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**The Spillover Effect of Disclosure Rule and Materiality Thresholds:
Evidence from Profit Warnings Issued in Hong Kong Markets^{*}**

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Abstract

Dual-listing firms are subject to the relevant regulations of both their home country and cross-listing country. Existing research has not paid enough attention to the potential influence of home country institutional factors (e.g. unique disclosure policies) either on dual-listing firms' or local foreign firms' voluntary disclosure. With more than 30% market capitalization of Chinese dual-listing firms under different profit warning rules from local firms, Hong Kong equity markets provide us with the opportunity to investigate whether these Chinese dual-listing firms influence other local players to make "warn or not warn" decision. We find that local players are more likely to issue profit warnings if the Chinese dual-listing peers have warned. We further find that this impact is varying with the type of news, the market capitalization of AH firms, and the market shares of AH counterparts in the industries. In addition, such spillover effect diminishes with the increase in earnings surprises of non-dual-listing firms, due to an underlying duty of non-dual-listing firms to the markets to disclose the material information.

Key Words: Profit Warning, Dual-listing, Materiality, Voluntary Disclosure

Data availability: Data are available from sources identified in the paper

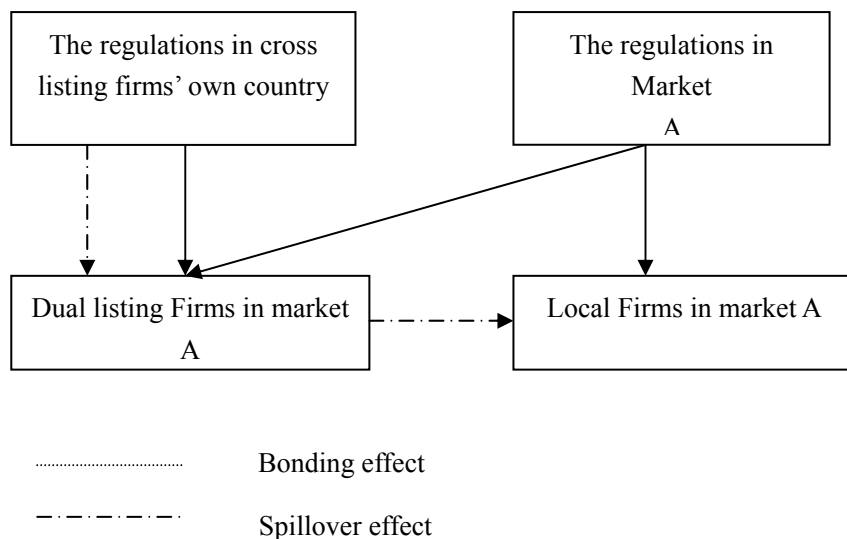
“Usually advanced markets like the US, the UK and Australia do not have profit-warning requirements and I do not think Hong Kong should have such a requirement.”

- Mark Dickens, HKSE

1. Introduction

Mark Dickens, the Hong Kong Stock Exchange's newly appointed listings head has urged the government to toughen penalties on companies that fail to disclose price-sensitive information to the market. But Mr. Dickens rejected suggestions that Hong Kong needed to follow the mainland in introducing specific profit-warning regulations. Setting regulatory standards appropriately would require intimate knowledge of the nature and extent of peer regulation's externality. Our study is to investigate such externality of mainland's profit warning regulation over players in Hong Kong markets.

Cross-listing setting



In a typical cross-listing setting (market A), there are two groups of firms: the cross-listing

firms and the local firms. Part of the cross-listing firms also issue shares in their own country (“dual-listing firms” hereafter). Those dual-listing firms need to comply with two sets of regulations: the regulations in their own country and the counterpart in market A. In contrast, other firms in market A only need to comply with the regulations of market A itself. It is obvious that the regulations of market A now have impact on those dual-listing firms. We call it “bonding effect”¹. Meanwhile, it is possible that the regulation in dual-listing firms’ own countries can also affect the behaviors of other firms in market A through the influence of dual listing firms; we call it “spillover effect” (see the above picture).

Up to now, most cross-listing literature focuses on examining the bonding effect on the cross-listing firms. Recent empirical works show that foreign firms with cross listings in the U.S. raise more external finance, have higher valuations, a lower cost of capital, more analyst following, and report higher quality accounting numbers than their foreign counterparts (Reese and Weisbach, 2002; Lang, Lins and Miller, 2003a; Lang, Raedy and Yetman, 2003b; Doidge, Karolyi, and Stulz, 2004; Bailey, Karolyi, and Salva, 2006; Hail and Leuz, 2006). Dual-listing firms however, are subject to the relevant laws and regulations of both its home country and cross listing country. Licht (2003), Leuz (2006) and Leuz and Wysocki (2008) indicate the existing research has not paid enough attention to the potential influence of home country institutional factors (e.g., unique disclosure policies) either on these dual-listing firms’ or local foreign firms’ voluntary disclosure. Therefore, in this paper, we examine such “spillover effect”, under-investigated in previous literature, by exploring the unique setting of Hong Kong markets, where China-based dual-listing firms are required to follow the mainland China’s disclosure rules influence other listed firms in Hong Kong markets to make profit warnings.

Accordingly, our study focuses on the “spillover effect” of regulation and raises the research

¹ That is, firms can opt into a foreign regime and thereby bond themselves to the more onerous disclosure, accounting and governance requirements and stricter enforcement regime of another country, which is called the bonding hypothesis (Coffee, 1999; Stulz, 1999).

question: Does spillover effect of regulation exist? Specially, we examine the spillover effect of mainland China's regulation on other listed firms in Hong Kong market (H shares, Red Chips and local firms) through the influence of Chinese dual-listing firms. We use the sample of 298 profit warnings in Hong Kong and find that local players are more likely to warn about their earnings performance if the Chinese dual-listing peers have warned. And this impact is varying with the type of news, the total market capitalization of AH firms, and the market shares of AH counterparts in such industries. We further find that this spillover impact from Chinese dual-listing firms diminishes with the increase in earnings surprises of non-dual-listing firms. It implies that disclosure behaviors are more likely to be independent of peer's actions if the disclosed information is material. Such results are consistent with and extend the findings by Heitzman et al. (2010).

Since we argue that AH peer's news sharing common market / industry component with the non-AH counterpart explains the spillover effect of profit warnings, we perform additional analysis to corroborate this argument. Our additional check repeats the main regression analysis after replacing full non-AH firms with the subsamples of both China-affiliated firms and one-by-one AH matching sample based on size and industry. We expect that the common market / industry component is more likely to hold for China-affiliated firms and one-by-one AH matching sample, because they are composed of a better peer group (Albuquerque, 2009). Consistent with this prediction, we find that the spillover effect is primarily driven by these better matching peers. We also find that our main results are robust to a variety of sensitivity tests, including the reclassification of peers by one-digit SIC codes and Datastream sectors, and one alternative proxy for spillover from AH.

Our study contributes to the literature in at least four ways. First, we add to the literature cross-listing firms. Except for the conventional wisdom on bonding effect, we investigate "spillover effect", i.e. the potential influence of home country institutional factors (e.g., unique disclosure policies) either on these dual-listing firms' or local foreign firms' voluntary disclosure. Prior studies do not pay enough attention to this effect. Second, our paper extends the literature on multiple-firm disclosure (Tse and Tucker, 2010) and finds that to

extent of which peers share common industry factors determines the interdependence on voluntary disclosure between these firms. Third, our evidence suggests that the materiality of information moderates the “interdependence” in voluntary disclosure. Fourth, showing that Hong Kong managers withhold more good and bad news than their AH counterparts, our study additionally sheds light on the nature and extent of peer regulation’s externality for policy makers in Hong Kong.

The remainder of the paper is organized as follows. In section 2, we describe the general institutional background of Hong Kong, including the market structure and profit warning rules. In section 3 we discuss previous literature and develop hypotheses afterwards. Section 4 presents the research design. Section 5 provides sample selection and tests results. Additional checks are discussed in Section 6. Section 7 concludes.

2. Institutional Background

In this section, we discuss the market structure of Hong Kong and related regulations of profit warning both in Hong Kong and mainland China.

2.1 Market Structure of Hong Kong

In our study, we categorize listed firms in Hong Kong into two groups. Firstly, Chinese dual listed firms, which trade both in mainland China (e.g. Shanghai or Shenzhen Stock exchanges) and Hong Kong (“AH firms” hereafter), have to subject themselves to additional rules imposed by the two stock exchanges in mainland China. They are typically concentrated in heavy industries (i.e. steel or petrochemicals) like Ma-An-Shan Iron and Shanghai Petrochemical. Second, other shares (“non-AH firms” hereafter) are ones that are not dual listed in mainland China and Hong Kong.²

² Among non-AH firms in Hong Kong, there are three sub-groups. First, Red Chip shares refer to mainland Chinese controlled firms that are incorporated outside China (Hong Kong, Bermuda, or the Cayman Islands) and trade on the HK Stock Exchange. Red Chips function primarily as foreign subsidiaries of the parent’s

In the last twenty years, over 200³ China-based firms (AH, H and Red Chip firms) list in Hong Kong markets. These firms become so important that they now account for more than half of the market capitalization and more than 60 percent of equity turnover in main board market⁴. Among those China-based firms, 57 are AH firms. Those AH firms are usually big giants in their industry; therefore, although the number of firms is not big, they account for 30 percent of market capitalization in main board market (Calculated on April 30th 2009).

