

Capital control, market segmentation and cross-border flow of information: Some empirical evidence from the Chinese stock market

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Abstract: This paper investigates the trading activities of two distinct classes of shareholders, namely, the Chinese domestic investors and the foreign investors in the segmented Chinese A-share and B-share markets, respectively. Based on the results of our event study, we document prominent volatility and trading volumes during the windows of earnings announcements. The market reaction is more intensive in the A-share market and takes place much earlier before the public release of information. Furthermore, the abnormal trading volumes without price changes in advance of the public disclosure support the hypothesis of existing information among the A-share investors. This manifests information leakage and suggests an informal information environment in the A-share market. We further classify the earnings announcements into good news and bad news, and find that different information does not bring about different reaction patterns for the A shares. Insider trading, speculation and over-optimistic prospects for the economy in the A-share market are possible explanations.

1. Introduction

An important measure in China's economic reform is to reactivate the stock exchanges after four decades of abandonment. Accompanied by regulatory reforms, a move to partially privatize state-run enterprises appeared. The government selected some state-owned plants and restructured them to form new firms as parts of the original enterprises. These firms were then listed on one of the two exchanges, namely, the Shanghai Stock Exchange and the Shenzhen Stock Exchange.

A listed firm may issue five types of shares in the Chinese stock market: state shares, legal-person shares, employee shares, A shares and B shares.¹ In addition, other kinds of shares are listed outside mainland China.² Among the shares issued in China, only A shares and B shares can be freely traded in the stock market. A shares are issued strictly to domestic investors and B shares are issued strictly to foreign investors and overseas Chinese.³

It has been an interesting topic to study the trading activities of the two distinct classes of shareholders in the Chinese stock market, namely, the domestic investors and the foreign investors in the segmented A-share and B-share markets. While research has been done on the correlation structure of the two markets (Ma (1996) and Chui and Kwok (1998)) and the issue of equity price premiums due to ownership restrictions (Bailey, Chung and Kang (1999)), little has been done to investigate the differential reactions of investors in the segmented markets with respect to firm-specific information. This paper attempts to examine this important issue using event study.

We conduct an event study on the effects of annual earnings announcements on both the Shanghai and Shenzhen stock exchanges. We find prominent volatility and trading volumes during the windows of earnings announcements. The market reaction is more intensive in the A-share market and takes place much earlier before the public release of information. This is consistent with the hypothesis that local investors in the A-share market have better access to firm-specific information before the public release.⁴ The pre-event abnormal trading volumes without significant price changes for the A shares imply some existing information in the A-share market, which manifests the information leakage and informal information environment in the A-share market.

Separating the earnings announcements into good news and bad news, we find that in the B-share market the good news generates significantly positive abnormal returns and the bad news brings about significantly negative abnormal returns. However, in the A-share market, the different information does not bring about different reaction patterns. The abnormal returns are negative in reaction to all the earnings announcements. Speculation and over-optimistic prospects for the economy in the A-share market are possible explanations. We maintain that although public release of information may generate volatility, whether pre-event market reaction exists and whether the news generates the expected effects are important issues to examine. In the case of the Chinese A market, the market reaction preceding the events suggests that there is information leakage.

The rest of this paper is organized as follows. Section 2 provides a survey of the Chinese stock market. Section 3 reviews the relevant literature on trading and information, and

¹ To issue B shares, a firm should meet some additional requirements that will be discussed later. Thus not all firms can issue B shares.

² The shares listed outside mainland China include the H-Shares listed on the Hong Kong Stock Exchange, the N-Shares listed on the New York Stock Exchange and the S-Shares listed on the Singapore Exchange.

³ On February 19, 2001 the China Securities Regulatory Commission announced that Chinese citizens are allowed to hold and trade B shares. However, our study period does not extend to this date.

⁴ This result is in line with Abdel-khalik et al. (1999), who reported that accounting earnings are value relevant in pricing A shares. It also supports the findings of Su and Fleisher (1999), who reported that "news enters the A-share market more extensively than the B-share market".

outlines the hypotheses to be examined in the event study. Section 4 presents the methodology and describes the data. Section 5 reports the results and the interpretation. Section 6 summarizes and concludes.

2. The Chinese Stock Market

2.1 The Shanghai Stock Exchange and Shenzhen Stock Exchange

There are two official national exchanges in China, namely, the Shanghai Stock Exchange (SHSE) established on December 19, 1990 and the Shenzhen Stock Exchange (SZSE) founded on July 3, 1991. In the past ten years, the size of the two exchanges expanded rapidly. At the end of 2000, there were 572 and 514 firms listed on the SHSE and SZSE, respectively.

The so-called B-Share, H-Share, N-Share and S-Share are issued to meet the foreign capital requirement and act as a mechanism for the development of the Chinese stock market. Among these shares, only B-share, together with A-share, is traded on the domestic exchanges. A-share is denominated in yuans (the domestic currency, Renminbi, RMB), while B-share is denominated in US dollars on the SHSE and Hong Kong dollars on the SZSE.⁵ At the end of 2000, 559 A shares and 55 B shares were listed on the SHSE, and 499 A shares and 59 B shares were listed on the SZSE. Compared to the A-share market, the B-share market is of a much smaller size.

2.2 Market Segmentation

Like many developing countries, China set up legal restrictions on the foreign ownership of domestic equity to maintain the domestic control of local firms, especially those companies that are of strategic and national interest. One major drive for this arrangement is to attract foreign funds without worrying about the loss of ownership control. Thus, in China (as in Mexico and Philippines) a local firm may issue two different types of shares, i.e., A shares and B shares. Foreign investors are only allowed to hold the B shares but not the A shares. On the other hand, Chinese citizens cannot buy foreign currencies freely.⁶ Thus, the local people have little chance to invest in the foreign stock markets. The lack of investment alternatives is a possible reason for the price premium of the A shares relative to the B shares.

A unique feature of the Chinese stock market is that the markets for the A shares and B shares are completely segmented during our period of study, while the segmentation in most other markets are only partial. In the latter case, foreign investors are allowed to own only the foreign class of shares, while domestic investors can place their orders on both local and foreign shares. In China, however, the stock market is completely segmented, although the owners of the A shares and B shares have equal rights.⁷

The contrast between the scale and transaction in the A-share and B-share markets is very clear: The number of listed firms, stocks, and issued shares, the market capitalisation, the trading volume, the deal number, and the turnover of the A shares are much larger than those of the B shares. At the end of 2000, there were 29.433 million A-share accounts and 0.145 million B-share accounts on the SHSE. On the SZSE, the figures were 28.303 million and 0.129 million for the A-share and B-share accounts, respectively. In the A-share market,

⁵ Note that the RMB is not convertible under capital accounts.

⁶ Even after February 19, 2001 when Chinese citizens are allowed to hold the B shares, they still cannot exchange for the foreign currency to invest in the B shares.

⁷ Some local investors use the passports of their relatives or friends who are overseas to open the B-share accounts.

individual investors dominate, while in the B-share market the percentage of institutional investors is much higher than that in the A-share market.⁸

2.3 Information Environment

The information release requirements for the firms with B shares are higher than those for the firms issuing A shares only. The financial statements of the B shares must follow the International Accounting Standards (IASs issued by the International Accounting Standards Committee) and are audited by internationally recognized audit firms to assure accordance with the IASs. In contrast, the information environment in the A-share market is more “informal” (Abdelkhalik et al. (1999)) and “underdeveloped” (Cheng (2000)), and the independence of the auditors is not guaranteed.⁹

Information asymmetry is regarded as one reason for the high volatility in the A-share market. The informal communication networks of families and friends give more momentum to speculation.¹⁰ The situation might be made worse by the herd-like behaviour of individual investors. Because of the lack of strong supervising system, insider trading, black-box contracts and herd-like behaviour, speculation is serious in the Chinese stock market. Overall, the information environment of the Chinese A-share stock market is informal and typical of an emerging capital market.

Due to the trading behavior in the A-share and B-share markets, the Chinese stock market is a unique market design that offers researchers a good opportunity to investigate heterogeneous investors’ reactions to the same news release.

2.4 State Control

Table 1 reports the percentage of share equity on the SHSE from 1995 to 2000.¹¹ As can be seen, the state still owns a large part of the firms. Due to the lack of market information to evaluate the assets, problems arise in the valuation of state-owned companies. As most CPA firms are government owned and the state continues to be the majority shareholder in the privatised firms, bureaucratic regulation and undue influence of state officials have undesirable impacts on the operation of the capital markets. This equity structure is not conducive to the independence of information and market makers.

3. Literature Review and Formulation of Hypotheses

In this section we first review the literature on the effects of information on stock trading, followed by a brief survey of related empirical research on the Chinese stock market.

3.1 The Effects of Information on Trading

Beaver (1968) was the first to investigate stock price and volume reactions to earnings announcements. He argued that abnormal trading volume reflects the degree to which

⁸ At the end of 2000 the SHSE institutional investors held 0.41 percent of the market value in the A-share market, while in the B-share market the institutional investors owned 5.52% of the market value. On the SZSE, the figures were 0.49 percent and 3.02 percent in the A-share and B-share markets, respectively.

