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Selling on the News: Does Sound Corporate Governance Mitigate the Negative Contagion Effect?

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Abstract: This paper studies when unexpected bad news about firms is released, whether the stock returns of firms in the same industry decline (i.e. *negative contagion effect*), and whether sound corporate governance could influence this decline. Looking at post-2002 data for Taiwan, there have been event firms that announced default, but anecdotal evidence has it that peer stock returns also plunged when the default news was announced, suggesting that this notion appears to hold true-- at least on the surface. This study, however, looks at the issue from a much deeper perspective in that it considers the timing of the bad news announcements and the strength of corporate governance in peer firms. It is found that the *negative contagion effect* only holds true for unexpected events. Equally important, it is determined that not all peer stocks are negatively affected -- only those with weak corporate governance are so affected. The implication of our paper is that, when facing unexpected bad news, peer firms with good governance can avoid being harmed by the ensuing crisis. Our findings encourage firms to improve the quality of corporate governance and protect the rights of stockholders.

JEL Classification: G14, G34
Keywords: event study, contagion effect, corporate governance

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Note: This study is the revision of our Chinese paper (*When firms announce financial distress unexpectedly, we believe the peer firms with good governance*, Management Science 管理評論, 2007, vol 26, no 4, pp.77-98) with the permission of the editor.

1. Introduction

An increasingly long list of U.S. corporate accounting scandals, including those at such entrenched giants as Enron, WorldCom, Tyco and Merck, have shaken much of the public's faith in the corporations and caused stock prices to drop substantially. Right up until the time these scandals broke out, no signals regarding the firms' deteriorating performance had been released, and even worse, stock analysts were still making buy recommendations for their stocks. The same has been true in Taiwan. On June 15, 2004, for example, Procomp Informatics Ltd suddenly announced it was going to default on a $2.98 billion New Taiwan (NT) dollar European convertible bond payment due on June 17. The news caught the stock market by surprise because Procomp's reported sales revenue was in fact growing, even though only moderately. Astonishingly enough, the cash on its balance sheets was reported to be NT$6.3 billion, more than sufficient to cover the default amount, and worse, there had been some buy and hold recommendations made by stock analysts just a few months before the announcement was made. In plain terms, the financial fundamentals as well as the market perceptions were all sending signals that Procomp was safe and sound. Nevertheless, when the news was released, panicking investors rapidly dumped their stocks, causing Procomp's stock price to plummet by 6.86%. Soon thereafter, three other companies, Summit, Infodisc and Abit, also announced financial distress, and their stocks decreased sharply by 6.48%, 7.04% and 6.75%, respectively.

The unexpected news concerning Procomp's default caused investors to question the credibility of any report attesting to the financial strength of firms, even those that were reportedly doing very well. In the case of Procomp, investors seemingly became quickly suspicious about other firms in the same industry as well. In this paper, for simplicity, defaulted firms, such as Procomp, are referred to as 'event firms', whereas firms in the same industry as the event firms are referred to as 'peer firms'. When bad news is released regarding event firms, investors might be inclined to wonder whether peer firms are equally engaging in similar misconduct, such as 'cooking' their financial ratios, thereby 'cheating' the market. Thus, in the case of Procomp, anecdotal evidence had it that the negative contagion effect went into force as investors, in their state of panic, began selling their stocks of peer firms, as evidenced by the decline in their respective stock prices. A similar but not identical phenomenon was noted following the financial distress announcements of

the other three companies.

There is an abundance of discussion in the literature on the negative contagion effect. Much along the same lines, Lang and Stulz (1992) investigated the effects of a bankruptcy announcement of one event firm on its peers. Due to the intra-industry negative contagion effect, this announcement of financial distress sent a signal to investors that its peer firms might also suffer losses, thereby pushing down their stock prices. A similar intra-industry contagion effect has also been found to occur in other financial events, for example, corporate security offerings (Szewczyk, 1992), dividend announcements (Laux, Starks and Yoon, 1998), dividend omissions (Caton, Goh and Kohers, 2003), and earnings restatements (Ahmed and Goodwin, 2007), to name but a few. These studies demonstrate that, when bad news regarding the event firm is disseminated, there indeed exists a negative contagion effect.

The purpose of this paper is to extend the current negative contagion effect in two directions, so that it encompasses the types of bad news (unexpected versus gradually known), as well as the governance of peer firms. Regarding the first extension, we classify the types of bad news into 'unexpected news' and 'gradually-known news'. While Ball and Brown (1968), Skinner (1994), Hotchkiss and Strickland (2003), and Kothari, Shu and Wysocki (2006) have also engaged in similar classifications, they employ either econometric methods or analyst forecasts to determine the unexpected earnings. They, however, do not study consider the intra-industry effects, nor do they read reports from newspapers or the press in general. Because there are no theoretical suggestions regarding the classification of these two types of news, our categorization of news is based on the announcements of default found by reading reports in various commercial newspapers and financial magazines. The press, especially the newspaper, is commonly viewed as the most important and credible vehicle for impacting individuals' perceptions (Gaines-Ross, 2000; Dyck and Zingales, 2003; Rindova, Williamson, Petkova and Sever, 2005). If there is no financial distress report before the day on which the default is announced, the news is then unexpected; otherwise, it is gradually known. Though some judgments could be subjective, in our case, they are not severe (see the next section for the discussion). Our findings demonstrate that the default announcements of Procomp and Summit were unexpected, while those of Abit and Infodisc were

gradually known.[1]

