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Buybacks versus Ordinary Dividends: Marginal Investor Reactions to Cash-return Announcements

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Abstract: This paper examines the stock price effect in New Zealand of announcements of increases in dividends and of share repurchases from 1993 to 2009. The results are related to the soft substitution hypothesis on Australian data. Dividend-increase announcements provoke a greater positive effect on the stock price than buyback announcements. The preference of the marginal investor is also examined when firms distribute cash through both mechanisms. Again, investors prefer dividend increases over repurchases, and do so to a greater degree than for firms that only use one form of distribution.

Keywords: Event Study, Dividends, Stock Repurchases, Abnormal Returns s

JEL Classifications: G14, G35

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1. Introduction.

In the United States prior to 2003, it was apparent that firms returning cash to shareholders were increasingly choosing to shift away from dividend payments in favour of repurchasing shares (Fama and French, 2001; Grullon and Michaely, 2002; Skinner, 2008). This was indicative of an increasing preference among U.S. investors for share repurchases relative to dividend payments. Recently, however, quite a different phenomenon has been found to exist in Australia, where no such shift has occurred (Aharoni, Brown and Wang, 2011).

It is strongly likely that the underlying driver in both countries is taxation policy. Evidence to that effect is provided by Chetty and Saez (2005) for the USA where dividends have traditionally been taxed at both the company and shareholder levels (double taxation), causing capital gains to enjoy a comparatively lighter impost. In Australia, however, capital gains from the sale of shares have been taxed at investors' personal income tax rates since 1985 (Australian Tax Office, 2011), while a system of franking credits ensures that profits paid out as dividends are taxed only once. In New Zealand the taxation of dividends is similar, except that franking credits are called imputation credits; but New Zealand has had no universally-applied capital gains tax.[1] Are New Zealand investors, given the absence of a capital gains tax, like American investors in preferring share repurchases, or are they more like the Australians in showing some preference for dividends? These similarities and differences give rise to a natural experiment based on tax treatments.[2]

The above research question concerns the two versions of the possible relation between share repurchases and dividends. In the United States, the substitution hypothesis was developed to

1. New Zealand has no capital gains tax on the sale of shares; unless an investor is buying and selling shares frequently for profit, in which case the investor is deemed to be a dealer and the realised capital gain will be taxed at their personal income tax rate (Emigrate NZ).

2. There is one more distinction which is not immediately relevant to the current study, but which would become important in any full investigation of distribution policy choices from a firm's point of view. The US and New Zealand both allow firms to hold their own stock (for instance see Section 67A of the NZ Companies Act (1993)). However, Section 257H(3) of Australia's Corporations Act (2001) requires that repurchased shares be cancelled.

account for the observed preference for repurchases there, while Aharoni et al (2011) developed the soft substitution hypothesis to account for the Australian phenomenon.

We conduct a simple event study analysis of investor reactions to share repurchase announcements and to dividend announcement made by companies listed on the New Zealand Stock Exchange. The basic premise is that the marginal investor making the last trade on the announcement day provides evidence indicative of how the different types of cash disbursement are valued. This evidence in event studies is the announcement day abnormal return. The study uses announcements of earnings-and-dividend increases. In New Zealand dividends and earnings are almost always announced simultaneously. The sample of ordinary dividend announcements in this paper is restricted to those which involve a dividend per share (DPS) and an earnings per share (EPS) which are both larger than their counterparts announced a year earlier. Hence there is an earnings effect embedded in the dividend effect in these announcements; but this should be relatively non-confounding in effect because share repurchases, generally speaking, also imply that company earnings are good. The chief difference between share repurchases and dividends is that the former confer flexibility in that investors get to choose whether or not to participate in the announced offer, while ordinary dividends go, wanted or not, to all shareholders.

We find, in spite of capital gains not being taxed while dividends are (albeit once only), the New Zealand marginal investor gets more excited about an increase in dividend than about a share repurchase.

The paper is organised as follows: Section 2 provides the required background for understanding this study, through describing the substitution and soft-substitution hypotheses and then briefly discussing international literature on dividends and repurchases. In section 3 the research questions and hypotheses are outlined. In section 4 the data collection and methodology used in this paper are described. Section 5 includes both the results and subsequent discussion, while Section 6 concludes.

2. Literature Review.

We start with a brief nod to the vast record of published dividend research, then consider share buybacks and the choice between dividends and buybacks.

Lintner (1956) found that firms set dividends at a level they are confident of their ability to maintain into the future and that this level is only raised if the firm believes it can sustain the increase indefinitely. Miller and Modigliani (1961) on the other hand, argued that in a world without information asymmetry and taxes, dividend policy was irrelevant to the value of the firm. However they did conjecture in a footnote that dividend signalling could exist; and this point was taken up by Asquith and Mullins (1983), who found that investors react positively to dividend initiations. Asquith and Mullins credited this to the value investors place on dividends and the signalling value of the initiation. Miller and Rock (1985) went on to posit a theory of dividend signalling.

Kane, Lee and Marcus (1984) examine, on U.S. data, abnormal stock returns generated by contemporaneous earnings and dividend announcements to see whether investors evaluate the two announcements in relation to each other, known as the corroborative effect. Their results are consistent with the hypothesis that earnings and dividend announcements are interpreted in relation to each other. Lonie, Abeyratna, Power, and Sinclair (1996) find similar results for UK data: that both earnings and dividend announcements jointly influenced the level of abnormal returns earned by companies. This should not, as mentioned in the introduction, pose a confounded-variable problem in the current study.