⁹ Qing et al. (1998) commented that “the biggest challenge facing the system is the persistent ailment of lack of fidelity about accounting information that is widespread in China”.

¹⁰ Osland (1990) commented that “because of the extensive networks of relationships with significant interaction between people, communications among Chinese customers for a given product may be diffused very quickly. Word-of-mouth publicity takes on greater importance in China than in most Western nations”.

¹¹ The data for SZSE are not available.

individual investors in the market revise their expectations in reaction to the earnings announcements. Abnormal returns reflect the aggregate or average revision in expectations. Bamber (1986) demonstrated that the earnings announcements are informative about firm prospects. Kim and Verrecchia (1991a) developed an analytical framework and showed that when traders have different beliefs, the level of differential pre-disclosure precision of information is related to the change in trading volume in response to a public disclosure of information. Ziebart (1990), Ajinkya, Atiase, and Gift (1991) explained trading volumes in terms of pre-disclosure asymmetry. Bamber (1986, 1987), Holthausen and Verrecchia (1990), Ziebart (1990), Terpstra and Fan (1993), Kross, Ha and Heflin (1994), Atiase and Bamber (1994) explained the variations in the trading volume in terms of unexpected earnings, firm size, risk changes, market-wide volume influences and the magnitude of associated price reaction. Kandel and Pearson (1995) suggested a model based on differential interpretation around public announcements. They demonstrated that abnormal trading volume may occur even when the announcements do not produce value effects.

Recently, He and Wang (1995) constructed a dynamic model of differential information and behavior of stock trading to incorporate the empirical findings in the literature. The main results are: (i) Private information does not only cause trading in the current period, it also generates possible trading afterwards; (ii) Public information leads to trading in the current period and high volume appears around the announcement date; and (iii) New information, private or public, brings about high volume accompanied by large price volatility while existing information only generates high volume without large price changes.

There has been some empirical research on specific markets. Terpstra and Fan (1993) analyzed forecasts of Hong Kong firms' earnings and gave additional support for the trading-volume theory that investor disagreement over the interpretation of information leads to increased trading. Chung and Lee (1998) studied the Japanese stock market and investigated the differential trading activities exhibited by different types of investors in response to earnings announcements. Choi and Choe (1998) provided empirical evidence of the effect of annual earnings announcements on investors' trading volume in the Korean stock market.

In an event study, Bhattacharya, Daouk, Jorgenson, and Kehr (2000) investigated a sample of Mexican corporate news announcements and found that there are no unusual reactions in returns, volatility of returns, volumes of trade and bid-ask spreads around news announcements. They attributed such a "curious case" to the "unrestricted insider trading" and argued that ranking emerging stock markets in terms of their market integrity is a methodology that can be used with the limited data available in these markets. This argument shows that extending the research to other emerging stock markets such as the Chinese stock market is of particular importance.

3.2 Selected Empirical Literature on the Chinese Stock Market

Much of the empirical research on the Chinese stock market has focused on the correlation structure of the A shares versus the B shares, and the puzzle that the A shares are traded at a high premium versus the B shares. Bailey (1994) considered the brief history of the Chinese stock markets since B shares were issued to non-Chinese investors. They showed that the B-share returns exhibit little or no correlation with international stock index returns or returns on China-related stocks traded in Hong Kong and the US. Discounts of B shares are correlated across firms and related to similar premiums in other Asian markets. They suggested that the B shares have considerable diversification value but are not completely segmented from global financial conditions.

Ma (1996) offered some explanations for the puzzle that while in most markets the foreign shares are sold at premiums, the B shares in China are sold at discounts. Sun and

Tong (1998) suggested that differential demand elasticity might explain this strange case. Bailey, Chung and Kang (1999) studied the impact of barriers to international capital flows with stock price data from eleven countries and investigated the anomaly in China. Poon, Firth and Fung (1998) examined the impact of market segmentation on asset prices for China-domiciled companies and provided empirical evidence that the initial listing of B-share issues have significant negative effects on the stock prices of their related A shares.

Recently, Ang and Ma (1999) measured the transparency of the Chinese capital market by means of the individual analysts' forecasts. They argued that although the errors of analysts' forecasts on Chinese stocks are much higher than those on Hong Kong and other Asia Pacific stocks, the forecasts are still valuable. Su and Fleisher (1999) proposed that the differences in the intensity of information arrival and the differences in the approach information is included in trading decision lead to a higher volatility in the A shares compared to the B shares.

To date, little has been done to investigate the trading volume and returns to firms' specific information on the A-share and B-share markets with respect to firm-specific information. Several points should be noted. First, the information channels are different between the foreign and domestic investors. Cheng (2000) pointed out that "foreign investors reportedly have better access to timely updates on the Chinese economy from media such as Reuters and other financial services". However, local investors also have their information sources, such as "network of relationship", "word of mouth" and "gossip". Second, the available financial tools are out of balance between the A-share and B-share investors. Foreign investors and Chinese investors residing overseas have access to alternative financial products that are not available to domestic Chinese investors. Third, institutional investors possess a greater portion in the B-share market than in the A-share market. Fourth, the B-share market is much smaller and less liquid than the A-share market. All these factors may imply different behavior between the A shares and B shares. In this paper, we focus on investors' reactions to news released in these separate markets. In order to define the good and bad news quantitatively, and to have definite event dates, the news under this study is confined to the annual earnings announcements.¹²

3.3 Some Hypotheses

In this section we formulate some hypotheses to be examined in the event study.

(1) Do the A-share and B-share markets react to earnings announcements?

Beaver (1968) argued that annual earnings announcements have "information content". Using data from the NYSE, Kiger (1972) provided similar results in the three days surrounding quarterly earnings announcements. Choi and Choe (1998) reported that the results on trading volume responses to annual earnings announcements from the markets of developed economies also carry through to the Korean market. Bhattacharya et al (2000) found that earnings announcements have no effect on the Mexican stock market. The Chinese stock market has a reputation as a "policy market". Do the corporations in such a market send out value-relevant information?

(2) Are the trading volumes in the announcement period accompanied by large price changes?

¹² When we follow other kinds of news, such as merger, acquisition, and take-over, the announcement date is hard to determine. Furthermore, there is no quantitative measure to classify the nature of such announcements.

He and Wang (1995) showed that volume might lag behind the information flow when the information is private. They demonstrated that “exogenous information”, which includes new private signals and public announcements, generates trading together with large price changes, while volume generated by existing private information is not accompanied by significant price changes. As defined by He and Wang, earnings announcement is exogenous. Thus, we would expect to see volume surrounding the news release accompanied by significant abnormal returns in both A-share and B-share markets.

(3) Is there any difference in the reactions between the A-share and B-share markets to earnings announcements?

French and Poterba (1991) argued that the low cross-border diversification for the US and Japanese investors are due to the difficulties in generating and exploring information about foreign security markets. Brennan and Cao (1997) offered a model for international equity portfolio investment. In their model nationals are assumed to possess better endowment of information on the domestic stock market. Kang and Stulz (1997) showed that the foreign investors in Japan are inclined to invest in large firms with minimal degree of informational disadvantage to the foreigners. In these works information asymmetry is assumed to work against foreign investors. As for the Chinese stock market, Su and Fleisher (1999) argued that foreign investors have less information about Chinese stocks. Morse (1981) pointed out that price changes prior to public announcements indicate that some clues about the information has been detected by some investors. Such arguments constitute the intuition for the following hypothesis:

H₁: Chinese investors are better informed than their foreign counterpart so that the trading activities in the A-share market present a more obvious pre-announcement reaction to earnings announcements than in the B-share market.

Lev (1988) argued that accounting information has different values to various classes of investors. Kim and Verrecchia (1991a, 1991b) provided a theoretical model to support Lev’s argument. Cready (1988) reported that large (institutional) investors are more responsive to earnings announcements than small (individual) investors. Kim, Krinsky and Lee (1997) empirically documented that abnormal trading volume increases with the fraction of ownership held by institutional investors surrounding earnings announcements and indicated that institutional investors are more likely to trade around the arrival of quarterly earnings announcements than individual investors. Bailey and Mao (1999) found evidence that abnormal trading activities around corporate news release are more significant in the “unrestricted market” than in the “restricted market” because the foreign institutional investors, compared to the local investors, have better information processing ability. Chui and Kwok (1998) and Cheng (2000) argued that foreigners could receive news about China faster than domestic investors via media and financial services. Consequently, we have the second hypothesis that is contrary to the first one:

H₂: Due to foreign media, financial services, and the superior information analysing ability of institutional investors, pre-event market reactions to earnings announcements are more significant in the B-share market than in the A-share market.

(4) Does publicly released news have any predictable effects on the A-share and B-share markets?