2.2 Profit Warning Regulations

In this paper, we focus on one particular event — profit warning — to examine the spillover effect. We focus on profit warning for two reasons: (1) both mainland China and Hong Kong have corresponding regulations on profit warning. The differences in two regulations exactly satisfy our requirement to observe the spillover effect; (2) after two big companies⁵ in Hong Kong were found to breach the rule of profit warning, professionals suggested that

operation in mainland China. Their assets and earnings have significant mainland Chinese exposure. But except for regulations in HK Stock Exchange, there are no ‘explicit’ additional listing and disclosure requirements for Red Chips. Secondly, incorporated in mainland China, H shares are subject to mainland China’s Company Law. Thirdly, local firms and other shares stand for the rest of listed firms not included in the above two groups in Hong Kong. In our study, we consider the within-group (non-AH firms) differences between local firms and China-affiliated firms (Red Chips and H shares). Therefore, all results are also tested in non-China-affiliated firm sample. The results are statistically similar with the full non-AH firm sample.

³ Up to April 30, 2009, there are 100 H share firms and 92 Red Chip firms listed in main board. 40 H share firms and 4 Red Chip firms listed in GEM.(Data resource: <http://www.hkex.com.hk/data/chidimen/chidimen.htm>)

⁴ More details can be found at : http://www.hkex.com.hk/data/chidimen/CD_TO.htm

⁵ For CITIC Pacific, a review of the audited accounts of the company for the financial year ending 31 December 2007 as well as its interim accounts for the six months to 30 June 2008 does not reveal any material exposure to such leveraged foreign exchange contracts, let alone one as substantial as that which was disclosed in its profit warning.

In March, 2009, the Democratic Party reprimanded HSBC Holdings for not issuing a profit warning before announcing an earnings plunge of 70 per cent on huge provisions for its United States business. The bank defended its decision to make the write-down just before the results announcement.

Hong Kong exchange follow the mainland in introducing specific profit-warning regulations.⁶ We think it is helpful to the regulator to know: under current situation, what is the impact of mainland China's regulation on Hong Kong firms.

2.2.1 Regulation in Mainland China

The regulation on profit warning goes through four important periods in China: (1) before 1998, no rules regarding profit warning exist; (2) From 1998 to 2000, listed firms must make a profit warning within two month after fiscal year end if they incur a substantial loss or loss that will continue in three consecutive years. Four points are worth noting during this period. First, firms only need to make a profit warning when incur loss. Second, the rules are only effective on annual earnings. Third, there is no clear threshold: whether it is “substantial” depends on management’s judgment. Fourth, management is not required to make any forecast but only preannouncement; (3) From 2001 to 2005, the rules become more complicated and begin to cover the interim earnings. The listed firms need to make a profit warning once their earnings changes more than 50% compared with earnings in last year or they incur loss. Additionally, the deadline for such a warning is one month after fiscal year end for annual earnings and half a month for interim earnings; (4) Three changes are made to the rule after 2005. First, the rules now include the earnings in first quarter. Second, the deadlines for all profit warnings (annual, quarterly, and half-year) are one month after fiscal period. Third, a new threshold is added: the listed firms now are required to issue warning if they turn from loss to profit. Fourth, now the firms are encouraged to issue a profit warning before fiscal period ending. We summarize such multiple-round reform in the Figure 1.

[Insert Figure 1 here]

⁶ Southern China Morning Post: *Tougher disclosure penalties sought - Listings chief says law change needed to ensure firms comply with price-sensitive news*” by Enoch Yiu on Apr 18, 2009

2.2.2 Regulation in Hong Kong

Meanwhile, “the Listing Rules” in Hong Kong require listed firms to make timely public disclosure of price-sensitive information⁷. But such minimum mandatory standard does not define the meaning of the term “material” and the exact mechanism such information should be disclosed properly to the public. In order to help issuers and their directors fulfill their obligations under the Listing Rules while allowing them to inform the market of company developments, HKSE introduced “Guide on Disclosure of Price-Sensitive Information” in January 7th, 2002. Specifically, Rule 13, 15 and 17 of HKSE require companies to issue an announcement warning investors of the likely impact promptly once it becomes aware that its financial results may be significantly worse than generally accepted market expectation.

Thus, Compared with AH firms that are simultaneously under mainland China’s regulation, other firms in Hong Kong have a voluntary disclosure environment of profit warning: (1) the thresholds of warnings are decided by managers; (2) the time to make profit warnings are also decided by managers; (3) only bad news are emphasized in the guidance of Hong Kong.

3. Literature Review and Hypothesis Development

3.1 Literature Review

Up to now, most cross-listing literature focuses on examining the “bonding effect” on the cross-listing firms. Reese and Weisbach (2002) find that firms can get more external financing following their cross-listings. Lang, Lins and Miller (2003a) document that higher analyst following is associated with higher valuations in the context of cross listing. In addition, previous research suggests that cross listed firms have a better accounting quality

⁷ See paragraph 2 of Appendix 7 of the Main Board Rules (the “Listing Agreement”) and Rule 17.10 of the GEM Rules

in the pre-cross-listing period and improvement in the post-cross-listing period (Lang, Raedy and Yetman, 2003b). Doidge, Karolyi and Stulz (2004) also report that foreign companies with shares cross-listed in the U.S. have Tobin's q ratios that were 16.5% higher than the q ratios of non-cross-listed firms from the same country. Bailey, Karolyi and Salva (2006) show that changes in the cross-listing firm's disclosure environment significantly affect its stock return and trading volume respond to its announced earnings. Hail and Leuz (2006) provide strong evidence that cross-listing on a U.S. exchange reduces firms' cost of capital.

Cross-listing firms, however, are subject to the relevant laws and regulations of both its home country and cross-listing country. Licht (2003), Leuz (2006) and Leuz and Wysocki (2006) indicate the existing research has not paid enough attention to the potential influence of home country institutional factors (e.g., unique disclosure policies) either on cross-listing firms' or local foreign firms' voluntary disclosure.

The decision on whether to warn or not to warn has been studied extensively. Kasznik and Lev (1995) investigate management's discretionary disclosures prior to a large earnings surprise. They find that the likelihood of warnings to be positively associated with magnitude of earnings surprise, firm size, and membership in high technology industry. Tucker (2007) shows that firms with a larger amount of unfavorable non-earnings news are more likely to warn. Using the partial observability discrete choice model, Heitzman et al. (2010) demonstrate that not merely voluntary disclosure incentives (Verrecchia, 1983, 2001) but also managers' obligation to disclose material information force managers to disclose private information.

Besides the above studies on single-firm decision, early in 1989, Pownall and Waymire find weak evidence on whether information transfer from intra-industry firms substitute to voluntary disclosure of these peers. Later Acharya et al. (2008) explore this area by introducing a model in a multiple-firm setting. They propose that the reduced mean of the posterior distribution of firm value lowers the disclosure threshold and consequently some

bad news that was previously withheld is now disclosed. Brown et al. (2006) and Tse and Tucker (2010) empirically investigate this “interdependent” behavior. Specifically, assuming that an earnings surprise can be caused by a combination of firm-specific factors and market or industry factors external to the firm, Tse and Tucker (2007) find that managers time their warnings to occur soon after their industry peers’ warnings to minimize their apparent responsibility for earnings shortfalls. However, they do not investigate this interdependence varying with the magnitudes of earning news. These multiple-firm studies imply that information transfer from intra-industry firms do not substitute to voluntary disclosure of these peers, but voluntary disclosure of intra-industry firms are correlated with each other.

3.2 Spillovers in Hong Kong

First of all, managers in Hong Kong are reluctant to disclose information voluntarily.⁸ Previous literature shows that when managers’ and investors’ preferences are not aligned, managers are reluctant to disclose information (Lo, 2003; Nagar, Nanda, and Wysocki, 2003). The more severe the principal-agent problems are, the less likely managers disclose private information. China-related firms and other firms in Hong Kong (mainly family firms) have long blamed for their severe principal-agent problems and pervasive expropriation from small shareholders (Berkman et al, 2007; Classens et al, 2000, 2002; Cheung et al, 2006). The pervasiveness of insider trading is another reason for managers to withhold their information. Cheng and Leung (2006) find that there are significant net insider-buying activities before the announcements of good news and significant net-insider-selling activities before bad news. What’s more, Chinese tend to rely on private communication through “guanxi” rather than public disclosure. Based on the three reasons discussed before,

⁸ The newly appointed Chairman of Hong Kong Stock Exchange, Mark Dickson talked about disclosure in Hong Kong in an interview: " I am not happy with the disclosure of price-sensitive information in Hong Kong as some listed companies do not have the culture of making continuous disclosure of price-sensitive information. " See Southern China Morning Post: *Tougher disclosure penalties sought - Listings chief says law change needed to ensure firms comply with price-sensitive news*” by Enoch Yiu on Apr 18, 2009

we assume that the voluntary disclosure is poor in Hong Kong markets. In other words, *ceteris paribus*, without mandatory profit warnings regulations, when investors are not sure whether a manager has learned the information, in equilibrium only those firms that have sufficiently positive news will release their information. Similarly, firms with more negative information will prefer to keep their market value higher – at least temporarily – by claiming that they do not yet have any information to report. It is consistent with the fact that only less than 15 % of firms with more than even 200% changes in their earnings make profit warnings.⁹

Second, as discussed above, the rules in mainland China require AH firms announce their profit warnings no later than one month after the fiscal period end. As a result, AH firms disclose their big surprises in earnings more than 42 days earlier than non-AH firms that have no such deadline to disclose on average (-13.42 vs. 29.41 days). The result arises after controlling for industry and firm size. It shows that most of non-AH firms warn their earnings as late as possible, even several days before the earnings announcement date. As a result, most non-AH firms can learn information given by their AH peers and decide whether to warn or not afterwards.

