with current ROA as an additional regressor. Sample consists of 1,127 firm years observations from 1987 to 2003. Two-tail t statistics are in parentheses. *=significant at 10%

Addressing the cash flow anomaly, Table 3.7 presents summary statistics of firms sorted by the magnitude of their cash flows. Earnings are positively (negatively) correlated with cash flows (accruals). Firms in the low (high) cash flow portfolio exhibit the lowest (highest) performance in future returns. Consistent with Houge

and Loughran (2002), the results in Table 3.7 show that the profile of portfolios based on cash flows is different from that based on accruals. The low cash flow portfolio consists of small stocks while the high cash flow portfolio consists of big stocks. The average abnormal return in the low (high) cash flow portfolio is negative (positive) at -9% (6%) and statistically significant. The average return of the hedge strategy is around 16% and statistically significant. The average abnormal return is generally increasing according to the order of the quintile portfolios.

Table 3.7
Mean Values of Selected Characteristics for Five Portfolios Formed
Annually Based on the Magnitude of Cash Flows

Portfolio	1	2	3	4	5
Earnings	-0.12	0.05	0.08	0.11	0.17
CF	-0.15	0.03	0.08	0.12	0.24
Accrual	0.03	0.02	0.01	-0.01	-0.07
Size	48.72	142.74	195.91	235.35	147.25
B/M	1.26	1.50	1.42	0.98	0.83
Raw Return	-11.62%	-1.84%	5.76%	3.18%	8.60%
Abnormal Return	-8.82%	-1.70%	3.01%	0.86%	6.35%
	(-3.77)***	(-0.71)	(1.60)	(0.45)	(2.99)***
Hedge Abnormal Return	15.84%				
	(3.55)***				
N	227	228	226	227	219

Note: Earnings are measured as operating income after depreciation but before interest expense, taxes and special items. Cash Flows are operating cash flows. Accruals are the difference between earnings and cash flows. All variables are deflated by average total assets. Size is market value of firms' equity and B/M is the book to market ratio of firms' equity. Book equity is total assets minus total liabilities. Raw return is defined as the buy and hold return calculated from 4 months after the end of the firm fiscal year. Abnormal return (AR) is the size-adjusted return measured as the difference between the stock return minus the size-matched portfolio return. The hedge portfolio consists of a long position in portfolio five and a short position in portfolio one. Sample consists of 1,127 firm years observations from 1987 to 2003. Two-tail t statistics are in parentheses
*** significant at 1%

The abnormal returns of the cash flow strategy are positive in 14 of 17 years during the sample period as depicted in Figure 3.2. The highest return is 44.38% in 2000

and the lowest return is -10.24% in 1987, which may be attributed to the stock market crash in October 1987 or to the technology (dot com) bubble.
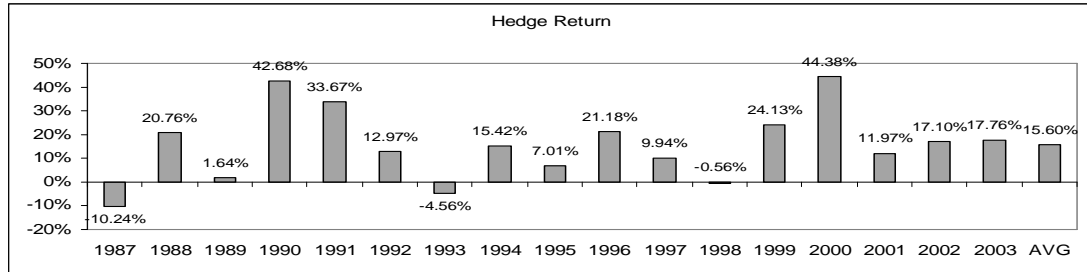
Figure 3.2: Abnormal Returns of the Trading Strategy Based on Cash Flows by Calendar Year

Note: Abnormal returns are firms' size adjusted returns. The strategy's abnormal returns are based on going long on the highest cash flow portfolio and short on the lowest cash flow portfolio. Cash flows are the operating cash flows obtained from the statements of cash flows. Sample consists of 1,127 firm years observations from 1987 to 2003.

3.3.2. Robustness tests

The positive abnormal returns of the cash flows portfolios in almost all of the calendar years across the sample period (Figure 3.2) suggest that investors underweigh the persistence of the cash flows component of current earnings. However, these positive abnormal returns may also reflect other unidentified risk factors.

Fama and French (1992 and 1993) report that beta, size and the book to market ratio explain most of the cross sectional variation in portfolio returns. They argue that their asset pricing model captures the cross sectional returns attributed to systematic, size and book to market ratio risk factors. The Fama and French three-factor model is:

$$r_{pt} - r_{ft} = \alpha_0 + \beta_1(r_{mt} - r_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \varepsilon_{pt} \tag{3.9}$$

r_{pt} is stock return of portfolio p in month t. r_{ft} is the risk free rate in month t. r_{mt} is the market return in month t. SMB is the size factor (small minus big) in month t. HML is book to market (high minus low) factor in month t. The intercept, α_0, measures

average monthly abnormal return of the portfolio in year t+1. To get the annualised abnormal return, α_0 is multiplied by 12.

The significant abnormal returns of the high and low cash flow portfolio may be attributed to these three risk factors. To test this hypothesis, equally weighted monthly time series cash flow portfolios are constructed beginning from July in year t and held until June in year t+1. The median size of NZX firms is used to split stocks into small and big portfolios. Next, firms are sorted based on their book to market ratios. The bottom (top) 30% firms are classified as the low (high) book to market portfolios. The 1-month bank bill rate is employed as the risk free rate[9]. The three factor model is run for each quintile of cash flow portfolios. As the market index, the NZX All, is available only from 1990, the sample period for this test is from 1990 to 2003.

Table 3.8
Monthly Time Series Regressions of Buy and Hold Returns of Equally Weighted Cash Flow Portfolios on Market Risk, Size and Book to Market Ratio

$$R_{pt} - r_{ft} = \alpha_0 + \beta_1(r_{mt} - r_{ft}) + \beta_2 SMB + \beta_3 HML + \varepsilon_{pt}$$

Portfolio	α_0	β_1	β_2	β_3	Adj. R^2%
Low	-0.01	0.98	0.31	0.13	43.31
	(-2.24)**	(9.84)***	(3.70)***	(1.24)	
2	0.00	0.79	-0.06	0.11	54.05
	(-0.26)	(13.98)***	(-1.28)	(1.97)**	
3	0.00	0.99	-0.16	0.14	62.26
	(1.59)	(16.59)***	(-3.21)***	(2.25)**	
4	0.00	0.87	-0.17	0.14	65.28
	(1.67)*	(17.64)***	(-4.23)***	(2.70)***	
High	0.01	0.89	-0.12	0.04	62.19
	(3.48)***	(16.66)***	(-2.64)***	(0.76)	
Hedge Return	0.02	-0.09	-0.42	-0.08	11.97
	(3.52)***	(-0.73)	(-4.38)***	(-0.71)	

Note: Stocks are ranked based on the magnitude of operating cash flows scaled by average total assets. Equally weighted cash flow portfolios are formed on July of year t until June of year t+1. The sample period is from 1990 to 2003. A Fama and French 3 factor model is conducted for each quintile portfolio. R_{pt} is stock return of portfolio p in month t. R_{ft} is 1-month bank bill rate. R_{mt} is the market (NZX All) return in month t. SMB is size factor (small minus big) in month t. HML is book to market (high minus low) factor in month t. Two-tail t statistics are in parentheses.
* significant at 10%
** significant at 5%
*** significant at 1%

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[9] The Official Cash Rate is a better and standard proxy for risk free rate in New Zealand. However, data for this variable prior to 1999 is not available.

Table 3.8 shows the results of the three-factor model for the cash flows-based portfolios. Similar to previous results, the abnormal returns for cash flow portfolios 2 to 4 are not statistically significant. Beta, size and the book to market ratio significantly explain the cross sectional variation of these portfolio returns. However, the abnormal returns of the two extreme cash flow portfolios are still robust after controlling for these three risk factors. The monthly average abnormal return of the low (high) cash flow portfolio is -0.99% (0.83%) or -11.85% (9.94%) annually, and is statistically significant. Buying high and selling low cash flow portfolio strategy during the sample period generates a significant average monthly abnormal return of 1.82% or 21.79% annually[10].

3.4. Summary

During the total sample period of 1987 to 2003, this study does not find a significant accrual anomaly in New Zealand. However, the results show that, from 1987 to 1992 – a period before the introduction of the Companies Act 1993 and the Financial Reporting Act 1993 – the presence of the accrual anomaly is statistically significant suggesting that these Acts have a significant impact on the occurrence of the anomaly.

In contrast, the presence of the cash flow anomaly during the sample period is significant. This evidence is consistent with a recent international study that the accrual anomaly does not always coexist with the cash flow anomaly (Pincus et al., 2007). The abnormal return of the low cash flow portfolio is negative and significant, while the abnormal return of the high cash flow portfolio is significantly positive. A corresponding cash-flow based trading strategy generates positive returns in 14 years (82%) of the 17 year period.

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[10] Carhart (1997) argues that adding a factor representing one-year momentum in stock returns factor into the Fama and French three factor model better explains the variation in stock returns. Therefore, the analysis was repeated using the Carhart four-factor model. The results are similar to the results using the three-factor model and are available upon request.

There are two reasons, however, that New Zealand investors may not be able to fully benefit from exploiting this anomaly. First, the prohibition of short selling in New Zealand prevents the use of the hedge strategy and as a result reduces the abnormal return of the strategy. Second, even though buying only high cash flows stocks still generates a positive and significant average abnormal return of 6.35%, firms in the sample have different fiscal periods. As a result, the hedge strategy requires portfolios to be constructed more than once in a given year. The information acquisition and the processing costs to implement this strategy would limit the benefit of the trading strategy.

Prior studies report that the accrual anomaly is consistent with earnings management hypothesis. The insignificant evidence on the existence of this anomaly in New Zealand, however, does not necessarily suggest that (at least some) New Zealand firms do not opportunistically manage earnings. The test results on the accrual anomaly show that future abnormal returns of high accruals and discretionary accruals portfolios are significantly negative suggesting that managers of these firms *deliberately* manage accruals. However, a straight conclusion cannot be drawn solely on these results as the poor future performance of high accrual firms can also be associated with other reasons, such as errors in the accrual estimation process and poor corporate decisions. This issue is addressed in the next chapter.

Chapter 4
Earnings Management

Subject to GAAP rules, managers have discretion to estimate accounting accruals. The discretion accorded by GAAP, however, provides room for managers to bias the estimates of accruals especially when there is a misalignment of interests between managers and firms' stakeholders. Misalignment of interests between managers and stakeholders could create an incentive for managers to manage earnings for their own benefit and harm their shareholders' wealth.

The literature reports several incentives for earnings management. The incentives for accruals increasing management are observed to be associated with debt covenants and equity issues, while the incentives for accruals decreasing management are typically associated with government regulations, equity buy backs and bonus plans.