Various factors are considered in deciding between increasing dividends and undertaking a share repurchase. Bartov, Kirinsky and Lee (1998), using US data, find the main factors include equity undervaluation, management compensation and institutional investors' holdings. For Canadian firms, De Jong, Van Dijk and Veld (2003) find the decision depends on behavioural and tax preferences, the existence of asymmetric information, and whether or not the company has executive stock option plans. Dittmar (2000) found that firms repurchase stock to take advantage of potential undervaluation and to distribute excess capital. In addition to this, however, firms also repurchase stock during some periods to alter their leverage ratio, fend off takeovers and counter the dilution effects of stock options.

Companies that enter into share buyback transactions often cite a desire to improve EPS as a main reason (Grullon and Ikenberry, 2000). For example, share buybacks can be used to offset the dilutive effects of employee stock options upon reported earnings per share. However, just because the number of shares in the denominator of the EPS ratio following a buyback will decrease, it does not necessarily mean that EPS will increase. Gould (2008) conjectures that the impact on earnings from which a firm's resources are diverted must be

considered in conjunction with the reduction in shares. The impact on EPS will be positive if the rate of after-tax earnings forgone from the buyback programme is less than the return on equity capital, and negative if the opposite is true. Share repurchases are theoretically superior to dividends for two reasons. The first of these is that a share repurchase "beats" a cash dividend by the amount of the tax savings from the tax basis which protects some of the cash distribution from taxes, plus any subsequent earnings on the tax savings (Bierman, 2008). The second advantage is that shareholders who do not desire immediate cash flow will not sell and thus will save both the taxes and transactions costs related to reinvesting.

However, the above reasoning ignores the stock price effect that might occur if the market likes dividends and likes increasing dividends through time. This was found by Graham and Kumar (2006), who discovered on US data that the preference for dividend yield increases as investor age increases and decreases as investor income increases. In examining the effect of payout policy on institutional holdings, Grinstein and Michaely (2005) found that paying a dividend attracts institutional investors. As conjectured by Black and Scholes (1974, p. 21), stock prices of firms that pay dividends "may change temporarily in response to a change in the dividend, because the market may believe that the change indicates something about the probable future course of earnings". However, this effect will disappear if it "becomes clear that the change was not made because of any changes in estimated future earnings".

A decreasing tendency for firms to make dividend payments and an increasing tendency for firms to repurchase shares is known as the "substitution effect" (Aharoni et al., 2011). Substitution requires firms to depart from their existing payout policies in order to undertake buybacks. Evidence for the United States prior to 2003 is indicative of the substitution effect being present (Fama and French, 2001; Grullon and Michaely, 2002; Skinner, 2008). Grullon and Michaely (2002), using US data find that firms have gradually replaced dividends with repurchases. However, Chetty and Saez (2005) discover that dividend payments in the US increased by 20% following the tax reform of 2003, indicating the tax environment has an impact on the substitutability of repurchases for dividends. Further to this, repurchases by dividend initiators increased after 2003, suggesting that these firms were not simply substituting dividends for repurchases. Von Eije and Megginson (2008), using European Union (EU) data prior to 2004, find that, like in the US, the fraction of European firms paying dividends had declined, while the level of share repurchases had markedly increased.

Further, although large scale share repurchases started much later in the EU, they have grown even more rapidly than in the US over the past decade.

Aharoni et al. (2011) introduce a variation of the substitution hypothesis which they call the soft substitution hypothesis. When either greater profitability or decreasing investment opportunities cause a firm to experience a situation where *higher* distributions to equity holders are feasible, it has to choose a method to distribute these *additional* funds. In this case the firm has to choose between distributing these funds through dividends or share buybacks. The salient feature that distinguishes soft substitution is that it only concerns the choice between dividends and share buybacks when a firm has excess cash. By examining the payout behaviour of large Australian firms, they find evidence in support of the soft-substitution hypothesis. Any substitution that occurs in Australian firms does not involve a choice between dividends and repurchases, but the choice between increasing dividends and undertaking a repurchase. By and large, the preferred choice is to increase the dividend.

Jagannathan, Stephens and Weisbach (2000) provide evidence of the opposite choice in the US, finding that repurchases are used by firms with higher 'temporary', non-operating cash flows. Skinner (2008), also on US data, finds repurchases are used in place of dividends even for firms that continue to pay dividends, and that the primary determinant of repurchases is the level of earnings.

Aharoni et al. (2011) go on to provide information on the characteristics underlying share repurchases and payout policies in Australia. They find that firms which have increased their dividends are less likely to undertake a repurchase, and firms that increased dividends in the past are less likely to undertake a repurchase in the future. Additionally they find there is a high persistence in the choice of payout method. This means a firm that has increased dividends in the past is more likely to increase dividends in the future. However, share repurchases can be "habit forming" too. Bagwell and Shoven (1998) find the share-repurchase habit to be consistent with the clientele hypothesis, which asserts that firms specialise in how they transmit cash to their owners.