With the knowledge of the two types of news, our first hypothesis claims that the *negative contagion effect* in relation to the unexpected news is stronger than that regarding the gradually-known news. With respect to the unexpected news, the *negative contagion effect* suggests that investors are frightened and tend to sell *all* their peer stocks. As to the gradually-known news, because the firms' difficulties have already before mentioned in the press before the announcement of default, the news is not really "news". As the negative information gradually spreads, investors will also sell the stocks of the event firms at a slower pace. We therefore take the position that the *negative contagion effect* should dominate in the case of the Procomp and Summit events, but that the *negative contagion effect* should be insignificant in the case of the Infodisc and Abit events.

Our second hypothesis argues that the soundness of corporate governance in peer firms may affect the *negative contagion effect*. A number of studies have shown that weak corporate governance reduces the confidence of investors. For example, firms with sound corporate governance are commonly valued positively (Dechow et al., 1996, Johnson et al., 2000, Fan and Wong, 2002, Farber, 2005) and are

[1] When beginning to research this paper, we intended to include as many events as possible in our sample, but we were not successful for three reasons. First, the data on corporate governance in Taiwan have only been available since 1996. Thus, we could not consider earlier data. Next, our study excludes the effects of systematic risk. With systematic risk, like that during the Asian financial crisis from 1998-1999, investors tend to sell all stocks regardless of corporate governance. This period is therefore not taken into account. In 2002, Taiwan sank into a severe recession which was another systematic crisis; we therefore exclude that period. Accordingly, we only select those events that occurred around 2003-2004. Additionally, we do not consider those events where a company's quarterly trading volume was less than 150 million New Taiwan dollars or where fraudulent money was less than 10 million NTD. It is obvious that setting a strict rule to select events is rather controversial and something researchers should try to avoid. However, it should also be noted that small events are rarely reported in the press -- for example, one distressed company (YuChen) had sales revenue that was less than 1% of that of our sample company, Abit. Thus, while it is also an event company, its impact is too small to be reported in the media.

Our paper is also similar to others in the literatures that have only focused on one or two events. To cite a few examples, Bowen, Castanias and Daley (1983) researched the effect of the power utility of the Three Mile Island event on March 28, 1979. Karafiath and Glascock (1989) studied the impact of the bank run on Penn Square Bank on July 5, 1982 on the stock returns of 54 other banks on July 5, 1982. Dickinson, Peterson and Christiansen (1991) studied the impact of the financial distress of the First Republic Bank on its peer banks. Carow (2001) has recently studied the effect of the Citicorp and Travelers Group merger on April 4, 1998 on banks and insurance companies. Chen, Li and Moshirian (2005) have studied the impact of IPO's of the China Bank in Hong Kong. Although our 'case studies' are not completely the same as theirs, they should be regarded as an extension of that kind of study.

particularly important in economic downturns (Johnson et al., 2000, Gugler and Yurtoglu, 2003). Our argument is that when news of financial distress is suddenly released, investors do not sell *all* their peer stocks if their governance is good; investors first scrutinize the peer firms and keep the stocks of those firms with strong corporate governance but sell those of firms with weak corporate governance. If this is true, strong corporate governance should be rewarded when there is unexpected bad news in the market.

Accordingly, from our second hypothesis it is inferred that, regardless of the speed of expectation, not all peer stocks are sold by investors—only those of firms with weak corporate governance. In addition, in the case of gradually-known cases, sound corporate governance, which originally protects peer stocks from being sold, is less critical since investors have already shifted their portfolios.

The remainder of this paper is organized as follows. Section 2 classifies the events as being either unexpected or gradually-known cases. Section 3 gives a complete description of the governance variables that we select. Section 4 presents the econometric model that we use to measure how the market reacts to the announcements regarding the event firms and the effects of these announcements on peer firms. This section also describes the sample and the characteristics of the data. Section 5 presents the empirical findings. Finally, Section 6 concludes the paper.

2. Two Unexpected and Two Gradually-Known Events

Because our hypotheses depend on whether negative news is totally unexpected or whether it is gradually released before the actual announcement date, we first explain how we distinguish between the two. While we wish to be objective, we are aware that making a clear-cut distinction between the two is more of an art than a science. Our two simple criteria are as follows. First, after carefully analyzing all of the collected articles in the major print media[2] in the six months prior to the event's taking place, we classify the firm's announcement as an unexpected event provided that those remarks convincingly and unanimously report that it was unexpected. Secondly, we categorize it as a gradually-known case when a firm is reported to have had worsening financial ratios-- for example, it has had negative earnings, has

[2] Our major private print media comprise two commercial papers and two commercial magazines. The two commercial papers are the *Economic Daily News* and the *Commercial Times,* and the two magazines are *Business Week* and the *Taipei Times*. They have the highest readership and are considered to be credible and reliable sources in the Taiwan market.

written off bad loans, or has made unprofitable investments some time before the actual announcement date.

