Financial Reporting Quality and Information Asymmetry: Evidence from the Chinese Stock Market

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Abstract:
This paper examines the effect of earnings quality on information flow in the Chinese domestic A- and foreign B-share markets. I find that A-share returns predict B-share returns, suggesting that domestic investors have an information advantage over foreign investors. The ability of A-share returns to predict B-share returns is negatively correlated with earnings quality, and the negative correlation is robust to controlling for other stock characteristics associated with the firm information environment. Further, I find that the ability of A-share returns to predict B-share returns decreases significantly in the month after earnings announcements, and that the reduction is only significant for firms with high earnings quality. My results also indicate that earnings quality is negatively correlated with the B-share discount, suggesting that foreign investors are willing to pay more when they face less information disadvantage. These results are consistent with the theory that high quality disclosure of public information can reduce uninformed (foreign) investors’ information disadvantage relative to informed (local) investors and reduce cost of equity. Given that information asymmetry between domestic and foreign investors can deter foreign investment, my results suggest providing high quality accounting information can facilitate foreign investment.

JEL classification: G15, F21, M41

Keywords: Information asymmetry, earnings quality, Chinese stock market, domestic and foreign investors.

Data availability: All data are publicly available from sources identified in the study.
I. Introduction

This paper examines the relation between financial reporting quality and information asymmetry between domestic and foreign investors in the Chinese stock market. I study the information transmission process between Chinese A-share market (for domestic investors) and B-share market (for foreign investors) and document that domestic A-share returns can predict foreign B-share returns. The documented return predictability is consistent with prior studies that foreign investors have an information disadvantage over domestic investors (Brennan and Cao 1997; Kang and Stulz 1997; Choe et al. 2005). More importantly, I also find that the ability of A-share returns to predict B-share returns are reduced in the cross-section as various measures of earnings quality increase, suggesting that high quality accounting information can reduce the information disadvantage of foreign investors.

The extant finance literature documents that foreign investors have an information disadvantage relative to domestic investors (Brennan and Cao 1997; Choe et al. 2005), and this information disadvantage deters direct foreign investment, resulting in adverse economic consequences to local firms (Brennan and Cao 1997; Young and Guenther 2003; Leuz et al. 2009). Prior studies also demonstrate that foreign investment is a critical source of financing for firms in emerging markets (Bekaert et al. 2005). Direct foreign investment can reduce the cost of equity capital for local firms through improved risk sharing (Bekaert and Harvey 2000; Chari and Henry 2004) and consequently spur investment and real economic growth to local economies (Henry 2000; Bekaert et al. 2005). Hence, reducing foreign investors’ information disadvantage is important for these markets to attract more direct foreign investment. Building on economic theory that high quality disclosure of public information can reduce the information asymmetry between informed and uninformed investors (Diamond 1985; Easley and O’Hara...
2004), this paper contributes to the literature by providing empirical evidence that high quality financial reporting can reduce the information disadvantage of foreign investors.

I use Chinese stock market data from 1995 to 2000 to investigate the role of financial reporting quality in reducing the information disadvantage of foreign investors. Information asymmetry between foreign and domestic investors is a prominent feature of the Chinese stock market. During the sample period, share manipulation and insider trading in China were rampant and investor protection rights were weak (Chakravarty et al. 1998; Pistor and Xu 2005). Foreign investors had difficulty acquiring information on Chinese firms compared with domestic investors (Chakravarty et al. 1998, Chan et al. 2008). To attract foreign capital, the Chinese government undertook a pilot scheme allowing a subset of publicly listed firms to issue shares to foreign investors (B-shares). Before 2001, domestic investors could only trade in the A-share market and foreign investors could only trade in the B-share market, and this segmentation provides an ideal setting to measure foreign investors’ information disadvantage by examining the information transmission process between domestic A-shares and foreign B-shares. If domestic investors in the A-share market have an information advantage, the returns of A-shares should predict future returns of B-shares. Hence, I use the predictability of A-share returns for B-share returns as a proxy for the information disadvantage of foreign investors. In addition, although the two classes of shares have identical payoff structures and voting rights, A-share prices were on average three times that of the corresponding B-shares during the sample period.  