Aharoni et al. (2011) also find that repurchases are used as a signalling device. Firms undertaking a repurchase are signalling that the current negative trend in earnings is unlikely to continue in the future. Further to this, their results emphasise that repurchases signal a lower probability of a large deterioration in the firm's future prospects, rather than a high

probability of a good outcome. In the US, Ofer and Thakor (1987) find that both share repurchases and dividends are used as signals. Although neither one dominates the other in all circumstances, the authors discover there is, in general, larger information content in a repurchase than in a dividend.

In what follows the existence of abnormal returns will be examined, then compared over the three different announcement types. Explanations for the findings will be conjectured; and, then, the findings will be related to those of previous studies.

3. Hypotheses.

Given the tax structure differences in the three countries and existing findings on US and Australian data, it would seem reasonable to predict that the reactions of New Zealand investors to buybacks and to dividends will be quite distinct from each other. Both the US and Australia have capital gains taxes, which implies that differences between these two countries are driven by how dividends are taxed. According to Aharoni et al (2011) it is the presence of the dividend imputation system (franking credits) in Australia that predisposes the Australians favourably towards dividend increases The existence of a dividend imputation system in New Zealand would encourage New Zealand investors to show a similar attitude towards dividends, since they become tax-neutral. However, the fact that there is no consistent New Zealand capital gains tax would suggest on the other hand, that New Zealand investors should actually prefer share buybacks.

Do New Zealanders prefer buybacks over dividends? This research question is answered in terms of the reaction of the marginal investor at or near the close of announcement day trading captured the form of an abnormal return. Hence, if abnormal returns are to be the workhorse variable employed in this paper, the first step is to determine whether the various buyback and dividend announcements furnish any of significance. The hypotheses, split out for the three announcement types, are stated in the null form and testing will be done by a simple *t*-test. H_1 covers the buyback announcement. This is the initial announcement of a buyback plan which will often be explained in more detail by the firm in a follow-up-detail announcement. We do not table results for investor reactions to follow-up detail announcements, but investigated them and found they produced statistically significant results similar to, but weaker than those of initial buyback announcements.

H_1: On the days of the buyback announcements there are no abnormal returns generated that are significant at the 5% level.

H_2 refers to earnings-and-dividend-increase announcements.

H_2: On the days of the dividend and earnings increase announcements there are no abnormal returns generated that are significant at the 5% level.

Since earnings-and-dividend announcements and the buyback announcements both imply or explicitly disclose an increase in earnings (or at the very least, excess cash on hand), it is reasonable to expect abnormal returns to be observed on the announcement date where any specific influence of the earnings component should not skew the results.

The third of hypothesis is designed to detect differences in abnormal returns across the announcement types. The primary measures of interest are size of abnormal returns and sign. These can be determined from medians, means, proportion by sign and other basic characteristics of the abnormal return sets. The tool for evaluating differences between sets will be a Kruskal-Wallis test, which evaluates median values.

H_3: There is no difference in investor reactions, in terms of abnormal returns, between buyback announcements and dividend-increase announcements at the 5% level of error in a Kruskal-Wallis test.

With respect to the fourth hypothesis, we narrow out focus to firms employing both repurchases and dividends to return cash to shareholders. In studying the abnormal returns generated by these firms, we move closer to generating results that can be used to shed some preliminary light on the relevance of Aharoni et al's (2011) soft-substitution hypothesis in New Zealand. Here we use a Kruskal-Wallis test to assess differences between the returns sets furnished by the respective announcement types.

H_4: There is no difference in investor reactions between buyback announcements and earnings-dividend-increase announcements detectable by a Kuskal-Wallis test on ab-normal returns for firms that have historically undertaken both forms of distribution.

We can also compare investor reactions between firms that only use *one* method, and firms that use *both*, again in terms of a Kruskal-Wallis test:

H_5: There is no difference in investor reactions between dividend-increase announcements for firms that don't undertake buybacks and dividend-increase announcements for firms that do undertake initial buybacks.

H_6: There is no difference in investor reactions between buyback announcements for firms that do not increase dividends and buyback announcements for firms that do increase dividend payments.

If the predicted preference for repurchases is verified, it would suggest evidence the substitution hypothesis applies in New Zealand. But this turns out not to be the case.

4. Methodology and Data.

We use the market model estimated on a 100-day estimation period to generate returns expectations and, from them, forecast abnormal returns into a 21-day test period centred on the day of a share repurchase or dividend announcement. This yields ten days worth of abnormal returns available immediately before and after the timing of the announcement for comparison with the day zero abnormal return. The returns fed into the market model's estimation process are log returns calculated from daily closing price and market index data.

The OLS market model has the following form:

$$\boldsymbol{R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon} \qquad \textbf{(1)}$$

Here, $R_{m,t}$ is the return on the market, and $R_{i,t}$ is the observed arithmetic return for security i at date t. Define $A_{i,t}$ as the abnormal return for security i at day t. For every security, the excess return for each day in the event period using the OLS market model is defined as:

$$\boldsymbol{A_{i,t} = R_{i,t} - \alpha_i - \beta_i R_{m,t}} \qquad \textbf{(2)}$$

Three-day cumulative abnormal returns (CARs) are also calculated over the test period. This is simply calculated as the sum of the 1-day abnormal returns over three day periods.

Daily data is used because a longer interval such as weekly or monthly would have greatly diminished the power of the tests. Mackinlay (1997) finds that the probability of detecting a given level of abnormal performance of a 5 percent test using daily data is 0.94, whereas the power using weekly and monthly data is a mere 0.35 and 0.12, respectively. This illustrates the severe trade-off between accuracy and computation time from increasing the interval.