Some pertinent excerpts of reports from the daily *Taipei Times* that exemplify our classifications follow.

Procomp The demise of Procomp is classified as an unexpected event because both the official reports and the media treated it, or even labeled it, as such. For example, the daily newspaper, the *Taipei Times,* reported:

The scandal broke on June 15, 2004 as Procomp unexpectedly filed a restructuring proposal in a local district court, saying it was unable to maintain solvency. (June 16, 2004)

Because "unexpectedly" appears directly in the media report, we classify it as an unexpected event. More news and reports regarding this unexpected event are available on the websites but are skipped here due to space constraints.

Summit News of Summit's distress broke on September 16, 2004, and we also classify the event as unexpected because the TSE made the announcement "after" Summit chairman Lee admitted to financial distress. According to a report in the *Taipei Times*:

The nation's stock market regulators yesterday suddenly restricted trading in shares of Summit Computer Technology Co. to cash transactions only, after the nation's largest educational CD title distributor reported financial defaults, the Taiwan Stock Exchange Corp. (TSE) said on its Website. (September 16, 2004)

Because it was suddenly announced, we classify it as unexpected.

Infodisc News of Infodisc's bankruptcy, because of its negative earnings and its writing off of bad loans, broke on September 1, 2004. We classify it as a gradually-known event because its loss as well as warnings regarding its problems had already been reported before the event. To cite the *Taipei Times*,

David Lu, founder and former chairman of the scandal-ridden Infodisc Technology Co. denied any wrongdoing but admitted a decision to invest in Mediacopy Texas Inc. in the U.S. had been a mistake. The company was forced to write off NT$4.28 billion (US$127 million) in losses this year related to the investment. From January to June, Infodisc reported a pretax loss of NT$4.31 billion, or net negative earnings per share (EPS) of NT$6.93 on revenues of NT$865 million. Last year, the pre-recorded DVD maker reported pretax profits of NT$193 million on

revenues of NT$2.82 billion. (September 1, 2004)

Due in large part to the huge loss it had incurred before the event and the fact that the activities of writing off took place one year prior to the event itself, we classify the event as a gradually-known case.

Abit News of Abit's bankruptcy because of serious losses broke on December 15, 2004. We classify the Abit event as a gradually-known case since its difficulties had previously been pointed out by the TSE. The *Taipei Times* reported:

"The Taiwan Stock Exchange Corp (TSE) ruled yesterday that shares of Abit Computer Corp will be a "full delivery" stock starting today, until the motherboard maker clarifies doubts about its financial portfolio. ... The Exchange also found Abit's issuance of a European convertible bond in 1992 problematic and suspects that insider trading might have been involved.…Abit on Tuesday failed to provide reasonable explanations to clear up eight points in its financial documents." (December 15, 2004)

As the loss was announced before the event, in all likelihood it is a gradually-known case. We classify it as such.

Thus, we have two unexpected events (Procomp and Summit) and two gradually-known events (Infodisc and Abit).

Table 1 reports the announcement dates and a brief description of the news released regarding the four event firms, Procomp, Infodisc, Summit and Abit, in 2004. We determine the event date as the date when the news first appeared in a newspaper. In the case of Procomp, a restructuring proposal was unexpectedly filed in a local district court on 15 June 2004, and this was reported in the newspaper the next day, 16 June 2004; therefore, we select 16 June 2004 as the event date. As for Infodisc, its chairman David Lu resigned after submitting the company's six-month financial report to the TSE on 31 August 2004; the next day, when this was reported in a newspaper, is our event date. In the case of Summit, the company's chairman admitted that the company had inflated sales by NT$3.7 billion between 2001 and 2004 in a move to window dress its financial statements. On 15 September 2004, the TSE declared that Summit's shares required full delivery; the next day is thus our event day. Finally, the TSE ruled on 14 December 2004 that Abit shares required full delivery because the firm had failed to provide reasonable explanations to clear up eight points in its financial documents. The next day, 15 December 2004, is therefore the event day.

Table 1
Definitions of and Reasons for the Event Dates

Event Firm	Calendar Date	Industry Type	Announcement
Procomp	16 June 2004	Light Emitting Diode	On 15 June 2004, Procomp unexpectedly filed a restructuring proposal in a local district court, and then the TSE reclassified Procomp shares as requiring full delivery.
Infodisc	1 Sept. 2004	Application Software	On 31 August 2004, Infodisc chairman Lu resigned from his post after submitting the company's six-month financial report to the TSE; the TSE said that it would investigate whether the firm had violated the law.
Summit	16 Sept. 2004	Storage Media	On 15 September 2004, Summit chairman Lee admitted that the company had inflated sales by NT$3.7 billion between 2001 and 2004 in a move to "improve" its financial statements; then the TSE reclassified Summit shares as requiring full delivery.
Abit	15 Dec. 2004	Motherboard	On 14 December 2004, the TSE ruled that the shares of Abit would require full delivery because it had failed to provide reasonable explanations to clear up eight points in its financial documents.