Empirical results on the incentive to manage earnings related to equity issues and government regulations are found to be significant. On the other hand, evidence for the incentive for earnings management associated with debt covenants and bonus is mixed. Evidence related to share buy backs has only been recently documented in the literature. Tender offer repurchases are reported to provide a weak incentive to manage earnings (Vafeas et al., 2003), but open market repurchases provide a strong one (Gong et al., 2006).

This chapter examines the existence of earnings management associated with corporate events by New Zealand firms. As the literature shows that managers are likely to opportunistically increase accruals related to equity issues, the first part of this chapter examines the incentive for accruals increasing management prior to stock dividend issues.

Investigating the incentive for earnings management associated with government regulations requires examination of regulations that create an incentive for

managers to manage earnings such as the Price Freeze Regulations in the early 1970s which was examined by Navissi (1999). Such regulations, however, are not frequently observed. The other incentive found to be consistent with managers deliberately decreasing accruals is related to share repurchases. Therefore, to examine accruals decreasing management, the second part of this chapter uses share repurchases data in New Zealand.

4.1. Earnings Management and the Market Performance of Stock Dividend Issuing Firms: Evidence from New Zealand

4.1.1. Introduction

According to standard corporate finance textbooks, stock dividends have no effect on shareholders' wealth and are just a cosmetic accounting change, where the increase in the common stock account attributed to stock dividend issues is offset by the decrease in the retained earnings account[11]. Thus, assuming that the market is efficient, the stock price of dividend issuing firms should adjust proportionally to the increase in the outstanding shares. For example, a 2 for 1 stock dividend should reduce the share price from $3 per share to $1 per share. Therefore, the total shareholders' wealth is unaffected by the stock dividend. In practice, however, firms do opt for stock dividends[12].

The literature, however, documents substantial empirical evidence on earnings management around equity issues. For example, Teoh et al. (1998b) find that high accrual IPO firms have poor post issue stock price performance. Similar evidence is reported in the context of SEO. Teoh et al. (1998a) document that discretionary accruals of SEO firms are negatively correlated with the firms' poor long-run

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[11] See for example, Brealey, Myers, Partington and Robinson (2000) and Ross, Westerfield and Jaffe (2005).

[12] Interestingly enough, the stock market reaction to the announcement of this corporate event has generally been significantly positive (see Lakonishok and Lev, 1997 for the US; Masse, Hanrahan, & Kushner, 1997 for Canada; Liljeblom, 1989 for Sweden; Anderson, Cahan, & Rose, 2001 for New Zealand). The favourable short-term market reaction is justified either as a positive signal regarding future cash flows of firms or a change in their risk profile.

abnormal returns. Using a different accrual model, Rangan (1998) finds that earnings management around SEO predicts the post issue performance of both firms' earnings and abnormal stock returns. Louis (2004) finds strong evidence that firms issuing equity to finance their mergers and acquisitions engage in upwardly earnings management which explains the firms' post merger underperformance.

To the author's knowledge, there has been no study examining the hypothesis that stock dividend issuing firms engage in earnings management. Using a refined accrual model, this research contributes to the literature by providing evidence of earnings management associated with stock dividends.

During the sample period, stock dividend issuing firms are found to increase accruals substantially in the issue year followed by poor earnings and stock price performances in the post issue year. Consistent with the earnings management hypothesis, these poor earnings and stock price performances are negatively associated with discretionary accruals in the issue year.

The remainder of the first part of chapter four is structured as follows. Section 4.1.2 formulates the hypotheses to be tested. Section 4.1.3 describes the research method and the sample selection process. The results are reported in section 4.1.4. Section 4.1.5 concludes the results.

4.1.2. Hypothesis development

The tax treatment to cash and stock dividend is the same in New Zealand, thanks to the imputation tax system[13] implemented since 1988. Therefore, for tax purposes, shareholders should be indifferent to these payout methods. Firms, however, may not be indifferent to these options as they practically pay "nothing" to their shareholders if they issue stock dividends. Shareholders may be aware of this situation and therefore, the decision to pay stock dividends may not be a popular decision, unless investing in the firm's stocks is considered as a better choice than

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[13] They both may or may not carry imputation tax credits.

receiving cash dividends as the latter option would incur transaction costs to reinvest the cash in the firms. This situation might give an incentive for the firms' managers to manage earnings in order to temporarily influence the shareholders' assessment on the firms' stock price.

When managers of stock dividend issuing firms engage in earnings management, they could artificially inflate the accruals component of earnings in the event year by "borrowing" earnings from the future year. Artificially increased accruals, however, cannot continue for long and will eventually revert to their pre managed level. Therefore, the accruals of stock dividend issuing firms in the event year are predicted to be higher than those of the pre event year and should revert to their normal level in the following year. The first hypothesis is:

H_1: Stock dividend issuing firms report higher accruals in the event year than those in the pre event year.

Earnings management in the issue year causes future earnings to decrease because some parts of accruals that belong to future earnings are shifted to current earnings. Hence, if managers of stock dividend issuing firms manipulate earnings opportunistically, the changes in future earnings are expected to be attributed to the event year accruals. Therefore, the second hypothesis is:

H_2: The changes of future earnings of stock dividend issuing firms are negatively associated with accruals in the issue year.

Anderson et al. (2001) find that the New Zealand stock market's reaction to stock dividend announcements in New Zealand is significantly positive. However, prior studies report that investors are not fully aware of managers' opportunistic behaviour on accruals (Bradshaw, Richardson and Sloan, 2001; Barth and Hutton, 2004). If investors fail to recognize that earnings are managed upward, they will overprice the firms' stock price. When the effects of earnings management are reversed in the following year, the market would react negatively to the unexpectedly lower future earnings. As a result, the stock returns of stock dividend

issuing firms are expected to be negatively correlated with the accruals in the event year. Our third hypothesis is:

H₃: The stock performance of stock dividend issuing firms is negatively correlated with accruals in the issue year.

4.1.3. Methodology and Data

4.1.3.1. *Methodology*

4.1.3.1.1. The accrual models

The examined variables are defined similarly to those in chapter three. Total accruals are measured as the difference between operating earnings and operating cash flows. Computing accruals directly from statements of cash flows is a more precise measure of accruals and avoids measurement errors in estimating accruals using the balance sheet approach (Austin and Bradbury, 1995 and Hribar and Collins, 2002). Operating earnings are defined as operating income after depreciation but before interest expense, taxes and special items. All variables are deflated by total assets at the beginning of the period.

$TA_{it} = OE_{it} - OC_{it}$ (4.1.1)

where TA_{it} = total accruals in the event year.

OE_{it} = operating earnings in the event year.

OC_{it} = operating cash flows in the event year.

To examine the hypothesis that managers opportunistically manage accruals, this study employs the pooled cross sectional modified Jones model to estimate the discretionary part of accruals:

$$TA_{it} = \alpha_1 + \alpha_2 (\Delta REV - \Delta REC)_{it} + \alpha_3 PPE_{it} + \phi_{it}$$ (4.2.2)

TA is total accruals defined as the difference between operating earnings and cash flows from operations, ΔREV is the change in revenues, ΔREC is the change in account receivables and PPE is property, plant and equipment. All variables are

scaled by lagged total assets. Nondiscretionary accruals are the fitted values and discretionary accruals are defined as the residuals of the model.

As explained in chapter three, the cross sectional modified Jones model is widely used in the earnings management literature and is the preferred alternative among the models available (Dechow, Sloan and Sweeney, 1995; and Bartov et al., 2000). Moreover, few NZ firms have long historical data. Hence the pooled cross sectional modified Jones model generates a larger sample and increases the power of the tests in this study.

The parameter estimates of the pooled cross sectional modified Jones model are obtained by running regression (4.2.2) using data from all sample firms during the period of 1989 to 2003 matched on event year. Nondiscretionary and discretionary accruals are estimated as the fitted values and the residuals of regression (4.2.2) respectively.

The modified Jones model, however, does not control for the performance effect on accruals. Firms with high growth in performance are likely to report high accruals not attributed to earnings management. Kothari, Leone and Wasley (2005) find that the commonly used discretionary accrual models are too often biased toward rejecting the null hypothesis of no earnings management. Kothari et al. (2005) suggest adjusting the performance effect on discretionary accrual of the sample firms by the control firms' discretionary accrual. The authors report that the performance-matched discretionary accrual model enhances the reliability of inferences from earnings management research and is best applied to examine earnings management related to corporate events such as stock offerings where control firms are not expected to report the same degree of discretionary accruals. Therefore, in addition to the modified Jones model, this study also uses the performance-matched modified Jones model. The performance-matched discretionary accrual for the sample firms is defined as the sample firm's modified Jones model discretionary accrual in the event year minus the matched firms' modified Jones model discretionary accrual for the corresponding year.

4.1.3.1.2. Measurement of stock returns

One year ahead stock returns are computed as the one year buy and hold returns measured using monthly returns from four months after the end of the firms' fiscal years[14]. To calculate the firms' abnormal returns, five equally weighted portfolios are constructed based on the market value of all firms[15] at the beginning of the year. Each sample firm is assigned to each portfolio according to its market value at the beginning of the year. The buy and hold abnormal return for each firm is calculated as the difference between the firm's buy and hold return and the portfolio's buy and hold return. These portfolios are rebalanced every year.

$$AR_{it} = R_{it} - R_{pt} \qquad (4.1.3)$$

AR_{it} is the size adjusted returns of firm i, R_{it} is the raw return of the individual firm and R_{pt} is the size-matched portfolio return.

4.1.3.1.3. Measuring earnings management

To examine the hypothesis that the decline in future earnings of stock dividend issuing firms is associated with earnings management in the event year, this study employs a procedure similar to Rangan (1998). First, changes in firms' return on asset are regressed on discretionary accruals[16]:

$$\Delta ROA_{it+1} = \alpha_0 + \alpha_1 DA_{it} + \alpha_2 SGRO_{it} + V_{it+1} \qquad (4.1.4)$$

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[14] It is expected that firm financial reports are publicly available four months after the end of the firm's fiscal years (Alford et al., 1994; Sloan, 1996).

[15] The literature recommends sorting portfolios based on both market value and book to market ratio. However, doing so would significantly reduce the number of firms in each portfolio. Besides, the literature on accruals reports a number of studies using size-adjusted portfolio returns as a benchmark to measure firms' abnormal returns (see for example, Sloan, 1996; Xie, 2001; Bradshaw et al., 2001; Barth and Hutton, 2004).

[16] Rangan (1998) suggests to also include changes in capital expenditures as an additional explanatory variable to control for the change in ROA. Missing observations on this variable, however, would reduce the sample size to 29 firm year observations. Therefore, we decided to exclude this variable from the regression.

ΔROA_{it+1} is change in return on assets from year 0 to year 1, and DA_{it} is firm i's discretionary accrual in year 0. If managers borrow future earnings to increase current earnings, discretionary accruals should explain the decline in future earnings. Therefore, the coefficient of DA_{it} is expected to be negatively correlated with the change in ROA_{it+1}.