Publicly released news may generate market reaction. How the markets respond to different news is another interesting question. We intend to observe the effects of good and bad news on the segmented markets. Following the findings in other financial markets, we establish the following hypotheses:

H₃: Good news generates positive abnormal returns around announcement dates and the general curve of the cumulative abnormal returns should be upward sloping in both the A-share and B-share markets.

H₄: Bad news generates negative abnormal returns around announcement dates and the general curve of the cumulative abnormal returns should be downward sloping in both the A-share and B-share markets.

4. Methodology and Data

We examine the effects of earnings announcements using event-study methodology. We first investigate the effects of earnings announcements on return volatility and trading volume. To measure the volatility, we use the absolute value of abnormal returns. In the next subsection we outline the methodology.

4.1 The Methodology

Classic event-study methodology is applied to examine the information contents of earnings-per-share announcements. The announcement date is defined as day 0, and the estimation period is from day -150 to day -21 . So the total estimation period covers 130 trading days. The event window of interest begins from day -20 and ends on day $+10$.

Let R_{it} denote the return for a security represented as the i th event on day t . Using the continuous compounding method, R_{it} is calculated as:¹³

$$R_{it} = \ln P_{it} - \ln P_{i,t-1} \quad (1)$$

where P_{it} is the security price in the i th event on day t . We follow Brown and Warner (1985) and calculate the abnormal daily return using three different measures: mean adjusted, market adjusted and market model.

Let A_{it} denote the excess (abnormal) return of the security in the i th event on day t . The daily excess return in the event window is calculated as follows:

Mean adjusted returns

$$A_{it} = R_{it} - \bar{R}_i \quad (2)$$

$$\bar{R}_i = \frac{1}{130} \sum_{t=-150}^{-21} R_{it} \quad (3)$$

Here \bar{R}_i is the arithmetic average of the security's daily returns in the $(-150, -21)$ estimation period in the i th event.

¹³ Dividend is included when it is distributed.

Market adjusted returns

$$A_{it} = R_{it} - R_{mt} \quad (4)$$

Here R_{mt} is the return of the index for day t .

Market model

$$A_{it} = R_{it} - \hat{a}_i - \hat{b}_i R_{mt} \quad (5)$$

Here \hat{a}_i and \hat{b}_i are obtained from the estimation period using OLS.

The index return in each segmented stock market is used to proxy the market return. We adopt the returns of the Shanghai A-share stock index, the Shanghai B-share stock index, the Shenzhen A-share stock index, and the Shenzhen B-share stock index to represent the market returns of the Shanghai A-share, the Shanghai B-share, the Shenzhen A-share and the Shenzhen B-share markets, respectively. These indices are all value-weighted. The index return R_{mt} is also computed with the continuous compounding measure, i.e.,

$$R_{mt} = \ln P_{mt} - \ln P_{m,t-1} \quad (6)$$

where P_{mt} is the market index on day t .

To measure the volatility, we calculate the cross-sectional average excess return of all the securities in the N events, A_t , as follows:

$$A_t = \frac{1}{N} \sum_{i=1}^N |A_{it}| \quad (7)$$

The non-parametric rank test described in Corrado (1989) is used to assess the statistical significance. To implement the non-parametric procedure, we first transform the time series of excess returns in each event period into their respective ranks. Thus, the values of the ranks vary from 1 to 161. Let K_{it} denote the rank of the time series of absolute value of excess return A_{it} in the i th event, i.e.,

$$K_{it} = \text{rank}(|A_{it}|), t = -150, \dots, +10 \quad (8)$$

where $|A_{it}| \leq |A_{ij}|$ implies $K_{it} \leq K_{ij}$, and $161 \leq K_{it} \leq 1$. The average rank is one-half plus half the number of observed returns, i.e., 81. The rank statistic T_t for day t is computed as:

$$T_t = \frac{1}{N \cdot S(K)} \sum_{i=1}^N (K_{it} - 81) \quad (9)$$

where N is the total number of events and $S(K)$ is the standard deviation based on the entire 161-day sample period given by:

$$S(K) = \sqrt{\frac{1}{161} \sum_{t=-150}^{+10} \left(\frac{1}{N} \sum_{i=1}^N (K_{it} - 81) \right)^2} \quad (10)$$

To allow for missing returns, the adapted rank test suggested by Corrado and Zivney (1992) is used. Ranks are standardized by dividing by one plus the number of available returns in each excess return time series. Let U_{it} represent the standardized rank, then

$$U_{it} = K_{it} / (1 + M_i) \quad (11)$$

where M_i is the number of available returns in the i th event.¹⁴ The rank test statistic for day t is calculated according to the following formula:

$$T_t = \frac{1}{N} \sum_{i=1}^N (U_{it} - 1/2) / S(U) \quad (12)$$

where $S(U)$ is the standard deviation obtained from the whole sample period, i.e.,

$$S(U) = \sqrt{\frac{1}{161} \sum_{t=-150}^{+10} \left(\frac{1}{\sqrt{N_t}} \sum_{i=1}^{N_t} (U_{it} - 1/2) \right)^2} \quad (13)$$

where N_t is the number of non-missing returns of all the N events on day t in the event period.

We have so far focused on the absolute abnormal returns. In order to further differentiate the market reaction to different information, we classified the earnings announcements into good news and bad news. With the earnings forecasts data collected from the International Brokers Estimate System (I/B/E/S) and the classification of earnings surprise as defined below, we calculate the earnings surprise according to the following formula:

$$ES_i = (AE_i - EE_i) / |EE_i| \quad (14)$$

where AE_i is the actual earnings reported in the i th event and EE_i is the estimated earnings reported by I/B/E/S. To screen out the good news, we try five different thresholds. Good earnings surprise is defined as ES_i above 0%, 8%, 10%, 15% and 20%. Similarly, for the bad news, the five standards are set as earnings surprise below 0%, -8%, -10%, -15% and -20%.

The abnormal return A_{it} is also obtained using the three methods, namely, mean adjusted, market adjusted and market model. Because we group the information into good and bad news, we consider the abnormal returns (with the sign preserved) and calculate both the parametric Student's test and the non-parametric Corrado's rank test. The daily cross-sectional average excess return of all the securities in the N events, namely A_t , is calculated as:

¹⁴ Among the total events under study, several daily returns in the estimation period for 4 events are missing. So the number of available returns in each event is not always equal to 161.

$$A_t = \frac{1}{N} \sum_{i=1}^N A_{it} \quad (15)$$

and the parametric Student's test for A_t is computed as:

$$T_t = A_t / S(A) \quad (16)$$

where $S(A)$ is the standard deviation of the abnormal return in the estimation window, which is defined as:

$$S(A) = \sqrt{\frac{1}{129} \sum_{t=-150}^{-21} A_t^2} \quad (17)$$

The calculation of the non-parametric rank test is the same as before, except that the rank value in formula (8) is not based on the absolute abnormal return, but on the actual value of the daily abnormal return.

Furthermore, we cumulate the abnormal returns in the event window to obtain the cumulative abnormal return, denoted as CAR_t , which is given by:

$$CAR_t = \sum_{i=-20}^t A_i, \quad t = -20, -19, \dots, +10. \quad (18)$$

To examine the changes in the trading volume upon the release of earnings announcements, abnormal daily trading volume is calculated as the difference between the trading volume and the mean daily volume for that stock over the event period normalized by the standard deviation. Each stock's daily trading volume is the turnover as measured by the number of shares. Following Brown and Warner (1985) and Corrado (1989), a T -test is applied to examine the significance of the normalized abnormal trading volume around day 0. To be specific, we define EV_{it} as the excess trading volume of the security in the i th event on day t . Then,

$$EV_{it} = V_{it} - \bar{V}_i \quad (19)$$

$$\bar{V}_i = \frac{1}{130} \sum_{t=-150}^{-21} V_{it} \quad (20)$$

where V_{it} is the turnover by volume and \bar{V}_i is the simple average of the security's trading volume in the i th event during the $(-150, -21)$ estimation period. The standard-deviation-normalized abnormal volume, E_{it} , is calculated as:

$$E_{it} = EV_{it} / S(EV_i) \quad (21)$$

where $S(EV_i)$ is its estimated standard deviation given by:

$$S(EV_i) = \sqrt{\frac{1}{130} \sum_{i=-150}^{-21} EV_{it}^2} \quad (22)$$

For each day t , the cross-sectional average excess volume of all the events, E_t , is computed as:

$$E_t = \frac{1}{N} \sum_{i=1}^N E_{it} \quad (23)$$

and the T -test statistic for day t is obtained by

$$T_t = \frac{1}{\sqrt{N}} \sum_{i=1}^N E_{it} \quad (24)$$

4.2 The Data

The Appendix provides the list of selected companies listed on the Shanghai and Shenzhen stock exchanges. Several criteria were used to screen the data. The first step is to select the common stocks. In order to compare the trading behaviour in the A-share market with that in the B-share market, we pick the firms that have both A shares and B shares. In the Shanghai stock market we obtain 41 firms that issue both A and B shares, while in the Shenzhen stock market the number is 42. Among these, one firm on the SHSE and 21 firms on the SZSE that are followed by fewer than three analysts from I/B/E/S are screened out. The last requirement for the remaining 40 firms on the SHSE and 21 firms on the SZSE is that their stocks should be traded in the market for at least one year. Finally, 38 firms on the SHSE and 21 firms on the SZSE survive the screening.

