Profitability of Insider Trading: New Zealand Evidence

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Abstract

This paper provides evidence on insider trading in New Zealand by examining the entire set of transactions disclosed by corporate insiders for a sample of 33 listed companies over the 1995-2000 period. These transactions involve two types of disclosures: Immediate disclosures, as represented by substantial shareholder notices, and delayed disclosures, as reported in annual reports. The overall results (1254 transactions) show that insiders earn significantly large abnormal returns (avoid large abnormal losses) on purchases (sales) of their own companies' securities. For delayed disclosures, we find that insiders earn noticeably large abnormal returns or avoid abnormal losses. Immediate disclosures, however, only allow insiders to avoid losses and share purchases result in no gain. These findings lend strong support to amendments to existing securities market laws that propose to require continuous disclosures for both directors and substantial shareholders.

I. Introduction

Insiders often possess information that is not yet available to the market as a whole. Trading on this therefore gives an insider an opportunity to make abnormal returns. The opportunity for profit has been proven in numerous studies that have established that insiders are better informed about their companies' prospects and therefore they trade profitability based on this information, purchasing shares in advance of share price rises or selling prior to share price drops to avoid losses. [Jaffe (1974), Seyhun (1986, 1998)] The requirements to disclose their trades have not stopped insiders from earning abnormal returns.

The disclosure regime in New Zealand calls for immediate filing of share dealings only in the case of substantial share dealings. Under the Securities Amendment Act of 1988, substantial shareholders, defined as any person with a relevant interest in more than 5% of the voting securities of a public issuer, are required to disclose their interest in the company. If a substantial shareholders interest changes by more than 1% or it drops below the 5% threshold, the substantial shareholders is required to disclose the details of these transactions. Disclosure is made to the stock exchange and the public issuer and includes price, number of shares, consideration and the date of the transaction. Substantial shareholders are targeted because they are believed to have superior information regarding their company and as such the ability to profit from it.

All other insider share dealings do not require immediate disclosure. Instead, they can be delayed up to a year as they are reported in the annual report of the company in question. These transactions are relatively small in size but they account for the majority of share dealings in New Zealand.

In New Zealand, there are also concerns regarding the monitoring and enforcement of the prevailing laws and regulations. Currently, there is a general perception that the laws are less effectively policed and enforced than those in most other developed markets. A major reason that is frequently cited for this weakness is the lack of enforcement power of the New Zealand Securities Commission, the principle

regulatory watchdog. The Securities Markets and Institutions Bill, currently before the Parliament, proposes to turn the Securities Commission into an effective investigatory and enforcement agency and to require continuous disclosure of trades by all insiders. This proposal will require more timely filings by directors.

Given the delays in disclosure in New Zealand, as well as the relatively relaxed enforcement record of the law, we expect that insiders would be able to make profitable trades in their own firms' securities. In particular, we would expect delayed disclosures by directors to be associated with greater profits. Delayed disclosures provide insiders with an opportunity to undertake multiple transactions that are relatively small in consideration and hence, less likely to be subject to detection. Evidence from overseas studies supports this view. (Barclay and Warner (1993) and Friederich et al. (2002))

In this paper, we examined a sample of 1254 trades by insiders consisting of 793 trades by directors and 461 trades by large block holders for 33 listed firms over January 1995 through December 2000. Our results show that insiders are active and that in a given year there is at least some activity in more than 78% of the stocks. Over the 250 trading days following the trade, insider purchases (sales) were associated with an abnormal gain of +6.64% (-.03%). For the delayed disclosures, the abnormal returns were +10.33% for purchases and –3.53% for sales. Only the results for purchases were statistically significant. As for immediate disclosures by major shareholders, both purchases and sales had a positive market response, respectively of +2.82% for purchases and +2.52% for sales, but neither was statistically significant.

Overall, the results suggest that insiders earn superior profits on their purchases and that such profits are especially large for directors.

The next section gives a review of the literature on declared insider share dealings in New Zealand and foreign markets. The data and methodology are described in Section III. Results are presented in Section IV. Section V gives a summary and concludes the paper.

II. Literature Review

A large body of research has been carried out on the issue of insider trading, both attempting to identify it in a variety of markets and situations and also examining the effectiveness of a variety of regulatory approaches in reducing insider trading. The literature has however gone in two different directions, separating insider trading into illegal and legal insider trading. The distinction is that illegal insider trading remains hidden from the market relying on such things as nominee sales to mask the fact that an insider is trading. This is done to prevent the market from being signalled about any hidden information and therefore adjusting the price accordingly. Legal insider trading however requires the disclosure of an insiders trading. This disclosure has been the subject of a number of studies examining whether insiders can profit from their trading.

The earliest studies on insider trading were conducted in the 1960's and sort to show that insiders could earn abnormal returns from their trading. Lorie and Niederhoffer (1968), for instance, attempted to identify patterns that showed insiders were more successful in predicting the future price of a stock. Using information based on the net number of buys or sells in a month, the statistical properties of these stocks were explored to find signals that would allow the market to predict future changes. The authors found that insiders had a much better record in picking large price changes. Jaffe (1976), taking a different approach, analysed the ability of insiders to earn abnormal profits. Jaffe calculated the cumulative abnormal returns for a stock over an 8 month holding period after the purchase share transaction. The sample however is limited to the top 8 companies on the basis of net transactions in any given month. The study used transactions disclosed in the Official Summary of Insider Trading, a monthly publication of insiders trading in the previous months. The study found that short run abnormal returns could be earned. But after taking into account transaction costs only intensive purchases held for an 8 month holding period were able to earn statistically significant abnormal returns.

Finnerty (1976) disagreed with these studies on the basis that their samples were based on intensively traded stocks and therefore did not accurately reflect the ability of insiders to earn abnormal returns. His sample was much broader using all trades in

a company in a month rather then using net transactions or creating a minimum number of trades required to join the sample. The study finds support for Jaffe (1976) in that abnormal returns can be earned in the short run from purchases and that losses can be avoided by sales. The returns are not large however and after the sixth month decline for the share purchases sample. Finnerty (1976) does not however consider the effect of transaction costs on the results.