All of the data used in this study comes from the 17-year period starting January 2003 and ending December 2009. Share buyback announcements were obtained from a data feed supplied by NZX Limited. This data feed was a four-thousand-page electronic transcript of all information released by firms in their buyback programmes, disclosure by disclosure. The company name and date of buyback were recorded for each relevant announcement. Obtaining this restricted information set required the filtering out of huge volumes of detail in the data feed that was extraneous to the study. This was done by converting the transcript into Excel files and employing Excel's sorting and filtering tools.

We then gathered a 121-day closing price information set and matching market index (NZX50) for each company-announcement starting 111 days prior to each announcement and ending ten days afterward. There prices were daily gross imputed adjusted prices provided in the NZX Company Deep Archive. This price and index information furnished company log returns and market log returns for the 100-day estimation period and 21-day test period. Where a firm did not trade during the 21-day market model test period, or for less than 30 days of the estimation period and test period combined, the company-announcement observation was dropped from the sample. This led to approximately half of the recorded announcements being removed, most of which were from before the year 2000. The final repurchase data set contains 86 buyback announcements.

The dividend data used in the study was similarly restricted, and in several further ways. In the first instance, it was restricted to announcements made at the end of a company's year, which ruled out mid-year and other interim dividend announcements. In the second instance, since dividends are almost always announced in conjunction with earnings, the sample was restricted to announcements heralding increases in dividends along with increases in earnings, which were the good news (++) combination in Kane, Lee and Marcus (1984). A further requirement was that the dividend had to be announced within three months of a buyback announcement in the data set. This provided 298 dividend announcements over this period.

In addition, we locate the firms that make both dividend announcements and initial buyback announcements. The data set for this subsample consists of 43 initial buybacks and 101 dividend announcements.

5. Results and Discussion.

5.1 Incidence of significant abnormal returns

The first result of interest pertains relates to the nature of abnormal returns associated with buyback announcements. In **Table 1**, the abnormal return generated by initial buybacks on the announcement date is strongly significant with a p-value of 0.0015. This allows H_1 to be rejected.

[Table 1 fits here]

The average day zero mean abnormal return is 1.14%, which is 2.3 times larger than the largest mean return in the test period prior to the announcement, which occurs on day t_{-9} and which also turns out to be significant, although this significance is likely to be random. Immediately following day zero, there is a significant abnormal return on day t_{+1}, which is indicative of a slow-ish news take-up by investors; but the size of abnormal returns falls sharply back into insignificance on day two. The standard deviations on these days, 3.20% and 3.51% respectively, are also larger than all but one of the days in the test period. This shows that the returns on these days are spread out over a large range of values around the mean. In addition, both days have positive skewness and are more outlier-prone than the normal distribution (as measured by the kurtosis values).

The pattern of 3-day cumulative abnormal returns (CAR) in Table 2 reinforces the above findings. Again H_1 can be rejected. The CAR starting one day prior to the announcement furnishes the highest mean in Table 2 at 2.44%; and the standard deviation of this CAR at 5.58% is larger than any of the other CAR standard deviations. This is backed up with positive skewness and relatively large kurtosis, indicative of a positive sprawl towards greater levels of enthusiasm by some marginal investors.

[Table 2 fits here]

We turn now to abnormal returns furnished by earnings-and-dividend increase announcements. The results in Table 3 are strongly significant for the announcement date and the day following (p = 0.000), allowing us to reject H_2 (that there are no significant abnormal returns). The announcement date has a very large kurtosis value of 34.05, which indicates the day zero abnormal returns are much more widely dispersed than the normal distribution.

[Table 3 fits here]

In addition, the standard deviation on this day of 4.85% is substantially bigger than any other day in the test period. However, unlike all the buyback announcements, the dividend announcements have a relatively large negative skewness of -3.0273. This indicates that while the mean return is positive at 1.56%, the abnormal return distribution is asymmetric in a negative direction. However, this does not mean there are more negative returns on this day compared to the buyback announcements, as the dividend announcements have a larger mean abnormal return. These results provide strong evidence indicating the presence of abnormal returns on the announcement date, as well as the days either side for dividend announcements.

Results of a similar quality are furnished for earnings-and-dividend increase CARS in Table 4.

[Table 4 fits here]

5.2. Comparisons of Abnormal Returns from Buybacks and Dividends.

To test for differences in abnormal returns distributions between buyback and earnings-and-dividend-increase announcements, we perform Kruskal-Wallis tests. The *chi-square* statistics and *p*-values are presented in Table 5.

[Table 5 fits here]

The first row of Table 5 records the Kruskal-Wallis results of earnings-and-dividend increase announcement abnormal returns versus those generated by initial buyback announcements. The *chi-square* statistic is 611.85 (p = 0.0000). This clearly rejects H_3: that there is no difference between the abnormal returns of the two types of announcement. The mean abnormal return on day zero for initial buyback announcements is 1.14 percent (standard deviation 3.2 percent) while the corresponding dividend mean return is 1.56 percent (standard deviation 4.85 percent). Although the mean return only differs by 0.42 percentage points and the standard deviation differs by 1.65 percentage points, the strength of the rejection warrants some investigation of further properties of the two abnormal return distributions. The kurtosis values for buybacks and dividends are 8.4093 (**Table 1**) and 34.0468, (Table 3) respectively. This indicates that the dividend distribution of returns has substantially more outliers than the initial buyback distribution. Therefore, the dividend distribution of returns is much flatter and widely dispersed than the initial buyback distribution. To analyse where most of the outliers

are we consider skewness. The value of skewness for dividend announcement abnormal returns is -3.0273 (Table 3), indicative of a leftward spread to the distribution. This is in contrast to the positive value of skewness of 1.9389 (**Table 1**) for initial buybacks . This is quite a substantial point of difference, implying there are more extreme negative values of abnormal returns for dividends than for initial buybacks. These measures indicate that the distributions of these two announcement samples are very different. The Kruskal-Wallis test results with respect to CARs turn out to be equally strong in significance, in the second row of Table 5.

