

Are Profit Warnings and Suspension Notices adequate Disclosures of Distress?

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Abstract

The paper uses simple event study methodology to look at whether disclosures of financial distress in terms of profit warning announcements and suspension notices impact on the market price of the shares of publicly listed New Zealand firms and examines the correlation between the behaviour of share prices and the firm's corresponding Z score, which is indicative of the severity of financial distress. Using a sample of 71 distressed and matching control firms, the results are generally in support of prior literature but also highlight the complexity of the nature of financial distress prediction. The results also question the efficacy of the required disclosures on the NZX as timely or accurate identifiers of distress.

Key words: Event Study, Financial Distress, Abnormal Returns, Altman's Z

JEL Category: G14, G33

1. Introduction

Corporate financial distress is an interesting and much examined area within finance research due to the impact it has on organisations, stakeholders and ultimately, society. Financial distress is especially relevant as we move on from the global financial crisis, the ensuing recession and sovereign debt crises. Currently we are seeing successful firms recovering and unsuccessful firms taken over, delisted and disappearing. Now more than ever, there is a need to consider means of identifying financial distress, and better understand the pathways of such phenomena.

The paper investigates whether the disclosure of financial distress has a clearly negative impact on the market value of the shares of listed New Zealand companies. Specifically it looks at the effect of two types of disclosure. The first of these is the notification of financial poor health that a listed firm makes to its investors through its stock exchange, in the form of a profit warning or a suspension of trading notification. The second is the release of information in company financial reports which provides inputs for computing an Altman's Z score, which investors might use to judge the financial health of a firm. The study will use this information to run an event study in a New Zealand context. Therefore only companies in

the NZX historic database, the NZX Deep Archive, will be considered. The intended contribution is two-fold. It will first provide some insight into the disclosure practices of New Zealand firms experiencing financial distress. Second, it could also help the NZX gauge the effectiveness of its disclosure requirements in aiding investors' decision-making. We argue that currently that formal disclosures of profit warnings and suspensions are at best noisy indicators of severe financial distress.

In the event of a corporate failure, the shareholders are last in line, behind all the other stakeholders, to get invested capital back. Thus their need for timely and accurate indications on the wellbeing of their investments is crucial (Holder-Webb & Cohen, 2007). The role of disclosures is, in principle, to provide timely information to avert the mispricing of stock by traders who would otherwise remain uninformed; and reduce the cost of capital for firms in general through the reduction of information risk (Collett & Hraskey, 2005; Graham, Harvey, & Rajgopal, 2005; Healy & Palepu, 2001). This is particularly the case if companies are anticipating capital undertakings such as the issue of new shares, or mergers and acquisitions (Healy & Palepu, 2001). However, management and stakeholders may have conflicting views on the provision of disclosure and this asymmetry in desired disclosure levels is likely to be greater when managers perceive that their firm has, for whatever reason, ceased to be profitable. The problem for the investor is that it is difficult to tell a healthy firm from an unhealthy one in the absence of information. It has been the role of stock exchange regulations to try to reduce this asymmetry. Prior to the introduction of the ASX Principles and the ASX Listing Rules, Collett and Hraskey (2005) argues that companies made very little corporate disclosures. They cite a survey by Sauer (1996) indicating that 43% of the companies on the ASX 100 did not make specific corporate governance disclosures in the early 1990s. Such uncertainty in the market hinders efficiency and rational investors prudently react by undervaluing 'good' investments, but at the same time overvaluing 'bad' investments (Healy & Palepu, 2001).

Most of the studies dealing with the willingness of companies to provide disclosures concern themselves with firms that are assumed to be stable or growing (Daily, Dalton, & Cannella Jr, 2003). A much smaller body of research deals with the disclosures of financially distressed firms. The bulk of this relates to distress disclosures in the United States. Elsewhere, Frino et al. (2007) used an event study to look at the impact of bankruptcy announcements in Australia, and Eng and Mak (2003) looked at disclosure policies of 158 firms listed on the Singapore Stock Exchange. There is, however, a significant lack of research in the New Zealand context. Through the use of an event study, this paper seeks to provide insight into the effect of disclosures of financial distress on share prices of listed companies in the NZX.

The paper will be laid out as follows: section two reviews prior literature on disclosure practices of firms experiencing financial distress. Section three looks at the formulation of the hypotheses and methodology. The data is discussed in section four, followed by the results in section five. The paper then closes with concluding remarks.

2. Previous Research

This section covers the background as to what motivates firms to make distress-related disclosures at the time that they do. It covers voluntary disclosure, timing, adequacy of disclosure, and the phenomenon of escape from disclosing at all by going dark.

Holder-Webb & Cohen (2007) and Altman (1983) concur in the recognition of the overall impact of financial distress. However, there is no unanimity in the research record concerning the effect of timing of disclosures and the underlying motivations of corporations'

tendency to provide disclosures. Moreover, despite a consensus that the losses to investors through uninformed decisions arising from non-disclosure are greater than those of the disclosure costs incurred by either management or the investors (Proimos, 2005), Healy and Palepu (2001) assert that regulated and mandatory disclosures usually allow management to pass the costs on to shareholders, thereby casting doubt over their supposed benefits. Further research within the disclosure practices of firms experiencing financial difficulties is therefore very valuable.

But do firms actually provide voluntary disclosures? Mandatory disclosures are generally little more than the release of the general purpose financial statements as required in stock exchange listing rules and specified in accounting standards backed by law. Voluntary disclosures are the market updates provided on an as-needed (by the firm) basis to investors via the exchange that the securities are listed on. The voluntary aspect of the disclosure is that the company can choose (to some extent) whether or not to disclose, and has control of its timing. Security exchanges generally do not explicitly state the level of updated information firms must provide, but that updates must be provided when the information content is material. Typically, these updates include incidences of material misstatements and accounting adjustments, significant changes in shareholdings and governance structures, profit warnings and suspensions of trade and trading halts.

A number of possible motivations for companies to provide voluntary disclosures have been suggested. Healy and Palepu (2001) believe that management engages in a constant struggle against shareholders for the balance of power. Shareholders have the ability to exercise voting rights to replace personnel in the event of a company's poor performance. Management therefore has the incentive to provide disclosure to correct mispricing of shares and defensively explain poor performance. Graham et al, (2005) suggest, on the basis of surveys and interviews with Chief Financial Officers, the failure of directors to achieve projected earnings per share, is indicative of poor management, prompting shareholders to take remedial action. Voluntary disclosures could therefore be used to the managements' own advantage; as a defensive mechanism or to signal their talent to the market.

Voluntary disclosures can also serve to maintain good relationships with other stakeholders. Collett and Hrasky (2005), upon analysing 299 Australian annual reports for the year 1994, find that managers make disclosure decisions in an attempt to take advantage of more favourable terms from capital suppliers. They can also decrease costs for analysts, thereby increasing analysts' attention and following in the firm (Graham et al., 2005). This is especially important now, given the increase in investment by, and activism of, institutional shareholders who generally have a superior background knowledge and influence over ordinary shareholders (Gillan & Starks, 2000).

Voluntary disclosures also help overcome the underlying limitations of the general purpose financial statements. These generally have significant time lags between releases, as they are, at their most frequent, quarterly, but in New Zealand tend to be published on a semi-annual basis. In addition, the complexity of the terminology used, although in line with the Generally Accepted Accounting Practices (GAAP), is usually such that investors' ability to understand is somewhat impaired (Graham et al., 2005). However, other factors causing managers to be reluctant to disclose information voluntarily should also be taken into consideration. Graham et al, (2005) discuss management's fear of setting up a disclosure precedent (p.59) that will limit its future freedom of action by what it has disclosed and perhaps even expose the firm to a potential litigation liability.