Issuing firms may experience high sales growth and may need sufficient funds to invest in positive NPV projects. However, these projects may start generating revenues from year 2 or 3 onwards. To avoid cash shortage, these firms may issue stock dividends to provide returns to shareholders while saving cash. Rangan (1998) argues that the profitable investment opportunity would attract competition hence lower future profitability. Thus, the change in earnings of issuing firms from year 0 to year 1 is expected to be negatively correlated with the change in sales from year -1 to year 0. Accordingly, the change in sales from year -1 to year 0, $SGRO_{it}$, is added into the regression as an additional variable for ΔROA_{it+1}.

Earnings management in the event year causes the shares of stock dividend issuing firms to be overpriced. When accruals reverse in the following year, the firms' stock price adjusts respectively to the lower than expected future earnings. As a result, the firms' stock return is expected to be negatively correlated with the event year discretionary accruals. Therefore, the following regression is estimated:

$$AR_{it+1} = \alpha_0 + \alpha_1 NDA_{it} + \alpha_2 DA_{it} + \alpha_3 MV_{it} + \alpha_4 \frac{B_{it}}{M_{it}} + \varepsilon_{it+1} \qquad (4.1.5)$$

AR_{it+1} is computed as the stock's buy and hold annual raw return minus the size-matched buy and hold annual portfolio return. NDA_{it} is nondiscretionary accruals and DA_{it} is discretionary accruals. DA_{it} is the coefficient of interest in this regression. However, NDA_{it} is also included in the regression to evaluate the relative information content for return between the two components of accruals. Market value of firms' equity, MV_{it}, and book to market ratio, B/M_{it}, are added as control variables on the abnormal returns.

However, it has been reported in the literature that earnings follow a random walk with a drift (Bernard and Thomas, 1990). Therefore, it is possible that instead of capturing the hypothesized earnings management effect, discretionary accruals capture a post earnings announcement drift effect. To mitigate this problem, Rangan (1998) suggests using the following regression:

$$AR_{it+1} = \gamma_0 + \gamma_1 UE_{it+1} + \gamma_2 DA_{it} + \gamma_3 MV_{it} + \gamma_4 \frac{B_{it}}{M_{it}} + \varepsilon_{it+1} \qquad (4.1.6)$$

where UE_{it+1} is the residuals from equation (4) and represents unexpected earnings for year t+1[17]. DA_{it} is information publicly available at the beginning of the abnormal return calculation period. Rangan argues that if the market is efficient[18] and if that earnings follow a random walk, then unexpected earnings in year 1 would be equal to earnings changes in that year. Therefore, the coefficient on UE should captures all the effect of the unexpected earnings on stock returns, and the coefficient on DA should be zero. However, if investors are not aware of the earnings management in the issue year, they overprice the issuing firms' stock prices in the issue year. When the post issue year earnings are lower than expected, the errors are corrected accordingly. Therefore, if issuing firms engage in earnings management, the coefficient of DA will be negatively correlated with the firm's abnormal stock return.

4.1.3.2. *Data*

This study is conducted using non financial firms listed on the New Zealand Stock Exchange from 1989 to 2003. The share price data, financial reports and the information on stock dividends are obtained from the Datastream database, the 2003 Datex company report files and the NZX Weekly Diary respectively. Initially, a sample of 64 firm year observations is obtained. Ten firm year observations are removed due to lack of share price data, leaving with 29 stock dividend issuing firms with 54 firm-year observations during the sample period. In addition to the

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[17] See Rangan (1998) for details.

[18] Rayhorn, Hassan, & Janson (2006) report that the New Zealand stock market appears to be efficient during the late 1980s to 1991.

test sample, a control sample is constructed by matching every firm in the sample with the closest return on assets (ROA_{it}) [19] of a cash dividend paying firm[20]. Return on assets is measured as earnings before interest and taxes divided by lagged total assets (Bodie et al., 2002).

4. 1.4. Empirical Results

4.1. 4.1. Earnings and stock performance of stock dividend issuing firms

Table 4.1.1 presents statistics of the characteristics of the test and the control firms from year -1 to year +1. The average accruals for stock dividend issuing firms increase by 200%[21] from 0.013 in the pre issue year to 0.039 in the issuing year. This is consistent with the first hypothesis. The mean (median) of nondiscretionary accruals, discretionary accruals and performance adjusted discretionary accruals in the issue year are 0.027 (0.010), 0.012 (0.009) and 0.010 (0.016) respectively (untabulated). The reversal effect of the increase in accruals in year 0 is reflected in the lower earnings in the post issue year. One possible explanation for these results is that because of the litigation risk associated with opportunistically increasing accruals, these firms would try to postpone the full reversal effects of the accruals in year t+1. In addition, earnings in the issue year are not statistically different from those of cash dividend paying firms suggesting that the sample firms increase accruals so that their reported earnings are comparable to those of control firms. The average (median) size adjusted abnormal return of the stock dividend issuing firms is -2.68% (-6.94%). Cash, however, drops 35% from 0.148 in year -1 to 0.096 in the event year before slightly increasing to 0.100 in the following year. These findings tend to be consistent with earnings management.

In contrast, accruals of the control firms decrease by half, from 0.050 to 0.026, and almost recover to the pre event level in the post issuing year. The average buy-

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[19] The method of selecting control firms based on ROA in earnings management studies has been widely employed in the literature (see for example, Barber and Lyon, 1996; Rangan, 1998; Teoh et al., 1998a, b; and Kothari et al., 2005).

[20] On average, the incentive to manage earnings is not as strong as that of stock dividend issuing firms. The pattern of accruals of cash dividend paying firms as reported in the result section is consistent with this conjecture.

[21] Significant at the 5% level based on a Wilcoxon test.

and-hold abnormal return is positive at 2.13%. Cashflows increase by more than 20% in the year when cash dividends are distributed and stay relatively the same in the following year. These results indicate cash dividend paying firms do not engaging in earnings management in New Zealand

Table 4.1.1
Mean (Median) Values of Selected Characteristics for the Sample and the Control Firms

	Test firms			Control firms		
	t-1	t=0	t+1	t-1	t=0	t+1
Accruals	0.013	0.039	0.013	0.050	0.026	0.037
	(0.002)	(0.019)	(0.026)	(0.021)	(0.022)	(0.030)
Cash flows	0.148	0.096	0.100	0.096	0.118	0.117
	(0.151)	(0.105)	(0.103)	(0.108)	(0.118)	(0.121)
Earnings	0.161	0.135	0.113	0.146	0.145	0.155
	(0.154)	(0.124)	(0.129)	(0.129)	(0.140)	(0.151)
AR			-2.68%			2.13%
			(-6.94%)			(2.61%)
MV		133.59			195.85	
		(73.61)			(99.45)	
B/M		0.67			0.83	
		(0.54)			(0.61)	

Note: Accruals are measured as operating earnings minus operating cash flows obtained from the statement of cash flows. Operating earnings are defined as earnings before interest expense and taxes. Abnormal return (AR) is calculated as the difference between the firm's one year buy-and-hold returns calculated beginning from four months after the end of the firm's fiscal year and the size-matched portfolio return. MV is market value of firms' equity and B/M is book to market ratio. Sample comprises of 54 firm year observations from 1989 to 2003.

Table 4.1.2 reports results from regressing the change in return on assets on discretionary accruals and the change in sales. Consistent with the second hypothesis, the coefficient of DA measured from the modified Jones is statistically significantly negative. A similar result is obtained after controlling for the performance effect on accruals. The coefficient of DA from the performance matched modified Jones models, although smaller in magnitude, is also statistically negative. The negative coefficient of DA suggests that the decline of earnings in the following year (as reported in Table 4.1.1) is associated with the reversal effect of discretionary accruals in the event year.

Table 4.1.2
Association between Earnings Changes and Discretionary Accruals

	Modified Jones Model	Performance Matched Model
Intercept	-0.013	-0.014
	(-1.09)	(-1.12)
DA	-0.253	-0.201
	(-2.53)**	(-2.56)**
SGRO	-0.031	-0.034
	(-0.92)	(-1.01)
# of obs.	54	54
Adj R^2	8.75%	8.97%

Note: Changes in earnings are calculated as the change in return on assets from year 0 to year 1. NDA (DA) is the fitted (residual) value of the modified Jones model. DA for the performance matched model is defined as the sample firm's discretionary accruals minus the control firm's discretionary accruals. SGRO is the change in sales from year -1 to year 0 scaled by total assets. Sample consists of 54 firm year observations from 1989 to 2003. Two-tail t statistics are in parentheses.

**=significant at 5%

Table 4.1.3 reports the results from regressing abnormal stock returns on the discretionary and nondiscretionary components of accruals. When stock dividend issuing firms deliberately manage earnings by increasing accruals in the issue year, earnings in the post issue year will decrease when accruals revert back to their means. If market participants are not aware of this earnings management but focus only on reported earnings, the lower than expected earnings in the post issue year will be reflected on the firm stock price. The results reported in Table 4.1.3 show that the coefficients of NDA are negative but not statistically significant which suggests that the negative future firm abnormal returns are not attributed to the nondiscretionary part of accruals.

The coefficients of DA for both the modified Jones and the performance matched accrual models, however, are both significantly negative. The negative coefficients of both measures of discretionary accruals suggest that discretionary accruals significantly explain the decline in the future abnormal stock returns. This result is consistent with the third hypothesis that managers do use their discretion over accruals opportunistically to manipulate earnings and ultimately the firm's stock price in the issue year. The stock mispricing in the issue year is corrected when the

following period's earnings are lower than anticipated due to the reversal effects of this artificially high discretionary part of accruals.

Table 4.1.3
Discretionary Accruals in the Event Year and Abnormal Stock Returns

	Modified Jones Model	Performance Matched Model
Intercept	0.127	0.149
	(0.95)	(1.11)
NDA	-1.471	-1.821
	(-1.51)	(-1.81)*
DA	-0.961	-0.835
	(-1.92)*	(-2.12)**
MV	0.000	0.000
	(-0.13)	(-0.53)
B/M	-0.145	-0.139
	(-1.07)	(-1.06)
# of obs.	54	54
Adj R^2	2.30%	3.80%

Note: Abnormal return (AR) is the size-adjusted return measured as the difference between the buy and hold stock return calculated from 4 months after the end of the firm fiscal year minus the size-matched portfolio return. NDA (DA) is the fitted (residual) value of the modified Jones model. DA for the performance matched model is defined as the sample firm's discretionary accruals minus the control firm's discretionary accruals. MV is market value of firms' equity and B/M is book to market ratio. Sample consists of 54 firm year observations from 1989 to 2003. Two-tail t statistics are in parentheses.

*=Significant at 10%

**=Significant at 5%

Table 4.1.4 reports the association between discretionary accruals and abnormal returns after controlling for the unexpected component of earnings. As expected, the coefficients of UE, the unexpected component of earnings in year t+1, are significantly and positively related to abnormal returns. If the issuing firms do not engage in earnings management, discretionary accruals should not be correlated with abnormal stock returns. The abnormal stock return should be explained only by the unexpected component of earnings in the year t+1. However, the results as reported in Table 4.1.4 show that the coefficients of discretionary accruals in both accrual models, after controlling for the unexpected earnings effect, are still negative and statistically significant. This evidence confirms the previous results reported earlier in Table 4.1.3 that there is earnings management in the issue year

as DA is significantly and negatively correlated with the poor abnormal stock returns[22].