The positive skewness of the abnormal return distribution for share buybacks in conjunction with a large kurtosis value is interesting because it is in contrast to the finding on the dividend data set. There are some intuitive and appealing explanations for why this is the case.

The first of these is related to the tax environment facing investors when they sell shares. In New Zealand there is currently no capital gains tax related to the sale of shares; unless an investor buys and sells shares frequently. Hence, hence for everybody except frequent traders, the cash return comes free of tax obligations and we would expect to observe a fairly uniform positive response to a buyback announcement. Dividends, however, are taxed at an investor's personal income tax rate. The ability of investors to avoid taxes is clearly an attractive attribute of share buybacks, to which investors respond positively. Grullon and Michaely (2002) find strong evidence that US firms use share repurchases as a substitute for ordinary dividends. The US economy has no form of dividend imputation credits, so dividends are tax disadvantaged relative to realised capital gains.

A potential explanation as to why investors react more positively (on average) to dividend announcements is provided by the argument that buybacks have signalling value. Aharoni et al. (2011) find evidence which suggests that firms which use repurchases are firms that tend to have suffered a decrease in earnings in the year prior to the buyback. They use repurchases to assure investors this decline is not indicative of a large deterioration in the firm's future prospects.[3] A share buyback announcement will therefore lead to a positive revision if shareholders had significantly downgraded their view on the firm's future prosperity upon extant evidence of earnings reduction. Just as shareholders view an increase in dividends as

[3] They are signalling to investors that a very bad scenario is unlikely rather than that future earnings are going to be good.

meaning firms have upgraded their expectation of future earnings (Lintner, 1956; deAngelo et al, 2006), they view buyback announcements as a signal by firms that the recent decline in earnings will not continue in the future. Clearly, dividend initiation and increase announcements signal more positive news than buyback initiations. This could partially explain the more positive reaction to dividend announcements.

The flexibility of buyback announcements, in that shareholders do not have to sell their shares if they choose not to, minimises the potential for negative reactions to buyback announcements. When a firm announces a dividend payment, if investors do not want dividends they will have to sell their shares to avoid them. On the other hand, if a firm initiates a share buyback programme, investors have the choice to opt in (or not) to this distribution plan. This is a likely explanation for the greater propensity for a positive reaction to buybacks, resulting in the positive skewed abnormal return distribution.

5.3. The Case of firms which use both ways to return cash.

We now cover the results for firms that undertake both forms of distribution over the period 1993-2009. First, we confirm that these firms, as a discrete subset, statistically significant abnormal returns on their announcements These preliminary results appear in Table 6, and Table 7. Day zero earnings-and-dividend-increase announcements in Table 6 have a 2.06 percent mean abnormal return (p = 0.000) with a standard deviation of 3.80 percent. This mean is larger than the mean for all dividend announcements by half a percentage point (1.56 percent in Table 3).

[Table 6 fits here]

Further to this, the distribution of dividend-increase announcements of firms that also perform buybacks in Table 6 has a positive skewness (0.8525 versus -3.0273 in Table 3) and is strongly leptokurtic (1.3711 versus the platykurtic 34.068 of Table 3). This implies that shareholders of these firms react more positively than shareholders of firms that do not perform buybacks.

Table 7 furnishes results obtained with respect to the abnormal returns from initial buybacks of firms that also pay dividends. But this time we see little change from the original results in Table 1. The mean day zero abnormal return in Table 7 of initial buybacks from firms that use both distribution methods is almost identical to the day zero mean of all initial buybacks,

as is the standard deviation of each. Yet the Kruskal-Wallis test for differences between abnormal return distributions furnished where only buybacks are ever offered and where firms have also a dividend tradition is still strongly significant in Table 8 with a *chi-square* of 201.14 (p = 0.0000).

[Table 7 fits here]

Making further comparisons between Table 7 and Table 1, it becomes clear that what is strongly different is that the skewness and kurtosis values for the reduced data set are half the size of the original initial buyback data set.

This means that there is a greater propensity for investors in firms that don't pay dividends to react more favourably to buyback announcements than investors in firms that also pay dividends. In other words the tradition of a firm's paying dividends appears to act as a dampener on the marginal investors' enthusiasm for the buybacks it might offer. Combining the buyback result in Table 7 with the dividend result in Table 6, it is clear there is a greater propensity (relative to the results in Table 1 and Table 3) for investors in buyback initiating companies to react favourably to dividend announcements, while reacting less favourably to buybacks if there is a history of dividend payments. Finding enable us to, at least qualitatively, reject the null form of H_4. That posits there is no difference between marginal investor reactions to either kind of announcement (in abnormal returns) made by firms that have a history of both.