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1 During the sample period, Chinese law forbade short-selling. Restrictive government rules also significantly constrained equity issuance and buy-backs, common practices that firms can use to “arbitrage” misvaluation. An important question is why firms issue B-shares given the heavy B-share discount. During my sample period, most Chinese firms suffered from a shortage of capital, and the decision to issue shares and the type of shares to issue was made by the central government rather by individual firms. To ease the capital shortage, firms took any financing opportunity available to them. Further, the Chinese government did not expect the huge discount by foreign investors and halted the permits for B-share issuance after 2001 (CSRC 2008). The number of firms with B-share outstanding has remained at approximately 110 since 2000. To obtain foreign capital, the government instead started
Prior studies (Charkravarty et al. 1998, Chan et al. 2008) show that the B-share discount is mainly attributable to information asymmetry between domestic and foreign investors. Hence, the Chinese stock market also provides a unique setting to examine the pricing effect of providing high quality financial information by investigating the relationship between earnings quality and B-share discounts.

I use three measures of accruals-based earnings quality to estimate financial reporting quality. The first measure is based on the estimation of abnormal accruals using the modified Jones (1991) model. Under this approach, I use the absolute abnormal accruals as an inverse measure of earnings quality. Following Aboody et al. (2005), I use the absolute value of residuals from the modified Dechow and Dichev (2002) model as my second measure of earnings quality. The third measure is the accrual quality, measured as the time-series standard deviations of the residuals from the modified Dechow and Dichev (2002) model. I multiply each measure of earnings quality by negative one so that my measures of earnings quality increase in financial reporting quality. The primary measure of earnings quality is the natural logarithms of the sum of the scaled decile rankings of each earnings quality metrics.

Using a sample of 76 individual firms issuing both A- and B-shares between 1995 and 2000, I find that domestic A-share returns predict current period B-share returns. While lagged B-share returns can also predict current period A-share returns, the magnitude is not statistically significant, suggesting that domestic A-share investors have an information advantage over B-share foreign investors. Then, I calculate a delay measure for each firm that captures the average

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2 Recent studies that use accruals-based earnings quality to proxy for financial reporting quality include: Rajgopal and Venkataram (2010), Beatty et al. (2010), Biddle et al. (2009), and Francis et al. (2008).

3 Because all the sample firms were required to issue financial statements prepared under both the Chinese generally accepted accounting standard (GAAP) and International Accounting Standard (IAS), there are total of six measures of earnings, three measured under the Chinese GAAP and three based on the IAS standard.
B-share price-delay relative to the corresponding A-share and consistent with the predictions, my results show that measures of accrual-based earnings quality are associated with reduced predictability of A-share returns for B-share returns. This negative relation between the return predictability and earnings quality holds even after controlling for factors that can affect the differential speed of the two markets in incorporating firm news. My results also reveal that the ability of A-share returns to predict B-share returns decreases significantly in the month right after earnings announcements, and the decrease is only significant for firms with high quality of earnings. These results lend further support for my hypothesis that high quality of earnings decreases foreign investors’ information disadvantage. Further empirical analyses also indicate that earnings quality is negatively and significantly correlated with the B-share discount while return predictability is positively and significantly correlated with the B-share discount, suggesting that high earnings quality reduces foreign investors’ information disadvantage and in turn foreign investors are willing to pay more for Chinese domestic equities and reducing the costs of equity capital for the firm. Lastly, my results are robust to controlling for firms’ operating volatility and returns on assets, two firm characteristics that can affect the measures of accruals-based earnings quality as argued in Hribar and Nichols (2007) and Kothari et al. (2005).