3. The Role of Governance

3.1 Brief Account of Governance in Taiwan

In Taiwan, the board structures of corporations are, in a broad sense, modeled after their German counterparts. Companies are comprised of two separate organizations--a board of directors and a board of supervisors--where directors manage the company and supervisors monitor the directors. What this means is that crucial managerial decisions are decided by directors or by the votes of directors during board meetings and that supervisors rarely participate in decision-making or the voting process. The minimum number of directors required is three for publicly-issued, but not listed, companies and five for listed companies. All directors

may be elected as standing directors,[3] and boards of directors and supervisors in Taiwan are parallel organizations, which means that decisions made by directors do not require the *a priori* approval of supervisors. In addition, Taiwan's Company Law stipulates that shareholders shall elect both supervisors and directors, and that only current shareholders qualify as candidates. Since supervisors are also shareholders and, more importantly, are often from subsidiaries of the same interest group, they often neglect their designated job of monitoring the directors. Thus, it is not unusual to find that family members of controlling shareholders serve as supervisors.[4]

3.2 Corporate Governance Variables

It is not easy to find the single suitable proxy for corporate governance since abundant governance variables are avialble and different researchers use different proxies. Following Baker and Wurgler's (2006) suggestions,[5] this study uses the principle component anssysis to construct a composite index *CG*. The method allows us to extract the common part of the governance variables, which are the deviation between the control rights and cash flow rights of controlling shareholders (**CRtoCFR)**, the pledge ratio for bank loans of directors and supervisors (**Pledge)**, the independent director ratio (**Independ)**, and institutional shareholdings (**InstituSH)**. Each variable is described below:

CRtoCFR This is defined as the ratio of the controlling shareholder's control rights to his or her cash flow rights. In emerging markets, in which firm ownership tends to be concentrated, the controlling shareholder can separate cash flow rights from control rights through pyramidal and cross-shareholdings to generate private benefits of control that are not shared by minority shareholders, so that the larger the

[3] In a general sense, the authority of the board of directors in accordance with Taiwan's Company Law encompasses the following: (1) determining the agenda of the general meetings of members; (2) examining membership qualifications and imposing membership suspensions; (3) electing or recalling 'standing directors', the vice-chairman and the chairman of the board of directors; (4) investigating and resolving the resignation of directors, standing directors, the vice-chairman and chairman of the board of directors; (5) examining the establishment of various committees and task forces; (6) employing and dismissing work personnel; (7) making annual plans, reports, budgets and final accounts; and (8) overseeing other operations. Then, five standing directors are elected from among the directors, and one chairman and one vice-chairman of the board are elected from among the five standing directors by the directors. For further details see the Company Law of Taiwan.

[4] With regard to the recent heated discussion as to whether a board should include independent directors and supervisors, Taiwan is also enacting a similar law. The drafting of the law, however, takes time and had not been finished at the time of writing this paper.

[5] Baker and Wurgler (2006) use a principal components analysis to build a composite index contains several proxies mentioned by prior studies to measure investor sentiment in the stock market.

difference between control and cash flow rights, the lower will be the firm's valuation (Claessens, Djankov, and Lang, 2000, Bertrand, Mehta and Mullainathan, 2002; Claessens et al., 2002, Friedman, Johnson, and Mitton, 2003). Prior studies use the number of shares that the controlling shareholder can control to measure control rights, while we use another proxy, the number of director seats replaces the number of shares, for control rights. The number of director seats plays a more crucial role for firm control. We expect the lower the ratio of the controlling shareholder's control rights to his or her cash flow rights is, the more likely it is that the firm will have good governance.

Pledge This is defined as the ratio of shares pledged for bank loans over total shares held by directors and supervisors. In Taiwan, it was not uncommon for directors and supervisors to pledge their shares for bank loans to obtain extra funds to buy firm stocks. If stock price goes up, the profits go into their own pockets. If the stock price turns down, they may tend to embezzle corporate funds to support the stock price. Directors or supervisors with more shares pledged for bank loans have little incentive to manage or monitor the firms well, and aggravate the deviation between the controlling shareholder's control rights and cash flow rights, therefore, it's more likely that minority shareholders will be expropriated. Claessens et al. (2000), Yeh and Lee, and Woidtke (2001) and Lee and Yeh (2004) report that the negative impact of the pledge ratio on firm value in Taiwanese firms is severe. Hence, we expect the higher the pledge ratio, the worse the corporate governance.

Independ The independent director ratio is the number of independent directors[6] as a percentage of the number of all directors. Beasley (1996) reported that the likelihood that a financial statement is fraudulent is inversely related to the proportion of independent directors serving on the board. Citing accelerated growth in economic profit when there is a board that is active and independent of management, Millstein and MacAvoy (1998) concluded that independent directors are in fact crucial. Their results indicate that corporations with active and independent boards appear to perform much better than those with passive, non-independent boards. Black, Jang and Kim (2006) recently noted that, in

[6] We define independent directors as directors who have no other position in the firm, who are not the parents or offspring of the directors and who had holdings of less than 1% when they were elected directors.

emerging markets, investors were likely to expect higher stock prices for those firms with sound corporate governance. Thus, having a high ratio of independent directors implies good governance.