A more hard-edged rejection is furnished by the Kruskal-Wallis test result in the top row of Table 8, with a *chi-square* statistic of 225.74 (p = 0.0000). Here, the gap between dividend and initial buyback mean abnormal returns increases from 0.42 to 0.88 percentage points.

[Table 8 fits here]

We turn now to the final two hypotheses, which posit that there is no difference in investor reactions to an announcement (be it buyback or dividend) between firms that only ever use one form of cash disbursement and those that have historically used both. H_5 concerns dividends. It is strongly rejected in the second row of Table 8 (*chi-square* = 631.94, p = 0.0000) where the median percentage abnormal return for firms using both methods is almost half a percentage point larger than for firms which only ever disburse via dividends, while the mean is exactly this magnitude greater. The null form of H_6, which concerns buybacks, is

also strongly rejected, but with a *chi-square* statistic (201.14) in the bottom row of Table 8 which is less than a third the size of dividend-related result. The marginal investor again bids the share price up more for firms that use both cash disbursement methods, but not by much. The mean increase this time is only 0.04 percent.

5. Conclusion.

Although this paper uses only very simple diagnostics, this paper offers some interesting perspectives. The first and least of these is that the marginal investor to reacts favourably to repurchase announcements in New Zealand. Part of this uptick may well be associated with the signalling content of repurchases in informing investors that any decline in earnings experienced recently is only temporary, as proposed by Aharoni et al (2011) on Australian data. More generally, there must be some advantage in a cash distribution method that is an opt-in one as distinct from compulsory to the recipient; and to one that, for many investors, is not taxed.

However investors in New Zealand react much more favourably to dividend announcements than they do buyback announcements. Further, they react even more favourably when a firm historically furnishing both dividends and share repurchase programmes announces a larger dividend. This provides some support for the soft substitution hypothesis of Aharoni et. al (2011) on Australian data. While the tax situation is different between the countries given that Australia has a capital gains tax, we still see a preference for dividends over share buybacks. Although this study makes no inferences about what distribution method is used more often, either in terms of frequency or dollar value, we can infer that investors' reaction to dividends relative to buybacks would encourage firms to distribute through a dividend distribution. The soft substitution hypothesis concerns the decision firms face where even higher distributions to equity holders are feasible. The results of this paper, however, provide no support for traditional substitution.

Given that the results of the studies on US and Australian data are largely driven by the tax situation in each country in that the tax-advantaged method is preferred, it reasonable to conclude that the neutralisation of tax implications delivered by the dividend imputation system trumps the absence of a capital gains tax. Further, one would posit that the adoption of a capital gains tax in New Zealand would not change this preference for dividends.

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Table 1: Initial Buyback Abnormal Returns.

	p-value	Mean	StdDev	Max	Min	Median	Skewness	kurtosis
Day -10	0.8723	0.0002	0.0119	0.0437	-0.0273	0.0001	0.8027	2.5784
Day -9	0.0381	0.0049	0.0215	0.1238	-0.0381	0.0002	2.6597	11.4803
Day -8	0.5501	-0.0010	0.0152	0.0293	-0.0426	0.0007	-0.7574	1.0103
Day -7	0.2261	0.0029	0.0224	0.1600	-0.0264	0.0002	4.2968	28.4939
Day -6	0.5397	-0.0011	0.0165	0.0420	-0.0731	-0.0002	-1.3725	4.9274
Day -5	0.7793	-0.0007	0.0227	0.0934	-0.0828	0.0008	-0.1638	5.4708
Day -4	0.9985	0.0000	0.0207	0.1016	-0.0503	-0.0006	1.5195	7.1108
Day -3	0.7636	-0.0005	0.0165	0.0428	-0.0682	-0.0006	-0.6483	3.5776
Day -2	0.8248	0.0008	0.0337	0.1304	-0.2142	0.0009	-2.5028	21.1147
Day -1	0.1336	0.0037	0.0229	0.1425	-0.0348	0.0004	3.1950	16.3080
Day 0	0.0015	0.0114	0.0320	0.1701	-0.0782	0.0047	1.9389	8.4093
Day 1	0.0158	0.0093	0.0351	0.1450	-0.0556	0.0020	1.6442	4.4758
Day 2	0.4831	0.0016	0.0205	0.0826	-0.0606	0.0009	0.4768	3.1433
Day 3	0.2168	-0.0030	0.0220	0.0484	-0.1039	-0.0011	-1.1796	5.0140
Day 4	0.6070	0.0014	0.0249	0.1081	-0.0761	0.0006	0.2303	4.0942
Day 5	0.6973	0.0008	0.0182	0.0849	-0.0393	-0.0008	1.5099	5.4542
Day 6	0.9198	0.0002	0.0221	0.1466	-0.0576	-0.0003	3.1754	22.4779
Day 7	0.6960	0.0011	0.0258	0.1516	-0.0786	-0.0004	1.9421	13.8835
Day 8	0.8228	0.0004	0.0183	0.0712	-0.0934	0.0004	-1.1323	9.8681
Day 9	0.2798	0.0022	0.0187	0.0782	-0.0604	0.0007	1.0338	5.9884
Day 10	0.3207	0.0016	0.0147	0.0461	-0.0424	0.0015	0.2693	1.8663

Table 2: Initial Buyback 3-day CARs.