Beginning on February 19, 2001, domestic investors with foreign currency holdings were allowed to trade in the B-share market. This policy change imposes an exogenous shock to the information structure within the B-share market, providing a natural experiment to infer the relationship between financial reporting quality and the information asymmetry between domestic and foreign investors. I find that the new regulation significantly reduced the information asymmetry between the two markets. The ability of A-share returns to predict B-
share returns decrease significantly after the policy change.\textsuperscript{4} Likewise, the B-share discount also decreases significantly in the period after the regulation. These results lend confidence to the validity of using the predictive ability prior to the regulation as a proxy for information asymmetry. Further, given that accounting information provided by firms did not change around the regulation, accounting information is held constant. The reduction in the information asymmetry accompanied with the reduction in the B-share discount provides empirical evidence that information asymmetry can reduce cost of equity in the Chinese stock market. Taken together, my results show that high earnings quality reduces foreign investors’ information disadvantage and in turn foreign investors are willing to pay more hold the risky assets, reducing the costs of equity capital for the firm.

My paper contributes to the international finance literature by documenting that high quality accounting information can reduce foreign investors’ information disadvantage and subsequently reduce the cost of equity capital for firms in emerging markets. Given that foreign investors’ information disadvantage deters foreign investment (Brennan and Cao 1997; Young and Guenther 2003; Leuz et al. 2009) and that foreign investment is an important source of financing for emerging markets (Chari and Henry 2004; Bekaert et al. 2005), my results also imply that high quality accounting information can facilitate foreign investment and improve the economic growth of emerging capital markets.

By documenting a negative association between earnings quality and B-share discounts, my results show that earnings quality can reduce the discount rates required by foreign investors and consequently reduce the cost of capital for local firms in emerging markets. Extent empirical evidence on whether earnings quality is a priced a factor is inconclusive (e.g. Francis et al. 2004

\textsuperscript{4} After the regulation, the ability of A-share returns to predict B-share returns and that of B-share returns to predict A-share returns became symmetrical, suggesting that information asymmetry between the two markets decreased significantly.
2005, Kim and Qi 2010, Bhattacharya et al 2003 2012, and Core et al. 2008). Prior studies examining this issue all suffer from the noise of measuring the cost of equity capital (see e.g., Lang 1999, Botosan and Plumlee 2005), and the mixed evidence can be driven by the noisy measures of cost of equity. The Chinese stock market allows me to directly observe foreign and domestic investors’ pricing differences for the same underlying assets. Given that domestic and foreign investors have the same claims to future cash flows, the differences in the A- and B-share price (i.e., the B-share discount) captures the differential discount rates required by domestic and foreign investors for the same underlying assets. Using the B-share discount as a proxy for cost of equity, this paper contributes to this line of literature by documenting that earning quality is significantly and economically associated with the cost of equity in the Chinese stock market.

Results of my paper also shed light on the debate whether information asymmetry is related to cost of equity. Easley and O’Hara (2004) develop a model showing that information asymmetry between informed and uninformed investors can affect cost of equity. However, Lambert et al. (2012) show that in a perfect competition setting, investors’ average information precision regarding firms’ cash flow rather than information asymmetry affects the cost of capital. Empirical evidence on the effect of information asymmetry on cost of equity is limited and inconclusive (Easley et al. 2002, Mohanram and Rajgopal 2009, Bhattacharya et al. 2012, Armstrong et al. 2011). By documenting a positive correlation between return predictability and B-share discounts, my study shows that in a high friction market, such as the Chinese stock market, reducing information asymmetry can lower cost of equity.

One caveat of this study is that the Chinese stock market may be different from other emerging markets; hence, the implication of the study will be limited. Nevertheless, given the

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5 Please see Lang (1999) and Botosan and Plumlee (2005) for a detailed discussion about the validity of various measures of the cost of equity capital used in the literature and the associated interpretation issues.
sheer size of the Chinese economy and the growing importance of its stock market, it is important to understand the information structure of the Chinese stock market and in particular the importance of accounting information plays in the development of the Chinese stock market. In particular, prior studies (e.g. Daske et al. 2008) suggest that quality of accounting information matters to stock market only in countries with strict law enforcement regimes and in countries where firms have strong incentive to be transparent. This study provides empirical evidence that accounting information is an important source of information at least to foreign investors even in a weak enforcement and low reporting incentive regime such as China (Allen et al. 2005). In addition, the small sample size may also limit the generalizability of this study’s findings.