Seyhun (1986) examined the profitability of insiders by examining the cumulative abnormal returns from the period 250 days prior to the event and then 100-300 days after the event. The results found by Seyhun showed that director's purchases earned 4.3% returns and their sales avoided losses of 2.2%. The author concluded that insiders could predict the future prices of the company based on information they held due to their association with the company. He also found that insiders could value their information and therefore trade on the most profitable information. In a later study, Seyhun (1992), similar results were obtained although for a 6 month period the results showed returns of 2.6% for purchases and 5.3% for sales.

These studies based on US information have been both supported and disputed by international studies. Basel and Stein (1979) applied the earlier studies to the Canadian market using a slightly different method of calculating abnormal returns. Their results supported the earlier US studies by showing that insiders were able to profit significantly from information they held. The study also supported the earlier study of Pratt and DeVere (1970), a US study, which found that share purchases were more like to be based on superior information and therefore profit driven whereas sales were more likely to be for liquidity purposes. This was shown in a difference between the profitability of the buy and the sale samples. Eckbo and Smith (1998) also examined disclosed share transactions on the Oslo Stock Exchange. This study used three separate performance measures of portfolios made up of insiders share transactions. Despite being considered a lax market for insider trading regulation, the Oslo market showed no evidence that insiders were able to earn abnormal returns.

Pope, Morris and Peel (1990) examined directors share dealings in Great Britain for the period 1977-1984. The samples were drawn from the Stock Exchange Weekly Intelligence, a publication that is similar to the Official Summary published in the US.

The authors found that in the UK directors could earn significant abnormal returns of 4.85% and avoid significant abnormal losses of 6.69%. These figures are very similar to those of the earlier US studies. One point of difference however is the fact that Pope, Morris and Peel (1990) found evidence that outsiders can also earn abnormal profits from following the lead of insiders. This however disagreed with Rozeff and Zaman (1988) whose study based on US data found that although prior to the transaction costs and the bid ask spread outsiders showed positive abnormal returns, the application of these costs resulted in zero or negative abnormal returns. Rozeff and Zaman also found that insiders trading profits were significantly reduced by the application of bid-ask spreads and transaction costs, reducing the insiders profit from 6% to 3-3.5% per annum. This supports the results of Jaffe (1976) who also found that transaction costs significantly reduced the profit of insiders.

Givoly and Palman (1985), however, found that insiders trading profits were predominately not caused by their possession of superior information. The authors examined the abnormal profits earned by insiders on the US AMEX stock exchange from the disclosure of information with the returns earned from the disclosure of insiders trading. The results showed that most of the profits were due to the disclosure of trading. The authors argued that the market inferred that insiders possess more information and therefore reacted to their trading as if they had possessed new information. The authors concluded that the market accepts that insiders possess more information and follow insider's trends. This finding does however refute the semi-strong and strong form of the efficient market hypothesis.

Research on insider trading in New Zealand is far more limited. Eterbari and Duncan (1990, 1997) provide the majority of the published material relating to insider trading in the New Zealand context. Eterbari and Duncan (1997) builds on the earlier study of Eterbari and Duncan (1990) which examined illegal insider trading prior to a number of corporate announcements in 1986. The 1997 study compared the data from 1986 with a new sample from 1993. The purpose was to examine the effectiveness of the Securities Amendment Act 1988. This study showed that illegal insider trading did exist in New Zealand and was prevalent and the new act was ineffective in halting insider trading. This represents the majority of the research on insider trading in New Zealand.

Casey and Tourani-Rad (2001), however, have looked at disclosed directors share dealings in New Zealand. The paper used a sample of 37 companies for the period 1993-1999, containing 418 buys and 444 sales. A market model was employed to estimate the abnormal returns for the period -60 to 250 days after the trade. The results showed significant abnormal returns of 15.83% for purchases and 11.75% for sales. The results supported foreign studies which showed that directors buy ahead of significant increases, but that directors cannot time significant drops or that reasons other then private information determines sales. The results were however more extreme then those found in other countries.

Most studies find that there are gains to insiders from trading on information that they possess. Insiders do buy before large price run ups although the evidence on the sales is mixed. Some studies have argued that directors do not sell to avoid losses, but rather they sell for liquidity reasons. The only study that failed to find significant returns was Eckbo and Smith (1998).

III. Data and Methodology

III.1. Data

The study period ran from January 1995, when share dealings were first required to be disclosed in the annual shareholder reports, through 2001. For this period we collected a sample from a set of companies for which we could obtain insider-trading data at the University of Waikato. To be included in the sample, each company had to survive as a listed company and have complete price histories over the entire period of study. For empirical test purposes, i.e., data requirements for an estimation period starting 250 days prior to the event and a test period that ended 250 days after each event, companies needed to have price histories for the period 1994-2001.

The overall sample consisted of two subsamples of disclosures. The first subsample included the directors share dealings disclosed in their respective company annual reports. Disclosure of this information is required by statute and is therefore available for all companies. Events that resulted in disclosures being made in the annual reports

and also in an SSH notice were removed from this sample. These were removed as the previous disclosure meant there would be no new information contained in these later disclosures. They were however retained in the SSH sample, where the disclosures did pass on information to the market. These criteria resulted in a subsample of 793 transactions across 33 companies. It consisted of 461 buy and 332 sell transactions.

The second subsample included substantial shareholder disclosure notices that were reported to the market for the period 1995-2000. SSH notices are required to be presented to both the public issuer of the shares they relate to and also to the stock exchange. The stock exchange then publishes these as daily announcements. We obtained these announcements from Datex's database of corporate announcements. The subsample in this case however was limited to existing substantial shareholders who had changed their holding. This resulted in a final subsample of 257 buy and 234 sell transactions across 33 companies.

Our overall sample included 718 buy and 536 sell transactions covering 33 companies across the immediate and delayed disclosures subsamples.

Share price data for the study were obtained from the Datastream databases.

III.2. Measuring Insider Trading

Studies of insider trading often examine net insider sales, defined as open market or private sales minus purchases. This definition is used on the grounds that insiders could, for instance, act on positive information by not only purchasing shares but also by delaying sales until the information is public. Net sales reflect the effects of either or both actions. However, in New Zealand we expect that a study of sales and purchases separately would be more informative. Given that there are already doubts about the Securities Commission's effectiveness as an active enforcement agency, we would find it almost impossible for the Commission to have been able to prove and prosecute an insider for delaying a planned sale of securities until after a substantial drop in the price.