Cost of disclosures is another important consideration. Chandra and Greenball (1978) suggest that the cost of data collection may deter management from disclosing more than it is legally obliged to. However, the authors also counter-argue that, because such information is generally on hand, the marginal costs incurred by management should not be substantial.

Indirect costs, such as proprietary, agency and political costs may also arise from the decision to voluntarily disclose (Graham et al., 2005). Proprietary costs are incurred as a firm's competitive position is compromised. Agency costs arise if management, by self-serving actions, reduces the return on investment to shareholders or other stakeholders. Political costs are incurred when regulators use the disclosures to the company's detriment (Graham et al., 2005). However, Chandra and Greenball (1978) argue that such information is usually readily available in the market from other sources such as trade publications and stakeholders' networking. Moreover, they believe that, as a result of the increasing sophistication of shareholders partly attributable to the increasing role played by institutions, investors' understanding of financial information should no longer be a valid barrier to disclosure.

In sum, although there is a trade-off, the benefits of voluntary disclosures arguably outweigh the costs. This trade-off creates an optimal disclosure level for the firm. This is usually a partial disclosure, as companies understand that excessive disclosure is just as costly as no disclosure (Core, 2001).

There are two main arguments regarding whether firms voluntarily disclose unfavourable information and if the disclosure is on a timely basis. The first assumes that firms will not withhold unfavourable news; the other holds that it will be withheld. The determining factor in the decision is the perceived reaction that is likely from the market (Kothari, Shu, & Wysocki, 2009), and the resulting effects on the firm's share prices (Trueman, 1986).

The first argument implies that, regardless of the resulting effect on share prices, firms will provide timely disclosure of unfavourable news. Timely disclosure of both good and bad news indicates that management has the ability to anticipate future changes in the firm, thus increasing their reputation and, downstream, their compensation. On the other hand, lack of disclosure leads the market to think that the firm has bad news. Fear of being punished in the stock market for bad news prompts management to provide timely disclosures (Trueman, 1986). However, real bad news is usually anticipated by investors and their expectations are impounded into share prices long before the date of its formal disclosure (Frino et al., 2007; Morris, 1997). Bad news therefore should not be 'new' news to investors and thus there is no reason for disclosures of bad news to be delayed. Frost (1997) agrees with this claim stating that, based on the 81 firms he studied, distressed firms were open about disclosure of their negative news. The rationale is that, if the market is efficient, the signs of impending distress will clearly be discernible to investors. Investors, for example, will pick up the cues implied in a decrease or omission of dividends (DeAngelo & DeAngelo, 1990). More importantly, bad news often sounds 'better' coming from the firms themselves in a timely manner (Frost, 1997). Graham, Harvey and Rajgopal (2005) found that 76.8% of their respondents considered that timely disclosures not only sounded better, but also reduced a firm's litigation risk. Moreover, managers who would withhold negative announcements in the hope that the situation would turn around first are in the minority (Graham et al., 2005). Timely disclosure is also a chance for management to explain poor performance to prevent shareholders holding management responsible and taking corrective action (Healy & Palepu, 2001).

Frino et al. (2007) examine the effects of bankruptcy announcements on 78 companies listed on the ASX. They find that firms that subsequently fail experience declining share prices as early as 425 days before the disclosure date (p.722). Their results fit with Skinner (1994), who found that, in 25 percent of cases of negative earnings surprises in his NASDAQ sample, prices had already adjusted via investors' informed decision making. Skinner also argued that management has an incentive to disclose large negative earnings surprises in a timely manner to minimise potential litigation costs. However, there is a trade off in terms of pricklier investor relations sooner.

With respect to the threat of litigation, there are conflicting views on how it influences an organisation's disclosure decisions and hence its perceived impact on share prices. Litigation is costly in terms of fees, damage to reputation and the inefficient use of management's time (Field, Lowry, & Shu, 2005). Litigation becomes especially relevant for distressed firms as the risk of litigation increases when earnings turn out to be lower than investors' expectations (Field et al., 2005; Healy & Palepu, 2001).

However, there are conflicting views regarding disclosure motives relating to litigation. On the one hand, legal action against firms for inappropriate and untimely disclosure may be seen as an incentive to disclose (Field et al., 2005; Graham et al., 2005; Healy & Palepu, 2001; Kothari et al., 2009). Field et al. (2005) suggest that timely disclosure can help deflect shareholders' claims of improper management and negligence, as management has fulfilled its duty with respect to disclosures. The risk of litigation also decreases as the timeframe in which the share price was mispriced, decreases. The opposite view is taken by Graham et al. (2005) and Healy and Palepu (2001). They argue that the fear of setting a disclosure precedent may reduce the incentive to provide forward-looking disclosures. This is because legal liabilities may result if management fails to achieve what they disclosed they would do. Existing research is ambiguous. Early disclosures have, in some cases, deterred litigation and mitigated liabilities, but in others have failed to achieve either.

Overall, disclosures that are made in advance, and on a timely basis are most likely issued by firms with high litigation risk to reduce the potential negative impacts on the firm. The choice of disclosure is therefore influenced by the industry the company is in, and whether or not it has historically provided disclosures (Field et al., 2005). However, from their sample of law suits in the United States between 1996 and 2006, the authors confirmed that, regardless of litigation risk-source, firms with a greater market capitalisation generally have a greater chance of facing litigation.

Given the adverse impact on share prices, management has incentive to withhold the disclosure of unfavourable news (Kothari et al., 2009). Management's self interest, whether directly through compensation or indirectly through ownership schemes, affects both the extent and integrity of disclosures (Donoher, Reed, & Storrud-Barnes, 2007; Kothari et al., 2009). Management may even go as far as using somewhat creative means that have the effect of distorting earnings and depressing long term prospects to avoid disclosure (Graham et al., 2005; Holder-Webb & Cohen, 2007). The incidence of information asymmetry provides opportunities for management to withhold disclosure; however this ability to delay bad news has somewhat diminished through the introduction of continuous disclosure regulations in the United States (Kothari et al., 2009). New Zealand has similar disclosure requirements set out by the Securities Market Act (1988) and the NZX listing rules (New Zealand Stock Exchange, 2009). However lax policing by the Securities Commissions, which has been suspected both internationally and domestically (Mackay, 2010; McConvill, 2006; Proimos, 2005), is likely to reduce the extent of complete and timely disclosures, though this is, as yet, unproven. Research into the New Zealand context is therefore very valuable.

Many authors argue that management therefore elects to withhold unfavourable news (Graham et al., 2005; Holder-Webb & Cohen, 2007; Kothari et al., 2009; Lurie & Pastena, 1975; Whittred & Zimmer, 1984). Lurie and Pastena discovered that there is a significant timing difference between the disclosure of favourable and unfavourable news, with only 22% of unfavourable news reported early in the fiscal year and most in the 12th (i.e. last) month. Lurie and Pastena's respondents believed that this is due to the relatively more stringent scrutiny during the close of the company year and that management controls naturally hamper the flow of information. However, this argument is weak, considering that those same management controls do not affect the prompt disclosure of favourable news.

Moreover, as this study was conducted in 1975, it may not be as relevant 35 years on. This study seeks to fill this gap by providing current insight on the disclosures in the New Zealand context.