	p-value	Mean	StdDev	Max	Min	Median	Skewness	kurtosis
CAR -3	0.2050	0.0041	0.0298	0.1770	-0.0456	-0.0004	2.7062	13.0847
CAR -2	0.7281	0.0012	0.0308	0.1620	-0.0839	0.0010	1.3815	8.6727
CAR -1	0.9577	0.0003	0.0464	0.1991	-0.2184	0.0025	-0.3217	8.6068
CAR 0	0.0001	0.0244	0.0558	0.3273	-0.0736	0.0101	2.4505	10.5354
CAR 1	0.9975	0.0000	0.0319	0.0788	-0.0763	0.0018	-0.0887	0.0955
CAR 2	0.6190	0.0021	0.0389	0.2137	-0.0724	-0.0026	2.6058	11.7762
CAR 3	0.1655	0.0042	0.0280	0.0794	-0.0878	0.0050	-0.3388	2.2526

Table 3: Earnings-and-Dividend Increase Abnormal Returns.

	p-value	Mean	StdDev	Max	Min	Median	Skewness	kurtosis
Day -10	0.7423	-0.0004	0.0218	0.0959	-0.2024	-0.0004	-2.6165	27.4788
Day -9	0.0108	-0.0024	0.0163	0.0494	-0.0636	-0.0005	-0.6738	2.4991
Day -8	0.2972	0.0011	0.0177	0.0901	-0.0986	0.0002	0.0529	6.9941
Day -7	0.5930	-0.0005	0.0173	0.0988	-0.0787	-0.0007	0.1633	7.5076
Day -6	0.0797	0.0018	0.0174	0.0644	-0.1541	0.0001	-2.2172	24.0266
Day -5	0.1715	0.0015	0.0183	0.1206	-0.0468	-0.0005	2.0244	10.7588
Day -4	0.0575	-0.0016	0.0142	0.0554	-0.0682	-0.0005	-0.6801	4.1321
Day -3	0.0513	0.0021	0.0182	0.1141	-0.0581	-0.0003	1.3809	8.6406
Day -2	0.6349	0.0005	0.0178	0.0784	-0.1085	-0.0002	-0.4278	8.6583
Day -1	0.0166	0.0033	0.0237	0.1468	-0.1528	0.0001	0.8420	14.3130
Day 0	0.0000	0.0156	0.0485	0.1570	-0.4674	0.0067	-3.0273	34.0468
Day 1	0.0000	0.0088	0.0289	0.2015	-0.0913	0.0016	1.6140	8.5455
Day 2	0.2889	-0.0013	0.0212	0.0600	-0.1207	-0.0002	-0.8198	4.7252
Day 3	0.5764	0.0007	0.0201	0.1273	-0.0699	-0.0006	1.2505	8.0027
Day 4	0.2848	0.0010	0.0168	0.0936	-0.0604	-0.0001	0.8629	4.3919
Day 5	0.5222	-0.0007	0.0192	0.1795	-0.0837	-0.0006	2.3066	27.0339
Day 6	0.5272	-0.0007	0.0193	0.0665	-0.2103	-0.0002	-4.2619	47.1656
Day 7	0.7804	-0.0003	0.0204	0.1449	-0.1507	-0.0007	0.1775	20.2843
Day 8	0.3858	-0.0010	0.0200	0.0941	-0.1487	-0.0002	-0.5734	13.2234
Day 9	0.4260	0.0009	0.0188	0.1337	-0.0785	-0.0002	1.1278	10.5129
Day 10	0.3236	-0.0010	0.0180	0.0769	-0.0752	-0.0006	-0.2726	4.7845

Table 4: Earnings-and-Dividend Increase 3-day CARs.

	p-value	Mean	StdDev	Max	Min	Median	Skewness	kurtosis
CAR -3	0.3190	-0.0018	0.0305	0.1125	-0.2020	-0.0002	-1.0169	7.1057
CAR -2	0.1527	0.0027	0.0324	0.1925	-0.1520	-0.0011	0.7345	6.2329
CAR -1	0.5696	0.0010	0.0298	0.1773	-0.1102	-0.0011	1.0401	7.3196
CAR 0	0.0000	0.0277	0.0585	0.2806	-0.4700	0.0203	-1.3715	18.6724
CAR 1	0.8459	0.0004	0.0343	0.1290	-0.1385	0.0000	-0.1093	2.4655
CAR 2	0.3831	-0.0018	0.0346	0.2165	-0.2071	-0.0017	-0.0243	11.1152
CAR 3	0.5019	-0.0012	0.0301	0.1130	-0.1201	-0.0017	0.0745	2.9185

Table 5: Kruskal-Wallis Test Output and Related Descriptive Statistics.

Type	Chi-square statistic	Prob>Chi-square (p-value)	Difference in means	Difference in medians
ARs: Buyback v Dividend	611.85	0.0000	0.42%	0.20%
CARs: Buyback v Dividend	611.85	0.0000	0.33%	1.02%

Table 6: Dividend Announcement Abnormal Returns by Share-Repurchasing firms.