InstituSH This ratio is measured as fraction of shares of the firm owned by institutional investors. Because of costly monitoring, only large shareholders such as institutional shareholders have greater incentives to monitor the management and bear the costs of disciplining errant management (Shleifer and Vishny, 1986; Maug, 1998; Cornett, Marcus, Saunders and Tehranian, 2007). McConnell and Servaes (1990), Nesbitt (1994), Smith (1996) and Del Guercio and Hawkins (1999) show evidences that corporate monitoring by institutional investors can result in managers focusing more on corporate performance and less on opportunistic or self-serving behavior. Thus, the greater the ratio is, the better the corporate governance.

4. Methodology and Data

4.1 Econometric Model

We estimate excess returns for peer firm stocks using the regression type of the event study that is the multivariate regression model (MVRM), as developed by Binder (1985). The MVRM is an application of Zellner's (1962) seemingly unrelated regression (SUR) technique that we use to measure the effects of the announcements of the event firms on peer firm stocks. This is because these announcements affect a number of firms concurrently; the assumption of the independent and identical distribution residuals is thus violated. The SUR method is an appropriate solution to the problem of "event clustering".

Our empirical model extends the MVRM, which is equation (1), by taking equation (2) into consideration.

$$R_{it} = \alpha_i + \beta_{i1} R_{mt} + \beta_{i2} R_{mt-1} + \beta_{i3} R_{mt+1} + \sum_{s=0}^{1} \lambda_{si} D_{it} + e_{it} \tag{1}$$

$$\lambda_{si} = \beta_0 + \beta_1 CG_{si} \tag{2}$$

where R_{it} is the return on firm i's stock on day t, R_{mt-1} is the market return on day t–1, R_{mt} is the market return on day t and R_{mt+1} is the market return on day t+1. R_{mt} is used to control for the general stock market movements and one-trading-day lagging and leading market returns are also included in order to control for

non-synchronous trading. The event date is defined as day 0; the model is estimated over a 150-day interval from day –150 to day –1. D_{it} is a dummy variable that is equal to unity during the event period (day 0 to day +1) and zero otherwise, and *CG* is the corporate governance index of the peer firms.

When the conventional MVRM is employed, the focus is on the coefficient λ_{si}, which captures the 2-day cumulative abnormal returns for peer firm i. A significantly negative λ_{si} indicates that the distress of the event firm has adverse effects on the stock returns of its peer firms, which fully supports the negative contagion effect.

The first hypothesis argues that the *negative contagion effect* is only in force for unexpected events and that it is mitigated for gradually-known events. Recall that we classify the Procomp and Summit events as unexpected and the Infodisc and Abit events as gradually-known events. Thus, the first hypothesis holds true for the former two events when λ_{si} is negative and is non-negative for the latter two events.

The second hypothesis postulates that, with an unexpected event, the *contagion effect* is at work for peer firms with weak governance, but not for peer firms with strong governance. The implication is that coefficient λ_{si} is affected by corporate governance with a negative β_0 and a positive β_1. This is because a firm with good governance has a sufficiently large *CG* and hence is able to overturn the negative effect of β_0, which causes λ_{si} to become non-negative. When the event is gradually known, the two effects are reduced since the news is known, albeit only vaguely.

4.2 Sample Selection

Table 2 reports the names and SIC codes of peer firms within the same industry. Procomp belongs to the light emitting diode (LED) industry; Summit belongs to the application software industry; Infodisc belongs to the storage media industry; and Abit belongs to the motherboard industry. The index we use to compute market returns is the stock market index for the whole of Taiwan, i.e., the "Taiwan Volume-Weighted Index." We collect the daily closing stock prices, the governance and financial variables for each peer firm and the Taiwan Volume-Weighted Index from the *Taiwan Economic Journal* (TEJ). Our way of handling missing data is to exclude from the sample any peer firms that do not have complete data for stock prices or the governance and financial variables. There are 12, 10, 10 and 10 peer firms in the respective industries.

Table 2.
Lists of the Event Firms and Peer Firms

Industry	Light Emitting Diode	Application Software	Storage Media	Mother Board
Event firms	2398 Procomp	2490 Summit	2491 Infodisc	2407 Abit
Peer firms	2340 Opto	2487 Ulead	2318 Megamedia	2331 Elitegroup
	2393 Everlight	3083 Chinesegamer	2323 CMC Magnetics	2350 Universal Scientific
	2422 United Epitaxy	5202 NewSoft	2349 Ritek	2357 Asustek
	2426 Tyntek	5203 CyberLink	2396 Prodisc	2376 Gigabyte
	2448 Epistar	5205 Fast	2406 Gigastorage	2377 Micro-Star
	2455 VPEC	5211 Penpower	2443 Lead Data	2397 DFI
	2466 Cosmo	5478 Soft-World	2495 Infortrend	2399 Biostar
	2499 Unity Opto	6111 SoftStar	3050 U-Tech Media	2405 Shuttle
	3031 Brtled	6169 InterServ	3057 Promise	2425 Chaintech
	3061 Forepi	6180 Gamania	3060 Min Aik	3064 Astro
	6164 Ledtech	6231 Insyde Software	6179 Accusys	5414 EPoX
	6168 Harvatek	6238 Catalyst	8071 Feng Sheng	6278 Taiwan Surface Mounting
	6226 Para Light 6289Arima Optoelectronics			