Table 4.1.4
Discretionary Accruals in the Event Year and Abnormal Returns after Controlling for the Unexpected Component of Earnings

	Modified Jones Model	Performance Matched Model
Intercept	0.111	0.101
	(1.04)	(0.96)
DA	-0.968	-0.710
	(-2.15)**	(-2.07)**
UE	2.121	2.131
	(3.59)***	(3.58)***
MV	0.000	0.000
	(-0.14)	(-0.26)
B/M	-0.181	-0.165
	(-1.50)	(-1.41)
# of obs.	54	54
Adj R^2	19.03%	18.66%

Note: Abnormal return (AR) is the size-adjusted return measured as the difference between the buy and hold stock return calculated from 4 months after the end of the firm fiscal year minus the size-matched portfolio return. NDA (DA) is the fitted (residual) value of the modified Jones model. DA for the performance matched model is defined as the sample firm's discretionary accruals minus the control firm's discretionary accruals. UE is the residuals from a regression of changes in return on assets on the event year discretionary accruals. MV is market value of firms' equity and B/M is book to market ratio. Sample consists of 54 firm year observations from 1989 to 2003. Two-tail t statistics are in parentheses.

*=significant at 10%

**=significant at 5%

***=significant at 1%

4.1.4.2. Robustness test

The analyses in this study use the size adjusted return as a measure of the abnormal stock return to conserve sample size. As robustness check the market adjusted return as a measure of abnormal stock return is used in this section and the analyses on the relation between stock abnormal returns and discretionary accruals of stock dividend issuing firms are replicated.

Stock abnormal returns are calculated as the difference between stock returns and the NZX index returns. Each firm's stock returns are computed monthly starting

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[22] Similar results are observed when NDA is included in the regression. The results are available from the author upon request.

from four months after its fiscal year end and cumulated for twelve months. Data on the New Zealand market index, however, are available only from 1990 onwards reducing the sample size to 49 events. Four events were excluded because they have cumulative abnormal returns of more than -100%.

Table 4.1.5
Discretionary Accruals and Abnormal Stock Returns

Panel A.

	Modified Jones Model	Performance Matched Model
Intercept	0.005	0.072
	(0.03)	(0.48)
NDA	-2.377	-2.917
	(-1.87)*	(-2.39)**
DA	-0.803	-1.134
	(-1.38)	(-2.51)**
MV	0.000	0.000
	(0.24)	(-0.29)
B/M	0.034	0.007
	(0.21)	(0.05)
Adj. R^2	9.64%	18.20%

Panel B.

	Modified Jones Model	Performance Matched Model
Intercept	-0.066	-0.060
	(-0.54)	(-0.50)
DA	-1.059	-0.943
	(-1.96)*	(-2.19)**
UE	2.253	2.086
	(3.33)***	(3.06)***
MV	0.000	0.000
	(0.39)	(0.12)
B/M	0.054	0.059
	(0.38)	(0.44)
Adj. R^2	23.08%	24.21%

Note: Abnormal return is the market adjusted return measured as the difference between the monthly stock return and the monthly NZX All index return cumulated from four months after the end of the firm's fiscal year for twelve months. NDA (DA) is the fitted (residual) value of the modified Jones model. DA for the performance matched model is defined as the sample firm's discretionary accruals minus the control firm's discretionary accruals. UE is the residuals from a regression of changes in return on assets on the event year discretionary accruals. MV is market value of firms' equity and B/M is book to market ratio. Sample consists of 45 firm year observations from 1990 to 2003. Two-tail t statistics are in parentheses.
* significant at 10%
** significant at 5%
*** significant at 1%

The results in Table 4.1.5 show that the earlier inferences remain unaltered. The mean (median) of the sample's abnormal return (untabulated) is -3.20% (-9.61%). Panel A of Table 4.1.5 shows that the coefficients of discretionary accruals are still negatively and significantly (under the performance adjusted model) correlated with the firms' abnormal returns. The adjusted R^2 under the modified Jones and the performance adjusted models increases from 2.30% and 3.80% (in Table 3) to 9.64% and 18.20% respectively. Moreover, consistent with the previous results reported in Table 4.1.4, after controlling for the drift effect on earnings, discretionary accruals significantly explain the abnormal stock returns (see Panel B).

4.1.5. Summary

This study examines the earnings management hypothesis by the stock dividend issuing firms during the period of 1989 to 2003 in New Zealand. Total accruals of the issuing firms are found to increase substantially in the issue year before dropping to the pre issue level in the following year. Looking at the stock performance, the results show that the stock prices of stock dividend issuing firms perform poorly subsequent to the event. These findings are in contrast with the pattern of accruals and the positive stock price performance of similar firms paying cash dividends.

Consistent with the earnings management hypothesis, it is observed that discretionary accruals of stock dividend issuing firms in New Zealand are negatively and significantly correlated with the declines in both firms' future earnings and abnormal stock returns. The negative association between discretionary accruals and the abnormal returns persists even after controlling for the drift effect of earnings and the performance effect on discretionary accruals. These findings complement the existing literature on earnings management around stock issues by firms.

4.2. Earnings Management and the Market Performance of On- and Off-Market Repurchasing Firms: NZ Evidence

4.2.1. Introduction

In the last two decades share repurchases have grown in popularity and importance as a method of returning capital to shareholders. This form of capital delivery has become a contemporary alternative for the historically popular dividend distribution. In 1998 US corporations distributed more cash through share repurchases than through dividends (Grullon and Ikenberry, 2000).

One of the main reasons for firms launching share repurchase programs as reported in the literature is because they believe that their shares are undervalued. Managers, however, have incentives to manage earnings downward prior to or during the share repurchase programs by understating accruals. The artificially lower reported earnings make the firms' stocks unattractive to investors and thus cheaper for the firms to repurchase. As a result, the undervalued stock price prior to stock repurchases is also consistent with the earnings management hypothesis. Empirical evidence consistent with managers manipulating accruals prior to share repurchases, however, has only been recently documented (Vafeas et al., 2003; Gong et al., 2006).

New Zealand has a tax system which favours dividends to repurchases as a payout method. As a result, launching share repurchase programs in New Zealand may not be a popular decision. Nevertheless, several New Zealand firms are observed to repurchase their shares either from the stock market or directly from their shareholders. This phenomenon raises suspicion regarding the motivation behind the repurchases. Are New Zealand managers involved in earnings management prior to repurchases? This study attempts to address this question. The results of this study may contribute to the earnings management literature by providing evidence from a different market environment.

As expected, the number of share repurchase programs during the investigation period from 1995 to 2004 is found to be small compared to that of in the U.S. but also surprisingly much smaller than that of Australia. Furthermore, while New Zealand firms have been permitted to conduct share repurchase since mid 1994, share repurchases have only started to flourish from 1998.

The main motivation to launch on- and off-market share repurchases, as observed from the repurchase announcements, is found to be associated with returning surplus funds to shareholders. Excess cash to be redistributed to shareholders through repurchase programs may therefore, provide an incentive for managers to influence market's valuation of firms' stock price by understating earnings through accrual prior to launching the programs.

The empirical results, however, fail to support the earnings management hypothesis. Accruals and their components of on-market repurchasing firms are observed to be positive prior to and in the announcement year. Similarly, while the patterns of accruals and their components of off-market repurchases are consistent with earnings management, these variables are not significant enough to support the earnings management hypothesis.

This section proceeds as follows. Section 4.2.2 provides a literature review on share repurchases. Section 4.2.3 describes the legal aspects of share repurchases in New Zealand. Section 4.2.4 discusses the sample selection process and the methodology to be employed. Section 4.2.5 presents the results. Section 4.2.6 summarises the findings.

4.2.2. Literature Review

Stock repurchases take place when "*a public corporation buys its own shares by tender offer, on the open market, or in a negotiated buyback from a large block-holder*" (Weston, Chung and Siu, 1998, p. 491). While both dividends and share repurchases are media of distributing cash to shareholders, Weston et al. (1998) suggest that managers pay dividends out of long run sustainable earnings. A company with stable earnings would thus tend to pay out a higher dividend than an

otherwise similar growth firm. Correspondingly, because dividends represent an ongoing commitment and are used to distribute permanent cash flows, firms on the whole are very reluctant to make a dividend increase if they feel they may have to reverse it in the future. Repurchases thus ensure financial flexibility relative to dividends because they do not require the company to commit to future payout ratios.

There are essentially three types of share repurchase methods used in the market. The first type is fixed price tender offers that involve a firm offering a single price to all shareholders for a specific number of shares. This offer is typically valid for a limited time period and may be contingent on a minimum threshold of shares being tendered. Empirical evidence show that the premium paid in a tender offer is around 13 percent to 15 percent (Vermaelen, 1981; Grullon and Ikenberry, 2000).

The second type is Dutch-auction repurchase which is also a fixed deal. In this transaction, managers solicit information from shareholders that allows them to form a final price. The actual price level at which the repurchase is completed is determined by adding the shares offered starting at the lowest end of the management's price range. Lie and McConnell (1998) and Peterson and Peterson (1993), however, find that there are no significant differences between fixed price and Dutch auction tender offer repurchases in terms of the announcement period returns, the tender premiums, the expiration day returns, and the earning performance after the repurchase.

The other type is open market share repurchases that occur when a corporation buys back its own shares on the open market at the going price just as any other investor might buy the shares. The average cumulative excess return around such an announcement is about 3.5 percent (Ikenberry, Lakonishok and Vermaelen, 1995). While the major methods explained above and some others are available to managers, open market repurchases are by far the most popular medium through which shares are repurchased. In terms of the methods employed by repurchasing firms, open market repurchases outweigh alternative methods of repurchasing by approximately ten to one (Weston et al., 1998).

The literature posits five main motives for companies to choose share repurchase as their payout method. The first motive is associated with tax efficiency. Share repurchase is preferred to cash dividend because selling shareholders are subject only to capital gains tax which normally is lower than ordinary income tax as in the case of a cash dividend (Grullon and Michaely, 2002; Lie and Lie, 1999). Moreover, non selling shareholders benefit from the increase proportion of their ownership in the firm, and pay capital gains tax only when they sell the shares.

The second motive is to signal to the market that the firm stock price is undervalued. Vermaelen (1981) asserts that repurchases are information signals to the market. The logic follows that company managers are probably best situated to recognise when market prices deviate from the company's true underlying value. Thus a frequent explanation of stock repurchases is that they take place when managers deem their stock to be undervalued. This view is consistent with the evidence that firms tend to announce programs following poor stock price performance (Comment and Jarrell, 1991; Stephens and Weisbach, 1998). The asymmetric information phenomenon is highlighted by Ikenberry et al. (1995), Vermaelen (1981), and Dann (1981). They find evidence to suggest that stock prices climb on the announcement of a repurchase program. In addition, results from Comment and Jarrell (1991) indicate that the abnormal returns observed around the announcement of a repurchase program are inversely related to recent stock price performance leading up to the repurchase announcement. This is consistent with the notion that asymmetric information is an influential motive for stock repurchases.