The period under study is from June 1995 through May 2000. From the 38 selected companies listed on the SHSE, we obtain 112 earnings announcements. For the A-share stocks, all the necessary data are available to study the 112 earnings announcements, but one earnings announcement is omitted from the B-share stocks due to lack of data. Therefore, 112 events of 38 companies are covered in the A-share market, and 111 events of 38 firms are studied in the B-share market. From the 21 companies listed on the SZSE, we obtain 44 earnings announcements. For the B-share stocks, all the necessary data are available, but two earnings announcements are excluded from the A-share stocks because of lack of data. Therefore, 42 events of 21 companies are available in the A-share market, and 44 events of 21 firms are followed in the B-share market.

When we define good news as earnings surprise above 0% and bad news as earnings surprise below 0%, we obtain 52 cases of good news (37 cases for the SHSE and 15 cases for the SZSE) and 97 cases of bad news (70 cases for the SHSE and 27 for the SZSE). After raising the threshold of the good news to earnings surprise above 20% and the threshold of bad news to earnings surprise below -20%, we obtain 26 cases of good news (21 cases for the SHSE and 5 cases for the SZSE) and 58 cases of bad news (44 cases for the SHSE and 14 cases for the SZSE).

Daily stock prices, trading volumes, market indices, the forecast of earnings and number of analysts from I/B/E/S were collected from the Datastream. Actual earnings values were obtained from the annual reports of the companies. Dates of announcements were gathered from the Shanghai Stock Exchange and Shenzhen Stock Exchange.

5. Empirical Analysis

5.1 Volatility and Trading Volume

Table 2 presents the results of the study on the absolute abnormal returns and abnormal trading volumes in the event window of earnings announcements in the Shanghai stock market.¹⁵ The *T*-test for the absolute abnormal returns is Corrado's rank test and the *T*-test for the abnormal trading volume is the usual Student's test. Using a one-tailed test at the 5% significance level,¹⁶ we find a statistically significant increase in return volatility on day +1 in both A-share and B-share markets. For trading volume, there are significant patterns around the information releases in both A-share and B-share markets. The significant abnormal trading volume accompanied by abnormal return around the announcement dates reflects "exogenous information" as described by He and Wang (1995), suggesting that annual reports have discernable effects on the markets. Furthermore, the results demonstrate that the behavior of stock volatility and trading volume at times of corporate information releases is different across the A-share and B-share markets. The pre-announcement volume reaction starts earlier in the A-share market, which corroborates hypothesis H_1 that the locals have better access to information. There are considerable post-event reactions up to day +5 in the B-share market and the post-event reactions extend to day +10 in the A-share market.

The reaction of the local investors in terms of both abnormal return and abnormal trading volume appears to be larger than that of the foreign investors, which is consistent with the different investor compositions in these two markets. In the A-share market, individual investors dominate and the level of information asymmetry is higher in this market. The large abnormal trading volumes without relevant price changes for the A shares reflect the existing information in this market, which, according to the findings of He and Wang (1995), may suggest that the investors in the A-share market may already have access to some information before the public release. This evidence again supports hypothesis H_1 . Thus, we reject hypothesis H_2 that investors in the B-share market are at a superior informed position.

Table 3 reports the results for the Shenzhen stock market. There is a statistically significant increase in the return volatility on day 0 in both A-share and B-share markets. For the trading volume, there are significant reactions around the information releases in these two markets. Again, the significant abnormal trading volume accompanied by the abnormal return reflects the "exogenous information" described by He and Wang (1995). The pre-announcement volume reaction without price changes still begins earlier in the A-share market, suggesting that some information has been leaked before the official release. This result again supports hypothesis H_1 and not H_2 .

5.2 Good News and Bad News

5.2.1 Good News

We combine the data in the Shanghai and Shenzhen Stock Exchanges to investigate the effects of good and bad news on the markets. Table 4 reports the daily abnormal return and the cumulative abnormal return when the earnings surprise is above 20%.¹⁷ According to the

¹⁵ The results for the three methods of calculating abnormal returns are similar. To save space, we only report the results for the market model.

¹⁶ All statistical significance referred to in this paper is based on the 5% level. These figures are represented in bold face.

¹⁷ Because the results under different levels of surprises are similar, we only report the results when the earnings surprise is above 20% for good news, and below -20% for bad news.

Student's test and Corrado's non-parametric test, abnormal returns are significant on days -8 , -1 , $+2$ and $+4$ in the A-share market, and on day 0 in the B-share market. When we further consider the abnormal return values, we find that the daily abnormal returns are positive in the B-share market but negative in the A-share market on the event day. The general phenomena are more clearly demonstrated in Figure 1 and Figure 2, which plot the CAR in the A-share and B-share markets when the earnings surprise is above 0% and 20%, respectively. The upward curve in the B-share market and downward curve in the A-share market suggest that only the investors in the B-share market react *rationally* to the good news.

An explanation for this phenomenon may be that the good news defined here actually is *not good* to the Chinese investors. As we use the I/B/E/S forecast data that are offered by the foreign institutional brokers and the foreign investors' estimate may not represent the local investors' forecast. We try the naïve forecast measure as an alternative: We replace the I/B/E/S forecast value with last year's earnings. However, we still get similar reaction patterns in both A-share and B-share markets. Thus, we reject hypothesis **H₃**. Comparing the CAR for different levels of surprises in the B-share market, we observe greater CAR for earnings surprise above 20%, showing that surprise is positively related to abnormal return.

For the abnormal trading volumes, the results of earnings surprise above 20% are summarised in Table 5. The abnormal trading volumes without price changes begin much earlier before the public news release and persist for a longer period after the event. All the results again support hypothesis **H₁**.

5.2.2 Bad News

Table 6 reports the effects of bad news on the Chinese stock market when the bad news is defined as earnings surprise below -20% . The abnormal returns are negative in both A-share and B-share markets, which is consistent with the bad-news effect found in other stock markets. Figure 3 and Figure 4 plot the CAR in the A-share and B-share markets when earnings surprise is below 0% and -20% , respectively. The downward patterns in both markets suggest that bad news generates its expected effect in the locals-dominated A-share market and the foreigners-involved B-share market. The CAR for earnings surprise below -20% are less than those for earnings surprise below 0%, which is consistent with what we have found in the market reaction to good news: The bigger the surprise, the more prominent the reaction.

Table 7 reports the abnormal trading volumes for earnings surprise below -20% . The trading volume reaction pattern is similar to that for good news. Abnormal trading volumes begin earlier and end later in the A-share market, while in the B-share market the abnormal trading volumes cluster around the event day.

5.3 Further Discussions

The results for the earnings surprise classified as good and bad news reject hypothesis **H₃** and accept hypothesis **H₄**. We find that good news and bad news do not have different effects on the Chinese local investors. Their reactions to different characteristic information are similar: all the reported earnings, whether they are higher or lower than *expected*, seem to be bad news to them. This leads us to question whether the reported accounting numbers have any meaning to them. Two possible explanations for this anomaly are suggested.

Firstly, the result may be due to the inaccuracy of the released accounting numbers and the speculative activities in the market. The lack of a strong supervisory system and loose insider trading constraints provide the condition for the insiders to trade prior to the

information release, causing abnormal trading volume patterns in the A-share market. Individual speculators trade more on the basis of market rumours and follow the big investors.

Secondly, the behaviour of the investors in the A-share market may be affected by the macroeconomic environment. The economic growth rate of China averaged more than 8% per year since 1979 (Fairlamb (1993)). Thus, the Chinese investors may be too optimistic and have unrealistic outlook for the growth potential of the firms. When the reported earnings do not meet their expectations, the announcements of earnings are regarded as bad news.

6. Summary

Our study on the annual earnings announcements in the Shanghai and Shenzhen stock exchanges leads us to accept hypothesis H_1 that local investors in the A-share market have better access to firm information before the public release. The late and less significant reaction to annual earnings announcements in the B-share market supports the rejection of hypothesis H_2 that investors in the B-share market have superior data analysing ability, rendering them information advantage. The pre-event abnormal trading volumes without significant price changes for the A shares imply some existing information in the A-share market and reflect the scenario of existing information described by He and Wang (1995). The abnormal trading volume and volatility are more significant in the A-share market around the event date, which is a result of the higher information asymmetry in this market.

We conclude that the information advantage for the investors in the A-share market does not apply to all the investors trading in the market. The superiority is only available to some of the local investors. Our conclusion is inconsistent with the findings of Bailey and Mao (1999) for the Singapore and Thailand markets. They found that the foreign institutional investors in the “unrestricted market” are better informed and react more significantly to the earnings announcements. This inconsistency may be due to the fact that in the Chinese B-share market, the foreign and institutional investors form only a small part.