Day	p-value	Mean	StdDev	Max	Min	Median	Skewness	kurtosis
Day -10	0.1598	0.0024	0.0167	0.0640	-0.0430	-0.0002	0.6141	2.1956
Day -9	0.0484	-0.0028	0.0140	0.0368	-0.0636	-0.0011	-1.3266	5.3331
Day -8	0.7114	-0.0007	0.0181	0.0504	-0.0986	0.0003	-1.3518	8.4573
Day -7	0.9034	0.0002	0.0136	0.0584	-0.0528	-0.0006	0.2966	5.7060
Day -6	0.2650	0.0015	0.0134	0.0392	-0.0570	0.0002	0.0247	4.1147
Day -5	0.7275	0.0007	0.0191	0.1067	-0.0455	-0.0004	1.9466	10.1415
Day -4	0.5378	-0.0009	0.0139	0.0554	-0.0476	-0.0001	-0.0199	3.9366
Day -3	0.5592	0.0009	0.0155	0.0565	-0.0565	-0.0007	-0.3019	3.9002
Day -2	0.0768	0.0030	0.0168	0.0746	-0.0347	0.0006	0.8805	3.3517
Day -1	0.9913	0.0000	0.0215	0.0495	-0.1528	0.0001	-3.4030	25.0743
Day 0	0.0000	0.0206	0.0380	0.1483	-0.0649	0.0114	0.8525	1.3711
Day 1	0.0014	0.0098	0.0302	0.2015	-0.0564	0.0028	2.8142	15.6484
Day 2	0.9557	-0.0001	0.0197	0.0466	-0.0759	0.0007	-0.5813	2.3635
Day 3	0.7086	0.0006	0.0164	0.0671	-0.0398	-0.0006	0.7175	3.6283
Day 4	0.0469	0.0032	0.0162	0.0559	-0.0293	0.0010	0.7698	1.0754
Day 5	0.2503	-0.0020	0.0172	0.0441	-0.0837	-0.0006	-1.0631	5.1139
Day 6	0.6953	-0.0006	0.0153	0.0571	-0.0479	-0.0008	0.6296	2.6604
Day 7	0.7159	0.0009	0.0261	0.1449	-0.1507	-0.0002	-0.2569	19.8620
Day 8	0.1826	-0.0033	0.0244	0.0941	-0.1487	-0.0007	-1.6418	14.0948
Day 9	0.6924	0.0007	0.0176	0.0650	-0.0662	-0.0008	0.2368	3.6227
Day 10	0.5764	-0.0010	0.0186	0.0769	-0.0752	-0.0011	-0.5689	6.9961

Table 7:

Initial Buyback Announcement Abnormal Returns for Firms that issue Dividends

Day	p-value	Mean	StdDev	Max	Min	Median	Skewness	kurtosis
Day -10	0.4436	0.0016	0.0134	0.0437	-0.0249	0.0008	0.6650	1.7555
Day -9	0.0492	0.0076	0.0246	0.1238	-0.0213	0.0023	3.0239	11.9072
Day -8	0.2647	-0.0023	0.0136	0.0293	-0.0426	-0.0001	-0.9511	2.5551
Day -7	0.5428	0.0015	0.0158	0.0575	-0.0250	-0.0006	1.2616	2.8697
Day -6	0.5183	0.0012	0.0118	0.0420	-0.0232	-0.0002	0.8435	2.7593
Day -5	0.2063	-0.0039	0.0201	0.0456	-0.0752	-0.0006	-0.8710	3.4040
Day -4	0.4611	0.0028	0.0251	0.1016	-0.0503	-0.0002	1.5284	5.7187
Day -3	0.0485	-0.0046	0.0149	0.0260	-0.0405	-0.0015	-0.4861	0.3706
Day -2	0.1332	0.0061	0.0261	0.1304	-0.0290	0.0023	2.5950	11.5466
Day -1	0.7107	0.0015	0.0258	0.1425	-0.0297	-0.0036	4.0183	21.3895
Day 0	0.0223	0.0118	0.0326	0.1314	-0.0782	0.0048	0.9119	4.1875
Day 1	0.4110	0.0048	0.0382	0.1450	-0.0556	0.0017	1.6464	4.7200
Day 2	0.8303	0.0006	0.0193	0.0481	-0.0606	0.0027	-0.6061	2.4407
Day 3	0.8689	-0.0006	0.0246	0.0460	-0.1038	0.0012	-1.6824	6.8030
Day 4	0.8733	-0.0007	0.0296	0.1081	-0.0761	0.0000	0.5402	4.0095
Day 5	0.2594	0.0033	0.0188	0.0849	-0.0260	-0.0001	2.0369	7.4708
Day 6	0.0703	-0.0043	0.0150	0.0183	-0.0576	-0.0012	-1.4151	3.7567
Day 7	0.3745	0.0042	0.0303	0.1516	-0.0786	-0.0006	2.4090	13.8848
Day 8	0.4463	-0.0023	0.0198	0.0238	-0.0934	0.0001	-2.5884	10.4592
Day 9	0.2353	0.0030	0.0163	0.0753	-0.0333	0.0012	1.9368	8.7910
Day 10	0.2437	0.0027	0.0148	0.0461	-0.0424	0.0025	-0.2030	2.4531

Table 8: Kruskal-Wallis Test Output for Reduced Data-set.

Type: (A) vs (B)	Chi-square statistic	Prob>Chi-sq	Mean A- Mean B	Median A-Median B
Buybacks vs. Dividends	225.74	0.0000	-0.88%	-0.66%
Dividends with buyback vs. Dividends without buyback	631.94	0.0000	0.50%	0.47%
Buybacks with dividends vs. Buybacks without dividends	201.14	0.0000	0.04%	0.01%