Han, Suk and Sang (1998) state that firms with a high book to market ratio (value firms) tend to have a higher likelihood of undervaluation in the market. Thus if we are to accept that firms are influenced by undervaluation beliefs, then firms with a high book to market ratio could be more inclined to announce repurchase programmes. Ikenberry et al. (1995) examine U.S. open market stock repurchase announcements from 1980 to 1990. They form equally weighted portfolios of stocks based on their book to market ratio and find that value stocks experience

significant abnormal return of 45 percent over a four-year period after the announcements. This finding is robust when the sample data is extended to 1996 (Chan, Ikenberry and Lee, 2004). Using Canadian open market stock repurchase data from 1989 to 1997, Ikenberry, Lakonishok and Vermaelen (2000) also report similar evidence of positive long term returns. The post announcement excess return over a three year period is 7 percent per year. Canadian value firms earn annual 9.1 percent abnormal returns, which is close to that of the US value firms.

The third motive is to achieve optimal capital structure. The repurchase of shares in a company has the effect of changing the firm's capital structure. Alternatively, when a company has excess capital but does not want to increase its leverage, it can use share repurchase to adjust its debt to equity ratio. A company may also use share repurchase to maintain its desired debt to equity ratio due to the exercise of employee stock option plan (Chan et al., 2004).

Fourth, managers have no alternative profitable investment and decide to distribute excess cash back to their shareholders (Lang and Litzenberger, 1989; Nohel and Tarhan, 1998; Lie, 2000; Koerniadi, Liu and Tourani-Rad, 2007). The underlying motive of the investment hypothesis is consistent with the free cash flows agency problem hypothesis which favours low financial slacks to mitigate the effect of agency problems.

Finally, a share repurchase program may be used as a defensive tool to fend off a hostile takeover. This method was popular in the US during the takeover era in the1980s (Klein and Rosenfeld, 1988; Mikkelson and Ruback, 1991).

More recent studies, however, report evidence that share repurchases are associated with earnings management (Vafeas et al., 2003; Gong et al, forthcoming). These studies find that pre repurchase discretionary accruals of share repurchasing firms are significantly lower and are negatively correlated with both future operating performance and future stock performance.

4.2.3. Share repurchases in New Zealand

Prior to 1994 share repurchases in New Zealand were not possible. However, since July 1994 New Zealand corporations have been able to undertake share repurchase programs as a means of repatriating capital to their respective shareholders.

To conduct a share repurchase program, a company must pass two solvency tests. The first test is to ensure that the company's cash flows are sufficient to sustain its solvency after the repurchase. The second test is to ensure that after the repurchase, the value of the firm's assets is greater than all of its liabilities. These restrictions are intended to protect creditors of the company so that, after making cash distribution through a share repurchase program, the company would not become financially insolvent.

Fenwick (1997) reports that there are effectively six ways in which a company can legally buy back its own shares:

1. Through a pro rata offer to all shareholders:

    Pro rata buy backs are off-market repurchases made by a company when it makes an offer to all of its shareholders to repurchase a specified proportion of their shares. This offer, if accepted by all shareholders, would not change the shareholders' voting proportions and their distribution rights. Furthermore, the company must give the shareholders a reasonable opportunity to accept the offer. Under the Companies Act 1993 section 60 (3) pro rata buy backs require board of directors' resolutions that:

    a. The acquisition is in the best interest of the company; and

    b. The offers' terms and the consideration offered are fair and reasonable to the company; and

    c. The board has no material information not disclosed for a share value assessment that would make the terms of the offer and the consideration unfair to shareholders accepting the offer.

2. A selective offer to some shareholders:

Selective offers are off-market repurchases made to specific shareholders. This offers require the consent of all shareholders in writing and the board of directors' resolution (section 60 (3)).

3. A special offer:

Special offers are off-market buy backs made by a company where the offers are expressly permitted by the company's constitution. The offers require special resolutions and oblige the directors who vote in favour of the repurchase to set out in full the reasons to repurchase and sign a certificate attesting the board's resolution (section 60 (3) above).

4. An on-market acquisition subject to prior notice to shareholders:

On market repurchases with prior notice are repurchases undertaken on the market for not more than a specified number of stocks. The on market repurchases also require board of directors' resolutions.

5. An on-market acquisition not subject to prior notice:

On market repurchase without prior notice are on market buy backs made by a company where the number of shares acquired in the preceding 12 months does not exceed five percent of the shares of the same class as at the beginning of the 12 month period. The board of directors' resolutions prior to the offer are also compulsory.

6. By unanimous written agreement executed by all entitled parties:

The entitled party here can be a shareholder and a person entitled by the company's constitution conferred any of the rights and powers of a shareholder.

New Zealand on-market repurchases are similar to open market repurchase programme in the U.S. while pro rata off-market repurchases are somewhat similar to the U.S. tender offer repurchases.

4.2.4. Data and Methodology

Data on the initial announcements of non financial companies to repurchase their shares and the corresponding companies accounting information were collected from the New Zealand Stock Exchange (NZX) and Datex New Zealand financial database from 1995 to August 2004. Several companies, however, did not announce their intention to conduct on-market share repurchase but directly bought back their shares on the market and reported their buy back activities to the NZX several days after. Therefore these repurchases are not included in the sample. The initial data obtained during the investigation period are 22 firms with 36 on-market repurchase announcements and 14 firms with 18 off-market announcements. Several companies, however, were delisted one year after the announcements. As a result, post repurchase announcement year earnings data of these companies are not available. Therefore, firm announcements with missing post announcement earnings data are excluded from the sample. The final sample consists of 33 on-market and 17 off-market share repurchase programmes respectively.

Prior studies typically examine earnings profiles of repurchasing firms for more than one year before and after share repurchases. Time series earnings data beyond one year prior to and after the repurchases for several companies, however, are not available. Therefore, to investigate managers' incentive to increase accruals in relation to share repurchases, this study analyses earnings' profiles of the sample firms only for the three years surrounding the initial share repurchase announcements.

If managers manipulate earnings in relation to share repurchases, they are likely to manage accruals downward prior to announcing the programs. The reversal effect of the depressed accruals might take place sometime after the announcement depending on the length of the repurchase programs. On average, on-market repurchases usually takes about one year to complete. Therefore, pre announcement discretionary accruals of on-market repurchasing firms are expected to increase one year after the announcements. As off-market repurchase

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programs usually take less than one year, discretionary accruals of off-market repurchasing firms are expected to increase in a much shorter period.

As stated previously, the managed part of accruals is estimated using the performance adjusted modified Jones model (Kothari, Leone & Wasley, 2005). This model controls the performance effects on accruals and measures the part of accruals attributed to managerial discretion as the difference between discretionary accruals of the sample firms and those of control firms. Control firms are defined as non repurchasing firms that have return on asset ratios close to those of sample firms in the pre announcement year.

4.2.5. Empirical results

Table 4.2.1 shows the numbers of firms' initial repurchase announcements during the sample period. These numbers are small compared to the 4,434 open market share repurchase programs in the U.S. from 1980 to 1997 (Grullon and Michaely, 2004) and surprisingly much smaller than 355 on-market share repurchase programs in Australia from 1997 to July 2003 (Brailsford, Marchesi and Tutticci, 2004).

Table 4.2.1
Firm's Initial Announcements across Years

Year	On-market	Off-market
1995	0	1
1996	1	1
1997	1	2
1998	7	0
1999	2	1
2000	3	2
2001	5	3
2002	8	3
2003	5	4
2004	1	0
Total	33	17

Several reasons for launching share repurchase programs, as declared in the repurchase announcements, are reported on Table 4.2.2. As shown on Panel A, the majority of on-market repurchase programs (42%) are motivated by the desire to return excess cash back to shareholders. The second and third most common motives for launching on-market repurchases are related to optimal capital structure and management repurchase scheme, each of which accounts for 15% of the total sample. Panel B shows that 24 percent (4 out of 17 announcements) of firms' motives conducting off-market repurchases are related to mergers and surplus funds.

Table 4.2.2
Motivations for Repurchases

Panel A.		
ON-MARKET REPURCHASES		
Undervalued	4	12%
Optimal capital structure	5	15%
Surplus funds	14	42%
Management purchase scheme	5	15%
n.a.	5	15%
Total	33	

Panel B.		
OFF-MARKET REPURCHASES		
Optimal capital structure	3	18%
Mergers and acquisition	4	24%
Surplus funds	4	24%
Blockholders	3	18%
Others	2	12%
n.a.	1	6%
Total	17	

Panel A of Table 4.2.3 reports mean and median values of earnings, accruals and its components in periods related to on-market repurchase announcements. Earnings are relatively stable during the three year period of investigation. On the contrary, total accruals decrease in the announcement year and continue to decline one year after. However, inconsistent with earnings management, total accruals and their components, aside from the performance adjusted discretionary accruals, are all positive prior to repurchases.

Table 4.2.3
Mean and Median Values of Earnings, Accruals and Their Components
from Year -1 to Year +1 Relative to Repurchase Announcements

Panel A.		ON-MARKET REPURCHASES		
		-1	0	+1
Earnings	Mean	0.133***	0.126***	0.125
	Median	0.113	0.118	0.159
Accruals	Mean	0.033**	0.016	0.005
	Median	0.020	0.020	0.038
NDA	Mean	0.025***	0.006	0.013
	Median	0.020	0.005	0.015
DA	Mean	0.007	0.010	-0.008
	Median	0.009	0.007	0.024
ABA	Mean	-0.003	0.008	-0.032
	Median	0.024	0.041	-0.043

Panel B.		OFF-MARKET REPURCHASES		
		-1	0	+1
Earnings	Mean	-0.148	-0.037	0.033
	Median	0.063	0.021	0.036
Accruals	Mean	-0.063	-0.057	0.004
	Median	0.022	0.013	-0.042
NDA	Mean	-0.054***	-0.037	-0.002
	Median	-0.026	-0.017	0.007
DA	Mean	-0.009	-0.021	0.006
	Median	0.054	0.036	-0.041
ABA	Mean	0.016	-0.050	0.014
	Median	0.076	0.065	-0.009

*** significant at 1%
** significant at 5%

Panel B of Table 4.2.3 shows that the averages of earnings, total accruals and the discretionary components of accruals of off-market repurchasing firms are both negative prior to and in the announcement year, before becoming positive in the subsequent year. These patterns appear to be consistent with income decreasing management. Looking at the median values of these variables, however, the results present a different pattern which is inconsistent with earnings management.

These variables, except nondiscretionary accruals, are all positive prior to and in the event year.

4.2.6. Summary

Using New Zealand non financial on-market and off-market repurchasing firm data from 1995 to 2004, this study fails to find significant evidence of earnings management prior to repurchases. Although total accruals of on-market repurchases continue to decline to one year after the announcements, total accruals and their components are all positive surrounding the repurchasing year.