4.3 Basic Statistics

Table 3 reports the basic statistics of three financial ratios and four governance variables explained above. We first compare the differences in the financial ratios between the event firms and peer firms. The three financial ratios are outstanding shares (Outstanding), the debt-asset ratio (DebtRatio) and the returns on equity (ROE).The outstanding shares of the event firms are overwhelmingly larger in number than those of the peer firms, suggesting that the event firms tend to have a higher number of initial or second public offerings, which echoes the old adage that people do not care so much about easy money. Except for Infodisc, the DebtRatios of the event firms are considerably higher than those of the peer firms, which is indicative of the high leverage of the event firms. Not surprisingly, the ROEs of the four event firms are –42.09%, –48.21%, 0.87% and –90.35%, values that are all substantially lower than the averages for the peer firms, which are 8.93%, 5.14%, 10.58% and –0.10%, respectively.

Table 3.
Descriptive Statistics of the Financial Ratios and Governance Variables:

	Light Emitting Diode		Application Software		Storage Media		Motherboard	
	Procomp	Peer firms	Summit	Peer firms	Infodisc	Peer firms	Abit	Peer firms
A. Financial Ratios								
Outstanding (Million)	463	163.14 (158.25)	188	61.17 (37.64)	651	615.50 (1014.23)	847	511.25 (707.85)
DebtRatio (%)	55.77	36.18 (9.23)	37.33	24.66 (15.56)	23.26	37.88 (20.78)	62.79	44.80 (18.01)
ROE (%)	–42.09	8.93 (15.02)	–48.21	5.14 (24.22)	0.87	10.58 (30.55)	–90.35	–0.10 (24.12)
B. Governance Variables								
CRtoCFR (–)	10.64	6.44 (7.54)	3.23	4.43 (5.26)	11.59	18.51 (34.23)	6.70	6.73 (6.24)
Pledge (%) (–)	–	7.29 (12.01)	36.10	2.23 (5.89)	75.88	10.31 (15.90)	43.99	6.33 (14.84)
Independ (%) (+)	0	10.88 (13.92)	14.29	23.58 (16.40)	0	16.57 (16.12)	42.86	11.67 (17.49)
InstituSH (%) (+)	14.25	28.3 (21.16)	4.73	33.29 (18.48)	7.84	28.95 (16.08)	7.4	26.96 (16.06)

Notes: Outstanding is outstanding shares. DebtRatio is the ratio of the book value of debt to the book value of total assets. ROE denotes the return on equity that is the net profit divided by total equity. CRtoCFR is defined as the ratio of the controlling shareholder's control rights to its cash flow rights. Pledge is defined as the ratio of shares pledged for bank loans over total shares held by directors and supervisors Independ is the number of independent directors as a percentage of the number of all directors. InstituSH is measured as fraction of shares of the firm owned by institutional investors. The first and the second entries (in parentheses) are the mean and the standard deviation, respectively. The signs + and – in the parentheses denote the positive, and negative effects of governance, respectively.

We next compare the differences in governance variables between the event firms and peer firms, where the marked differences between the two groups are found. For example, event firms typically have indisputably larger **Pledge,** lower **Independ** and smaller **InstituSH** than those of the peer firms. What is particularly worth noting here is that neither Procomp nor Infodisc have any independent directors prior to they default. In short, a distressed firm tends to have more stocks pledged by directors and supervisors for bank loans, fewer independent director and fewer shares held by institutional investors. It is noted that, however, no clear patterns is found for **CRtoCFR**. Procomp's value (10.64) was higher those of the peer firm but the results are opposite for other distressed firms. That is, **CRtoCFR** aer lower for Summit (3.23), Infodisc (11.59) and Abits (6.70) than those of the peer firms.

We next use prinincap components analsys to consdtrut the CG index on the

basis of the above four governance variables. Our CG index is

$$CG_t = -0.167 \times CRtoCFR_t - 0.676 \times Pledge_t + 0.681 \times Independ_t + 0.227 \times InstituSH_t \quad (3)$$

where the weight is consistent with the expected signs and the greater the numbers of CG index, the higher the quality of corporate governance.

Table 4 presents the correlation coefficients of the CG index and governance variables. **Independ** and **Pledge** are correlated significantly with CG index for each industry. **CRtoCFR** are correlated significantly with the CG index for LED and motherboard industries; **InstituSH** are correlated significantly with the CG index for application software and storage media industries.