The firms described as most likely to provide inadequate disclosures are those that are generally less profitable, as they want to hide the reasons they are not performing (Singhvi & Desai, 1971). Firms with relatively poor prospects and performance usually do not disclose the full extent of their relative position in the market (Penman, 1980) as this increases uncertainty, which is detrimental to their relatively higher default and bankruptcy risk (Holder-Webb & Cohen, 2007). Moreover, Whittred and Zimmer (1984) assert that distressed companies usually have longer time lags between the releases of their general purpose financial statements. However, these authors only studied 53 failed firms and matching control groups that were listed on the Sydney Stock Exchange. This is restrictive and reduces the strength of their claims. Additionally, their definition of “distress” includes only firms that went through receivership when there are many alternatives for distressed firms, ranging from liquidation, bankruptcy to restructuring (Ball & Foster, 1982; Coats & Fant, 1993; Whittred & Zimmer, 1984). Similarly, Singhvi and Desai (1971) only examined 55 annual reports, and as the research was conducted nearly four decades ago, the relevance of their findings is also brought into question.

On the whole, bad news therefore should not be ‘new’ news to investors and thus there is no reason for disclosures of bad news to be delayed. However, Holder-Webb and Cohen (2007) are of the view that there is a discrepancy between moral and economic motivations to disclose information, and that management’s self interest may allow the latter to override the former. Moreover, the ability of voluntary disclosures to achieve the intended effects is largely dependent on the perceived credibility of disclosures, which declines with the financial health of the company (Healy & Palepu, 2001).

There are also incentives to bypass disclosure completely, withdraw from the SEC (in the US) and “go dark” (Leuz, Triantis, & Wang, 2008 p. 182). These are firms that are still publicly trading, but no longer follow rigorous disclosure requirements as they have chosen to delist from the relevant securities exchange (Coles, 2008; Marosi & Massoud, 2009). This phenomenon is more common in the United States, especially after the enactment of stringent legislation such as the Sarbanes-Oxley Act, following many high-profile corporate collapses (Coles, 2008; Leuz et al., 2008; Marosi & Massoud, 2009). There is a trade-off in such decisions. Leuz et al, (2008) and Marosi and Massoud (2009) believe that, as the firms who usually resort to such measures are generally small, poor performing and are under a great deal of stress, the cost savings achieved from not having to comply with the SEC disclosure rules justifies this decision. On the other hand, Coles (2008) believes that the benefits do not justify the costs, as the firms will experience a significant decrease in growth opportunities. However, the authors are in agreement that the market’s perception of such a move is generally negative, in that even if it is made for some legitimate reason, the interpretation will be that management is looking after its personal agenda.

There is no evidence that this phenomenon is occurring yet in New Zealand. However, with advent of the continuous disclosure regime and the adoption of New Zealand International Financial Reporting Standards (NZICA, 2007) on top of the existing requirements of the Financial Reporting Act 1993 and the Companies Act 1993 (Yeoh, 2005), such a practice may well occur in the future.

Overall, the bulk of the research is related to the business context of the United States, which does not consider New Zealand’s business environment. This represents a significant research gap, and this paper seeks to address it.

3. Hypotheses and Methodology

The first main research question addressed by the paper is: What is the impact of disclosures of financial distress on the market value of shares of publicly-listed New Zealand firms? The second relates to the apparent disclosures of distress as noisy indicators: To what extent are disclosures of financial distress meaningful indicators of meaningful distress?

An event study is the most commonly used method to analyse the effect of company-specific phenomena on equity markets. As this is a preliminary study, the methodology and diagnostics are kept as simple as possible. Daily trading returns R_{jt} (for any company j for day t) are collected in natural log form along with log-form returns on the market R_{Mt} . A return expectation is generated by performing the following simple OLS regression employing these two variables on a 250-day estimation period.

$$R_{jt} = \alpha + \beta R_{Mt} + \varepsilon \quad (\text{Equation 1})$$

The expectation is then forecasted forward into the test period, and into the event window in particular. An abnormal return is calculated for each day of interest by subtracting the forecasted return and cumulative abnormal returns are generated additively from these:

$$AR_{jt} = R_{jt} - (\alpha + \beta R_{Mt}) \quad (\text{Equation 2})$$

$$CAR_j = \frac{1}{N} \sum_{t=1}^N AR_{jt} \quad (\text{Equation 3})$$

For each financial distress disclosure event, the estimation period is initially set at 250 days as it is just short of one year of trading. Initially, the estimation period is set immediately prior to a 21-day test period in which the eleventh day is the day of the disclosure. However, for examining the effects of financial distress prior to the date of disclosure, we use a much earlier estimation period and switch to using weekly data. In this instance, the estimation period trading ends three years before the date of disclosure

We turn now to the basic hypotheses, which are all framed in the null form. Due to the availability of information from a wide variety of communication sources, investors usually anticipate such news and therefore have already discounted their perceived value of the firm (Frino et al., 2007; Morris, 1997). Therefore share prices already reflect these events, so on the day of disclosure, there should be no significant impact.

H₁: Abnormal returns on the day of a distress disclosure to the NZX are not significant, measurable at the 5% level of a Type I error.

In addition, shareholders' informed decision-making has long term impacts on share prices. In Frino et al. (2007) shareholders were found to experience losses from 425 days prior to the actual bankruptcy announcement. On that basis, share prices should gradually decline, as different shareholders start to adjust the perceived value of their investment.

H₂: Share returns, measured as weekly cumulative abnormal returns, do not decline in the year(s) before a distress disclosure, measurable at the 5% level of a Type I error.

With respect to H_2 , investors generally will retire their investment in distressed firms well before an official announcement by the company. The test period for examining the hypothesis therefore includes up to three years prior to the disclosure date, to capture the effects of the investors who have pulled out earlier. The estimation period here consists of 51 weeks of weekly trading data prior to the 157th week before the date of distress disclosure. This is then projected onto t_{-157} WKS (approximately 3 years beforehand) until t_{52} WKS (approximately one year after disclosure date).

We turn now to the third hypothesis. There is no universally accepted definition of financial distress (Ball & Foster, 1982), but numerous studies support the use of Altman's Z index (Coats & Fant, 1993; Holder-Webb & Cohen, 2007; Piotroski, 2000, among others). This is a weighted index:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + .06X_4 + .999X_5 \quad (\text{Equation 4})$$

In Equation 4, (Altman, 1968, 1983)¹ X_1 is the ratio Working capital/total assets, while X_2 is the ratio of Retained earnings/total assets, X_3 Earnings before interest and taxes/total assets, X_4 Market value equity/book values of total liabilities, and X_5 is Sales/total assets.

Altman's Z index is a linear analysis technique that determines a firm's classification based on dichotomous measures (financially distressed or non-distressed). When the computed value of Z is greater than 2.99, a firm is deemed not to be financially distressed, while it is considered to be so when the Z is less than 1.81. Altman (1983 p.120) calls the interval between these two values ($1.81 < Z < 2.99$) the "Zone of ignorance" in which the firm's financial health is neither clearly sound nor unsound. As firms release information in their financial statements that allows informed investors to calculate a Z value, it is reasonable to expect that they do so. It is therefore also reasonable to expect that a negative score will generally indicate unfavourable share return performance.

H_3 : There is no significant relationship between share price behaviour and the magnitude of Altman's Z statistic, measurable by the Kruskal-Wallis Test.

We will use the nonparametric Kruskal-Wallis test, for which purpose, the abnormal returns associated with distress disclosures will be sorted into the three Z-score categories for three sets of tests. Specifically, the test will be performed on the abnormal returns on day t_0 in the first set. In the second set, the test will be performed on a weekly cumulative abnormal return cumulated over the year prior to the event date; and in the third, the test will be run on a weekly cumulative abnormal return cumulated over the year ending one year prior to the event date. For these abnormal returns and cumulative abnormal returns, the estimation periods are as given for testing hypotheses H_1 and H_2 above.