The patterns of the averages of accruals and their components of off-market repurchasing firms are seen to be consistent with earnings management. The averages of total accruals and their components, except for the performance adjusted discretionary accruals, are all negative in the year prior to the announcements, all accrual measures are negative in the announcement year, and they become positive in the post announcement year. However, inconsistent with the earnings management hypothesis, the median values of these variables, except those of nondiscretionary accruals, are all positive.

A possible explanation for the lack of evidence on earnings decreasing management related to share repurchases is that, as share repurchases are unpopular as a payout distribution method in New Zealand, share repurchases may not provide strong incentives for managers to manipulate accruals (Vafeas et al., 2003). Alternatively, it is also possible that the insignificant results are due to the low power of the tests attributed to the small number of the repurchasing programs during the investigation period.

Chapter 5

The Role of Accruals as a Signal in Earnings and Dividend Announcements: NZ Evidence

5.1. Introduction

The basic premise of managerial discretion accorded under the Generally Accepted Accounting Practice (GAAP) to manage accruals is to improve the value relevance of reported earnings to help investors better assess current and future firm operating performance. While this principle has been cited in several studies (Holthausen and Leftwich, 1983; Healy and Palepu, 1993, Healy and Wahlen, 1999; Kothari, 2001), little empirical work has been done to support this hypothesis. Furthermore, the results of prior studies examining this hypothesis (Guay et al., 1996; Subramanyam, 1996; Louis and Robinson, 2005) are found to be also consistent with the opportunistic earnings management hypothesis.

The inconclusive results on the signalling hypothesis of accruals reported in those studies can be attributed to the use of a broad sample that allows the empirical results to be consistent not only with the accrual signalling hypothesis, but also with the opportunistic accrual hypothesis (Subramanyam, 1996 and Guay et al., 1996) and to the choice of the research setting (Louis and Robinson, 2005). To tackle these problems, this chapter uses contemporaneous earnings and dividend increase announcements data from New Zealand to examine the hypothesis that managers use accruals to convey information about firm future profitability. The results of studies on contemporaneous earnings and dividend announcements strongly indicate that such announcements are a signalling event (for example, Kane et al., 1984; Emanuel, 1984; Easton, 1991; Cheng and Leung, 2006). Therefore, using these announcements as the background research setting reduces the likelihood that the empirical results would be consistent with the opportunistic income smoothing hypothesis.

The results in this chapter are consistent with the notion that managers use both accruals and dividends to convey information about the firm's future profitability. First, consistent with prior studies, the market's reaction to the contemporaneous earnings and dividend increase announcements is reported to be significantly positive. Next, while dividend decreasing and dividend maintaining firms report negative accruals, dividend increasing firms report positive accruals. More importantly, total accruals and discretionary accruals of dividend increasing firms are found to be significantly correlated with the firms' future profitability. This correlation is robust to the performance, the growth and the earnings drift effects.

The rest of the chapter proceeds as follows. Section 5.2 formulates the hypotheses, describes the methodology and the sample selection process. Section 5.3 presents the empirical results and section 5.4 concludes.

5.2. Research Design

5.2.1. Hypothesis development

In finance literature there are at least three circumstances under which managers are likely to signal private information to the market. Firstly, managers use stock splits or stock dividends to convey information about the firm's future profitability (see for example, McNichols and Dravid, 1990; Ikenberry, Rankine and Stice, 1996). The literature, however, also reports that managers use stock splits or stock dividends for other reasons, such as achieving optimal trading share price and attracting attention paid to the firm. Furthermore, the results reported in chapter 4 are consistent with stock dividend issuing firms manipulating earnings.

Secondly, managers buy back equities as a signal to the market that the firm profitability will increase in the future (Hertzel and Jain, 1991; Persons, 1994; Lie and Mc Connell, 1998). However, in addition to other motivations for stock repurchases that are documented in the literature, Vafeas et al. (2003) and Gong

et al., (forthcoming) report that firms tend to report negative discretionary accruals prior to stock repurchase programs in order to lower the firms' stock prices.

Thirdly, it is hypothesised that managers increase dividends when they have favourable information. According to the information content of the dividend hypothesis, dividend changes affect stock returns because they reveal new information about the firm's future profitability. Empirical results on the information content of the dividend changes hypothesis, however, are inconclusive. While several studies report that dividend changes signal information about future profitability, several others find results inconsistent with the information content of dividend hypothesis[23]. The mixed results on the information content of dividend suggest that companies change their dividend policy for reasons other than signalling such as free cash flows or tax clienteles.

The literature also reports that stock markets' reaction is positively correlated with the direction of unexpected earnings in earning announcements. Managers' opportunistic behaviour over accruals, however, could influence market reaction by distorting firms' earnings towards their desired level. As a result, either dividend changes or earnings announcements alone may be a noisy signal for future profitability.

Healy and Palepu (1993) argue that when financial reporting is inadequate for communicating information on a firm's performance, financial policy changes (such as dividend changes) are needed to communicate the economics of the firm. Their conjecture suggests that managers may communicate information through both earnings and dividends such as in contemporaneous earnings and dividend announcements.

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[23] See for example, Kalay and Loewenstein (1985), De Angelo, De Angelo and Skinner (1996), Benartzi, Michaely and Thaler (1997), and Nissim and Ziv (2001), among others. New Zealand adopts an imputation tax system which is different from the conventional tax system in the U.S.. Prior studies on dividends in an imputation tax credit environment show that the market also reacts positively at the announcements of dividends increase (Gunasekarage and Power, 2002), stock dividends (Anderson et al., 2001, p. 661) and special dividends (Balachandran and Nguyen, 2004) suggesting that firms in an imputation environment also use dividends to convey private information to the market.

Kane et al. (1984), Emanuel (1984), Easton (1991), Leftwich and Zmijewski (1994), and Cheng and Leung (2006) document that stock markets respond positively to contemporaneous earnings and dividend announcements when positive earnings surprises are accompanied by dividend increases. The positive market reaction to the contemporaneous earnings and dividend increase announcements suggests there is new information released in such announcements either through earnings or dividends, or both.

Prior studies on the contemporaneous earnings and dividend announcements report that earnings and dividends have incremental information beyond each other. Ely and Mande (1996) find that analysts earnings forecast are related to the noisiness of earnings information. They report that when earnings are noisy, analysts focus on the information in dividends. More specifically, Best and Best (2000) find that analysts' earnings forecast revisions following such announcements are attributed primarily to earnings announcements. Best and Best conclude that firms increase dividends to corroborate information in earnings. As reducing dividends is costly (Bajaj and Vijh, 1990; Denis, Denis and Sarin, 1994), increasing dividends validates the signal in earnings.

Firms in New Zealand typically announce earnings and dividends contemporaneously. The contemporaneous earnings and dividend increase announcements in New Zealand provide an opportunity to examine the hypothesis that managers are likely to use both accruals and changes in dividends to signal private information regarding firm future profitability to the market. Therefore, the first hypothesis to be examined in this chapter is:

> H1: The market's reaction to the dividend increase announcements is
> positive.

When managers use accruals to communicate information about future profitability and use dividends to corroborate their signals, it is very unlikely that accruals are negative. Moreover, if accruals are negative, the positive association between

negative accruals and future profitability implies that the firm's operating performance declines in the future. Accordingly, accruals of dividend increasing firms should be positive and be positively correlated with the firms' future profitability. Thus, the second and third hypotheses are:

H2: Dividend increasing firms report positive accruals.

H3: The positive accruals of dividend increasing firms are positively correlated with future profitability.

5.2.2. Methodology

5.2.2.1. Information content of the contemporaneous dividend and earnings announcements.

In New Zealand, the interim reporting period usually is half yearly. This chapter uses final dividend announcement dates of dividend increasing firms as the announcement events. Dividend changes are measured as the difference between total (interim plus final) ordinary cash dividend in current year and total dividend in previous year.

Sample firms' abnormal announcement returns are calculated as the difference between the sample firms' returns and the firms' expected returns estimated using a market model approach:

$$AR_{it} = R_{it} - \alpha_i - \beta_i Rm_t \tag{5.1}$$

AR_{it} = the abnormal return on day t for firm i

R_{it} = total return on day t for firm i

Rm_t = market (NZX All) return on day t

β_i = beta for stock of firm i

Thin trading in the New Zealand stock market, however, creates a non synchronous trading problem in the return data that bias the beta generated from the market model. Consequently, the firm's beta is estimated using an approach suggested by Scholes and Williams (1977). The estimation period of the market model is from -220 to -21 days relative to the announcements. The event window is from day -20 to day +20.

Boehmer, Musumeci and Poulsen (1991) show that when an event causes minor increases in the variance of returns, traditional event study methods reject the null hypothesis of zero abnormal returns too frequently, even when the average abnormal return is statistically insignificant. Therefore, to mitigate the bias due to event-induced heteroskedasticity of the abnormal returns, the test for the significance of the abnormal returns is also adjusted using a method suggested by Boehmer et al. (1991).

5.2.2.2. The accruals model
Adopting the cash flow method, total accruals are measured in this study as the difference between operating earnings and operating cash flows. As mentioned before in chapter 3 and 4, computing accruals directly from statements of cash flows is a more precise measure of accruals and avoid measurement errors in estimating accruals using the balance sheet approach (Austin and Bradbury, 1995; Hribar and Collins, 2002). Operating earnings are defined as operating income after depreciation but before interest expense, taxes and special items. All variables are deflated by total assets at the beginning of the period.

Kothari, Leone & Wasley (2005) report that the commonly used discretionary accrual models do not control for the performance effects on accruals. High performance firms may report high discretionary accruals that are not attributed to managers' discretion over accruals but to firm performance effects. This is particularly true for increasing dividend firms since these firms are likely to do well. Kothari et al. also report that the Jones discretionary accrual model with current Return on Assets (ROA_t) included as an additional regressor enhances the

reliability of inferences from earnings management research. The ROA adjusted Jones model is:

$$TA_t = \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{\Delta REV_t}{A_{t-1}} \right) + \alpha_3 \left(\frac{PPE_t}{A_{t-1}} \right) + \alpha_4 ROA_t + \phi_t \qquad (5.2)$$

As noted in the previous two chapters, TA is total accruals defined as the difference between operating earnings and cash flows from operations, ΔREV is the change in revenues and PPE is property, plant and equipment. Return on assets (ROA) is measured as earnings before interest and taxes divided by total assets (Bodie et al., 2002). All variables are scaled by lagged total assets. Nondiscretionary accruals are the fitted values and discretionary accruals are the residuals of the model.

5.2.2.3. Accruals and future profitability

Prior studies report that current earnings are a significant predictor for one-year ahead earnings (Finger, 1994; Kim and Kross, 2005). Thus, this study uses actual one-year ahead operating earnings as a proxy for future profitability. To assess the association between accruals and future profitability, firms are sorted based on changes in dividends, and for each change (increase, no change and decrease) in dividends the following regression is estimated:

$$E_{i,t+1} = \beta_0 + \beta_1 CF_{it} + \beta_2 TA_{it} + \beta_3 \frac{B_{it}}{M_{it}} + \varepsilon_{i,t+1} \qquad (5.3)$$

E   = Operating earnings defined as operating profit after depreciation,
             scaled by lagged total assets.
CF   = Operating cash flows in the announcement year, scaled by lagged total
             assets.
TA = Total accruals in the announcement year, scaled by lagged total assets

Book to market ratio is included to control for the effect of growth on one-year ahead operating earnings (Smith and Watts, 1992; Gaver and Gaver, 1993).