Third, we argue that the issuance of profit warnings by AH firms in the same industries will affect the issuance of profit warning by other peers. Given that when investors are not sure whether a manager has learned the information, in equilibrium only those firms that have sufficiently positive news will release their information, and firms with more negative information will prefer to keep their market value higher by claiming that they do not yet have any information to report. While in a multi-firm setting, investors are informed of what a non-disclosing manager should know from disclosing manager's disclosures, and non-disclosing manager cannot get the same equilibrium payoff of keeping silent (Banerjee, 1992; Bikhchandani et al., 1992; Welch, 1992). In Hong Kong markets, when a AH firm issue a profit warning to follow the mainland China's regulation, investors are informed of

⁹ See the detail in Figure 3.

what a manager in a non-AH counterpart should know, because the AH peer's news shares common market / industry component with the non-AH counterpart. Therefore, the non-AH peer manager would be more likely to make a good-news announcement to show he also has competitive managerial talent (Trueman, 1986). Also, the non-AH peer manager would be more likely to make a bad news announcement as long as he believes that her investors are less likely to hold her responsible for bad-news when other firms also issue bad news, thereby lower their penalty on the earnings shortfall (Skinner, 1994, 1997; Acharya et al., 2008; Tse and Tucker, 2010). Therefore, spillovers happen.

Hypothesis 1: non-AH firms are more likely to warn if their AH peers make profit warning announcements.

Under the profit warning rules in mainland China, AH firms are only required to warn about their earnings news if percentage of changes in earnings is larger than 50%, earnings are negative, and earnings become positive from negative. Therefore, it is important to examine whether this spillover effect varies with magnitude of earnings news.

Acharya et al. (2008) find that reduced mean of the posterior distribution of firm value lowers the disclosure threshold and consequently some news that was previously withheld is now disclosed. If spillover effects from AH firms exist, non-AH firms with immaterial earnings news (e.g. less than 50% earnings changes) will still be likely to warn when their AH firms disclose a 50% material changes in earnings news. On the other hand, Heitzman et al. (2010) demonstrate that the incentives to voluntarily disclose information must recognize that such information is often disclosed because of an underlying duty to the markets to disclose. Under this materiality framework, independent of the costs the firm might incur as a result (e.g. proprietary costs), the manager discloses warning information when magnitude of earnings news is greater than the threshold of materiality. In other words, firms with higher magnitudes of earnings news would become more independent of the behaviors of peers to make decision than firms with lower earnings surprises. Therefore,

we expect that spillover effect from AH peers is not linear and become weaker with increase in magnitude of earnings news. The hypothesis is the following:

Hypothesis 2: The positive relationship in H1 is attenuated when the magnitude of earnings surprise of non-AH firms.

4. Research Design

4.1 Test Variable Definitions

For the main variable, we measure AH peer's spillover effect by constructing *AHONLY*, an indicator variable set equal to 1 if AND ONLY if for non-AH firm *i* in industry *j*, no other non-AH firms made but at least a AH firm in industry *j* made a profit warning before firm *i*'s action.¹⁰ "Peers" in our main tests are defined as companies in the same industry group via 2-digit SIC codes.

For the control variables, we cover determinants of decision on whether to warn or not in the previous literature (Kasznik and Lev, 1995; Soffer et al., 2000; Baginski, 2000, 2004; Baginski et al., 2002; Tucker, 2007, etc.). In detail, we control for magnitude of earnings change (*ABSURP*), the type of earnings news (*BN*), negative current earnings (*LOSS*), loss to profit of earnings (*LTP*), firm size (*SIZE*), market-to-book ratio (*MBRANKS*), earnings volatility (*EARN_VOLT*), magnitude of earnings change on industry-level (*IND_SURP*).

¹⁰ The proxy, *AHONLY*, will underestimate the spillover effect. There are other 4 scenarios of lead-follow warning relations: (1) for non-AH firm *i* in industry *j*, both AH and non-AH firms made profit warnings before firm *i*'s action. And a AH firm is the lead firm; (2) for non-AH firm *i* in industry *j*, both AH and non-AH firms made profit warnings before firm *i*'s action. And a non-AH firm is the lead firm; (3) For non-AH firm *i* in industry *j*, no AH firms made but at least a non-AH firm in industry *j* made a profit warning before firm *i*'s action; (4) for non-AH firm *i* in industry *j*, this non-AH firm is the lead firm to make profit warning in industry *j*. We also construe these scenarios into additional three dummy variables, *AHLC*, *LCAH*, and *LCONLY* respectively to test our results in the robustness checks.

For the same reason of Baginski et al. (2002), we employ the change in earnings (*ABSURP*) to maximize the sample size. The bad news indicator (*BN*) considers the asymmetric behavior of management forecast (Skinner, 1994, 1997). Firm size (*SIZE*) captures many aspects of a firm's operational and business environment, for example, a firm's political cost (Watts and Zimmerman, 1986), higher private information acquisition (higher information demand) (Lang and Lundholm, 1993). Hence, we include *SIZE* as the logarithm of the market value of equity at the beginning of the fiscal year that firms make warnings for. Market-to-book ratio (*MBRANKS*), defined as decile rank of the market value of equity and divided by the book value of total assets at the beginning of the event fiscal year, indicates firm's investment opportunity set and growth potential. It capture the motive of growth firms for softening the earnings-torpedo effect (Skinner and Sloan, 2002, etc.). In addition, managements of unstable firms (high earnings volatility), lacking real control, attempt to manage an illusion of control by attributing to themselves more credit for negative outcomes (Kasznik and Lev, 1995; Baginski et al. 2000, 2004). Therefore, we use *EARN_VOLT*, measured as the standard deviation of the earnings per share during the prior 4 fiscal periods, in order to capture the volatility of business. Two other indicators, negative current earnings (*LOSS*) and loss to profit of earnings (*LTP*) are to include the mainland's rules. At last, we add a group of indicator variables to control the effects from year, industry, market segments (main board stock or GEM stock), and interim or annual results.

4.2 Regression Specification

Based on the above agreement, we use the following logistic model to examine the impact of AH peer's spillovers on other firms.

$$Prob(Warn_{i,t} = 1) = \Phi(\delta_0 + \delta_1 AHONLY_{i,j,t} + Controls + \epsilon_{i,j,t}) \quad (1)$$

***Warn*_{*i,t*}** equals to 1 if the firm *i* make a profit warning in fiscal period *t*;

***ANONLY*_{*i,j,t*}** equals to 1 if AND ONLY if for non-AH firm *i* in industry *j*, no

other non-AH firms made but at least a AH firm in industry j made a profit warning of fiscal period t before firm i 's action.

Controls:

ABSURP $_{i,t}$ equals to the absolute value of the change in net income between event fiscal period t and same fiscal period last year deflated by net income for the same fiscal period last year;

BN $_{i,t}$ equals to 1 if the change in net income between event fiscal period t and same fiscal period last year deflated by net income for the same fiscal period last year is <0 , otherwise, 0;

LOSS $_{i,t}$ equals to 1 if the net income of the event fiscal period t is <0 , otherwise, 0;

LTP $_{i,t}$ equals to 1 if the net income of the event fiscal period t is >0 and the net income of the same fiscal period last year is <0 ; otherwise, 0;

SIZE $_{i,t}$ equals to the market value of equity at the beginning of the event year t ;

MBRANKS $_{i,t}$ is the decile rank of the market to book ratio at the beginning of the event year t , and is coded from 0 to 9;

EARN_VOLT $_{i,t}$ equals to the standard deviation of the annual return on assets for the last 4 years;

IND_ABSURP $_{i,t}$ equals to the absolute value of the change in industry net income between event fiscal period t and same fiscal period last year deflated by industry net income for the same fiscal period last year;

If δ_l is positive significant, we conclude that non-AH firms are more likely to warn if there is no other non-AH firms but at least one AH peer issue profit warning announcement, i.e. spillover effect from AH firms over non-AH firms exists. Furthermore, the positive relation between *AHONLY* and *WARN* implies that (1) not many non-AH firms make their profit warnings as leading announcers; (2) and non-AH firms follow their AH peers to disclose big earnings surprises but do not follow their non-AH peers.

4.3 Sample Selection and Descriptive Statistics

HKEx, providing investors with listed-company filings, maintains all price-sensitive information announcements from 1999 till now in its HKEx News online searching system. We use profit warnings files from 2002 to 2009 as our sample period. This period starts with 2003 because of the passage of *Guide on Price-Sensitive Information*. For the data coverage, we collect the warning announcements after June.25, 2007 in HKEx website, and stop at April.30, 2009.¹¹ We manually collect the rest of warnings data from Bloomberg.¹² All financial information and stock market data are from Datastream database.

[Insert Table 1 here]

Table 1, Panel A reports the profit warnings selection. 5846 fiscal periods with 298 pieces of profit warning announcements are available. During the sample period, 2003-2008, companies in Hong Kong markets issued 853 warnings about interim and yearly earnings. In addition to events excluded due to missing financial data, we also delete events that don't

¹¹ We include all quarterly result announcements of fiscal period t-1, if these announcements contain any profit warning information on fiscal period t. In practice, many AH firms issue their warnings in the quarterly results.