The measure of insider trading used in this paper is the basic purchase or sale transaction. This measure assigns the same weight to each buy or sell transaction irrespective of the consideration involved. Barclay and Warner (1993) report that the optimal size of an information-driven trade can be medium to small because larger trades tend to increase the probability of inspection and can result in legal and market penalties. Further, Seyhun (1986) suggests that officers and directors tend to deal in smaller transactions that are often more informative than those undertaken by beneficial owners.

Our methods do not adjust for normal trading that goes on in a security as the relatively short history of the data on declared trades in New Zealand does not allow for a meaningful estimation of abnormal insider trading. Hence, we assume that each transaction was unusual.

III.3. Methodology

We used event study methodology to derive the abnormal returns to insider trading. Our tests are designed to detect whether trading by insiders was associated with abnormal profits during the study period. Given the difference in the signal provided by insider purchases versus sales, we examine purchases and sales separately for each subsample. Previous research has shown that insider purchases are more informative than sales as sales might be driven by such factors as liquidity needs, as opposed to private information.

The estimation period used in this study was 190 days starting 250 days before the event date, i.e., the date of each transaction. Our test period ran from 60 days prior to the event date to 250 days after that date. We chose a long post-event window to show the long term effect of insider trading, although we report the abnormal returns for shorter subperiods surrounding the event date as well.

For each event, we estimated the market model over days t=-250 to t=-61, as follows;

$$R_{it} = a_i + b_i R_{mt} + e \qquad (1)$$

Where R_{it} and R_{mt} are respectively the returns of stock i and the market portfolio on day t of the test period, measured by log of daily price relatives, calculated from

prices adjusted for capital changes. We used the NZSE All Ordinaries Index to measure the market portfolio.

Using the estimates from (1) above, we then forecast the abnormal returns for day t of the test period as follows:

$$AR_{it} = R_{it} - (a_i + b_i R_{mt}) \qquad (2)$$

Further, as in Etebari and Duncan (1997), we also measured the abnormal returns using market-adjusted returns. This measurement did change the results, hence they are not being reported in this paper.

Daily abnormal returns were then calculated and tested for their significance as follows:

$$t = \frac{AR_i}{s} \qquad (3)$$

Daily average abnormal returns were then accumulated over the entire test period, as well as selected subperiods, to give cumulative abnormal return, CAAR. The CAARs will be tested individually for significance using the formula:

$$t = \frac{CAR_i}{\sqrt{n} * s} \qquad (4)$$

Further, the difference in results between the delayed and immediate subsamples were tested for their significance according to the following equation:

$$t = \frac{(x_1 - x_s)}{\sqrt{\frac{S_1^{\,2}}{n} + \frac{S_2^{\,2}}{n}}} \qquad (5)$$

where $S_1 = \sqrt{n} * s_{AR1}$ and $S_2 = \sqrt{n} * s_{AR2}$ and the degrees of freedom given by:

$$DOF = \frac{\left(\left(\frac{S_1^{\,2}}{n}\right) + \left(\frac{S_2^{\,2}}{n}\right)\right)^2}{\frac{\left(\frac{S_1^{\,2}}{n}\right)}{n-1} + \frac{\left(\frac{S_2^{\,2}}{n}\right)}{n-1}}. \qquad (6)$$

Given that the purpose of the SSH notice is to prevent illegal transactions by insiders and to improve the speed with which the market reacts to insiders trading it should

follow that immediate disclosure reduces the ability of insiders to earn abnormal profit. To test the effect of the timing of disclosures on abnormal returns, the profits of insiders will be compared between immediate disclosure and delayed disclosure. SSH notices will represent immediate disclosure while disclosures made in annual reports will represent delayed disclosure. Even at its best, annual reports take between 3-4 months to be produced and distributed which is a substantial delay in disclosure. It also allows ample opportunity for insiders to continue to make use of their superior information. By comparing between the abnormal returns earned by the two samples it will be possible to determine if the timing of disclosures has an effect on insiders ability to profit from inside information.

IV. Results

Table 1 reports summary statistics of the overall sample and the two subsamples, delayed and immediate disclosures. As reported in the table, over the 1995-2000 period we studied a total a total of 718 buy and 536 sell transactions involving 33 companies. These transactions were split into 461 buys and 332 sales in the delayed disclosure sample, and 257 buys and 204 sales in the immediate disclosures sample. In both samples there were more buys than sales, and overall there were more delayed disclosure transactions than immediate disclosures. The number of transactions were also distributed in a fairly uniform fashion across the years covered in the study, except for a large number of trades that occurred in 1995. This coincides with the first time period in which directors were required to disclose there trading. Trades were also spread fairly equally across weekdays. This is curious given the literature on the New Zealand market that shows that returns at the start of the week tend to be lower than the end of the week. (Etebari and Lont (1999)). Given the perception that insiders are more informed than other market participants, the lack of correlation between the day of the week and insiders trades is curious. There are also 22 trades reported on weekends. These trades most likely reflect transactions in overseas markets, such as ADRs in the US, or private off-market transactions

Table 1 also shows that at least 78% of the firms had at least one transaction in the sample period in a given trading category. The category with the lowest number of

Table 1: Summary Statistics on Insider Transactions

	Delayed Disclosure (Annual Reports)				Immediate Disclosure (SSH Notices)				Overall	
	Buy		Sell		Buy		Sell		Buy	Sell
No of Transactions	461		332		257		204		718	536
By Year										
1995	114		74		49		28		163	102
1996	79		81		33		22		112	103
1997	83		53		46		31		129	84
1998	75		55		48		51		123	106
1999	58		36		46		35		104	71
2000	52		33		35		37		87	70
By Day of the Week										
Mon	69		54		53		42		122	96
Tue	81		69		38		36		119	105
Wed	99		75		49		34		148	109
Thu	81		51		57		35		138	86
Fri	119		78		57		55		176	133
Sat	8		3		1		1		9	4
Sun	4		2		2		1		6	3
By Index Membership										
10	126	126	79	79	23	125	31	97	149	110
Not Top 10 30	53	179	117	196	54	77	46	77	107	163
Not Top 30 40	48	227	41	237	55	132	30	107	103	71
Not in any index -	234	461	95	332	125	257	97	204	359	192
No of Companies	32		26		31		30		33	32
Stocks w/ >=1 trade	96.97%		78.79%		93.94%		90.91%		100%	96.97%
Largest Transactions	Richwhite (TEL)	53	Bowkett (WAM)	43	Tower Corp	26	Franklin Resources	21		
	Yovich (MHI)	28	Inger (WHS)	24	Franklin Resources	15	AMP Asset Management	19		
	Le Grice (MET)	26	Paykel (FAP)	20	Phillips and Dew Fund Management	15	Tower Corp	17		