To examine the hypothesis that managers use their discretion on accruals to signal future profitability, total accruals are decomposed into discretionary and nondiscretionary accruals obtained from the ROA adjusted Jones model (equation 5.2):

$$E_{i,t+1} = \alpha_0 + \beta_1 CF_{it} + \beta_2 NDA_{it} + \beta_3 DA_{it} + \beta_4 \frac{B_{it}}{M_{it}} + \varepsilon_{i,t+1} \tag{5.4}$$

E   = Operating earnings defined as operating profit after depreciation, scaled by lagged total assets.

CF   = Operating cash flows, scaled by lagged total assets.

NDA = Nondiscretionary accruals.

DA = Discretionary accruals.

5.2.3. Data

This study is conducted using non financial firms listed on the New Zealand Stock Exchange from 1992 to 2003. The share price data, financial reports and the information on earnings and dividend increase announcement dates are obtained from Datastream database, the 2003 Datex financial company report files and the NZSE Weekly Diary respectively. During the sample period, there are 244 dividend increase announcements obtained. For the analysis of the association between accruals and future profitability, the sample consists of 1,023 firm-year observations.

5.3. Empirical results

5.3.1. Information content of the contemporaneous dividend and earnings announcements.

Table 5.1 presents daily average abnormal returns surrounding the dividend increase announcements. Consistent with prior studies and H_1, the New Zealand stock market reacts positively and significantly to the announcements. The average abnormal stock return on the announcement day is 1.66% and is significant at 1% level of significance. The positive and significant average announcement abnormal return suggests that there is private information released to and priced by the market on the contemporaneous earnings and dividend increase announcements[24].

Table 5.1
Abnormal Return surrounding the Contemporaneous Earnings and Dividends Announcements

Day	Mean	Median	% positive	Heteroskedasticity-adjusted t-statistics
-1	0.23%	-0.08%	46	1.23
0	1.66%	0.89%	64	5.66***
1	0.21%	-0.04%	49	1.32
CAR $_{(-1,+1)}$	2.09%	0.83%	64	1.93**

Note: The average abnormal returns are estimated with market model with beta adjusted according to Scholes and Williams (1977). There are 244 announcements from 1992 to 2003. The estimation period is from -220 to -21 days prior to the announcements. % positive is the percentage of positive abnormal returns. t statistics are presented using the heteroskedasticity-adjusted t statistics approach (Boehmer et al., 1991).

***= Significant at 1%.
 **= Significant at 5%.

5.3.2. The accruals models

Table 5.2 summarises the statistics of the ROA adjusted Jones model on each changes in dividends. For dividend increasing firms, the adjusted R^2 of the accrual model is the highest at 95% and all the coefficients of ΔROA, PPE and ROA are

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[24] Unfortunately, the association between the announcement abnormal returns and the discretionary accruals cannot be tested because not all announcements contain enough data to compute accruals.

statistically significant. The negative coefficient of ROA suggests that low (high) profitability report high (low) accruals. This result seems to be inconsistent with the research hypothesis. However, when these firms are sorted into quintile portfolios based on their profitability, the results show that low (high) profitability firms are small (big) and value (growth) firms[25]. Louis and Robinson (2005) argue that small firms tend to use accruals to signal their private information as their ability to use other forms of communication is limited. For dividend maintaining and decreasing firms, almost all coefficients are statistically significant. The adjusted R^2 for dividend maintaining and decreasing firms, however, are lower than that of dividend increasing firms.

Table 5.2
Descriptive Statistics of the Accrual Model

	Intercept	ΔRev	PPE	ROA	Adj. R^2	F test	N
DIV+	-0.045	0.036	0.142	-0.175	94.72%	1849.75	392
	(-0.08)	(15.76)***	(13.97)***	(-11.86)***			
DIV0	4.912	-0.021	0.008	0.720	68.46%	224.15	408
	(0.34)	(-4.51)***	(0.57)	(28.58)***			
DIV-	0.181	0.003	-0.051	0.512	37.10%	34.12	223
	(0.35)	(0.25)	(-6.11)***	(11.67)***			

Note: DIV+, DIV0 and Div- are dividend increasing, dividend maintaining, and dividend decreasing firms respectively. Accruals are computed as earnings before interest and taxes minus operating cash flows, scaled by lagged total assets. Δ REV is the change in total revenues, scaled by lagged total assets. PPE is property, plant and equipment, scaled by lagged total assets. ROA is earnings before interest and taxes scaled by lagged total assets. Nondiscretionary (discretionary) accruals are the fitted values (residuals) of the models. Sample consists of 1,023 firm year observations from 1992 to 2003.

***= Significant at 1%.

5.3.3. Accruals and future profitability

The signalling theory of accruals posits that managers use accruals to communicate private information regarding the firm's future profitability. Table 5.3 shows the mean and the median values of the firms' future profitability and the components of current earnings of dividend increasing, maintaining and decreasing firms. On average, future profitability of dividend increasing firms is positive and

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[25] The results are not reported but available from the author upon request.

less variable than those of dividend maintaining and decreasing firms. The mean of future profitability of dividend increasing firms are also large at around 0.14 compared to that of dividend maintaining or dividend decreasing firms. For dividend decreasing firms, future profitability is also positive but smaller at around 0.06. This is probably due to the persistence effect of cash flows which are relatively high in magnitude (0.09). On the contrary, future profitability for dividend maintaining firms is negative. On average, the change in future profitability $\left(\dfrac{E_{t+1}}{A_t} - \dfrac{E_t}{A_{t-1}} \right)$ for dividend increasing firms is positive at 0.03. The average changes in future profitability for dividend maintaining, and dividend decreasing firms, however, is negative at -0.05 and -0.03 respectively (untabulated).

Table 5.3
Descriptive Statistics of Sample Firms

	DIV+				DIV0				DIV-			
	Mean	std. dev.	Median	% positive	Mean	std. dev.	Median	% positive	Mean	std. dev.	Median	% positive
E_{t+1}	0.139	0.107	0.124	94.90%	-0.073	1.225	0.044	65.93%	0.056	0.409	0.081	86.10%
CF	0.032	1.679	0.105	93.88%	0.022	0.232	0.038	66.91%	0.089	0.085	0.082	89.24%
TA	0.076	0.624	0.026	71.17%	-0.041	0.330	-0.002	49.51%	-0.006	0.101	0.006	55.61%
DA	0.006	0.140	-0.003	49.23%	-0.034	0.182	-0.034	33.33%	-0.027	0.075	-0.025	34.08%
NDA	0.070	0.609	0.026	71.17%	-0.007	0.276	0.033	66.67%	0.020	0.060	0.017	70.85%

Note: DIV+ is dividend increasing firms. DIV0 is dividend maintaining firms. DIV- is dividend decreasing firms. E_{t+1} is operating earnings, scaled by lagged total assets CF is operating cash flows, scaled by lagged total assets. TA is total accruals defined as the difference between operating earnings and operating cash flows, scaled by lagged total assets. NDA is nondiscretionary accruals and DA is discretionary accruals. Sample consists of 1,023 firm year observations from 1992 to 2003.

The mean of total accruals for dividend increasing firms is positive which is consistent with H_2. The magnitude is also large at around 0.08. For firms that maintain and decrease their dividends, total accruals are, on average, negative.

When managers signal information regarding future profitability through accruals, discretionary accruals must be positive. Table 5.3 shows that on average,

discretionary accruals for firms that increase their dividends are positive. In contrast, the average discretionary accruals for dividend maintaining and dividend decreasing firms are all negative.

Table 5.4
The Association between Future Profitability and the Components of Current Earnings Based on Changes in Dividends

Panel A.

	DIV+	DIV0	DIV-
Intercept	0.174	-0.154	0.024
	(20.65)***	(-1.90)*	(0.40)
ACC	0.119	0.183	0.012
	(3.32)***	(1.01)	(0.04)
CF	0.051	1.001	0.432
	(3.80)***	(3.89)***	(1.22)
B/M	-0.054	0.058	-0.006
	(-7.70)***	(1.24)	(-0.18)
Adj. R^2	16.50%	3.50%	-0.49%
F test	26.75	5.92	0.64
N	392	408	223

Panel B.

	DIV+	DIV0	DIV-
Intercept	0.182	-0.172	0.011
	(20.58)***	(-2.10)**	(0.18)
CF	0.023	-0.386	0.789
	(1.37)	(-0.43)	(1.52)
NDA	0.040	0.857	-0.446
	(0.87)	(1.89)*	(-0.79)
DA	0.165	-1.343	0.443
	(4.20)***	(-1.40)	(0.82)
B/M	-0.056	0.059	-0.004
	(-8.03)***	(1.27)	(-0.12)
Adj. R^2	17.91%	3.88%	-0.54%
F test	22.32	5.11	0.70
N	392	408	223

Note: DIV+ is dividend increasing firms. DIV0 is dividend maintaining firms. DIV- is dividend decreasing firms. ACC is total accruals measured as the difference between earnings before interest and taxes minus operating cash flows, scaled by lagged total assets. CF is operating cash flows, scaled by lagged total assets. DA is discretionary accruals. NDA is nondiscretionary accruals. B/M is the book to market ratio. Sample consists of 1,023 firm year observations from 1992 to 2003. t statistics are in parentheses.

***=Significant at 1%.
**= Significant at 5%.
*=Significant at 10%.

Table 5.4 reports results for the association between future profitability and the components of current earnings according to changes in dividends. Results in Panel A show that the coefficient of TA for dividend increasing firms is positive and significantly correlated with future profitability. The adjusted R^2 is relatively high at 16.50%. On the other hand, the coefficients of TA for dividend maintaining and decreasing firms are not statistically significant.

Panel B of Table 5.4 breaks total accruals (TA) into nondiscretionary and discretionary accruals. The results show that the significantly positive coefficient of ACC for dividend increasing firms in Panel A is attributed to the discretionary part of accruals. The coefficient of DA is significantly positive while the coefficient of NDA is statistically not different from zero.

Bernard and Thomas (1990) document that earnings follow a random walk with a drift. Therefore, it is possible that instead of capturing the hypothesised signalling effect, discretionary accruals capture a post earnings announcement drift effect. Bernard and Thomas report that the drift is consistent with delayed market reaction to current earnings. Therefore, to control the earnings drift effect, the unexpected component of earnings is proxied by lagged earnings (LE)[26] and nondiscretionary income (NDI) which is assumed to be free from earnings management. Nondiscretionary income is defined as operating cash flows plus nondiscretionary accruals (Subramanyam, 1996). If the positive coefficient of DA in Table 5.4 is attributed to the post earnings announcement drift effect, NDI and LE should capture the drift effect, and the coefficient of DA should be zero. Thus the following regression for dividend increasing firms is estimated:

$$E_{i,t+1} = \alpha_0 + \beta_1 DA_{it} + \beta_2 LE_{it-1} + \beta_3 NDI_{it} + \beta_4 \frac{B_{it}}{M_{it}} + \varepsilon_{i,t+1} \qquad (5.5)$$

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[26] Unavailable lagged earnings data reduces the sample size from 392 to 346 firm year observations.