Other researchers have generally cited distress disclosures of greater severity than is the case in the study. For example, Altman (1968) and Frino et al. (2007) included only bankrupt firms within their distressed samples. However, this study observes all instances of distress disclosure available in New Zealand. Therefore, the indicators of distress provided to the stock exchange and the public (usually in the form of profit warnings, suspension of trades and material misstatements) may well be too noisy to be efficient and effective measures of financial distress. On the other hand, disclosures are all we have in advance (whether timely

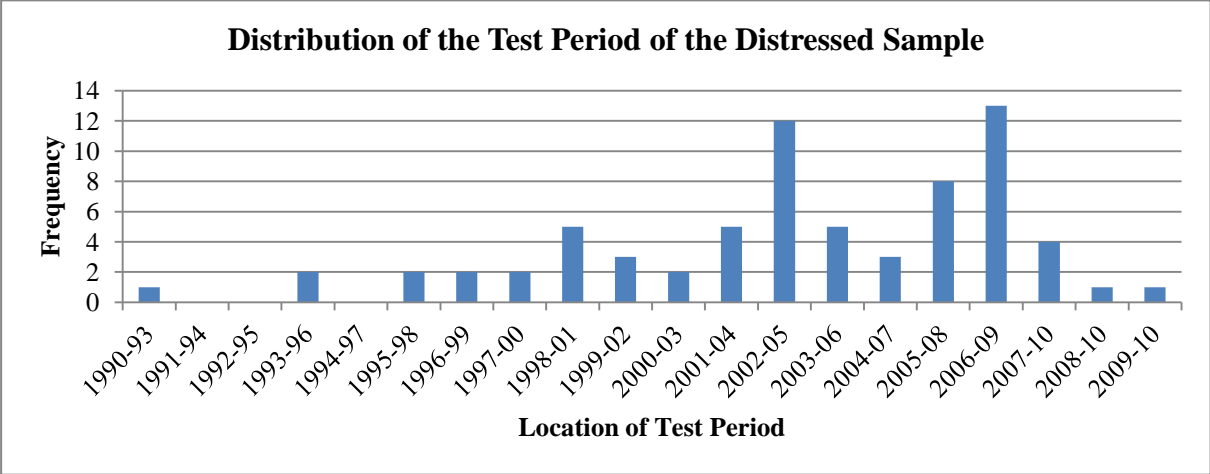
¹ The actual version of the Z-score specified here is equivalent to Altman's (1968) specification and is explained by Altman (2000), p.12.

or not) and the absolute fact of a bankruptcy is only known with certainty, retrospectively. No formal hypothesis is posited to test this noisiness assertion. However, the evidence accumulated in testing the existing three hypotheses provides ample information for addressing the noisy indicator phenomenon.

4. Data

Share price and distress announcement information was obtained from the NZX Deep Archive (January 1990 – May 2010). In total, there were 426 companies in the archive. Since there is no universal measure of ‘financial distress’ as different studies have different criteria, (Ball & Foster, 1982) we define the advent of distress in terms of three diagnostics: profit warning announcements, a suspension of trade of their securities on the NZX or incidences of material restatements in the company’s financial statements. To be included in the sample, a “distressed” company must first have made one of these distress-related announcements and its announcement files and price history information must be on the database. The earliest Deep Archive price histories date from January 1990 onward. A sample of 72 companies meeting the above definition was collected. However, one company lacked available share price data, bringing the sample down to 71 companies. Of these, 48 companies announced a profit warning and the remaining 23 experienced a suspension of trading. The distribution across time of the companies is provided in figure 1, which shows the location of the test periods. The year in which a company disclosed its distress will be the final year of the given span for each point along the horizontal axis.

Figure 1: Distribution of the Testing Period of the Distressed Sample



A matching sample of 71 control companies consists of NZX-listed firms that neither made profit warning announcements nor were suspended from trade. In choosing the control firms, care was taken to ensure that they were similar, or as close to the distressed company as possible. Share price information for the same time period was also examined. However, given New Zealand’s small number of publicly-listed companies, this could not always be the case. Each company has been categorised into a sector by the NZX. In the first incidence, a control company was chosen within the same sector. In cases where a control company could not be identified within the same sector, a company with similar business activity with relevant share price information was selected.

The event day of a control company, t_0 , was set on the date the corresponding distressed company released its profit warning or was suspended from trade. Hence the matched pairs had matched estimation and test periods.

Table 1: Descriptive Statistics

	Market Capitalisation on t_0 (\$000)	
	Distressed	Control
Mean	554,470	2,438,980
Medium	41,310	49,360
Standard Deviation	2,154,665	13,611,554
	Z Score on t_0	
	Distressed	Control
Mean	-0.76756992	1.009025561
Median	1.408902911	1.080461941
Standard Deviation	11.00617654	3.652570054
Z<1.81 = Financially distressed, most likely to face bankruptcy		
1.81<Z<2.99 = Less likely to face bankruptcy but subject to high probability of incorrect classification		
Z>2.99 = Not financially distressed, clearly not bankrupt		
	Data Summary (Number of firms)	
Sector	Distressed	Control
Finance and Others	5	7
Consumers	10	7
Transport	3	1
NZAX	13	11
Food and Beverage	2	4
Media an Communication	2	4
Textile & Apparel	3	1
Mining	1	1
Tourism	1	2
Energy Processing	3	5
Port	1	3
Agriculture and Fisheries	5	4
Overseas	8	4
Property	1	1
Intermediate and Durables	6	6
Investment	7	6
Forestry & Forest products	-	1
Building Materials & Construction	-	3
Total	71	71
Distress Criteria	Distressed	Control
Profit Warning	48	
Suspension of Trade	23	

As the analysis progressed, it became clear that incidence of profit warnings and suspensions of trade were inadequate indicators of financial distress. This may have been because every company may experience financial turbulence to some extent in its lifetime. It is also of interest that the mean and median Z-scores of the control firms fall into the risk of distress category; but why this should be so is an issue that falls outside the scope of this study.

When the original sample of 71 companies was further filtered to include only those that have ceased to be in operation, there were only eight bona fide distressed companies: six in receivership and two in either voluntary or involuntary liquidation. That left a question hanging over the nature and effect of the other 63 distress proxy announcements.

Information concerning the five ratios for the Altman's Z score is collected through the "Annual Report Financials" section of each company in the NZX Deep Archive.² For the fourth ratio, market value equity/book values of total liabilities, the "last" share price on the closing date of the company's year is used. In cases where the "last" price is unavailable, the "bid" price is used, since it represents what investors are willing to pay and, as such, is similar to the accounting concept of fair value, in which there is a hierarchy of determining the value of an asset or liability. In the first instance, the "last price" represents level one of the hierarchy, the quoted price of an active market. The "bid price" represents the second level of the hierarchy, in which the quoted price of an inactive market is sought, as there was no trading of the firm's share on that day (NZICA, 2009).

Table 2 shows the number of firms in the distressed and control samples, and the subsequent subsamples with complete Z score information. The number of control companies is reduced by there not being data available for 30 of them, while 18 of the distressed firms are dropped for the same reason.

Table 2: Firms in the Distressed and Control Samples for the Z Score Analysis

	Distressed	Control
Full Sample	53	41
Profit Warning	44	26
Suspension	9	15
'Bona Fide' Distressed	2	-

5. Results

5.1. Results concerning H_1

H_1 states that share returns do not significantly drop on the day of a distress disclosure to the NZX, measurable at the 5 percent level of a Type I error. To be able to reject H_1 , there must be significant negative AR_{t0} on the day of disclosure.