¹² We also match the news data from Bloomberg with the price-sensitive information filings in the HKEx website to make sure our sample is complete. One of the seminar participants concerned that whether listed firms in Hong Kong do not only file profit warnings to HKEx officially, but rather choose other communication channels to inform the markets of their earnings news. We use the key words “profit/earning + warning/surprise/estimate”, “significantly/substantially/significant/substantial/expected + increase/decrease/change/surge/decline”, “expected/estimated/expectation on + improvement/performance/financial results”, and “盈餘/盈利/業績+預警/預告” to search the warning news in Wisenews database. The results are almost matching with our profit warning announcement data in HKEx website and Bloomberg. Only two additional pieces of news are not included previously. These two indicate that two non-AH firms announce in the press release to refuse to make any profit warnings. We add these two non-profit warnings into our profit warning sample. Moreover, this additional search in Wisenews database shows that listed firms in Hong Kong do not choose other communication channels but only the official filing to HKEx to inform the markets of their earnings news.

have enough financial data to calculate variables in the model. As a result, the final number of warnings is 298 issued, which includes 209 warnings for annual earnings and 89 warnings for interim earnings.

Panel B of Table 1 further summarizes profit warnings issued distributed across fiscal years. Consistent with previous literature, managers are not only redundant to disclose warnings news, but also more likely to warn if the news is bad. Based on the results in the Panel E, partly because of the clear cut-off and symmetric rule in mainland China, AH firms make more percentage of good news warnings than non-AH firms distributed across the changes in earnings. Panel F. confirms the fact that AH firms warn their earnings on a more timely basis than non-AH firms. Moreover, these results in Table 1 remind us of controlling the year, fiscal period (annual or interim) and market segment effects in warnings behaviors.

5. Results

5.1 Variable Distributions and Other Descriptive Statistics

Figure 2.a and b describe warning firm distributions by percentage of earnings changes for our sample of 5846 sample periods. In AH sample, firms start to warn their earnings in 30%, but non-AH firms make warnings even less than 10% changes in earnings. On average, however, AH firms make more percentage of warnings than non-AH firms (66.01% vs. 4.29%). Figure 2.a and b provide us with a detailed picture of non-AH warning firm distributions by percentage of earnings changes, condition on whether a AH peer warns or not ($AHONLY=1$ or 0). Non-AH firms under AH peer's pressures (Figure 3.a, $AHONLY=1$) have more percentages of warnings than other non-AH firms without AH peer's pressures (Figure 3.b, $AHONLY=0$). This univariate result confirms our hypothesis that non-AH firms are more likely to warn if their AH peers make profit warning announcements (5.84% vs. 3.60%).

[Insert Figure 2.a, b and Figure 3.a, b here]

Table 2, Panel A describes variable distributions for our sample of 5846 sample periods used to estimate Equation (1).

5.2 Primary Results

5.2.1 Tests on Hypothesis 1

[Insert Table 3 here]

Table 3 presents the Equation (1) logistic regression test of H1. We first regress *warn* dummy on control variables we choose. The results in first two columns show the consistence with Tucker (2007) and Baginski et al. (2002) and imply our controls are effective within the sample of Hong Kong market. Then after adding *AHONLY* into the model, as H1 predicts, the significantly positive δ_l holds for *AHONLY* (1.22, $z = 3.92$), indicating that non-AH firms depend on their AH peers' behaviors when making profit warnings. These results arise after controlling for the expected positive effects of *ABSURP* (positive; $z = 2.49$), firms are more likely to make bad news warnings (*BN*) (positive; $z = 3.03$), negative earnings news (*LOSS*) (positive; $z = 2.31$) and positive earnings news after a loss in previous fiscal period (*LTP*) (positive; $z = 0.61$). Meanwhile, firm size (*SIZE*), Market-to-book ratio (*MB*, negative; $z = -1.74$), earnings volatility (*EARN_VOLT*, negative; $z = -3.37$) and industry earnings news (*IND_ABSURP*, positive; $z = 4.41$) are also controlled.

We also report the results of Equation (1) of different sub-samples in Table 3. After controlling for other determinants of issuing profit warnings, the coefficient on *AHONLY* is more significant for the China-affiliated firms, but become weaker for non-China-affiliated firms. We think there are two possible reasons for such differences: (1) the impact from AH firms depends on the level of how much non-AH firm's news shares common market / industry component with the AH counterparts. Non-China-affiliated firms might share less common market / industry component with the AH counterparts; (2) non-China-affiliated

firms in Hong Kong markets are composed of many penny firms, which are too small in terms of their size and market capitalization. Therefore, these small firms are not real industry counterparts with AH peers.

To further confirm these two explanations, we build up a one-by-one matching sample with AH firms by size and industry on fiscal-period basis (Albuquerque, 2009). The results presented in Table 3 show that in the AH matching sample, δ_l holds for *AHONLY* (2.71, $z = 5.51$) is more positively significant than the ones for full non-AH, China-affiliated and non-China-affiliated firm samples.

In summary, the main results reported in Table 3 indicate that non-AH firms are more likely to warn their earnings news if a AH peer has warned.

[Insert Table 4 here]

In Table 4, we report the additional logit results for Equation (1) by good and bad news. Of full non-AH sample, 3350 convey good news and 2165 convey bad news. The *AHONLY* coefficients are only significant for bad news. For non-China-affiliated firms, the results are similar. Therefore, managers in non-AH firms are more likely to issue bad-news warnings if their AH peers made such warnings before. On the other hand, these non-AH managers are reluctant to make good-news preannouncements, even their AH peers disclose the good news. The asymmetric results are consistent with the findings by Skinner (1994, 1997), Tse and Tucker (2007). Also, the results confirm that Hong Kong managers withhold good news and buy the shares of their own firms before earnings news is released Cheng and Leung (2006).

[Insert Table 5 here]

To investigate whether the spillover effect becomes greater with the increase of AH firms' market power, we divide market capitalization of AH firms in to three groups. We expect

with more AH firms land in Hong Kong market, they provide more information about their industries. As a result, investors are more informed of new information these AH firms disclosed, for example, profit warnings. Therefore, the spillover effect should become greater. In Table 5, we sort firm-periods into three groups based on the percentage of market capitalization of AH firms over total market (*AHCAP_M*) in each fiscal periods. We find that coefficients on *AONLY* increase when market capitalization of AH firms (*AHCAP_M*) becomes greater. In addition, we also sort firm periods into three groups based on the percentage of market capitalization of AH firms within industry (*AHCAP_IND*) in each fiscal periods. Only the coefficient on *AHONLY* in the middle group of *AHCAP_IND* is significant. The results are consistent with the findings in Table 3 and imply that the spillover effect from AH firms depend on the level of how much non-AH firm's news shares common market / industry component with the AH counterparts. If a AH firm have too small market shares in one industry, the spillover is weak. If the AH firms dominated in their industries, as a result, investors cannot find a proper comparable firms to match with, the spillover is also diminished.

5.2.2 Tests on Hypothesis 2

[Insert Table 6 here]

With respect to H2, the results are also consistent with our expectations. In Table 4, we provide empirical evidence on our arguments by estimating the logistic model separately on observations ranked by their magnitude of *ABSURP*. We form groups based on the cutoffs by top-middle-bottom classification. Specifically, the bottom group consists of firms where *ABSURP* is below 26% (bottom 25% of firms). The top group consists of the 25% firms in which *ABSURP* is at its highest, at least 151%. Ceteris paribus, this top groups is most likely to be material and thus most likely to be forced to disclose, which implies that the spillover effects from AH peers should have little and insignificant explanatory power. The middle two groups contain firms with *ABSURP* of 26% to 66% and 66% to 151%.

In our sample periods, no AH firms with less than 30% earnings changes make profit warnings. Thus, it is important to remind that the test on whether non-AH firms with “immaterial” earnings news (e.g. <30%) are also more likely to warn if a AH peer with "material" earnings news has been made a profit warning is more powerful to suggest the “interdependence”. Comparing with the big earnings changes (e.g. >30%), such scenario lowers the possibility that non-AH firms just warn after AH peers but independently make their decisions in that they have duty to disclose similar material earnings news with AH peers. Thus this subsample test mitigates post-hoc fallacy in our design.¹³ Panel B of Table 4 reports the results.

Among firms with the lowest *ABSURP* (<26%), *AHONLY* has no significant effect on disclosure on profit warnings of non-AH firms (-0.26, $z = -0.23$). In unreported tables, earnings surprise (*ABSURP*, $z = 2.10$), bad earnings news (*BN*, $z = 2.00$), and firm size (*SIZE*, $z = 1.83$) significantly determine the disclosure decision. We report estimates from the same model for firms with *ABSURP* between 26% - 66% and find that the coefficient on the *AHONLY* becomes positive and significant (2.79, $z = 3.80$). For *ABSURP* between 66% - 151%, it still shows that the coefficient on the *AHONLY* is positive and significant but becomes weaker in magnitude (1.35, $z = 4.76$). This indicates that the fact that the probability of disclosing profit warnings increases with existence of AH peer’s warnings for firms likely to disclosure becomes weaker is due to materiality. Similar with the bottom group, in the unreported tables, for both of the middle groups of *ABSURP*, other controls, earnings surprise (*ABSURP*, $z = 2.93, 1.98$), bad earnings news (*BN*, $z = 3.58, 4.65$), and firm size (*SIZE*, $z = 2.56, 1.79$) still hold the positive relationships with the disclosure decision. Moreover, the coefficients of negative earnings news (*LOSS*) (positive; $z = 4.23, 2.54$) and positive earnings news after a loss in previous fiscal period (*LTP*) (positive; $z = 1.74, 1.85$) change to be significant.

¹³ We admit that the “interdependence” on disclosure also exists within non-AH firms. But we can hardly have a powerful test to argue this interdependence based on a simple post-hoc relation for pure non-AH sample.