participant companies is the delayed disclosure sales, whereas all but one company have at least one trade for the delayed buys. The immediate disclosure subsamples show almost identical numbers of participating companies. The results also show that the majority of the trades involved the largest firms in New Zealand (those in NZSE10) or the smaller firms not included in major stock indexes (NZSE 10, 30 or 40). This pattern holds for both the overall sample and the delayed subsamples. The overall buys for instance show an almost identical number of transactions involving firms in the NZSE10 Index (251) as those not included in any stock index (256). The immediate disclosure sample however shows an almost uniform increase in the number of transactions as a firm's participation in indices decreases. The number of not in index transactions is the lowest for both of buys and sales in this sample.

Table 2 presents information on the market to book ratios and the market values of the sample companies. The average market to book value ratio for the sample companies was 1.72, with a median figure of 1.31. In addition over 80% of the sample had a ratio in excess of 1. The average market value of the companies in the sample was $827.4 million, however the median number was much smaller, a mere $140.7 million. This is reinforced by the distribution of the market values, with 36% of the companies having a market value of less then 100 million, while 27% had a market value over 500 million. This shows that the sample companies had a large range of market values, from the very small to the largest in New Zealand.

Table 2: Market Value and Market-to-Book Statistics

	1995	1996	1997	1998	1999	2000	Overall
Market Value ($millions)							
Average	787.33	843.91	869.48	819.79	930.24	713.70	827.41
Median	113.01	151.20	128.29	142.10	139.20	142.27	140.65
Market to Book Ratio							
Average	1.44	1.73	1.51	1.79	1.88	2.00	1.72
Median	1.24	1.51	1.21	1.26	1.43	1.36	1.31

In the remainder of this section we will discuss the profitability of insider buy and sell transactions for the overall sample, as well as the two subsamples. In our discussions we will focus on the immediate effect, day t=0, and the long term effect, the 250 days following each event (days t=-1 to t=+250).

The results for the overall sample are reported in Table 3. As shown in the table, for the buy subsample the abnormal returns at t=0 are statistically significant. Further, over the 250 trading days following transactions insider purchases are associated with a statistically significant abnormal return of 6.64% (CAR over days –1 to +250). As can be seen from the data in Panel A, the average abnormal return results for purchases reflect the common response of the majority of the firms in the subsample and are not driven by a few outliers. The results for the sale subsample are however mostly insignificant, and for each day, there are roughly equal number of positive and negative abnormal returns. Over the 250 trading days following transactions, those selling avoid an insignificant loss of -0.03%. The ability (inability) of insiders to time increases (decreases) in the share price of their companies by buying (selling) is supported by existing evidence. In their study of the New Zealand market, Casey and Tourani-Rad (2001) reported similar results, i.e., that insiders could earn large abnormal returns on their purchases and that their sales had little valuation effect. Previous studies suggest that insiders sell for reasons other than profiting from inside information, such as liquidity or diversification.

Table 3. The Overall Sample Results

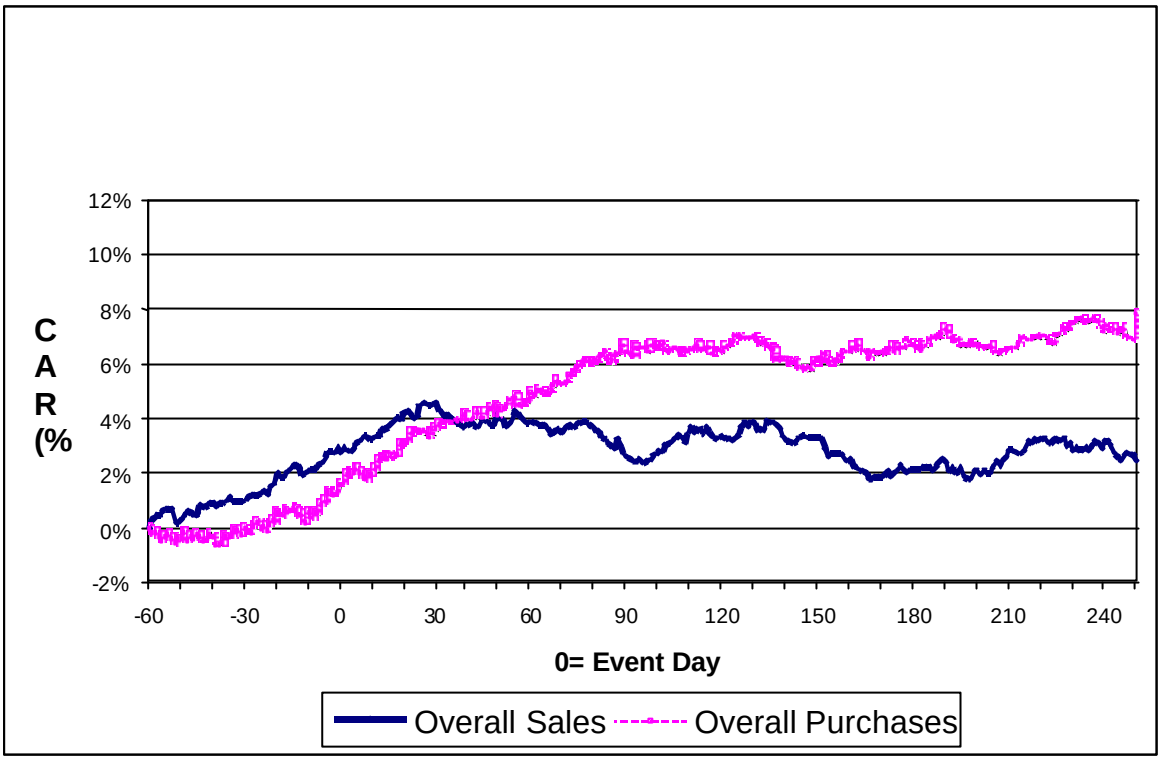
Panel A: Overall Purchase and Sales ARs and CARs for Days -5 to 10						
	Overall Purchases			Overall Sales		
Event Date	Abnormal Returns	% of AR's Negative	Cumulative Abnormal Returns	Abnormal Returns	% of AR's Negative	Cumulative Abnormal Returns
-5	0.0010	37.24%	0.0010	0.0022 *	51.04%	0.0022
-4	0.0028 *	36.96%	0.0038	0.0021	49.34%	0.0044
-3	0.0002	37.52%	0.0041	0.0000	45.94%	0.0044
-2	-0.0008	35.43%	0.0032	-0.0005	52.93%	0.0039
-1	0.0007	36.40%	0.0040	0.0023 *	50.47%	0.0062
0	0.0029 *	39.05%	0.0068 *	-0.0021	52.55%	0.0041
1	0.0011	37.38%	0.0079	0.0015	50.85%	0.0056
2	0.0023	39.33%	0.0102	-0.0005	49.34%	0.0051
3	0.0010	39.89%	0.0112	-0.0002	51.23%	0.0049
4	-0.0002	37.10%	0.0110	0.0014	47.26%	0.0063
5	0.0016	35.15%	0.0126	0.0009	48.77%	0.0072
6	-0.0011	35.43%	0.0115	0.0011	49.91%	0.0083
7	-0.0015	38.91%	0.0100	0.0019	49.15%	0.0102
8	-0.0006	36.82%	0.0095	0.0003	47.64%	0.0105
9	0.0009	37.94%	0.0103	-0.0017	48.96%	0.0088
10	0.0004	36.82%	0.0107 *	0.0004	49.34%	0.0092 *