² Annual rather than semi-annual reports were used in the study. With respect to the earlier years of the sample, use of semi-annual data would have entailed more instances of inaccessibility of data.

Table 3: Abnormal Returns of Full Sample of Distressed and Control Companies

Distressed Companies (t = days from distress disclosure)								
AR _t	-4	-3	-2	-1	0	1	2	3
Mean	0.0084	-0.0085	0.0033	0.0242	0.0299	0.0064	-0.0038	0.0010
Median	-0.0013	-0.0006	-0.0008	-0.0007	0	-0.0004	-0.0011	-0.0003
Max	0.4671	0.0859	0.4628	1.0837	0.4695	0.2565	0.0417	0.1055
Min	-0.1885	-0.3848	-0.2200	-0.1640	-0.2257	-0.2609	-0.1026	-0.1269
% > 0	43.66%	38.03%	36.62%	43.66%	49.30%	42.25%	38.57%	42.86%
P value	0.3792	0.2068	0.7550	0.1626	0.0153**	0.4244	0.1755	0.7441
Control Companies (t = days from distress disclosure)								
AR _t	-4	-3	-2	-1	0	1	2	3
Mean	0.0069	-0.0075	0.0015	-0.0049	-0.0009	9.56E-05	-0.0004	-0.0009
Median	5.22E-05	-0.0016	0.0002	-0.0019	-0.0005	-0.0003	-0.0004	-2.3E-05
Max	0.5052	0.0483	0.0620	0.1967	0.3231	0.0928	0.1123	0.0743
Min	-0.0774	-0.1861	-0.0461	-0.0702	-0.1689	-0.0859	-0.1437	-0.15075
% > 0	50.70	32.39	54.93	33.80	42.25	47.89	44.29	48.57
P value	0.3714	0.0300**	0.4213	0.1977	0.8789	0.9684	0.8937	0.7555

** Significant at the 5 percent level of a Type I error

Both groups had sufficient information for all 71 companies in the sample up until two days after the disclosure, where information was only available for 70 out of the 71 companies in the sample.

Table 3 compares the AR_{t_0} of the 71 companies in the original distressed sample and their corresponding control companies. It shows a significant reaction at the 5 percent level on the day of disclosure t_0 , indicative by the p-value of 0.0153. However, upon closer inspection, this significant reaction may be due to distortions caused by some of the AR_{t_0} in the sample. The mean AR_{t_0} is 0.0299, which is greater than the median of 0. There is also a large difference between the maximum and minimum AR_{t_0} , which tend to suggest that the data is not normally distributed. The data is indeed skewed towards the left hand (negative) side as only 49.30 percent of the AR_{t_0} in the sample was positive. On the other hand, there appears to be no reaction in the market on t_0 for control firms, as the p-value is at 0.8789.

Overall, the mean reaction in the market is driven by a small number of firms with large positive AR_{t_0} such as ICP Biotechnology Ltd, Postie Plus Group Ltd, Tower Ltd, VTL Group Ltd and POD Ltd. There are several explanations for this. The first is that a small rise in a very low share price in the presence of a negative movement in the market as a whole may yield a relatively large abnormal return. This is the case illustrated by ICP Biotechnology Ltd and VTL Group Ltd. The second possibility is illustrated by Tower Ltd, a large and reputable insurance company with a large following of analysts by New Zealand standards, whose profit warning, as explained shortly, has been dismissed by investors in the presence of further information. The relative inadequacy of profit warnings and suspension notices as identifiers of serious financial distress is highlighted by the fact that, of the 71 companies included in the full distressed sample; only 8 were ultimately put into liquidation or receivership and have ceased trading.

Table 4: Abnormal Returns sorted by the Suspension of Trade Criterion

Distressed Company								
AR_t	-4	-3	-2	-1	0	1	2	3
Mean	0.0544	-0.0185	0.0304	0.0782	-0.0105	-0.0029	0.0008	0.0044
Median	0.0008	-0.0009	-0.0009	-1.9E-05	-0.0006	-0.0007	0.0008	-0.0002
Max	0.4733	0.1247	0.4694	1.0959	0.0805	0.0048	0.0185	0.0767
Min	-0.1828	-0.3920	-0.2228	-0.1615	-0.2230	-0.0285	-0.0101	-0.0078
% > 0	52.17	43.48	43.48	47.83	43.48	43.48	54.55	45.45
P value	0.1200	0.3526	0.3125	0.1483	0.3517	0.0897*	0.5624	0.2362
Control Company								
AR_t	-4	-3	-2	-1	0	1	2	3
Mean	0.0134	-0.0028	0.0004	-0.0039	-0.0094	0.0011	-0.0020	-0.0023
Median	-0.0009	-0.0007	0.0004	0.0005	-0.0032	0.0010	-0.0004	0.0004
Max	0.5052	0.0483	0.0524	0.0169	0.03657	0.0552	0.04937	0.0610
Min	-0.0774	-0.0750	-0.0461	-0.0665	-0.0719	-0.0860	-0.0713	-0.1507
% > 0	45.83	37.50	54.17	50.00	25.00	54.17	43.48	56.52
P value	0.5458	0.5727	0.9197	0.2980	0.06713*	0.8313	0.64567	0.7666

* Significant at the 10 percent level of a Type I error

Both groups had sufficient information for all 23 companies in the sample up until two days after the disclosure, where information was only available for 22 out of the 23 companies in the sample.

Table 4 presents the abnormal performance record of the 23 firms experiencing a suspension of trade from the NZX and their matches. In terms of the distressed sample, there is no significant market reaction at the 5 percent level as the p-value for t_0 is 0.3517. This tends to suggest that investors do not react negatively to companies with a suspension of trade. This is most likely due to the fact that the NZX will only suspend a listed company from trading for significant breaches of their listing rules, and will have given forward notice of its intention to do so. Therefore investors will have had time to adjust their perceptions of the firm's value. The fact that there is a reduction in the size of abnormal returns following the announcement suggests that even unsophisticated investors consider the firm to be valued correctly as of the time of the announcement. This finding is in line with those of Frino et al (2007) who found that their ASX-listed firms, on average, recorded 1.3 percent gain on the day of the announcement (and 1.2 percent the previous day), following a 424-day trend of falling value. Also both the mean and median AR_{t_0} were negative; and less than 50 percent of the AR_{t_0} values in the sample were positive. This is in line with our expectations.

On the other hand, unlike the case of the "distressed" firms, the mean abnormal returns of the 23 control firms do not systematically alter in magnitude following day t_0 . Given that nothing has happened for them, on average, this is to be expected. However, these companies furnish a weakly significant negative reaction, with a p-value of 0.0671. This is unexpected as we would expect them to furnish tiny, insignificant abnormal returns. This reaction is caused by two firms in particular, Comvita Limited and Sealegs Corporation Limited, which yielded relatively large negative AR_{t_0} values and thus have depressed the mean (-0.0094) for the control firms relative to their median (-0.0032). In a rising market, we would also expect a greater proportion of positive AR_{t_0} values for the control group. However with only 25 percent of the AR_{t_0} being positive, it is clear there is a negative skew in the distribution of abnormal returns for these firms. This may reflect the impact of economic hard times New Zealand experienced in the early 1990s lingering from the 1987 Crash and the effects of the Global Economic Crisis in the data from 2007 onward. The point that is salient, however, is that for suspensions, there is no appreciable distinction on day t_0 between "distressed" firms and control firms in magnitude with the expected sign.

Similarly, Table 5 shows the AR_{t_0} results of the 48 firms which issued a profit warning. There is a significant reaction in the market at the 1 percent level, with the p-value of 0.0025.