Table 4
Correlations between the Governance Variables

Panel A: Procomp	CG	CRtoCFR	Pledge	Independ	InstituSH
CG	1				
CRtoCFR	–0.515***	1			
Pledge	–0.637***	0.287***	1		
IndDirector	0.866***	–0.267***	–0.216**	1	
InstituSH	0.172	–0.059	–0.192*	0.139	1
Panel B: Summit	**CG**	**CRtoCFR**	**Pledge**	**Independ**	**InstituSH**
CG	1				
CRtoCFR	0.006	1			
Pledge	–0.424***	–0.010	1		
Independ	0.943***	0.086	–0.104	1	
InstituSH	0.618***	–0.041	–0.392***	0.427***	1
Panel C: Infodisc	**CG**	**CRtoCFR**	**Pledge**	**Independ**	**InstituSH**
CG	1				
CRtoCFR	–0.248**	1			
Pledge	–0.689***	–0.175*	1		
Independ	0.875***	–0.144	–0.284***	1	
InstituSH	0.353***	–0.041	–0.319***	0.080	1
Panel D: Abit	**CG**	**CRtoCFR**	**Pledge**	**Independ**	**InstituSH**
CG	1				
CRtoCFR	–0.338***	1			
Pledge	–0.526***	0.094	1		
Independ	0.845***	–0.147	–0.017	1	
InstituSH	–0.128	0.139	0.114	–0.265**	1

Notes: All variables have been defined in Table 3. The *t*-values are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

Table 5.

Event Study without Governance: SUR Model

We estimate the excess returns of the stocks of peer firms using the multivariate regression model (MVRM). where R_{it} is the return of firm i's stock on day t; R_{mt} is the market return on day t; R_{mt-1} is the market return on day t–1, and R_{mt+1} is the market return on day t+1.D_t is a dummy variable that equals one during the event period and zero otherwise; and D_t, is a dummy variable that captures the abnormal returns of the peer firms due to the announcements. The coefficient λ_i is the 2-day cumulative abnormal returns (*CAR*) of peer firm i.We define the event date as day zero, and the estimation period is a 150-day interval from day –150 to day –1. Notes: the *t*-values are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

Model: $R_{it} = \alpha_i + \beta_{i1}R_{mt} + \beta_{i2}R_{mt-1} + \beta_{i3}R_{mt+1} + \sum_{s=0}^{1}\lambda_{si}D_{it} + e_{it}$

	Unexpected Events		Gradually-known Events	
	Light Emitting Diode	Application Software	Storage Media	Motherboard
Sample Size	14	12	12	12
Intercept	0.05 (0.90)	–0.25*** (–3.95)	–0.27*** (–3.78)	–0.15** (–2.26)
R_{mt}	0.85*** (28.03)	0.76*** (20.72)	–0.01 (–0.27)	0.05 (1.13)
R_{mt-1}	0.10*** (2.97)	0.12*** (3.08)	0.03 (0.77)	0.05 (1.21)
R_{mt+1}	–0.06* (–1.87)	–0.03 (–0.84)	–0.10** (–1.83)	–0.07** (–1.98)
$\sum_{s=0}^{1} D_{st}$	–4.25*** (–4.89)	–5.06*** (–3.17)	2.22 (1.47)	0.33 (0.07)
R^2	0.2521	0.1959	0.0124	0.0065

5 Empirical Results

Table 5 reports the estimated results using equation (1) only. It is interesting to note that the signs of the coefficients λ_{si} are significantly negative for the unexpected events (the first two events), but are insignificantly positive for the gradually-known events (the last two events). That is, they are –4.25% and –5.06% for the LED and the Application Software industries, respectively, but 2.22% and 0.33% for the Storage Media and the Motherboard industries, respectively. Accordingly, when confronted with unexpected bad news, investors, out of fear of being hurt, tend to sell the peer firms' stocks to protect their portfolios, and in so

doing create negative abnormal returns. This is strongly supportive of the *negative contagion effect*, where unexpected financial distress announcements of event firms generate negative market reactions toward peer firms. By contrast, in the case where the financial distress of a firm becomes known over a longer period of time, investors have evidently already begun selling the stocks of event firms and buying the stocks of peer firms, with the result that abnormal returns are insignificant. These two end results together support our first hypothesis that not all bad news has a negative effect on the stock returns of peer firms. For gradually-known events, the *negative contagion effect* does not hold.[7]

Tables 6 assume that investors' reactions toward peer firms (λ_{si}) are affected by corporate governance. If the second hypothesis cannot be rejected, i.e., in the case of unexpected events the *negative contagion effect* is mitigated for peer firms with good governance, then the coefficients of the interaction variables between $\sum D_{it}$ and the governance variables should be positive, which reduces the *negative contagion effect*. In addition, in the case of gradually-known cases, the sound governance, which originally protected peer stocks from being sold, is less critical since investors have already shifted their portfolios. Then the coefficients of the interaction variables between $\sum D_{it}$ and the governance variables should be insignificant.

The first two columns of Table 6 report the empirical results for the unexpected events. The significantly negative coefficients λ_{si} are similar to those shown in Table 5. However, the coefficients for the interaction variables between $\sum D_{it}$ and the governance variables become significantly positive, i.e., 1.95 for LED and 1.34 for Application Software. The important implication here is that these positive coefficients support the second hypothesis in that, with unexpected bad news, the *negative contagion effect* on the stock returns of peer firms is mitigated when they have good governance. Investors do indeed differentiate between sound governance and dubious governance when unexpected events are announced.