To see further evidence that materiality makes non-AH managers have a duty to disclose profit warnings, independent of AH peers' pressures, we report results for the group with the highest *ABSURP*. The coefficient on *AHONLY* becomes smaller and statistically insignificant ($z = 1.41$). *ABSURP* itself has no significant positive effects on disclosure either. The results are consistent with the H2. Because independent of the costs the firm might incur as a result (e.g. proprietary costs), the manager discloses warning information when magnitude of earnings news is greater than the threshold of materiality. In other words, firms with more "material" earnings news would have duty to disclose such material information. As such, magnitude of earnings news larger than the "threshold" of materiality would have little explanatory power on disclosure decision. Also, comparing with the firms with lower *ABSURP*, firms in the top group of *ABSURP* would be more independent to warn or not to warn. These results arise after controlling for the *BN* ($z = 3.57$), *SIZE* ($z = 2.38$), and *MB*, *LTP* and *EARNVOLT* (insignificance). Therefore, the result in Top *ABSURP* group in Table 6 shows that spillover effects from AH firms have little power on their non-AH peers when the earnings news are material.

In summary, the results of testing spillover effects via sub-groups of *ABSURP* confirm H2. Spillover effects from AH firms are strongest in the lower *ABSURP* - when earnings news is immaterial, non-AH peers are more likely to lower the disclosure threshold and consequently some news that was previously withheld is now disclosed. However, the spillover effects diminish with the increase in the magnitude of earnings news. Because when such news becomes more material, managers in non-AH firms have duty to disclose this material information. Therefore, spillover effects from AH peers are weaker.

6. Additional Tests

6.1 Alternative Proxy for Spillovers from AH peers: *AHWARN*

Throughout the paper, we use the indicator variable, *AHONLY*, as a proxy for spillover effect from AH firms on non-AH peers. As defined in the above section, *AHONLY* is an

understated measure on this spillover effect, because we disregard two situations AH firms still possibly influence their non-AH peers on the decision to warn or not to warn. First, after a AH firm warns, there is a non-AH peers has also warned its profit before other non-AH firms do. Second, AH firms are not the first movers, but followed by non-AH peers in profit warnings. We cannot give other non-AH followers with a clear-cut conclusion whether they are influenced by AH firms or other non-AH peers. However, the measurements based on above two situation are overstated on AH firm's spillovers. In the additional test section, we would like to do the robust check on these two situations by using an alternative proxy, *AHWARN*, equals to 1 once if a AH peer warns its earnings performance before the firm makes any decisions of profit warning in fiscal period *t*. Our main results in Table 3 to 6 continue to hold. In particular, as we expect, we find that the spillover effect measured by *AHWARN* is greater than *AHONLY*.

6.2 Industry reclassification

Our sample includes 61 industries based on SIC 2-digit codes. Given that our hypotheses are based on intra-industry effect, potential sensitivity might arise if we reclassified sample industries. Moreover, in fact industries are clustered in Hong Kong. Financial, real estates, and industrials are dominated. Therefore, it is important to re-test our hypotheses based on alternative industry classification. We use both the Datastream sector data and SIC 1-digit code to check our main results additionally. Similarly, we find no significantly statistical difference in main effect on *AHONLY*, except that the coefficients on *SIZE*, *MBRANKS* and *IND_ABSURP* become significant at 15% level.

7. Conclusion

In this paper, we examine the peer regulation's externality, "spillover effect", a different angle from previous literature, by exploring the unique setting of Hong Kong markets, i.e. how China-based dual-listing firms that are required to follow the mainland China's disclosure rules influence other listed firms in Hong Kong markets to make profit warnings.

Such clear cut mandatory disclosure rule in mainland China makes these China-based dual-listing firms start to warn their earnings when they have more than 50% earnings changes, negative bottom lines, or positive earnings after a loss year in one month after the fiscal period end. This behavior lowers the disclosure threshold and consequently some news that was previously withheld by non-AH firms is now disclosed. In addition, the incentives to voluntarily disclose information must recognize that such information is often disclosed because of an underlying duty to disclosure. Therefore, we expect the spillover effect from AH firms on non-AH firms becomes weaker when the earnings news is getting material.

Evidence presented above suggests that non-AH firms are more likely to warn if their AH peers make profit warning announcements and this impact varies across the types of news, market power of AH firms. Furthermore, such positive relationship is weaker with the increase in the earnings changes due to materiality that independent of disclosing costs, managers have a duty to disclose the information.

Although AH firms partly force their non-AH peers open their earnings news, these following warnings still are on a less timely basis. An interesting avenue for future research involves studying the link between less timeliness of profit warnings of non-AH firms and their incentives to withhold or delay such information. Our findings suggest that non-AH firms make profit warnings in 30 days after fiscal period end on average, systemically less timely than AH firms. Many of these late warnings are disclosed even only several days before the earnings announcement date that has been 4 months after the fiscal year end. This long pending period gives insiders room to take advantage of private information to entrench the wealth from public investors.

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Figure.1

Period	Deadlines (M) ϕ	Frequency	Thresholds
Before 1998	N/A	N/A	N/A
1998-2000	2	Annual	(1) Substantial loss; (2) Loss that will continue in three consecutive years
2001-2005	1 (A) $\mathfrak{2}$; 0.5 (I) $\mathfrak{3}$	Annual; Interim	(1) Loss; (2) > 50% change in earnings changes
After 2005	1	Annual; Interim; 1 st quarter	(1) Loss; (2) > 50% change in earnings changes; (3) Loss to Profit

ϕ Number of months; $\mathfrak{2}$ Annual; $\mathfrak{3}$ Interim.

Table 1

Panel A. Sample selection procedure

	Annual	Interim	Total
Total profit warnings	552	301	853
Less: Forecasted year is before 2003 or after 2008	46	99	145
Less: lost due to changes in datastream coverage listed on datastream	<u>191</u>	<u>58</u>	<u>258</u>
Less: Missing datastream data complete data on datastream	<u>106</u>	<u>55</u>	<u>152</u>
	209	89	298

Panel B. Profit warnings distributed across fiscal years

Year	# of warnings			
	Interim Year		Annual	
	GN	BN	GN	BN
2003	9	9	9	9
2004	6	6	9	9
2005	6	11	9	13
2006	3	7	10	9
2007	12	7	22	26
<u>2008</u>	<u>4</u>	<u>9</u>	<u>14</u>	<u>70</u>
Total	40	49	73	136

Panel C. Fiscal periods distributed across market segments

# of obs.	AH	Non-AH	
		All	Non-China
Main Board	331	4682	4448
<u>GEM</u>	<u>0</u>	<u>833</u>	<u>600</u>
Total	331	5515	5048

Panel D. Profit warnings distributed across market segments

# of warning.	AH	Non-AH	
		All	Non-China
Main Board	106	176	160
<u>GEM</u>	<u>0</u>	<u>16</u>	<u>11</u>
Total	106	192	171

Panel E. Profit warnings distributed across good and bad news

	AH	Non-AH	
		All	Non-China
Good News			
# of warnings	77	36	34
% of warnings	72.64%	18.75%	19.77%
Bad News			
# of warnings	29	156	138
% of warnings	27.36%	81.25%	80.23%
Total Profit Warnings			
# of warnings	106	192	172
% of warnings	100.00%	100.00%	100.00%

Panel F. Timeliness of profit warnings

# of days to fiscal period end	AH	Non-AH	
		All	Non-China
Mean	-13.42	29.34	31.81
Std. Dev.	41.60	57.17	58.50
Min	-114	-28	-28
25%	-15	-14	-12
Median	-7	19.5	21.5
75%	62	56	56
Max	117	186	186

of days to fiscal period end equal to the profit warning announcement date minus event fiscal period end date.

Figure.2.a: warning firm distributions by percentage of earnings changes (AH sample)

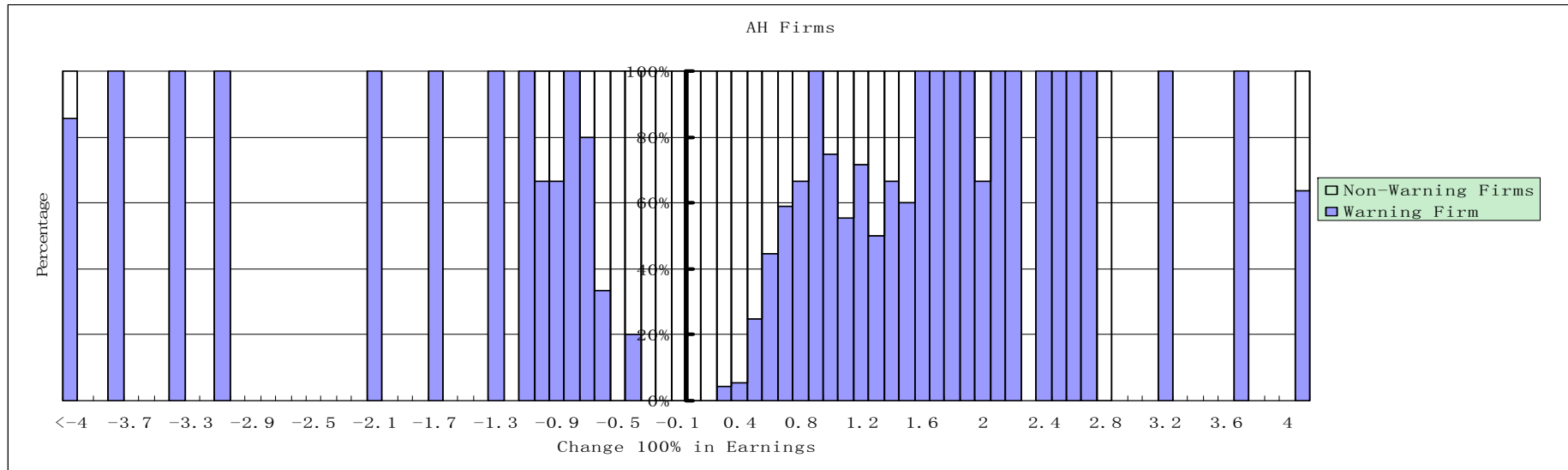


Figure.2.b: warning firm distributions by percentage of earnings changes (Non-AH sample)