However, contrary to our expectations, the mean of the AR_{t0} in the 48 companies in the distressed sample is positive, where negative AR_{t0} are usually expected of companies upon the disclosure of a negative profit outlook. However, the median is negative, as expected, and very small (-3.9E-06). This tiny magnitude is again indicative of an absence of meaningful news content in the profit warning announcement. The huge difference between mean and median values can be traced to the effect of 5 outlier firms which may have tempered their warnings by simultaneously announcing encouraging news of some sort. For instance, in the case of Tower Ltd, the profit warning was announced in conjunction with a plan to improve the firm's finances by raising \$200 million in new debt.

Table 5: Abnormal Returns sorted by the Profit Warning Criterion

Distressed Company								
AR_t	-3	-2	-1	0	1	2	3	4
Mean	0.0039	-0.0049	0.0042	0.0509	0.0134	-0.0011	0.0054	0.0030
Median	0.0002	0.0002	-0.0003	0.0013	-3.9E-06	0	0.0013	-0.0008
Max	0.0906	0.0404	0.11069	0.4713	0.2576	0.0533	0.1064	0.05977
Min	-0.0930	-0.1848	-0.0289	-0.0079	-0.1075	-0.1033	-0.0337	-0.0556
% > 0	52.08%	52.08%	41.67%	62.50%	45.83%	50.00%	64.58%	41.67%
P value	0.2920	0.2920	0.1505	0.0025***	0.15435	0.7726	0.0539	0.3199
Control Company								
AR_t	-4	-3	-2	-1	0	1	2	3
Mean)	0.0033	-0.0110	0.0015	-0.0055	0.0038	-0.0009	-7.4E-06	-0.0006
Median	0.00013	-0.0020	0.0002	-0.0033	0.0007	-0.0012	-0.0002	-0.0006
Max	0.1133	0.0146	0.0620	0.1967	0.3231	0.09287	0.1123	0.0743
Min	-0.0297	-0.1861	-0.0300	-0.0702	-0.1689	-0.0353	-0.1437	-0.0361
% > 0	53.19%	29.79%	55.32%	25.53%	53.19%	44.68%	45.65%	43.48%
P value	0.2943	0.0298**	0.5072	0.3095	0.6532	0.7251	0.9987	0.7771

** Significant at the 5 percent level of a Type I error

*** Significant at the 1 percent level of a Type I error

Both the distressed and control samples had sufficient information for all 48 companies in the sample for the entire testing period.

However, 62.50 percent of the AR_{t0} values for “distressed” companies were positive.

With respect to the 48 control companies, there are no significant reactions; and both the mean and median are positive. This result supports our prior expectations for control companies.

Table 6 eliminates the effects of the above five companies, bringing the sample down to 43. The mean and median AR_{t0} continue to be positive and significant at the one percent level for the distressed companies. However, they have decreased by 68.85% and 33.29% respectively, indicating that the five companies were key drivers of the unexpected magnitude of AR_{t0} back in Table 4. However, the Table 6 result still highlights the inadequacy of profit warning as a classification, as it is too broad to capture only severe cases of financial distress.

Table 6: Abnormal Returns Sorted by Profit Warning Criterion (Reduced to 43 Firms)

Distressed Company								
AR _t	-3	-2	-1	0	1	2	3	4
Mean	0.0016	-0.0016	0.0012	0.0158	0.0193	-0.0003	0.0060	0.0002
Median	0	0.0001	-0.0007	0.0008	0	9E-06	0.0013	-0.0008
Max	0.0906	0.0315	0.0397	0.0862	0.2574	0.0533	0.1064	0.05959
Min	-0.0930	-0.0584	-0.0289	-0.0079	-0.1075	-0.1033	-0.0337	-0.0556
% > 0	48.84%	51.16%	39.53%	58.14%	48.84%	51.16%	65.12%	37.21%
P value	0.6528	0.5156	0.5295	0.0009***	0.0461	0.9413	0.0559	0.9501
Control Company								
AR _t	-4	-3	-2	-1	0	1	2	3
Mean	0.0041	-0.0107	0.0011	-0.0051	0.0042	-0.0003	0.0004	-0.0012
Median	0.0001	-0.0020	0.0002	-0.0029	0.0007	-0.0005	-0.0002	-0.0009
Max	0.1133	0.0146	0.0620	0.1967	0.3231	0.09287	0.1123	0.07421
Min	-0.0221	-0.1861	-0.0300	-0.0702	-0.1689	-0.0353	-0.1437	-0.0361
% > 0	53.49%	30.23%	55.81%	25.58%	53.49%	48.84%	45.24%	40.48%
P value	0.2253	0.0319**	0.6173	0.3830	0.6554	0.9115	0.9364	0.6204

** Significant at the 5 percent level of a Type I error

*** Significant at the 1 percent level of a Type I error

Both the distressed and control samples had sufficient information for all 43 companies in the sample for the entire testing period.

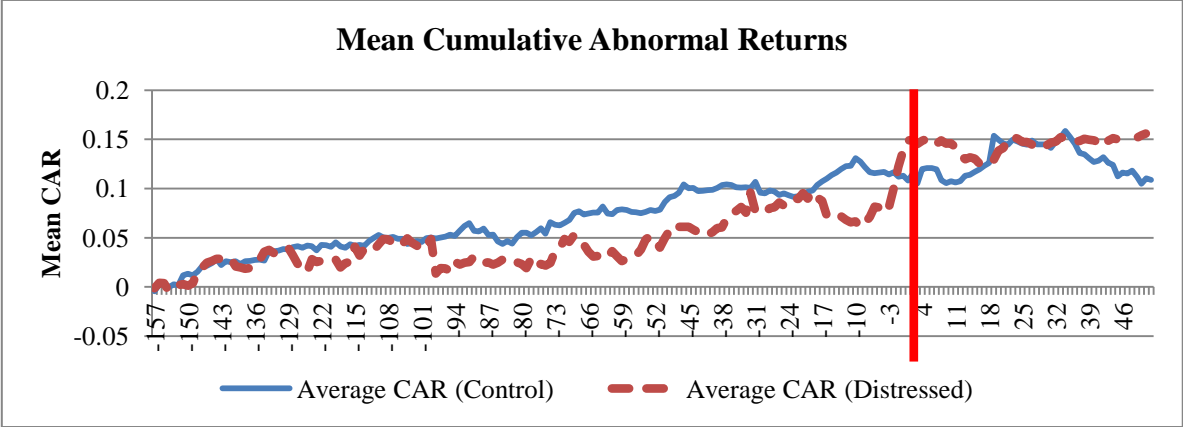
Although Tables 3 to 6 show a significant reaction on day t_0 , it is apparent that results have been driven by the distortions ascribable to individual companies and that there is clearly no strong evidence of a negative reaction in the market on the day of disclosure. Therefore, the hypothesis H1 cannot be rejected. This corroborates Frino et al (2007).

5.2. Results concerning H₂

H₂ states that share returns do not decline in the year or years preceding a distress disclosure, measurable in weekly CARs. Figure 2 shows graphically, the average CAR from $t_{-157 \text{ WKS}}$ (3 years prior to distress disclosure) to $t_{52 \text{ WKS}}$ (approximately one year following the disclosure date) for both the 71 distressed and 71 control companies in the original sample. What is expected is that the average CAR of the distressed firms will be generally lower than that of the control companies and that it will be declining over time, to reflect relatively poorer performance.