Bhattacharya, Daouk, Jorgenson, and Kehr (2000) showed that earnings announcements do not produce volatility or abnormal trading volumes in the Mexican stock market and attributed the lack of market integrity to insider trading. They suggested using market integrity to rank emerging markets. However, in the Chinese stock market we observe prominent volatility and trading volumes during the windows of earnings announcements. Do the results imply a higher integrity and a higher rank for this emerging market? The answer is negative. The market reaction manifests the information leakage and informal information environment in the A-share market. Furthermore, we find that different information does not bring about different reaction patterns for the A shares. Insider trading, speculation and over-optimistic prospects for the economy are possible explanations. We maintain that although public release of information may bring about volatility, whether pre-event market reaction exists and whether the news generates effects in conformity with its nature are important issues to examine. In the case of the Chinese A-share market, careful interpretation should be considered.

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Table 1: Ownership structure of listed companies on the SHSE

This table reports the ownership distribution between state, legal persons, employees, local and foreign investors. All numbers are in percentage, representing the proportions of different shares in the total number of issued shares. The data were collected from the Shanghai Securities Year Book. Non-tradable shares include state shares, legal person shares (domestic, foreign, and auctioned), employee shares and others. Float shares include A shares, B shares, H shares, N shares and S shares. The data for the SZSE are not available.

Year	1995	1996	1997	1998	1999	2000
Non-tradable Shares	65.71	65.73	64.91	65.41	64.80	65.01
State Shares	43.76	40.97	37.61	40.41	40.76	43.55
Legal Person Shares	21.00	22.78	24.28	22.07	21.46	19.69
Domestic	13.25	14.70	16.79	15.39	13.88	13.07
Foreign	1.00	1.11	0.93	0.95	0.96	1.02
Auctioned	6.75	6.97	6.56	5.73	6.62	5.60
Employee Shares	0.23	0.85	1.43	1.43	0.89	0.62
Others	0.72	1.13	1.59	1.81	1.69	1.15
Float Shares	34.29	34.27	35.08	34.59	35.20	34.99
A Shares	16.98	18.89	20.52	22.20	24.64	26.50
B Shares	6.18	6.06	6.36	5.40	4.86	4.00
H, N, and S Shares	11.13	9.31	8.19	6.94	5.70	4.49
Total Issued Shares	100	100	100	100	100	100

Table 2: Absolute abnormal return (market model) and abnormal trading volume in the event window of earnings announcements in the Shanghai stock market

Event Day	Absolute Abnormal Return				Abnormal Trading Volume			
	A Shares		B Shares		A Shares		B Shares	
	A_t	T-test	A_t	T-test	E_t	T-test	E_t	T-test
-20	0.0166	1.125	0.0318	1.321	0.2517	2.663	0.0848	0.893
-19	0.0152	0.652	0.0231	-1.057	0.2344	2.481	0.0035	0.037
-18	0.0128	-0.274	0.0191	-2.136	0.0819	0.866	-0.1038	-1.093
-17	0.0133	0.111	0.0202	-1.110	0.0582	0.616	-0.0686	-0.722
-16	0.0125	-0.194	0.0264	0.102	0.2794	2.956	-0.0148	-0.156
-15	0.0152	0.614	0.0215	-1.266	0.3683	3.898	-0.1748	-1.842
-14	0.0149	0.712	0.0229	-0.808	0.2835	3.000	-0.0955	-1.006
-13	0.0158	0.485	0.0189	-2.173	0.3681	3.895	-0.0318	-0.335
-12	0.0174	0.709	0.0255	-0.210	0.4049	4.285	-0.0717	-0.756
-11	0.0162	0.426	0.0231	-1.039	0.4106	4.346	-0.1384	-1.459
-10	0.0151	0.554	0.0185	-1.946	0.4776	5.054	-0.1527	-1.609
-9	0.0127	-0.213	0.0232	-0.026	0.3411	3.610	-0.1570	-1.654
-8	0.0147	0.457	0.0222	-1.424	0.4046	4.282	-0.1288	-1.358
-7	0.0142	0.330	0.0278	0.521	0.3302	3.494	-0.0177	-0.187
-6	0.0144	0.813	0.0203	-1.525	0.4264	4.513	0.0089	0.093
-5	0.0170	1.377	0.0243	-0.762	0.6144	6.502	0.0960	1.012
-4	0.0184	2.162	0.0261	0.306	0.4412	4.669	0.0535	0.564
-3	0.0173	1.363	0.0252	0.134	0.5928	6.273	0.0780	0.821
-2	0.0192	2.350	0.0294	1.069	0.7428	7.861	0.1963	2.068
-1	0.0203	2.057	0.0306	1.145	1.0969	11.608	0.4019	4.234
0	0.0265	3.834	0.0335	1.809	0.9607	10.167	0.3009	3.170
1	0.0212	3.192	0.0343	2.479	0.8508	9.089	0.5008	5.276
2	0.0180	2.275	0.0299	0.112	0.6560	6.943	0.3276	3.452
3	0.0174	1.968	0.0289	1.061	0.5511	5.833	0.3643	3.838
4	0.0182	2.148	0.0266	0.587	0.5936	6.282	0.1755	1.849
5	0.0190	1.579	0.0285	1.044	0.5233	5.539	0.2504	2.638
6	0.0186	1.845	0.0263	0.615	0.4175	4.419	0.0805	0.848
7	0.0167	0.930	0.0299	1.032	0.4405	4.662	0.0975	1.028
8	0.0185	1.447	0.0277	0.795	0.4479	4.740	0.0103	0.108
9	0.0187	1.668	0.0288	0.671	0.7334	7.762	-0.0796	-0.839
10	0.0165	-0.110	0.0275	0.580	0.6694	7.084	0.0752	0.792

Table 3: Absolute abnormal return (market model) and abnormal trading volume in the event window of earnings announcements in the Shenzhen stock market

Event Day	Absolute Abnormal Return				Abnormal Trading Volume			
	A Shares		B Shares		A Shares		B Shares	
	A_t	T	A_t	T	E_t	T	E_t	T
-20	0.0113	-1.116	0.0187	-0.402	-0.1104	-0.715	0.0492	0.326
-19	0.0131	0.075	0.0143	-1.771	0.0904	0.586	0.1981	1.314
-18	0.0139	0.325	0.0180	0.670	0.0479	0.311	0.2096	1.391
-17	0.0148	1.067	0.0192	1.096	0.1006	0.652	0.1776	1.178
-16	0.0140	0.835	0.0167	-0.995	0.0798	0.517	0.1774	1.177
-15	0.0138	0.817	0.0176	0.460	0.1365	0.885	0.1442	0.957
-14	0.0141	0.585	0.0148	-1.659	0.1335	0.865	0.0681	0.452
-13	0.0131	0.438	0.0177	-0.533	0.0879	0.568	-0.0299	-0.198
-12	0.0137	0.312	0.0170	-0.021	0.3585	2.323	-0.0557	-0.369
-11	0.0147	0.747	0.0136	-1.461	0.2784	1.804	0.0423	0.281
-10	0.0162	0.613	0.0209	0.733	0.3044	1.973	0.3001	1.991
-9	0.0155	0.709	0.0138	-1.714	0.3861	2.502	0.1585	1.052
-8	0.0140	-0.070	0.0145	-0.974	0.2753	1.784	0.2607	1.729
-7	0.0157	1.461	0.0233	1.488	0.3517	2.279	0.1713	1.136
-6	0.0165	0.801	0.0183	0.219	0.3824	2.478	0.0758	0.503
-5	0.0222	2.636	0.0191	0.910	0.6524	4.228	0.1641	1.089
-4	0.0155	1.448	0.0182	-0.338	0.3272	2.120	0.2793	1.852
-3	0.0155	1.752	0.0202	0.584	0.1622	1.051	0.1475	0.978
-2	0.0215	0.685	0.0253	2.423	0.3198	2.073	0.1613	1.070
-1	0.0176	1.551	0.0221	0.438	0.4850	3.143	0.1629	1.080
0	0.0357	5.328	0.0387	4.867	1.0629	6.888	0.5596	3.712
1	0.0249	3.311	0.0220	1.373	1.2484	8.090	0.5361	3.556
2	0.0185	1.232	0.0209	0.971	0.7103	4.603	0.4817	3.195
3	0.0188	1.708	0.0224	1.762	0.5671	3.675	0.3189	2.115
4	0.0185	0.636	0.0208	0.597	0.4090	2.650	0.1030	0.683
5	0.0201	2.324	0.0200	0.542	0.3270	2.119	0.4160	2.759
6	0.0151	0.758	0.0175	-0.183	0.3257	2.111	0.2210	1.466
7	0.0148	0.600	0.0158	-0.070	0.3651	2.366	0.1297	0.860
8	0.0145	0.327	0.0180	0.347	0.4239	2.747	0.0528	0.350
9	0.0148	0.026	0.0181	0.505	0.5095	3.302	0.2514	1.668
10	0.0158	0.271	0.0182	0.563	0.5722	3.708	0.2139	1.419