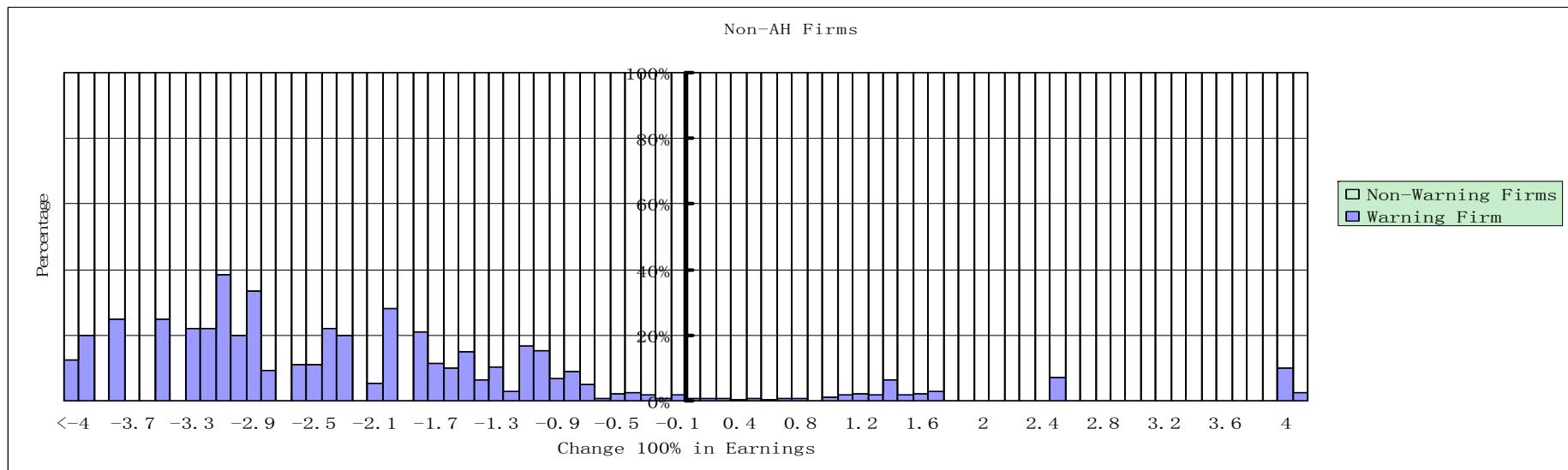


Figure.3.a: warning firm distributions by percentage of earnings changes (Non-AH sample, $AHONLY=1$)

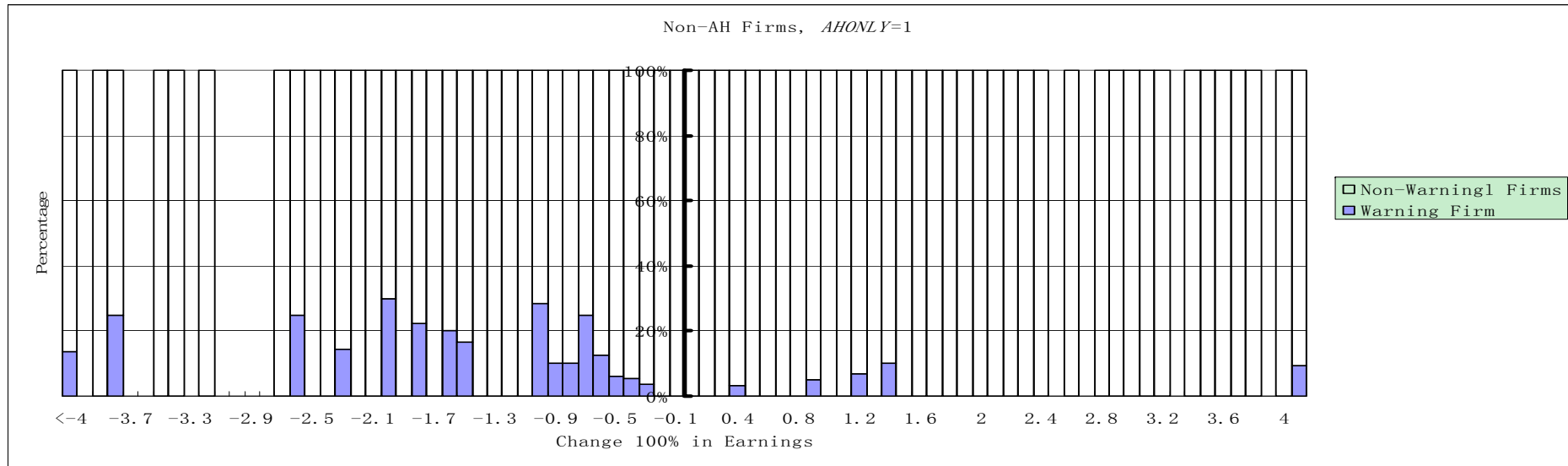


Figure.3.b: warning firm distributions by percentage of earnings changes (Non-AH sample, $AHONLY=0$)

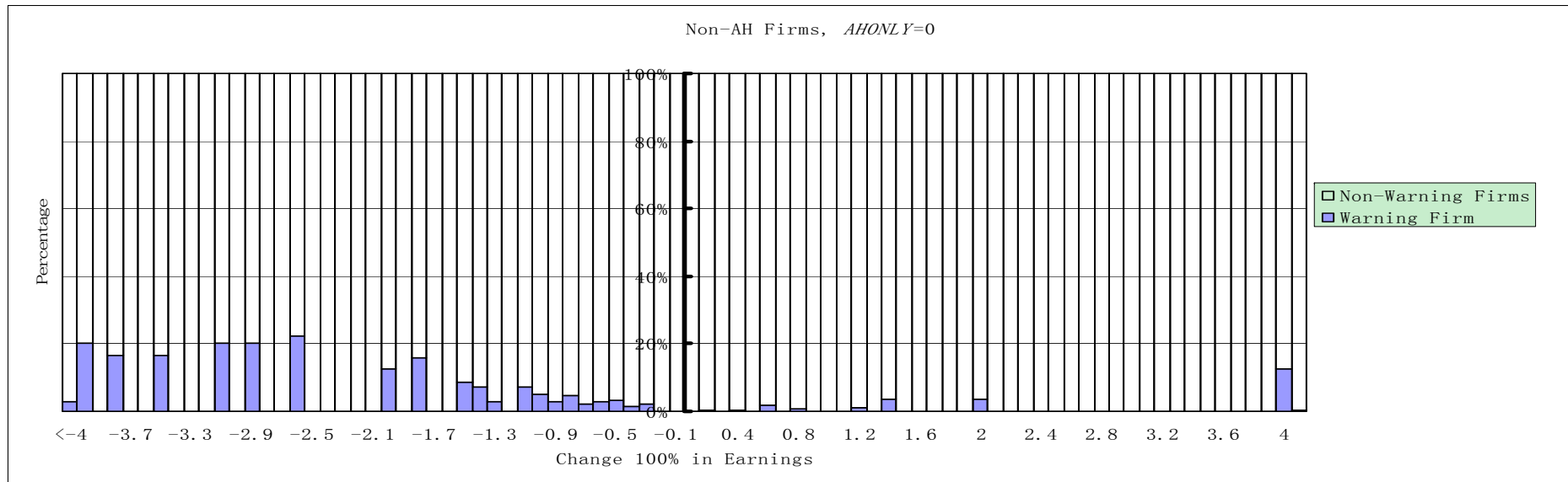


Table 2

Panel A. Selected descriptive statistics of variables used

Classification Variable								
<i>WARN</i>	<i>WARN=1</i>	# of obs	%	<i>WARN=0</i>	# of obs	%		
	AH	38	12.97		293	87.03		
	Non-AH	191	3.46		5324	96.54		
<i>AHONLY</i>	<i>ANONLY=1</i>	# of obs	%	<i>ANONLY=0</i>	# of obs	%		
	Non-AH	286	4.89		5560	95.11		
Continuous Variable								
<i>ABSURP</i>	Mean	Std. Dev.	Min.	25th	Median	75th	Max.	
	AH	1.25	3.97	0.00	0.16	0.40	0.97	51.10
	Non-AH	2.50	6.94	0.00	0.26	0.66	1.50	51.10
Classification Variables								
<i>BN</i>	<i>BN=1</i>	# of obs	%	<i>BN=0</i>	# of obs	%		
	AH	95	28.70		236	71.30		
	Non-AH	2165	39.26		3350	60.74		
<i>LOSS</i>	<i>LOSS=1</i>	# of obs	%	<i>LOSS=0</i>	# of obs	%		
	AH	18	5.44		313	94.56		
	Non-AH	1410	2.56		4105	74.43		
<i>LTP</i>	<i>LTP=1</i>	# of obs	%	<i>LTP=0</i>	# of obs	%		
	AH	9	2.72		322	97.28		
	Non-AH	502	9.10		5013	90.90		
Other Control Variables								
<i>SIZE</i>	Mean	Std. Dev.	Min.	25th	Median	75th	Max.	
	AH	16.08	1.84	12.77	14.64	16.17	17.17	21.41
	Non-AH	13.65	2.07	14.97	12.19	13.40	14.97	21.74
<i>MBRANKS</i>	Mean	Std. Dev.	Min.	25th	Median	75th	Max.	
	AH	5.32	2.08	1	4	5	7	9
	Non-AH	4.45	2.90	0	2	4	7	9
<i>EARN_VOLT</i>	Mean	Std. Dev.	Min.	25th	Median	75th	Max.	
	AH	-3.77	.94	-7.30	-4.39	-3.76	-3.09	-1.98
	Non-AH	-2.59	1.59	-9.01	-3.54	-2.72	-1.79	4.36
<i>IND_ABSURP</i>	Mean	Std. Dev.	Min.	25th	Median	75th	Max.	
	AH	.62	.93	.00	.14	.36	.82	7.34
	Non-AH	.85	1.22	.00	.15	.47	.96	7.34

AHONLY equals to 1 if and ONLY IF a AH peer warns its earnings performance before the firm makes any decisions of profit warning in fiscal period t.