The results are surprising in that the CARs for the distressed companies increase over time, to a point where it actually takes over the CARs of the control companies. Intuitively, we would expect growing negative CARs, if the market were to be reacting negatively to a distress disclosure impending on the horizon. In part this is explained by the presence of firms such as Tower Ltd for which a profit warning has been a temporary step backward. However, it is also possible for a firm to appear to be doing very well until some poor investment decision by its management has rapidly unfolding disastrous results. If so, cumulative abnormal returns would be expected to plunge in response to the distress disclosure. The trajectory of the mean CAR suggests, however, that there are no firms like this in the sample. However, in a non-quantitative professional journal article, Argenti (1977) provides some insight into the range of paths that firms might take into financial distress.

Figure 2: Mean Weekly CARs for 3 Years Prior to, and One year Post Announcement



As in the previous section, the different classifications of financial distress are treated separately.

Figure 3: Mean CARs with respect to Profit Warning Announcements

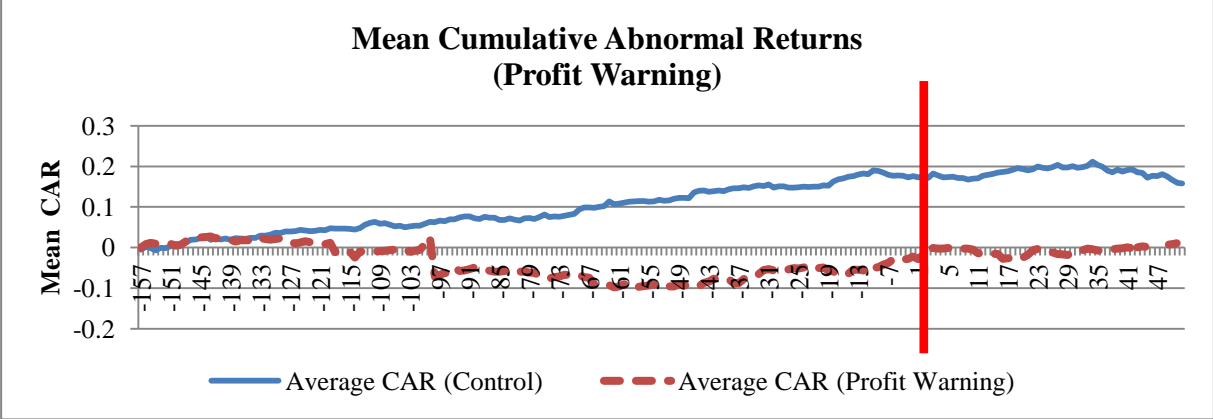


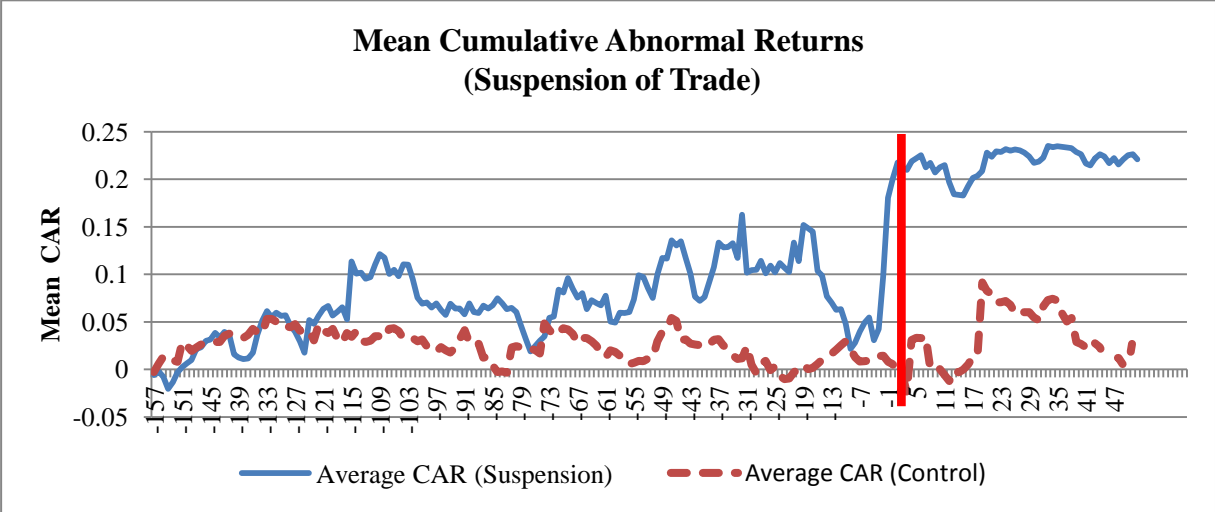
Figure 3 shows the average CAR of the 48 companies included in the distress sample due to a profit warning announcement. It is much closer to our expectations, in that the firms issuing a profit warning, on average, experience unusually poorer performance than do the matching control firms. This is indicated by the negative weekly CAR. However, this troughs at around -0.1 (-10%), and then increases to just above zero by the end of the testing period. This is again, due to the inclusion in the sample of surviving companies such as Briscoe Group Ltd, Telstra Ltd, Pharmacybrands Ltd, and Insured Group Ltd.

By contrast in Figure 3, the average CAR of the control companies steadily increases, as they are never deemed to be financially distressed.

In Figure 4 we turn to the CARs of the full subsample of firms associated with suspensions of trade. The results are again contrary to expectations in that we do not see a decline in the average CAR of the distressed samples over time. As with the previous graphs, this sample contains companies who have survived through momentary turbulence in trading and are still striving today. On the other hand, Figure 4 excludes the effect of one chronically dysfunctional firm, Apple Fields Ltd, which had an outlying CAR of 7.022856 by $t_{52 \text{ WKS}}$. An investigation of Apple Fields data revealed that its share prices were at a record low in the

estimation period, trading on average, at \$0.03 per share. By the test period, share prices rose to the average of \$0.07 per share, which is double in value but still derisory in real terms.

Figure 4: Average CARs with Respect to Suspension of Trade (But not Apple Fields Ltd)



Overall, on average CARs over the span from three years prior to the disclosure date to one year after, it is clear the results remain inconclusive as various companies in the sample have bucked the expected trend. From the results, it is evident that the two identifiers of financial distress used in the study (i.e. a profit warning or a suspension of trade) are too vague; and that, as standard alerts, they are not precise enough. Hence it appears that investors tend to ignore them. On that note, we find, on the basis of the 71 distressed and matching control firms, H_2 cannot be rejected.

But what about the case in which a firm subsequently (and understood ex post) ceases to operate and is placed in liquidation or receivership? We now narrow our focus to the eight firms within the distressed sample that irrefutably suffers financial distress. Here H_2 can clearly be rejected.