Table 4: Abnormal return (market model) for reported earnings exceeding the forecast in the Chinese stock market (earnings surprise above +20%)

Event Day	A Shares				B Shares			
	Abnormal Return	Parametric Test	Non-Parametric Test	Cumulative Abnormal Return	Abnormal Return	Parametric Test	Non-Parametric Test	Cumulative Abnormal Return
-20	0.0028	0.695	-1.087	0.0028	0.0004	0.045	0.402	0.0004
-19	0.0046	1.153	-0.772	0.0074	0.0023	0.259	-0.261	0.0027
-18	-0.0077	-1.912	1.511	-0.0003	-0.0044	-0.491	0.381	-0.0017
-17	0.0009	0.218	0.062	0.0006	-0.0079	-0.880	1.429	-0.0096
-16	-0.0002	-0.048	-0.295	0.0004	0.0007	0.079	0.496	-0.0089
-15	0.0022	0.535	-1.046	0.0026	0.0020	0.218	-0.312	-0.0069
-14	0.0010	0.257	0.058	0.0036	0.0086	0.960	-1.177	0.0017
-13	0.0056	1.399	-1.440	0.0092	-0.0041	-0.457	0.783	-0.0024
-12	-0.0066	-1.644	1.283	0.0026	-0.0048	-0.537	0.680	-0.0072
-11	-0.0030	-0.742	0.552	-0.0004	-0.0042	-0.462	1.044	-0.0114
-10	-0.0006	-0.148	-0.149	-0.0010	-0.0048	-0.533	1.040	-0.0162
-9	-0.0038	-0.956	0.531	-0.0048	0.0068	0.788	-0.907	-0.0094
-8	0.0113	2.806	-2.295	0.0065	-0.0070	-0.783	0.364	-0.0164
-7	-0.0019	-0.475	0.573	0.0046	0.0058	0.643	-0.650	-0.0107
-6	0.0023	0.569	-0.419	0.0069	0.0003	0.032	-0.056	-0.0104
-5	-0.0025	-0.625	0.805	0.0043	0.0071	0.794	-0.013	0.0032
-4	-0.0026	-0.647	0.955	0.0017	0.0009	0.096	-0.689	-0.0024
-3	-0.0043	-1.074	0.942	-0.0026	0.0053	0.587	-0.377	0.0029
-2	-0.0054	-1.347	1.785	-0.0080	-0.0039	-0.437	0.561	-0.0010
-1	0.0090	2.227	-2.225	0.0010	0.0114	1.265	-1.579	0.0104
0	-0.0022	-0.551	0.847	-0.0013	0.0181	2.011	-1.988	0.0285
1	-0.0060	-1.494	0.855	-0.0073	-0.0081	-0.897	0.984	0.0204
2	-0.0106	-2.626	2.474	-0.0178	0.0094	1.048	-0.997	0.0299
3	-0.0050	-1.246	1.291	-0.0228	-0.0119	-1.319	1.665	0.0180
4	0.0107	2.666	-2.266	-0.0121	0.0015	0.167	0.039	0.0195
5	-0.0041	-1.011	1.415	-0.0162	-0.0018	-0.205	0.629	0.0177
6	0.0064	1.587	-0.212	-0.0098	-0.0009	-0.104	-0.300	0.0167
7	-0.0012	-0.288	0.095	-0.0110	0.0017	0.190	-1.288	0.0184
8	0.0026	0.656	-0.664	-0.0083	-0.0007	-0.072	-0.458	0.0178
9	0.0060	1.495	-0.266	-0.0023	0.0115	1.274	-1.656	0.0292
10	-0.0014	-0.340	1.465	-0.0037	0.0012	0.129	-0.325	0.0304

Table 5: Abnormal trading volume for reported earnings exceeding the forecast in the Chinese stock market (market model, earnings surprise above +20%)

Event Day	A Shares		B Shares	
	Abnormal Volume	<i>T</i>	Abnormal Volume	<i>T</i>
-20	0.2832	1.444	0.0203	0.104
-19	0.5097	2.599	-0.0132	-0.067
-18	0.0800	0.408	0.1168	0.596
-17	0.2810	1.433	-0.0697	-0.355
-16	0.2959	1.509	0.1700	0.867
-15	0.4322	2.204	-0.0232	-0.118
-14	0.6092	3.106	-0.1467	-0.748
-13	0.4454	2.271	-0.0771	-0.393
-12	0.4208	2.145	-0.1518	-0.774
-11	0.5025	2.563	-0.1387	-0.707
-10	0.3222	1.643	0.1411	0.720
-9	0.0773	0.394	-0.1970	-1.004
-8	0.4997	2.548	-0.0788	-0.402
-7	0.3099	1.580	-0.1431	-0.730
-6	0.4095	2.088	-0.1571	-0.801
-5	0.5229	2.666	-0.0352	-0.179
-4	0.4923	2.510	0.0232	0.118
-3	0.4555	2.322	0.0406	0.207
-2	0.6561	3.345	0.5119	2.610
-1	1.3304	6.784	0.7289	3.716
0	1.3697	6.984	0.6579	3.354
1	0.8547	4.358	0.7989	4.074
2	0.3821	1.949	0.6672	3.402
3	0.1774	0.904	0.2412	1.230
4	0.3910	1.994	-0.0219	-0.112
5	0.3254	1.659	0.3957	2.018
6	0.3662	1.867	0.2004	1.022
7	0.2972	1.515	0.3499	1.784
8	0.4662	2.377	0.1809	0.923
9	0.6273	3.199	-0.0095	-0.048
10	0.5518	2.814	0.3842	1.959

Table 6: Abnormal returns for reported earnings less than the forecast in the Chinese stock market (market model, earnings surprise below - 20%)

Event Day	A Shares				B Shares			
	Abnormal Return	Parametric Test	Non-Parametric Test	Cumulative Abnormal Return	Abnormal Return	Parametric Test	Non-Parametric Test	Cumulative Abnormal Return
-20	0.0081	2.960	-2.188	0.0081	0.0069	1.357	-1.765	0.0069
-19	0.0024	0.886	-0.466	0.0105	0.0017	0.343	-0.657	0.0086
-18	-0.0001	-0.054	-0.759	0.0103	-0.0023	-0.463	0.527	0.0063
-17	-0.0039	-1.411	1.794	0.0065	-0.0029	-0.575	0.361	0.0034
-16	-0.0015	-0.565	0.255	0.0050	-0.0054	-1.058	0.710	-0.0020
-15	-0.0008	-0.303	-0.021	0.0041	-0.0036	-0.719	0.870	-0.0056
-14	-0.0015	-0.566	0.483	0.0026	0.0017	0.332	0.165	-0.0040
-13	-0.0013	-0.493	-0.070	0.0012	-0.0051	-1.009	0.992	-0.0091
-12	-0.0019	0.708	-0.768	0.0032	0.0087	1.729	-1.074	-0.0003
-11	0.0023	0.844	-0.522	0.0055	-0.0029	-0.582	0.648	-0.0033
-10	0.0008	0.234	0.265	0.0062	-0.0017	-0.342	0.475	-0.0050
-9	0.0024	0.893	-0.747	0.0087	-0.0009	-0.170	0.525	-0.0059
-8	0.0025	0.932	-1.014	0.0112	-0.0040	-0.792	0.654	-0.0099
-7	0.0024	0.878	-0.427	0.0136	-0.0041	-0.081	0.649	-0.0140
-6	0.0003	0.109	-0.253	0.0139	-0.0087	-1.725	1.720	-0.0227
-5	-0.0001	-0.034	1.021	0.0138	0.0018	0.346	-0.172	-0.0209
-4	-0.0055	-2.005	1.585	0.0084	-0.0037	-0.728	0.260	-0.0246
-3	-0.0016	-0.577	0.427	0.0068	-0.0058	-1.147	1.060	-0.0304
-2	-0.0047	-1.732	0.952	0.0021	-0.0005	-0.094	0.059	-0.0309
-1	-0.0022	-0.804	0.128	-0.0001	-0.0096	-1.893	1.735	-0.0405
0	-0.0200	-7.333	4.403	-0.0201	-0.0146	-2.888	1.940	-0.0551
1	-0.0033	-1.218	1.256	-0.0235	-0.0131	-2.584	1.766	-0.0682
2	-0.0044	-1.606	0.798	-0.0279	-0.0171	-3.389	2.183	-0.0853
3	-0.0045	-1.664	1.276	-0.0324	-0.0055	-1.080	0.336	-0.0908
4	-0.0055	-2.032	1.987	-0.0379	-0.0092	-1.814	1.487	-0.0999
5	0.0032	1.172	0.478	-0.0347	-0.0058	-1.140	0.997	-0.1057
6	-0.0066	-2.428	1.669	-0.0414	-0.0024	-0.482	-0.554	-0.1081
7	-0.0028	-1.044	0.685	-0.0442	-0.0045	-0.884	0.760	-0.1126
8	0.0011	0.420	-0.032	-0.0431	0.0003	0.053	-0.643	-0.1123
9	-0.0016	-0.575	0.661	-0.0446	0.0010	0.205	-0.776	-0.1113
10	0.0003	0.125	-0.016	-0.0443	0.0073	1.440	-1.364	-0.1040