ABSURP equals to the absolute value of the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year;

BN equals to 1 if the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year is <0, otherwise, 0;

LOSS equals to 1 if the net income of the event fiscal period is <0, otherwise, 0;

LTP equals to 1 if the net income of the event fiscal period is >0 and the net income of the same fiscal period last year is <0; otherwise, 0;

SIZE equals to the market value of equity at the beginning of the event year;

MBRANKS is the decile rank of the market to book ratio at the beginning of the event year , and is coded from 0 to 9;

EARN_VOLT equals to the standard deviation of the annual return on assets for the last 4 years;

IND_ABSURP equals to the absolute value of the change in industry net income between event fiscal period and same fiscal period last year deflated by industry net income for the same fiscal period last year.

Panel B. Selected descriptive statistics of warning and non-warning firms

		<i>AH</i>		<i>Non-AH</i>		<i>Non-AH & Non China</i>	
		Mean	Median	Mean	Median	Mean	Median
<i>WARN=1</i>	<i>ABSURP</i>	3.69	0.99	5.25	1.37	5.09	1.34
	<i>SIZE</i>	16.23	15.98	14.28	14.33	14.29	14.32
	<i>MBRANKS</i>	5.37	5	4.01	4	4.04	4
	<i>EARN_VOLT</i>	-3.73	-3.65	-2.71	-2.96	-2.59	-2.91
	<i>IND_ABSURP</i>	0.91	0.50	0.89	0.72	0.93	0.78
<i>WARN=0</i>	<i>ABSURP</i>	1.16	0.42	3.67	0.63	3.58	0.65
	<i>SIZE</i>	16.09	16.19	13.63	13.35	12.59	12.31
	<i>MBRANKS</i>	5	5.32	4	4.47	4	4.40
	<i>EARN_VOLT</i>	-3.79	-3.78	-2.08	-2.11	-2.20	-2.62
	<i>IND_ABSURP</i>	0.57	0.31	0.83	0.45	0.86	0.47

AHONLY equals to 1 if and ONLY IF a AH peer warns its earnings performance before the firm makes any decisions of profit warning in fiscal period t.

ABSURP equals to the absolute value of the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year;

BN equals to 1 if the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year is <0, otherwise, 0;

LOSS equals to 1 if the net income of the event fiscal period is <0, otherwise, 0;

LTP equals to 1 if the net income of the event fiscal period is >0 and the net income of the same fiscal period last year is <0; otherwise, 0;

SIZE equals to the market value of equity at the beginning of the event year;

MBRANKS is the decile rank of the market to book ratio at the beginning of the event year , and is coded from 0 to 9;

EARN_VOLT equals to the standard deviation of the annual return on assets for the last 4 years;

IND_ABSURP equals to the absolute value of the change in industry net income between event fiscal period and same fiscal period last year deflated by industry net income for the same fiscal period last year.

Panel C. Selected descriptive statistics of non-AH firms by *AHONLY*

Non-AH

		Mean	Median	Std. Dev.	Min	Max	Diff. t (z)
<i>AHONLY=1</i>	<i>ABSURP</i>	1.61	0.64	4.48	0.01	51.10	-2.51
	<i>SIZE</i>	13.76	13.32	2.17	9.62	21.22	0.83
	<i>MBRANKS</i>	5.86	5	2.84	1	10	2.24
	<i>EARN_VOLT</i>	-2.67	-2.72	1.71	-7.35	3.06	-0.84
	<i>IND_ABSURP</i>	0.76	0.41	0.89	0.00	7.43	1.34
<i>AHONLY=0</i>	<i>ABSURP</i>	2.53	0.66	7.02	0.01	51.10	(1.15)
	<i>SIZE</i>	13.65	13.41	2.06	7.79	21.73	(-0.37)
	<i>MBRANKS</i>	5.43	5	2.90	1	10	(-2.25)
	<i>EARN_VOLT</i>	-2.58	-2.77	1.58	-9.01	4.36	(1.14)
	<i>IND_ABSURP</i>	1.04	0.49	3.24	0.00	8.19	(3.67)

Table 3.

Logistic regression of the decision to issue profit warnings for non-AH firms: $Prob(Warn_{i,t} = 1) = \Phi(\delta_0 + \delta_1 AHONLY_{i,j,t} + Controls + \epsilon_{i,j,t})$

Variables	Predicted Sign	(1)		(1)		(1)		(1)		(1)	
		Non-AH		Non-AH		Non-AH and China		Non-AH and Non-China		Non-AH Matching Sample	
		Coff.	Z	Coff.	Z	Coff.	Z	Coff.	Z	Coff.	Z
<i>AHONLY</i>	+			1.22	3.02***	1.99	2.16**	0.78	1.67*	2.71	5.51***
<i>ABSURP</i>	+	0.02	2.67***	0.01	2.49**	0.02	0.90	0.02	3.33***	0.02	0.84
<i>BN</i>	+	1.56	2.20**	0.75	2.43**	3.63	2.68***	1.39	3.18***	-	-
<i>LOSS</i>	+	0.68	2.17**	0.57	2.31**	1.45	0.94	0.60	2.90***	1.24	2.22**
<i>LTP</i>	+	0.90	0.63	0.14	0.61	2.19	1.12	0.74	6.56***	-	-
<i>SIZE</i>	+	0.18	2.72***	0.34	2.56**	0.27	0.25	0.15	1.15	0.47	2.56**
<i>MBRANKS</i>	+	-0.20	-1.70*	-0.19	-1.74*	-0.25	-0.29	-0.17	-1.86*	-0.66	-2.36**
<i>EARN_VOLT</i>	?	-0.19	-3.43***	-0.29	-3.37***	-0.79	-2.39**	-0.14	-2.08**	-0.30	-1.81*
<i>IND_ABSURP</i>	+	0.64	4.11***	1.06	4.14***	0.94	1.17	0.63	2.80***	1.07	3.65***
<i>Year Dummies</i>		Yes		Yes		Yes		Yes		Yes	
<i>Industry Dummies</i>		Yes		Yes		Yes		Yes		Yes	
<i>Market Segment Dummy</i>		Yes		Yes		Yes		Yes		Yes	
<i>Interim/Annual Dummy</i>		Yes		Yes		Yes		Yes		Yes	
# of obs.		5515		5515		467		5048		331	
Wald Chi2		825.80		873.73		93.82		678.15		142.29	
Prob>Chi2		0.0000		0.0000		0.0000		0.0000		0.0000	
Pseudo R2		27.01%		30.00%		44.85%		29.38%		38.62%	

When estimating the coefficients' standard errors, we use a clustering procedure that accounts for serial dependence across fiscal periods of a given industry. We include dummies for year, industry, market segment and interim or annual results in the regressions to control for the temporal fixed effects; the results are not tabulated.

AHONLY equals to 1 if and ONLY IF a AH peer warns its earnings performance before the firm makes any decisions of profit warning in fiscal period t.

ABSURP equals to the absolute value of the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year;

BN equals to 1 if the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year is <0, otherwise, 0;

LOSS equals to 1 if the net income of the event fiscal period is <0 , otherwise, 0;

LTP equals to 1 if the net income of the event fiscal period is >0 and the net income of the same fiscal period last year is <0 ; otherwise, 0;

SIZE equals to the market value of equity at the beginning of the event year;

MBRANKS is the decile rank of the market to book ratio at the beginning of the event year , and is coded from 0 to 9;

EARN_VOLT equals to the standard deviation of the annual return on assets for the last 4 years;

IND_ABSURP equals to the absolute value of the change in industry net income between event fiscal period and same fiscal period last year deflated by industry net income for the same fiscal period last year.

*, **, *** p-value $<10\%$, p-value $<5\%$, and p-value $<1\%$, respectively, two-tailed.

Table 4.

Logistic regression of the decision to issue profit warnings for non-AH firms by good and bad news:

$$Prob(Warn_{i,t} = 1) = \Phi(\delta_0 + \delta_1 AHONLY_{i,t} + Controls + \epsilon_{i,t})$$

Variables	Predicted Sign	Non-AH				Non-AH and Non China			
		Good News		Bad News		Good News		Bad News	
		Coff.	Z	Coff.	Z	Coff.	Z	Coff.	Z
<i>AHONLY</i>	+	-0.69	-1.02	1.29	3.45**	-1.02	-1.12	0.23	1.76*
Controls		Yes		Yes		Yes		Yes	
<i>Year Dummies</i>		Yes		Yes		Yes		Yes	
<i>Industry Dummies</i>		Yes		Yes		Yes		Yes	
<i>Market Segment Dummy</i>		Yes		Yes		Yes		Yes	
<i>Interim/Annual Dummy</i>		Yes		Yes		Yes		Yes	
# of obs.		3350		2165		3058		1990	
Wald Chi2		110.95		260.27		129.36		265.69	
Prob>Chi2		0.0000		0.0000		0.0000		0.0000	
Pseudo R2		25.81%		31.44%		26.44%		32.40%	

When estimating the coefficients' standard errors, we use a clustering procedure that accounts for serial dependence across fiscal periods of a given industry. We include dummies for year, industry, market segment and interim or annual results in the regressions to control for the temporal fixed effects; the results are not tabulated.