Figure 5: Cumulative Abnormal Returns of ‘Bona Fide’ Distressed Companies

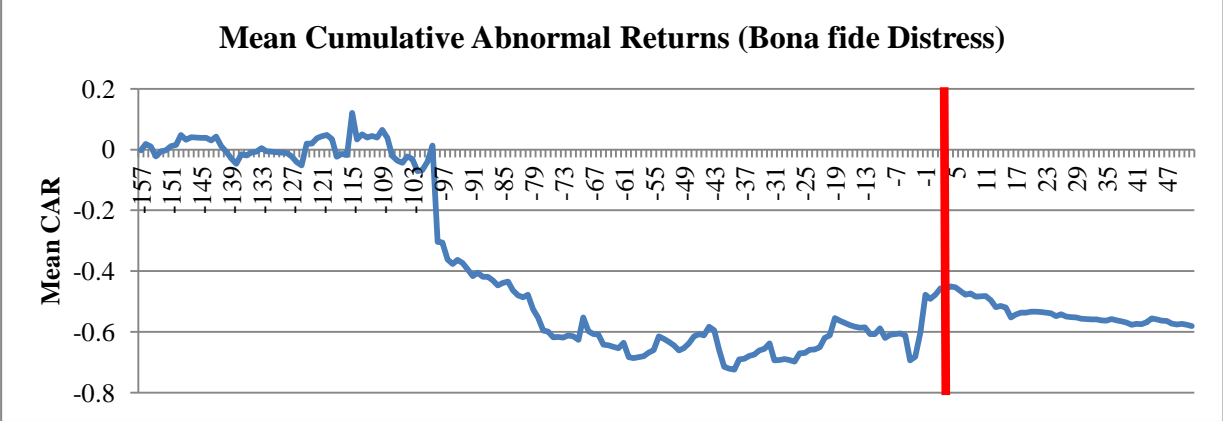


Figure 5 shows that under this narrow definition of ‘financial distress’, the average CAR of the eight firms in the sample is as expected: negative and decreasing throughout the test period. From the graph it is clear that these firms experience negative abnormal returns consistently from two years beforehand until the firm ceases to trade. This corroborates Frino et al., (2007) in that share prices usually reflect distress long before the official disclosure, and hence firms experience declining share prices beforehand. In Frino et al’s case, this was over

a 425-day timeframe, in which the distinction between the negative CARs of failed firms and those in a control group became statistically significant at day t_{-200} . But their sample of distressed firms went on to become actual bankrupts.

The result in Figure 5 also fits with the contention that the distortions and inconclusive results of the previous sections are caused by the abnormal returns behaviour of firms identified by bona fide distress diagnostics but not irretrievably in financial distress. It would seem that investors, on average, can tell the difference between a firm that is heading for oblivion and one that is not, not only well in advance, but also irrespective of their formal announcement intimating distress.

5.3. Results concerning H_3

H_3 states there is no significant relationship between share price behaviour and the magnitude of Altman's Z statistic, measurable by the Kruskal-Wallis Test. The sample size was reduced from 71 observations to 53 as a result of non-availability of data for computing the Z-scores of 18 firms. The control firms dropped to 41 for the same reason. The test could not be used at all on the sample of distressed firms which subsequently were liquidated, as only two of these firms furnished appropriate general purpose financial report data. Z-scores were summarized into three categories, where "1" was designated to represent a distress-level score, "2" covered the indeterminate range and "3" represented good health.

Panel A of Table 7 shows no significant relationship between AR_{i0} and Z score class for the firms in the sample when distressed and control firms are combined. This becomes less surprising when one notes that only nine of the control firms furnished most recently available Z-scores that were 3 (healthy) while ten of the distressed firms managed that feat. However, the Z-score appeared to perform strongly in associating itself with the abnormal returns generated by the sample of distress-disclosing firms (31 observations of 1 (distress) 12 that were indeterminate ("2") and 10 healthy as just mentioned). In this distressed sample, the chi-squared value is 33.39 with a very small p-value (5.62E-08). The control sample in its entirety yielded echoed this finding, but only at the 10 percent level of significance (Chi-square = 5.2348 and p-value = 0.0730). This result indicates that Z-scores do have some relevance in diagnosing company health, but they are not very good as forecasters of distress in the ensuing financial reporting period. However, there turns out to be no distress-announcement (by profit warning or suspension) connection between Z-scores and announcement-event abnormal returns.

This forecasting capacity is even worse in terms of the relation between the Z scores and cumulative abnormal returns generated over the year leading up to the announcement in Panel B. Here there is no significant result for any category. In Panel C, which measures the relation discernible for the year ending a full year before the distress disclosure, two weakly significant relations are detected, but the absence of significance in Panel B renders these Panel C results dubious.

Consequently the only conclusion that can safely be drawn is that conventional distress-related announcements made to the NZX are noisy by nature, and do not have a significant relationship with the severity of financial distress.

Table 7: Relation between CARs and Altman's Z measured by the Kruskal-Wallis Test

Panel A: Abnormal Returns (t_0) and Z Score Class			
Sample	Count	Chi-squared	P-value
Full Sample	94	0.72	0.6966
Distressed Firms only	53	33.3882	5.62E-08***
Control Firms Only	41	5.2348	0.0730*
Distressed Firm Profit Warnings	44	1.5101	0.4670
Distressed Firm Suspensions	9	1.3714	0.2416
Panel B: CAR over Year 0 ($t_{WKS -52} - t_{WKS -0}$) and Z Score Class			
Sample	Count	Chi-squared	P-value
Full Sample	94	0.2213	0.8952
Control firms only	41	2.8049	0.2460
Distressed Firm Profit Warnings	44	2.8083	0.2456
Distressed Firm Suspensions	9	0.0857	0.7697
Panel C: CAR over Year Negative 1 ($t_{WKS -105} - t_{WKS -53}$) and Z Score Class			
Sample	Count	Chi-squared	P-value
Full Sample	94	0.8038	0.6691
Distressed Firms Only	53	1.381339	0.5012
Control Firms Only	41	5.2422	0.0727*
Distressed Firm Profit Warnings	44	4.1538	0.1253
Distressed Firm Suspensions	9	3.0857	0.0790*

* Significant at the 10 percent level of a Type I error

** Significant at the 5 percent level of a Type I error

***Significant at the 1 percent level of a Type I error level

6. Conclusion

The field of financial distress is an intriguing area of study and impacts on both the fields of finance and accounting. The primary aim of the paper was to see whether either of two types of financial distress-related announcement has any effect on the market value of shares, and in particular, test this assumption on listed New Zealand companies. Prior literature tends to have suggested that although there are many compelling arguments against the timely disclosure of unfavourable news, the generally accepted stance is that prompt disclosures benefit the firms themselves and does not significantly affect the market.

In this study, there has been little evidence of firms being unduly punished for making profit –warning announcements or for being suspended from trade. The hypothesis H_1 , which posited that there would be no significant abnormal price reaction on the day of an announcement, could not be rejected. However, when the set of firms that do go bankrupt is separated from those which go on to recover financially, it is clear that, for the former, no punishment is actually necessary. This is because investors have already spent the best part of two years bidding their share prices down prior to the date the distress is disclosed. The steadily deepening negative cumulative abnormal returns earned on the shares of these eight companies easily allows for the rejection of H_2 , which posited that no significant weekly cumulative abnormal returns would be discernible over the three-year period prior to the date of the distress disclosure. On the other hand, H_2 could not be rejected on the far less clear-cut body of evidence provided by the set of “distressed” firms which went on to recover financially and survive.

H_3 could also not be rejected. The relationship between Altman's Z score and different measures of abnormal return turned out simply to be too weak. As mentioned, the sample included firms that did not go on to suffer the full severity of financial distress. This could be due to two reasons. The first is that the Altman's Z score has a wide scope and captures incidences of distress (indicative by poor performance in any of its five ratios) that does not warrant the immediate attention of management. This would support Morris' (1997)

claim that Altman's Z index has a high type II error. The other possibility is that, in response to the stringency of listing rules, most companies NZX-listed companies tend to adopt a 'better safe than sorry' approach, which entails their disclosing to the market any signs of financial turbulence, however temporary these might be. If this is so, then the paper has included instances of companies showing weak signs of financial distress making a formal signal to the market for the sake of compliance. It is, perhaps, like a regulatory encouragement for the little boy in the folk tale to go ahead and cry "Wolf!" Investors have perhaps become accustomed to such disclosures and no longer react negatively to the news, discounting the effect of the warnings as part of the normal operations of the company – unless faced with further evidence that corroborate them. Indeed the overall message is that formal announcements that might be seen as indicators of distress actually do not necessarily mean what they say, and are treated by investors accordingly.

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