Panel B: Various Event Window CARs for Overall Purchases and Sales				
	Overall Purchases		Overall Sales	
Windows	Abnormal Returns	Cumulative Abnormal Returns	Abnormal Returns	Cumulative Abnormal Returns
-60 - 250	0.0094 ***	0.0784 ***	-0.0019	0.0245
-1 - 250	0.0094 ***	0.0664 ***	-0.0019	-0.0030
-1 - 30	0.0013	0.0243 ***	0.0003	0.0187 **
-1 - 15	-0.0005	0.0133 **	0.0006	0.0092 *
-1 - 0	0.0029 *	0.0036 *	-0.0021	0.0002
-1 - 1	0.0011	0.0047 *	0.0015	0.0017

* = Signficant at 10% level, ** = Significant at 5% level, *** = Significant at 1% level

Figure 1 gives graphic illustration of the results for the overall sample. It presents some interesting evidence on the ability of insiders to time their trades. For instance, insider sales typically occur during a period of increasing prices. However, insiders tend to capture only about half of this increase, selling out about 30 days prior to the run up ending. As for their purchases, again insiders buy when the price is increasing. On average, they buy about 20 days into a significant price run up that typically lasts three months.

Figure 1. CARs for Overall Insider Purchases and Sales



The insider purchases and sales were separately analysed for: delayed disclosures and immediate disclosures. As hypothesized earlier, we would expect that the return to delayed disclosure be significantly greater then the return to immediate disclosures. These results are presented in Table 4.

The most noticeable feature of these results is that insiders seem able to earn significantly greater returns by delaying the disclosure of their share purchases. Over the period -1 to 250, the return to the delayed disclosures subsample is a statistically significant 10.33%, compared with an insignificant return of 2.8% to the immediately disclosures subsample. The average abnormal return at the event date, t=0, is a statistically significant .56% for delayed disclosures, where is there is little valuation effect for the immediate disclosures on that date. There is a subsequent positive reaction for immediate disclosures at t=+2, but we cannot fully attribute this effect to the earlier transaction.

Table 4. Insider Purchases: Delayed vs Immediate Disclosure

Panel A: ARs and CARs for Delayed vs Immediately vs Disclosures						
	Delayed Disclosure Purchases			Immediate Disclosure Purchases		
Event Day	Abnormal Returns	% of AR's Negative	Cumulative Abnormal Returns	Abnormal Returns	% of AR's Negative	Cumulative Abnormal Returns
-5	0.0001	36.23%	0.0001	0.0019	51.17%	0.0019
-4	0.0029	39.05%	0.0030	0.0028 *	49.22%	0.0047
-3	0.0012	31.67%	0.0041	-0.0007	51.17%	0.0040
-2	-0.0022	36.66%	0.0020	0.0006	52.73%	0.0046
-1	0.0017	36.66%	0.0036	-0.0002	46.88%	0.0043
0	0.0056 **	40.56%	0.0092	0.0000	51.56%	0.0043
1	0.0001	36.01%	0.0093	0.0021	50.00%	0.0065
2	-0.0016	40.56%	0.0076	0.0064 ***	57.03%	0.0129
3	0.0015	40.78%	0.0092	0.0003	55.47%	0.0133
4	0.0006	36.01%	0.0098	-0.0011	54.30%	0.0122
5	0.0004	32.54%	0.0102	0.0028 *	51.17%	0.0150
6	-0.0017	34.49%	0.0085	-0.0004	50.00%	0.0146
7	-0.0021	36.88%	0.0065	-0.0008	50.00%	0.0137
8	0.0004	35.36%	0.0069	-0.0016	48.44%	0.0121
9	0.0027	36.23%	0.0096	-0.0010	52.73%	0.0111
10	-0.0021	31.67%	0.0075	0.0030 *	57.03%	0.0141 **

Panel B: Various Event Window CARs for Immediately and Delayed Purchases				
	Delayed Disclosure Purchases		Immediate Disclosure Purchases	
Windows	Abnormal Returns	Cumulative Abnormal Returns	Abnormal Returns	Cumulative Abnormal Returns
-60 - 250	0.0093 ***	0.1116 ***	0.0096 ***	0.0441
-1 - 250	0.0093 ***	0.1033 ***	0.0096 ***	0.0282
-1 - 30	0.0003	0.0247 *	0.0023	0.0239 **
-1 - 15	-0.0016	0.0118	0.0007	0.0149 **
-1 - 0	0.0056 **	0.0056	0.0000	-0.0002
-1 - 1	0.0001	0.0057	0.0021	0.0019