[7] Robustness is tested, but due to space limitations, the results are not reported here; however, they are available from the authors upon request. While our 2-day cumulative abnormal window is (0, 1), we also attempt wider windows, such as (–1, 1) and (1, 3), to test for robustness. The results do not change significantly. We also measure the AR and CAR with narrower windows, and the results are still consistent with our reported findings. For example, when unexpected events have occurred, the stock price reactions of peer firms, such as AR0, AR1, and AR2, are almost all significantly negative. When expected events have been announced, most stock price reactions of peer firms are insignificant.

Table 6.

Event Study with Governance Added

We estimate the excess returns of the stocks of peer firms using the multivariate regression model (MVRM). where R_{it} is the return of firm i's stock on day t; R_{mt} is the market return on day t; R_{mt-1} is the market return on day t–1, and R_{mt+1} is the market return on day t+1.D_t is a dummy variable that equals one during the event period and zero otherwise; and D_t, is a dummy variable that captures the abnormal returns of the peer firms due to the announcements. The coefficient λ_i is the 2-day cumulative abnormal returns (*CAR*) of peer firm i.We define the event date as day zero, and the estimation period is a 150-day interval from day –150 to day –1, *CG* represents the corporate governance index. Notes: the *t*-values are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

Model: $R_{it} = \alpha_i + \beta_{i1} R_{mt} + \beta_{i2} R_{mt-1} + \beta_{i3} R_{mt+1} + \beta_0 \sum_{s=0}^{1} D_{it} + \beta_1 \sum_{s=0}^{1} CG_{si} \times D_{it} + e_{it}$

	Unexpected Events		Gradually-known Events	
	Light Emitting Diode	Application Software	Storage Media	Motherboard
Sample Size	14	12	12	12
Intercept	0.05 (0.90)	–0.24*** (–3.95)	–0.27*** (–3.78)	–0.15** (–2.25)
R_{mt}	0.85*** (28.03)	0.76*** (20.72)	–0.01 (–0.27)	0.04 (1.13)
R_{mt-1}	0.10*** (2.97)	0.12*** (3.08)	0.03 (0.77)	0.05 (1.21)
R_{mt+1}	–0.06* (–1.87)	–0.03 (–0.84)	–0.10** (–1.83)	–0.07** (–1.98)
$\sum_{s=0}^{1} D_{it}$	–4.99*** (–3.54)	–6.78** (–2.45)	2.01 (0.81)	0.33 (0.25)
$\sum_{s=0}^{1} CG_{si} \times D_{it}$	1.95*** (3.55)	1.34*** (2.89)	0.30 (0.58)	0.01 (0.01)
R^2	0.2531	0.1959	0.0125	0.0065

The last two columns of Table 6 report the empirical results for the the gradually-known events. The insignificantly positive coefficients λ_{si} are also similar to those shown in Table 5. The interesting results that emerge from these two cases are that none of the coefficients of the interaction variables are significant. Thus, for this gradually-known event, the release of the bad news evidently did not create negative abnormal returns; aside from this, governance did not affect the abnormal returns of the peer firms. These findings substantiate the second hypothesis, i.e., that with a gradually-known event, sound governance is less critical.

6. Conclusions

The question at the beginning and in the middle of this study has been whether or not the stock returns of firms in the same industry (peer firms) decline when the bad news of firms (event firms) is announced. That is, does what we call the *negative contagion effect* exist? By employing post-2002 data for Taiwan, we examine four event firms that announced that they had defaulted, namely, Procomp, Summit, Infodisc and Abit. Anecdotal evidence has long held that peer stock returns drop when the default news of an event firm is announced, which is indicative of a positive response to this question. However, until now, some important considerations have long been overlooked.

This study looks at the issue from a much deeper perspective in that it considers the timing of such news releases and the role of corporate governance in peer firms. Our first hypothesis argues that the *negative contagion effect* depends on whether the news is unexpected or whether it becomes gradually known. We classify the default news of the first two event firms as unexpected but the news of the other two firms as becoming gradually known. The empirical evidence here lends support to the view that the less surprise there is, the weaker is the *negative contagion effect*. That is, for the unexpected events, there is a *negative contagion effect,* but this *contagion effect* is mitigated in the gradually-known cases.

Our second hypothesis is that not all peer stocks are adversely affected--only those with weak corporate governance. With respect to the unexpected events, the empirical results confirm that the *negative contagion effect* is exacerbated for the peer firms with bad governance. For those peer firms with good governance, their stock returns could even increase when there is bad news regarding the event firms. Furthermore, the importance of governance is downgraded for gradually-known events most likely because investors have already started to adjust their portfolios.

The implication of our paper is that, when facing unexpected bad news that is unexpected, firms with good governance can avoid being harmed by the ensuing crisis. Our findings thus encourage firms to improve the quality of their corporate governance and protect the rights of stockholders.

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