Table 5.5 reports results on the association between earnings components on future profitability after controlling for the unexpected component of earnings. As expected, the coefficients of NDI and LE are both positively and significantly correlated with future profitability. If dividend increasing firms do not use accruals to signal future profitability, after controlling for the earnings drift and the growth effects, discretionary accruals should not be correlated with future profitability. However, the results as reported in Table 5.5 show that the coefficient of DA is still significantly positive and the magnitude of the coefficient is greater than that of NDI.

Table 5.5
The association between future profitability and the components of current earnings of dividend increasing firms

Intercept	0.137
	(11.46)***
DA	0.091
	(2.36)***
LE	0.280
	(6.10)***
NDI	0.010
	(2.26)**
B/M	-0.047
	(-5.47)***
Adj. R^2	25.63%
F test	30.72
N	346

Note: LE is lagged earnings before interest and taxes, scaled by lagged total assets. NDI is operating cash flows, scaled by lagged total assets plus nondiscretionary accruals. DA is discretionary accruals. B/M is the book to market ratio. Sample consists of 346 firm year observations from 1992 to 2003. t statistics are in parentheses.

***=significant at 1%.
**=significant at 5%.

5.3.4. Robustness test

The analysis in this chapter was carried out using the modified Jones and the performance adjusted Jones model. Several prior studies propose slightly different modified Jones based accrual models. For example, Pae (2005) and Chan, Jegadeesh and Sougiannis (2004) argue that since cash flows are negatively

correlated with accruals, adding scaled cash flows into the modified Jones model increases the performance of the model in estimating discretionary accruals from total accruals. The cash flows Jones model (CFM) is:

$$TA = \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{\Delta REV_t - \Delta REC_t}{A_{t-1}}\right) + \alpha_3\left(\frac{PPE_t}{A_{t-1}}\right) + \alpha_4\frac{CF}{A_{t-1}} + \phi_t \qquad (5.6)$$

where CF is operating cash flows.

Coulton, Taylor and Taylor (2005) suggest adding lagged of total accruals and the ratio of future sales growth into the modified Jones model to capture the reversal effect of accruals. The lagged (LTACC) and the forward-looking (GROWTH) modified Jones models respectively are:

$$TA = \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{\Delta REV_t - \Delta REC_t}{A_{t-1}}\right) + \alpha_3\left(\frac{PPE_t}{A_{t-1}}\right) + \alpha_4 TA_{t-1} + \phi_t \qquad (5.7)$$

and

$$TA = \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{\Delta REV_t - \Delta REC_t}{A_{t-1}}\right) + \alpha_3\left(\frac{PPE_t}{A_{t-1}}\right) + \alpha_4 TA_{t-1} + \alpha_5 GROWTH + \phi_t \; (5.8)$$

TA_{t-1} is the lagged scaled total accruals and $GROWTH$ is the ratio of $\dfrac{Sales_{t+1}}{Sales_t}$.

These accrual models, however, do not control for the performance effect on discretionary accruals.

Table 5.6 reports results for the association between future profitability and the components of current earnings controlling for changes in dividends. Consistent with prior results, Panel A shows that the coefficients of DA for dividend increasing

firms are all positive and significantly correlated with future profitability across the three models. All the coefficients of DA for dividend maintenance firms are positive but statistically not significant in all models (Panel B). On the contrary, all the coefficients of DA for dividend decreasing firms in panel C are negative.

Table 5.6
The Association between Future Profitability and Discretionary Accruals Based on Changes in Dividends

Panel A. Total Div +

	Intercept	CF	NDA	DA	B/M	Adj. R^2	N
CFM	0.18	0.01	0.00	0.18	-0.05	14.65%	392
	(19.09)***	(0.38)	(-0.04)	(4.02)***	(-7.06)***		
LTACC	0.18	0.03	0.06	0.17	-0.06	18.14%	346
	(20.00)***	(2.35)***	(1.60)	(3.84)***	(-7.60)		
GROWTH	0.18	0.03	0.06	0.17	-0.06	18.41%	341
	(19.82)***	(2.35)***	(1.60)	(3.88)***	(-7.58)***		

Panel B. Total Div 0

	Intercept	CF	NDA	DA	B/M	Adj. R^2	N
CFM	-0.13	0.58	-0.25	0.21	0.06	1.86%	408
	(-1.59)	(2.56)***	(-0.31)	(1.10)	(1.20)		
LTACC	-0.13	1.02	0.41	0.34	0.05	1.87%	371
	(-1.51)	(3.12)***	(0.35)	(1.08)	(1.01)		
GROWTH	-0.09	1.03	-2.09	0.53	0.06	2.83%	361
	(-1.10)	(3.06)	(-1.58)	(1.63)	(1.36)		

Panel C. Total Div -

	Intercept	CF	NDA	DA	B/M	Adj. R^2	N
CFM	0.01	0.45	0.52	-0.01	0.00	-0.68%	223
	(0.24)	(1.28)	(0.70)	(-0.03)	(-0.11)		
LTACC	0.02	0.40	0.25	-0.03	0.00	-0.82%	214
	(0.26)	(1.07)	(0.41)	(-0.09)	(-0.14)		
GROWTH	0.02	0.42	0.20	-0.02	-0.01	-0.91%	212
	(0.28)	(1.09)	(0.30)	(-0.08)	(-0.17)		

Note: DIV+ is dividend increasing firms. DIV0 is dividend maintaining firms. DIV- is dividend decreasing firms. ACC is total accruals measured as the difference between earnings before interest and taxes minus operating cash flows, scaled by lagged total assets. CF is operating cash flows, scaled by lagged total assets. DA is discretionary accruals. NDA is nondiscretionary accruals. B/M is the book to market ratio. Sample consists of 1,023 firm year observations from 1992 to 2003. t statistics are in parentheses.

***=Significant at 1%.

5.4. Summary

This chapter uses a sample of New Zealand dividend increasing announcement firms as the research setting to examine the hypothesis that managers use both accruals and changes in dividends to communicate information regarding firm future profitability. This chapter finds that, on average, the market's reaction to dividend increase announcements is significantly positive. As the change in future profitability of dividend increasing firms is observed to be positive, these findings confirm our hypothesis that the dividend increase announcements are a signalling event. Further analysis indicates that total accruals of dividend increasing firms are found to be positively and significantly associated with firm future profitability, while those of dividend maintaining and decreasing firms are not. By decomposing total accruals into discretionary and nondiscretionary components, the results show that only discretionary accruals of dividend increasing firms are significantly correlated with firm future profitability. The positive association between discretionary accruals of dividend increasing firms and future profitability is robust to the performance, the growth and the earnings drift effects. These results are consistent with the hypothesis that managers use both accruals and changes in dividends to communicate information regarding firm future profitability.

Chapter 6

Summary

The accrual accounting system defined by GAAP is better at matching revenues and expenses than the cash accounting system because under the former managers have discretion to adjust the amounts of revenues and expenses to be reported in financial statements using accounting adjustments (called accruals), that best represent their firms' operating performance. Accordingly, earnings derived from the accrual accounting system are expected to be a more relevant measure of firm performance than those of cash accounting. In practice, however, the managers' estimate of accruals is subjective and could be influenced by incentives to manage accruals opportunistically, thereby distorting the information in the reported earnings. Evidence on the opportunistic managerial discretion over accruals has, indeed, been substantially documented in the literature. On the other hand, empirical evidence supporting managerial discretion that enhances earnings' informativeness is scarce and inconclusive. This thesis examines whether managers use the discretion to manage accruals as an instrument to communicate information about their future firm performance to the market or, as reported in the literature, use it opportunistically.

This thesis employs New Zealand data as the contemporaneous earnings and dividend announcements in New Zealand are documented in the literature as a signalling event. Therefore, the contemporaneous earnings and dividend increase announcements in New Zealand provide an opportunity to examine the hypothesis that managers are likely to use accruals to signal private information regarding future profitability to the market. In addition, as little empirical work on the association between accruals and stock returns and on earnings management has been undertaken using New Zealand data, the empirical results presented in this thesis provide information that would be valuable to investors and the Accounting Standards Review Board (ASRB), the accounting standard setting body in New Zealand.

The empirical results on the association between accruals and stock returns presented in chapter 3 show that, except in the period prior to the introduction of Companies Act 1993 and the Financial Reporting Act 1993, the accrual anomaly does not exist in the New Zealand stock market. However, consistent with prior studies on the accrual anomaly, this study finds that firms reporting high earnings accompanied by high accruals are observed to have significantly negative abnormal returns suggesting that these firms engage in accruals increasing management.

As accruals are negatively correlated with cash flows, the cash flows anomaly had long been considered to coexist with the accrual anomaly. The results of this study, however, suggest that the occurrence of these two anomalies is brought about by two different reasons. This finding corroborates the results reported by Pincus et al. (2007). Despite the non-existence of the accrual anomaly in the New Zealand stock market, the cash flows anomaly persists during the sample period. A hedging strategy exploiting this anomaly generates a significant average annual abnormal return of around 16%. This finding is of considerable interest as a large number of studies had investigated the accrual anomaly but, until now, there has been no study that formally examined the existence of the cash flows anomaly. Future studies investigating why the cash flows anomaly occurs is therefore an important area for future research.

Chapter 4 investigates earnings management in New Zealand. The first part of chapter 4 examines whether the stock dividends provide managers with incentives to manage earnings. The results show that the pattern of accruals of stock dividend issuing firms and the association between the accruals and the firms' stock returns are found to be consistent with earnings management. While the accruals of similar firms that pay cash dividends decrease in the issue year, the accruals of stock dividend issuing firms increase significantly in the issue year and is negatively correlated with the one year ahead abnormal stock returns.

The incentive to decrease accruals is analysed in the second part of chapter 4. The results show that there is insufficient evidence to support the hypothesis that managers decrease earnings around stock repurchases to manipulate their firms' stock price. Contrary to the earnings management hypothesis, on- and off-market repurchasing firms report positive accruals and the pattern of the accruals is inconsistent with earnings management. Overall, these results provide additional evidence that share repurchases do not provide enough incentive for managers to manipulate earnings and that, except to benefit from government regulations, managers are more likely to manipulate earnings upward.

Chapter 5 analysis and provides evidence on the hypothesis that managers also use accruals to communicate their private information regarding their firm's future profitability. The contemporaneous earnings and dividend announcement data in New Zealand are used as the research setting to test this hypothesis. The results suggest that managers use both accruals and increase in dividends to communicate their private information to the market. One limitation of this study is that positive discretionary accruals may be attributed not to signalling but to over optimism in predicting future profitability. While the former is attributed to managers' superior information, the latter is attributed to behavioural bias.

In summary, the empirical results presented in this thesis show that, depending on the incentives, managers can use their discretion in estimating accounting accruals for their own benefit or as an instrument to communicate private information to the market.

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