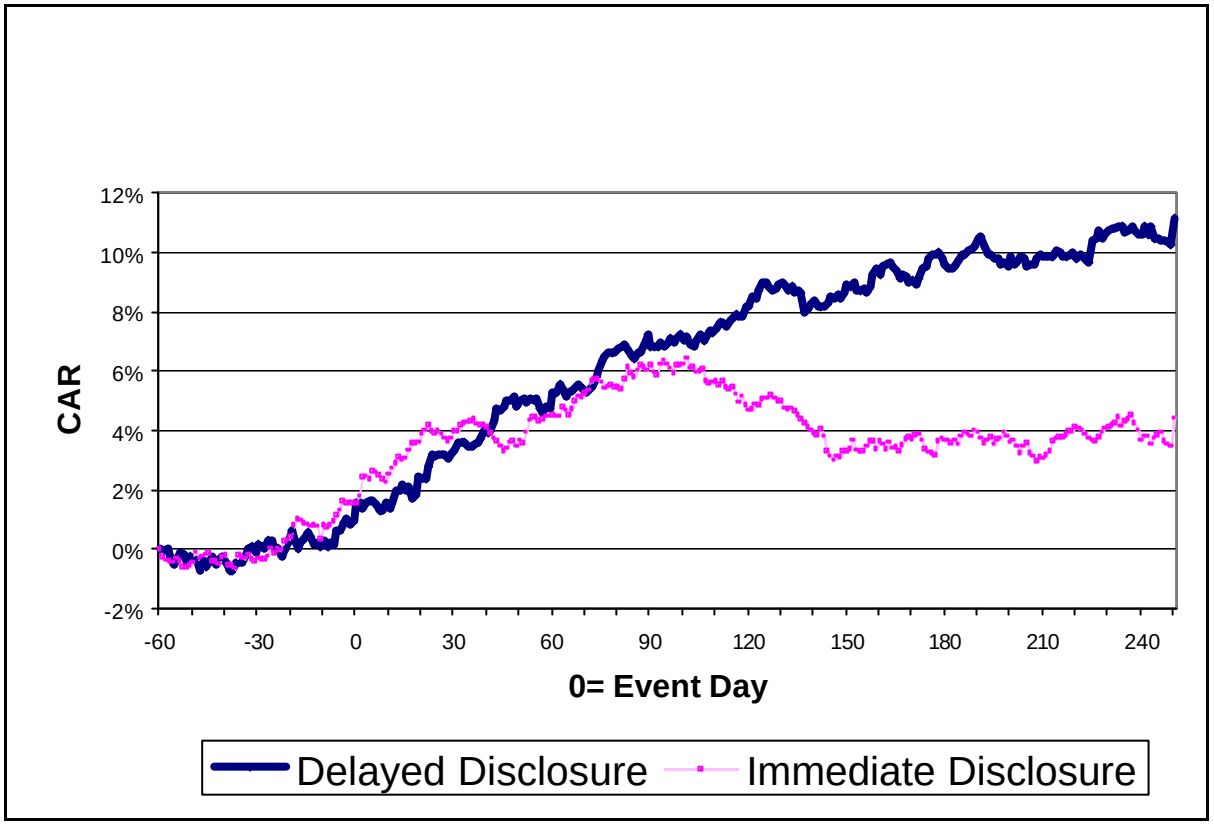
* = Signficant at 10% level, ** = Significant at 5% level, *** = Significant at 1% level

The average abnormal returns reported in Panel A of the Table 4 seem to represent a general phenomenon in the sense that they reflect the response of the majority of individual abnormal returns. The results in Panel B certainly appear to suggest a difference in the abnormal returns in the medium to long term interval due to delays in disclosure.

The results in the tables are illustrated in Figure 2, which depicts the cumulative returns for the delayed and the immediate purchases. From this figure, the two subsamples tend to respond similarly for the period up to 100 days after the transaction at which point the CARs for the immediate disclosure drop down before steadying out. The results for delayed disclosures however continue to increase right

across the length of the sample, although they level off at the end of the estimation period.

Figure 2. CARs for Insider Purchases: Delayed vs Immediate Disclosure



The results of the abnormal returns of insider sales for the two samples are different from those of the purchases but also show that immediate disclosure reduces the abnormal returns of insiders, although the results are far less clear cut in this sample. The results in Table 5 show that there is a difference in the end results for the two samples, although neither sample has a significant result at day 250. The delayed sample shows that insiders can avoid a statistically insignificant result of -3.53% for the period -1 to 250, whereas insiders selling and disclosing immediately make losses of 2.5% for the same period. Again however the event windows for differing periods show at for the periods -1 to 15 and -1 to 30 the two sub-samples followed nearly identical paths, both registering CAR's of nearly 1% for the first 15 days, and nearly 2% for the first 30 days. The results also show that the number of negative abnormal returns for the sample transactions are very similar over the sample period, and for the five days prior to the transactions are nearly identical.