Table 7: Abnormal trading volume for reported earnings less than the Forecast in the Chinese stock market (Market Model, earnings surprise below -20%)

Event Day	A Shares		B Shares	
	Abnormal Volume	<i>T</i>	Abnormal Volume	<i>T</i>
-20	0.3473	2.599	0.2406	1.816
-19	0.1734	1.297	0.0292	0.220
-18	0.0922	0.690	-0.2019	-1.524
-17	-0.0642	-0.480	-0.0143	-0.108
-16	0.2024	1.515	-0.0229	-0.174
-15	0.2881	2.156	-0.1232	-0.930
-14	0.0517	0.387	-0.0682	-0.515
-13	0.1552	1.161	-0.1332	-1.006
-12	0.2199	1.646	-0.1846	-1.393
-11	0.3806	2.848	-0.2583	-1.950
-10	0.4213	3.153	-0.2075	-1.566
-9	0.3847	2.879	-0.1756	-1.326
-8	0.4533	3.393	0.0133	0.100
-7	0.4898	3.665	0.0962	0.726
-6	0.6023	4.507	0.1773	1.338
-5	0.8258	6.180	0.2549	1.925
-4	0.5451	4.079	0.0887	0.670
-3	0.7038	5.267	0.2729	2.061
-2	0.7901	5.912	0.1356	1.023
-1	1.2901	9.654	0.4943	3.732
0	1.0324	7.726	0.1386	1.047
1	1.3035	9.754	0.3744	2.826
2	1.2923	9.671	0.3983	3.007
3	0.9649	7.221	0.4717	3.561
4	0.9249	6.921	0.2027	1.530
5	0.6179	4.624	0.0549	0.415
6	0.4779	3.577	-0.0331	-0.250
7	0.2928	2.191	0.0786	0.593
8	0.2739	2.050	-0.0924	-0.698
9	0.3058	2.288	-0.0601	-0.453
10	0.2482	1.857	-0.1082	-0.817

Figure 1: Effects of good news with earnings surprise above 0%

These graphs present the cumulative abnormal returns in the Chinese stock market during the event window (-20, +10) upon the public release of the earnings per share that is greater than the I/B/E/S forecast. The earnings surprise is above 0%. The I/B/E/S earnings forecast is the mean of the earnings estimation values offered by the brokers one month before the public release. The x-axis displays the day in the event window and y-axis displays the cumulative abnormal return (CAR) on day t , where t ranges from -20 to +10. The abnormal return is obtained from the market model and the data are collected from the Shanghai and Shenzhen Stock Exchanges.

Figure1. 1: Cumulative abnormal return (CAR) for the A shares

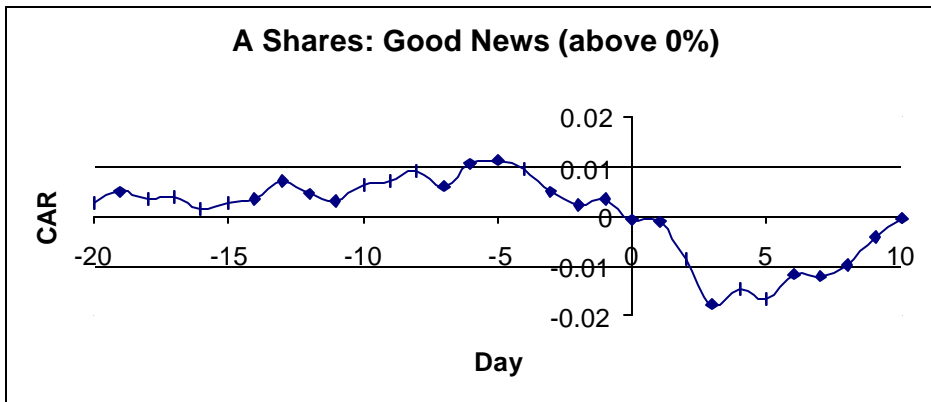


Figure 1.2: Cumulative abnormal return (CAR) for the B shares

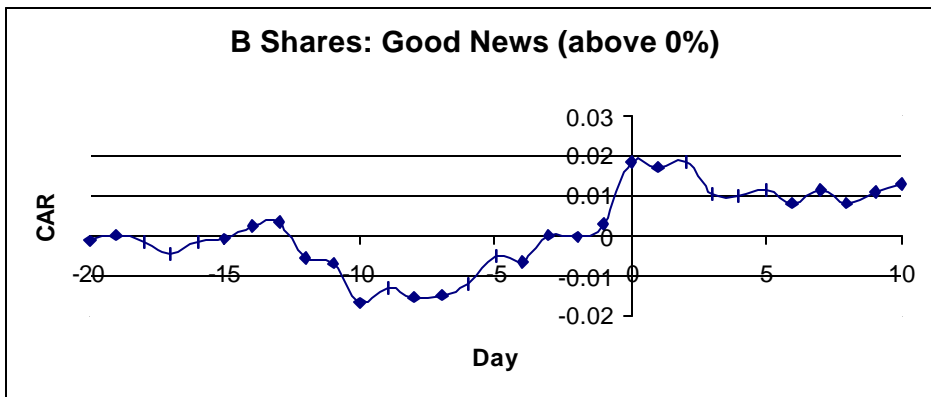


Figure 2: Effects of good news with earnings surprise above 20%

These graphs present the cumulative abnormal returns in the Chinese stock market during the event window (-20, +10) upon the public release of the earnings per share that is greater than the I/B/E/S forecast. The earnings surprise is above 20%. The I/B/E/S earnings forecast is the mean of the earnings estimation values offered by the brokers one month before the public release. The x-axis displays the day in the event window and y-axis displays the cumulative abnormal return (CAR) on day t , where t ranges from -20 to +10. The abnormal return is obtained from the market model and the data are collected from the Shanghai and Shenzhen Stock Exchanges.

Figure 2.1: Cumulative abnormal return (CAR) for the A shares

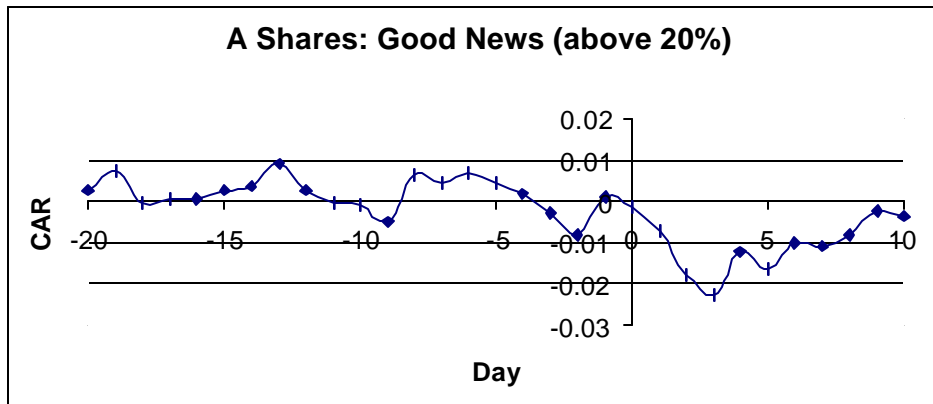


Figure 2.2: Cumulative abnormal return (CAR) for the B shares

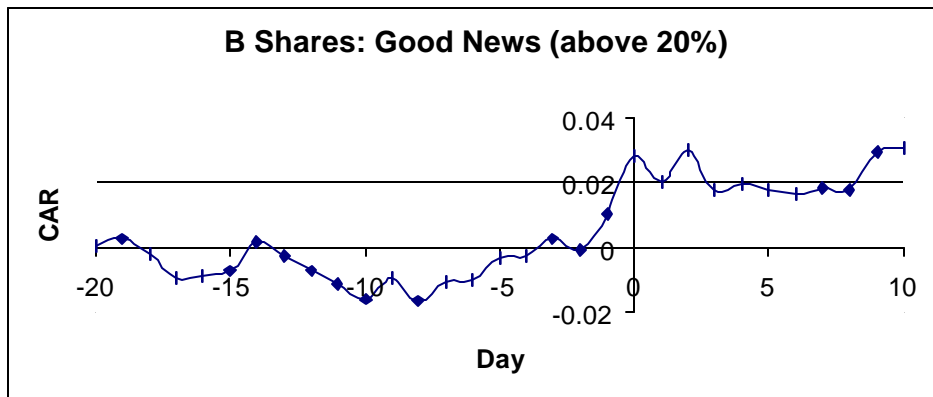


Figure 3: Effects of bad news with earnings surprise below 0%

These graphs present the cumulative abnormal returns in the Chinese stock market during the event window (-20, +10) upon the public release of the earnings per share that is less than the I/B/E/S forecast. The earnings surprise is below 0%. The I/B/E/S earnings forecast is the mean of the earnings estimation values offered by the brokers one month before the public release. The x-axis displays the day in the event window and y-axis displays the cumulative abnormal return (CAR) on day t , where t ranges from -20 to +10. The abnormal return is obtained from the market model and the data are collected from the Shanghai and Shenzhen Stock Exchanges.