AHONLY equals to 1 if and ONLY IF a AH peer warns its earnings performance before the firm makes any decisions of profit warning in fiscal period t.

ABSURP equals to the absolute value of the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year;

BN equals to 1 if the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year is <0, otherwise, 0;

LOSS equals to 1 if the net income of the event fiscal period is <0, otherwise, 0;

LTP equals to 1 if the net income of the event fiscal period is >0 and the net income of the same fiscal period last year is <0; otherwise, 0;

SIZE equals to the market value of equity at the beginning of the event year;

MBRANKS is the decile rank of the market to book ratio at the beginning of the event year, and is coded from 0 to 9;

EARN_VOLT equals to the standard deviation of the annual return on assets for the last 4 years;

IND_ABSURP equals to the absolute value of the change in industry net income between event fiscal period and same fiscal period last year deflated by industry net income for the same fiscal period last year.

*, **, *** p-value<10%, p-value<5%, and p-value<1%, respectively, two-tailed.

Table 5.

Logistic regression of the decision to issue profit warnings for non-AH firms by *AHCAP_M* and *AHCAP_IND*:

$$Prob(Warn_{i,t} = 1) = \Phi(\delta_0 + \delta_1 AHONLY_{i,t} + Controls + \epsilon_{i,t})$$

Variables	Predicted Sign	Non-AH						Non-AH					
		High <i>AHCAP_M</i>		Mid <i>AHCAP_M</i>		Low <i>AHCAP_M</i>		High <i>AHCAP_IND</i>		Mid <i>AHCAP_IND</i>		Low <i>AHCAP_IND</i>	
		Coff.	Z	Coff.	Z	Coff.	Z	Coff.	Z	Coff.	Z	Coff.	Z
<i>AHONLY</i>	+	1.62	3.90***	1.16	1.82*	-0.48	-0.52	-0.61	-1.51	1.29	5.91***	0.03	1.13
Controls		Yes		Yes		Yes		Yes		Yes		Yes	
<i>Year Dummies</i>		Yes		Yes		Yes		Yes		Yes		Yes	
<i>Industry Dummies</i>		Yes		Yes		Yes		Yes		Yes		Yes	
<i>Market Segment Dummy</i>		Yes		Yes		Yes		Yes		Yes		Yes	
<i>Interim/Annual Dummy</i>		Yes		Yes		Yes		Yes		Yes		Yes	
# of obs.		1512		3280		1054		1659		899		2957	
Wald Chi2		316.47		270.09		60.46		111.90		290.34		285.54	
Prob>Chi2		0.0000		0.0000		0.0025		0.0000		0.0000		0.0000	
Pseudo R2		33.32%		32.50%		25.04%		27.48%		31.54%		32.67%	

When estimating the coefficients' standard errors, we use a clustering procedure that accounts for serial dependence across fiscal periods of a given industry. We include dummies for year, industry, market segment and interim or annual results in the regressions to control for the temporal fixed effects; the results are not tabulated.

AHONLY equals to 1 if and ONLY IF a AH peer warns its earnings performance before the firm makes any decisions of profit warning in fiscal period t.

ABSURP equals to the absolute value of the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year;

BN equals to 1 if the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year is <0, otherwise, 0;

LOSS equals to 1 if the net income of the event fiscal period is <0, otherwise, 0;

LTP equals to 1 if the net income of the event fiscal period is >0 and the net income of the same fiscal period last year is <0; otherwise, 0;

SIZE equals to the market value of equity at the beginning of the event year;

MBRANKS is the decile rank of the market to book ratio at the beginning of the event year, and is coded from 0 to 9;

EARN_VOLT equals to the standard deviation of the annual return on assets for the last 4 years;

IND_ABSURP equals to the absolute value of the change in industry net income between event fiscal period and same fiscal period last year deflated by industry net income for the same fiscal period last year;

AHCAP_M equals to market capitalization of AH firms in period t over total market capital of all firms in period t;

AHCAP_IND equals to market capitalization of AH firms in industry j in period t over total market capital of industry j in period t;

*, **, *** p-value<10%, p-value<5%, and p-value<1%, respectively, two-tailed.

Table 6.Panel A. Selected descriptive statistics of non-AH firms by *ABSURP*

Partitions by <i>ABSURP</i>							
<26%	Mean	Std. Dev.	Min.	25th	Median	75th	Max.
<i>ABSURP</i>	0.13	0.07	0.01	0.06	0.13	0.19	0.26
<i>BN</i>	0.35	0.48	0	0	0	1	1
<i>LOSS</i>	0.12	0.32	0	0	0	1	1
<i>LTP</i>	0	0	0	0	0	0	0
<i>SIZE</i>	14.24	2.15	8.78	12.71	14.02	15.57	21.22
<i>MBRANKS</i>	4.47	2.48	0	1	3	6	9
<i>EARN_VOLT</i>	-2.95	1.61	-9.01	-3.91	-3.08	-2.22	3.83
<i>IND_ABSURP</i>	0.68	1.40	0.00	0.13	0.33	0.70	15.75
<hr/>							
26%~66%	Mean	Std. Dev.	Min.	25th	Median	75th	Max.
<i>ABSURP</i>							
<i>BN</i>	0.39	0.49	0	0	0	1	1
<i>LOSS</i>	0.20	0.40	0	0	0	0	1
<i>LTP</i>	0	0	0	0	0	0	0
<i>SIZE</i>	13.85	2.10	8.80	12.35	13.60	15.21	21.12
<i>MBRANKS</i>	4.45	4	0	2	4	7	9
<i>EARN_VOLT</i>	-2.68	1.53	-7.47	-3.57	-2.87	-1.94	3.73
<i>IND_ABSURP</i>	0.92	3.61	0.00	0.15	0.41	0.84	7.34
<hr/>							
66%~151%	Mean	Std. Dev.	Min.	25th	Median	75th	Max.
<i>ABSURP</i>	0.98	0.23	0.66	0.79	0.94	1.14	1.51
<i>BN</i>	0.42	0.49	0	0	0	1	1
<i>LOSS</i>	0.28	0.45	0	0	0	1	1
<i>LTP</i>	0.15	0.36	0	0	0	0	1
<i>SIZE</i>	13.47	13.18	8.26	11.94	13.19	14.79	21.74
<i>MBRANKS</i>	3.95	2.88	0	1	3	6	9
<i>EARN_VOLT</i>	-2.50	1.58	-7.47	-3.39	-2.50	-1.60	4.35
<i>IND_ABSURP</i>	1.52	4.34	0.00	0.21	0.58	1.29	8.19
<hr/>							
>151%	Mean	Std. Dev.	Min.	25th	Median	75th	Max.
<i>ABSURP</i>	8.45	12.06	1.51	2.14	3.48	7.90	51.10
<i>BN</i>	0.41	0.49	0	0	0	1	1
<i>LOSS</i>	0.41	0.49	0	0	0	1	1
<i>LTP</i>	0.21	0.41	0	0	0	0	1
<i>SIZE</i>	13.04	1.69	7.79	11.80	12.90	14.05	18.41
<i>MBRANKS</i>	3.87	2.98	0	1	3	6	9
<i>EARN_VOLT</i>	-2.30	1.55	-9.01	-3.24	-2.39	-1.64	3.83
<i>IND_ABSURP</i>	1.19	1.61	0.00	0.21	0.59	1.34	7.34

AHONLY equals to 1 if and ONLY IF a AH peer warns its earnings performance before the firm

makes any decisions of profit warning in fiscal period t .

ABSURP equals to the absolute value of the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year;

BN equals to 1 if the change in net income between event fiscal period and same fiscal period last year deflated by net income for the same fiscal period last year is <0 , otherwise, 0;

LOSS equals to 1 if the net income of the event fiscal period is <0 , otherwise, 0;

LTP equals to 1 if the net income of the event fiscal period is >0 and the net income of the same fiscal period last year is <0 ; otherwise, 0;

SIZE equals to the market value of equity at the beginning of the event year;

MBRANKS is the decile rank of the market to book ratio at the beginning of the event year, and is coded from 0 to 9;

EARN_VOLT equals to the standard deviation of the annual return on assets for the last 4 years;

IND_ABSURP equals to the absolute value of the change in industry net income between event fiscal period and same fiscal period last year deflated by industry net income for the same fiscal period last year;

Panel B.

Partitions by <i>ABSURP</i>	<i>AHONLY</i>	<i>Z</i>	Controls	Pseudo R2	Prob > chi2
0-26%	-0.26	-0.23	Yes	24.75%	0.000
26-66%	2.79	3.80***	Yes	31.30%	0.000
66~-151%	1.35	4.76***	Yes	25.17%	0.000
>151%	0.48	1.41	Yes	25.68%	0.000

When estimating the coefficients' standard errors, we use a clustering procedure that accounts for serial dependence across fiscal periods of a given industry. We include dummies for year, industry, market segment and interim or annual results in the regressions to control for the temporal fixed effects; the results are not tabulated.

*, **, *** p-value $<10\%$, p-value $<5\%$, and p-value $<1\%$, respectively, two-tailed.