Table 5. Insider Sales: Delayed vs Immediate Disclosure

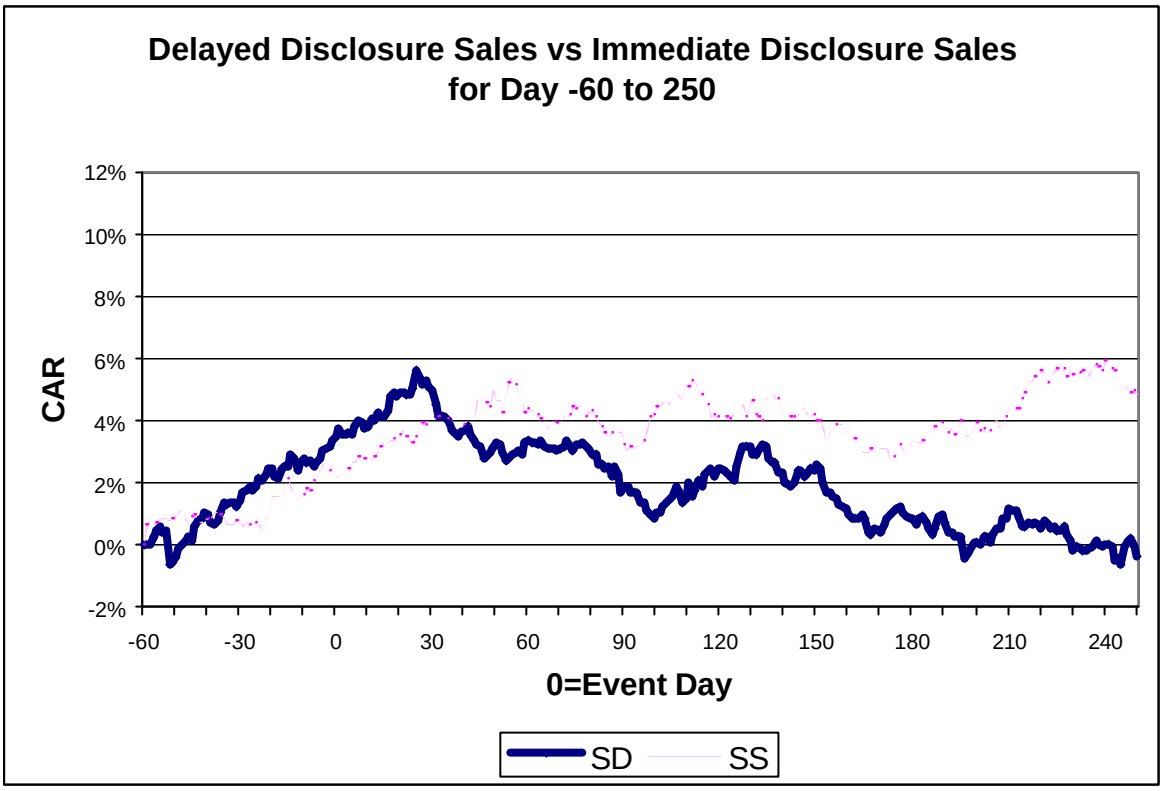
Immediately Disclosured Sales vs Delayed Disclosure Sales AR's and CAR's for Days -5						
	Delayed Disclosure Sales			Immediate Disclosure Sales		
Event Date	Abnormal Returns	% of AR's Negative	Cumulative Abnormal Returns	Abnormal Returns	% of AR's Negative	Cumulative Abnormal Returns
-5	0.0010	50.60%	0.0010	0.0033 *	51.78%	0.0033
-4	0.0029	49.40%	0.0039	0.0015	49.24%	0.0048
-3	0.0007	46.99%	0.0046	-0.0006	44.16%	0.0042
-2	0.0007	52.41%	0.0054	-0.0016	53.81%	0.0026
-1	0.0016	50.30%	0.0069	0.0030	50.76%	0.0056
0	0.0014	54.22%	0.0083 *	-0.0051 ***	49.75%	0.0005
1	0.0025	53.61%	0.0108	0.0007	46.19%	0.0012
2	-0.0018	45.48%	0.0090	0.0006	55.84%	0.0018
3	0.0003	54.82%	0.0093	-0.0007	45.18%	0.0011
4	0.0004	45.48%	0.0097	0.0023	50.25%	0.0034
5	-0.0007	45.78%	0.0091	0.0022	53.81%	0.0056
6	0.0025	50.30%	0.0115	-0.0001	49.24%	0.0055
7	0.0021	46.08%	0.0137	0.0017	54.31%	0.0073
8	-0.0006	48.80%	0.0130	0.0011	45.69%	0.0083
9	-0.0017	47.89%	0.0113	-0.0017	50.76%	0.0066
10	0.0002	51.20%	0.0115	0.0005	46.19%	0.0071

Various Event Window AR's and CAR's for Immediatelyand Delayed Sales				
	Delayed Disclosure Sales		Immediate Disclosure Sales	
Windows	Abnormal Returns	Cumulative Abnormal Returns	Abnormal Returns	Cumulative Abnormal Returns
-60 - 250	-0.0032	-0.0034	-0.0008	0.0486
-1 - 250	-0.0032	-0.0353	-0.0008	0.0250
-1 - 30	-0.0017	0.0176	0.0021	0.0197
-1 - 15	-0.0002	0.0095	0.0013	0.0090
-1 - 0	0.0014	0.0029	-0.0051 ***	-0.0022
-1 - 1	0.0025	0.0054	0.0007	-0.0015

* = Signficant at 10% level, ** = Significant at 5% level, *** = Significant at 1% level

Graph 3 also indicates that a number of similarities exist between the two groups. However again there is a divergence around 170 days after the transaction date, although the gap between the two had been increasing over time. At that point in time the two samples CAR's diverged, the CAR's for the immediately disclosed sample increased to 4.68% for the period -60 to 250. The CAR's for the delayed disclosure group however decreased from that point to a return of -.34% for the same period. This supports the fact that delayed disclosure benefits insiders, however the results are weakened by the fact that neither sample records a statistically significant CAR.

Figure 3. CARs for Insider Purchases: Delayed vs Immediate Disclosure



We tested the difference in the cumulative abnormal returns due to purchases between the delayed and immediate disclosures subsamples for various intervals, with the results presented in Table 6. As the t-stats show, the difference between the samples is significant on day 0. Then the two samples converge and the differences become insignificant. This lasts for between 30 and 60 days, at which point the difference of the purchases diverges. This divergence supports the hypothesis advanced in this paper, that those insiders trading with delayed disclosure earn significantly higher returns then those having to disclose immediately.

Table 6. Difference in CARs between Delayed and Immediate Disclosures

Differences in CAR's between Delayed and Immediate Disclosure					
	Purchases			Sales	
	Difference	T-stat of Difference		Difference	T-Stat of Difference
0	0.75%	2.5668 **		0.51%	1.9200 *
5	-0.21%	-0.7334		0.07%	0.2680
15	-0.31%	-1.0516		0.05%	0.1918
30	0.08%	0.2600		-0.21%	-0.7930
60	1.49%	5.1098 ***		-1.81%	-6.8162 ***
90	1.38%	4.7211 ***		-2.15%	-8.1258 ***
120	4.29%	14.6600 ***		-2.60%	-9.8101 ***
150	6.35%	21.7138 ***		-2.22%	-8.3730 ***
180	6.69%	22.8882 ***		-3.31%	-12.4881 ***
210	7.58%	25.9178 ***		-4.01%	-15.1372 ***
250	7.50%	25.6483 ***		-6.04%	-22.7829 ***
* = Significant at 10% level, ** = Significant at 5% level, *** = Significant at 1%					

Table 6 also provides further support to the notion that investors delaying sales disclosures can avoid greater losses then those required to disclose sales immediately. The results of the tests of the difference in the CARs for these subsamples indicate that although the two samples move together for between 30 and 60 days, after this period the CARs for the two samples diverge. This divergence jumps out and then steadies until between days 90 and 180 at which point the gap widens steadily until the end of the sample. Although insiders do not avoid statistically significant losses, they do perform better then insiders required to disclose trading immediately.