Figure 3.1: Cumulative abnormal return (CAR) for the A shares

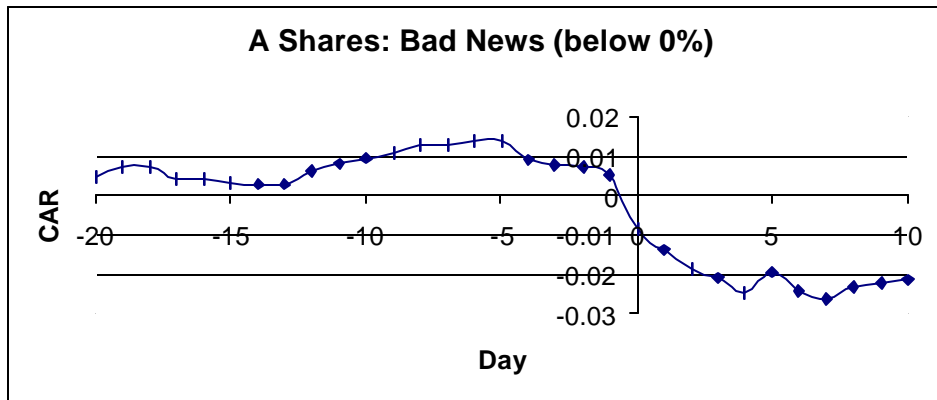


Figure 3.2: Cumulative abnormal return (CAR) for the B shares

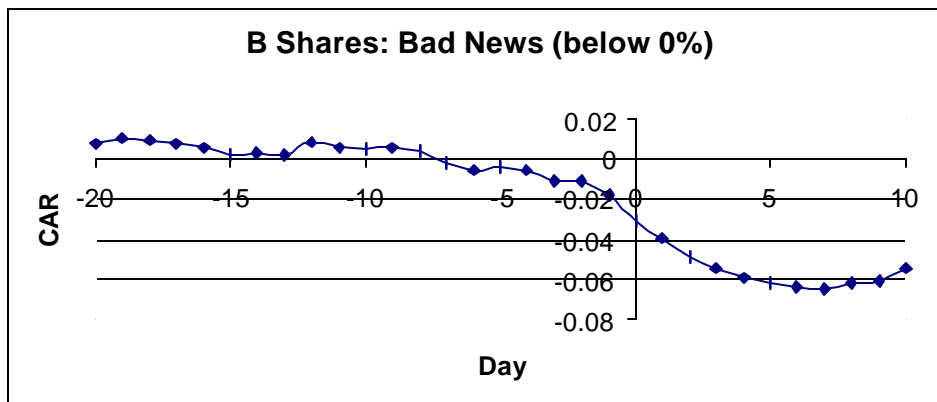


Figure 4: Effect of bad news with earnings surprise below -20%

These graphs report the cumulative abnormal returns in the Chinese stock market during the event window (-20, +10) upon the public release of the earnings per share that is less than the I/B/E/S forecast. The earnings surprise is below -20%. The I/B/E/S earnings forecast is the mean of the earnings estimation values offered by the brokers one month before the public release. The x-axis displays the day in the event window and yaxis displays the cumulative abnormal return (CAR) on day t , where t ranges from -20 to +10. The abnormal return is obtained from the market model and the data are collected from the Shanghai and Shenzhen Stock Exchanges.

Figure 4.1: Cumulative abnormal return (CAR) for the A shares

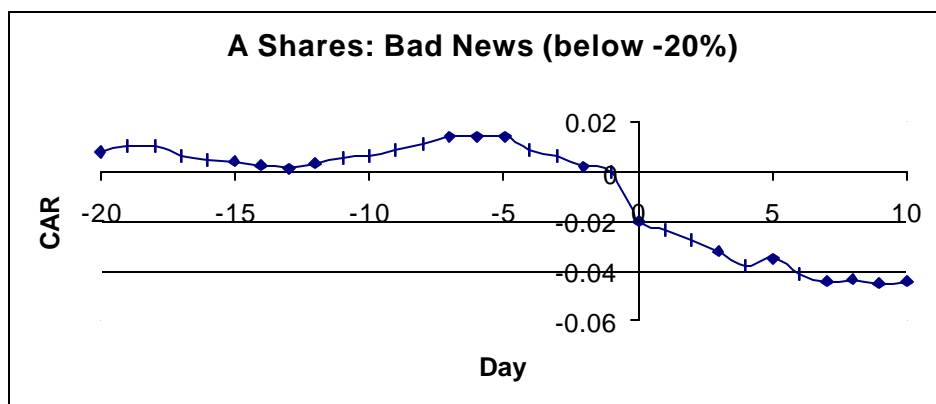
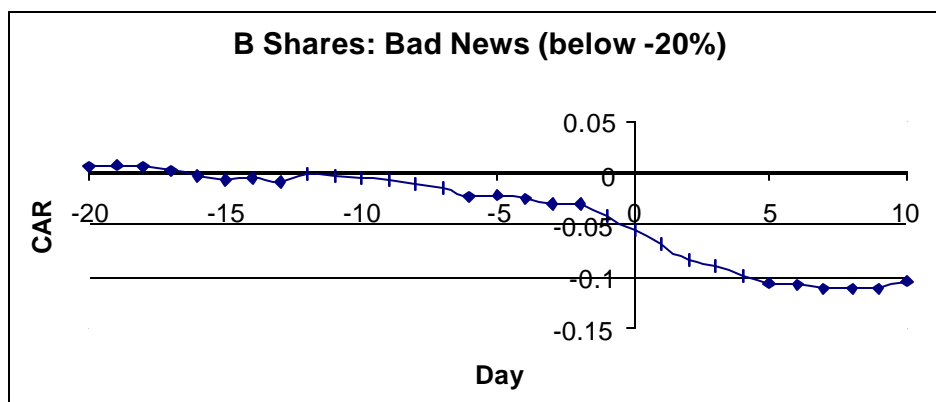


Figure 4.2: Cumulative abnormal return (CAR) for the B shares



Appendix: Selected firms listed on the SHSE and SZSE included in the event studies

The firms in the sample are those (1) issuing both A and B shares, (2) followed by three or more analysts of I/B/E/S, and (3) publicly traded in the market for more than one year. We obtain 38 firms from the SHSE and 21 firms from the SZSE

SHSE	SZSE
1. China First Pencil	1. Anhui Gujing Distillery
2. China Textile Machinery	2. Bengang Steel Plates
3. Shanghai Dazhong	3. Changchai
4. Eastern Communications	4. China International Marine Containers
5. Heilongjiang Electric Power	5. China Merchants Shekou
6. Hero (Group)	6. China Southern Glass Holding
7. Huangshan Tourism	7. China Vanke
8. Huaxin Cement	8. Chongqing Changan Automobile
9. Jinzhou Harbor (Group)	9. Foshan Electrical and Lighting
10. Phoenix	10. Guangdong Electric Power Development
11. Shangong	11. Guangdong Provincial Expressway Development
12. Shanghai Automation Instrumentation	12. Hubei Sanonda
13. Shanghai Chlor-Alkali Chemical	13. Konka Group
14. Shanghai Dajiang (Group)	14. Shenzhen China Bicycle
15. Shanghai Diesel Engine	15. Shenzhen Chiwan Wharf
16. Shanghai Erfangji	16. China Fangda Group
17. Shanghai Forever	17. Shenzhen Nanshan Power Station
18. Shanghai Friendship & Overseas Chinese	18. Shenzhen Petrochemical Industry (Group)
19. Shanghai Haixin (Group)	19. Shenzhen Special Economic Zone (Group)
20. Shanghai Jinjiang Tower	20. Weifu Fuel Injection
21. Shanghai Jinqiao Export Processing Zone Development	21. Wuxi Little Swan
22. Shanghai Lianhua Fiber	
23. Shanghai Lujiazui Finance & Trade Zone Development	
24. Shanghai Material Trade Center	
25. Shanghai Narcissus Electric Appliance	
26. Shanghai New Asia (Group)	
27. Shanghai Posts & Telecommunications	
28. Shanghai Refrigerator	
29. Shanghai Rubber Belt	
30. Shanghai Sanmao Textile	
31. Shanghai Shangling Electric Appliance	
32. Shanghai Steel Tube	
33. Shanghai Tire & Rubber	
34. Shanghai Vacuum Electron Devices	
35. Shanghai Wing Sung Stationery	
36. Shanghai Worldbest	
37. Shanghai Yaohua Pilkinton Glass	
38. Tianjin Marine Shipping	