The overall results show that insiders, such as directors, earn abnormal profits from purchasing shares of their companies. Their ability to earn abnormal profits can be attributed to their privileged access to private information about their firms. Our results have implications for the regulatory regime in New Zealand, which aims to reduce the ability of insiders to profit from information asymmetry and make the market more transparent.

Our specific subsample results give clues as to the best way to reduce the profits of insiders, timely disclosure. Those results show that there are significant differences in the cumulative abnormal returns earned by insiders between delayed and immediate disclosure. The results show that insiders can earn significant abnormal returns from

their purchases and at least avoid losses from their sells although these are insignificant. The levels of profits from purchases in New Zealand are also significantly higher than in other countries that encourage more timely disclosure by publishing weekly or monthly lists of insiders trading. This finding further supports the idea that delayed disclosure leads to extra abnormal profits. The source of these extra returns is most likely the ability to make multiple trades without the market being informed. Hence, the market price of the stock would not reflect the information that the insider possesses. Disclosure of trades signals the market that extra information exists and therefore allows the market to reassess the market price of the stock in question. Without these signals the market will be slow in readjusting and it provides insiders with to continued trading opportunities. Timely disclosure will reduce the ability of the insiders to exploit these opportunities over the long period.

V. Conclusion

This paper set out to examine the interrelationship between the timing of mandatory disclosures of share dealings by insiders and their ability to profit. This is of concern in New Zealand due to the allegations that the New Zealand stock market is rife with insider trading. These allegations have resulted in discussion documents focussed on the issue of New Zealand insider trading laws and strengthen these laws. The difficulty is however that these reforms have focussed on illegal insider trading and have neglected to address the fact that insiders the world over have shown an ability to earn abnormal returns from disclosed and therefore legal insider trading.

The situation is more dire in New Zealand due to the differences in the local regulatory regimes from those in other foreign jurisdictions. In particular are the differences in the disclosure regimes between New Zealand and countries such as the USA and the UK. These countries have long had in place public documents produced on a regular basis that disclose insiders share dealings, usually weekly or at worst monthly. In New Zealand disclose is either required immediately or not until the annual report is produced. Disclosures in the annual reports therefore represent a delay of at least several months while the reports are printed and distributed and at worst 12 months. This provides ample opportunity for directors to use their

knowledge of the company to earn abnormal profits and to make multiple trades on that information before the market becomes aware of the information or the trading. The purpose of this paper was to examine the question of whether this delay allows insider to make extra profits.

The results of this study have shown that firstly insiders in New Zealand do trade to earn abnormal returns or to avoid potential losses. Insiders can earn abnormal profits of 6.64% from share purchases but avoid losses of only .30 by selling their shares. These are large and significant returns for insiders purchasing and show that they able to earn much greater returns then those reported in foreign studies exploring the same issue. Comparing the returns of the delayed disclosures with those of the immediate disclosures proves the second hypothesis. Delayed disclosures were able to make significantly increased abnormal returns. Insiders required to disclose purchases immediately made insignificant abnormal returns of 2.82%, whereas purchases by those able to delay disclosure significant profits of 10.33%. The delayed sales subsample also showed that insiders were able to avoid larger losses by trading on their information, avoiding an insignificant loss of –3.53% while the immediate disclosure subsample had abnormal returns of 2.5%, a loss to the sellers. The differences between both samples were also significant at all levels although in the significance did not emerge until between 3 and 6 months after the transaction. The results do however support the hypothesis that delays in disclosure allow insiders to earn extra abnormal profits.

These results suggest that the approaches taken in this country to prevent insider trading have been misdirected. While illegal insider trading takes the limelight directors are able to make significant returns due to possessing superior information. The issue of disclosure has also not considered important despite the fact that it can be seen that the timing of disclosures impacts significantly on the ability of insiders to profit from an information asymmetry. This is an issue that needs to be explored if the regulation of insider trading is to be improved.

There are a number of opportunities to extend this study and add to our understanding of insider trading in New Zealand. The first is to conduct further analysis to discern how timely are actual disclosures in substantial shareholders notices and the annual

reports. Secondly, the results could be made stronger using a longer sample period and a larger sample of firms. Thirdly, finer measures of insider trading activity, such as net sales, adjusted for the normal level of insider trading, as well as the effects of various firm or transaction characteristics, such as market to book and membership in stock indexes, can also provide valuable insights into insider trading activity and the factors that drive it. Lastly, error checking via the use of alternate sources of information can possibly provide explanations for some anomalies in the data.

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Warrior Trading Blog. Insider Trading â€“ How to Follow Insider Trades. Sean. Day Trading Investing. Blog Posts. Most people associate â€œinsider tradingâ€ with secret tips and federal agents busting into a dirty hedge fund like Showtimeâ€™s Billions. Thatâ€™s insider trading based on material non-public information (MNPI).Â When analyzing insider trading filings, youâ€™ll generally only focus on the form 4, which has to be filed within two days of the transaction. How To Find a Form 4. Navigating the SEC website is pretty simple.Â There are a few factors observed by Seyhun which improve the profitability of following insider transactions: Following buys instead of sells. Excess returns of insider purchases are almost double those of insider sales. Why Insider Trading Should Be Illegal. One argument against insider trading is that if a select few people trade on material nonpublic information, then the public might perceive markets as unfair.Â Another argument against insider trading is that it robs the investors without nonpublic information of receiving the full value for their securities. If nonpublic information became widely known before insider trading occurred, the markets would integrate that information, resulting in accurately priced securities. Suppose a pharmaceutical company has success in Phase 3 trials for a new vaccine and will make that information public in a week. Then, there is an opportunity for an investor with that nonpublic information to exploit it. Insider Trading defined and explained with examples. Insider Trading is trading securities, based on privileged information not available to the public.Â Insider trading is the act of buying and selling stock, or other financial commodities, by individuals who have access to information that has not been made publicly available. The practice is generally illegal because it is unfair for one investor to be able to make decisions based on privileged information not available to others.