The remainder of the paper is organized as follows: Section II provides institutional background on the Chinese stock market. Section III lays out my empirical hypotheses followed by the empirical method in Section IV. I report my results in Section V and VI and further examine the empirical hypotheses using samples after the regulation change in Section VII. Section VIII concludes the paper.

II. Background on the Chinese Stock Market and Financial Reporting

Stock exchanges in Shanghai (SHSE) and Shenzhen (SZSE) were established in December 1990 and July 1991 in an effort to reform state-owned enterprises and attract foreign investment. Since its inception, the Chinese stock markets have grown rapidly. By the end of 2009, the number of firms listed on the two exchanges had reached 1,718, with a total market capitalization over 3 trillion U.S. dollars. Two types of shares, A-shares and B-shares, trade on the two exchange markets. A-shares are denominated and traded in Chinese Renminbi (RMB)

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6 Appendix A provides an overview of the major events in the Chinese stock markets during the sample period of this paper.
7 Information is obtained from the website of the China Securities Regulation Committee (CSRC), available at http://www.csrc.gov.cn/
and can be traded only by Chinese citizens. B-shares are traded in either U.S. dollars (for the SHSE B-share market) or Hong Kong dollars (for the SZSE B-share market) and can only be traded by foreign investors. While the majority of publicly listed firms issue only A-shares, to attract foreign capital to the securities market, several dozen firms also issue both A- and B-shares which traded on the same exchange. Before 2000, there were 99 firms that issued A-shares at the Chinese stock exchanges and also simultaneously issued H-shares at the Hong Kong stock exchange. A few firms were also listed on U.S. stock exchanges and their shares can be purchased through American Depository Receipts. I do not include those firms in my sample because they were traded on an exchange under different regulations. In particular, before 2000 Hong Kong was still under Britain’s control and publicly listed firms were subject to Britain’s regulations. Price differences between A- and H-shares may reflect cross-country differences in investor protection or legal environment. In addition, different trading times and dates across the two markets make the measure of return predictability very noisy. In contrast, both A- and B-shares are traded at the same stock exchange under same rules and regulations, which allows me to effectively control for any institutional and trading time difference.

The majority of A-shares are issued by state-owned enterprises and can be classified as state shares, legal shares, or public shares. State shares are held by the government through a designated government agency, while legal shares are held by enterprises or other economic entities, but not individuals. Public shares are owned by individual Chinese citizens. Prior to the 2001, only public shares owned by individual investors were traded in the market. A-shares owned by the government or other economic entities were not freely tradable in the market. B-shares are ordinary shares available to foreign investors and impart identical voting and dividend rights as to A-shares.
Starting from 1992, the Chinese government adopted the financial reporting system widely used in Western countries. The system was revised in 1998 to further align the accounting practices for listed Chinese companies with the International Accounting Standard (IAS). In the meantime, a series of auditing standards was also introduced to regulate auditing practice. All of these reforms were aimed at improving the quality and quantity of corporate accounting disclosure. Chinese financial reporting requirements treat domestic and foreign investors differently. Firms issuing only A-shares need to prepare their financial reports under Chinese generally accepted accounting standards (GAAP), whereas firms issuing both A- and B-shares are required to convert their Chinese GAAP based financial statements to formats following IAS. The interim and annual financial reports are released to the public through designated securities newspapers with Chinese GAAP-based statements in mainland China newspapers and IAS-based statements in Hong Kong newspapers. The two sets of financial statements must be released on the same day. In the case of a significant difference between the earnings prepared under the two standards, firms are required to provide a summarized reconciliation schedule to be released in local newspapers along with the Chinese GAAP-based financial statements. IAS-based financial statements for the B-share market are audited by international auditing firms in order to improve the credibility of the financial statements. Chinese GAAP-based statements for A-share reporting are audited by local CPA firms or joint ventures between international and local auditing firms.

III. Literature Review and Hypothesis Development

Literature Review

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8 Chinese firms are required to use calendar year as their fiscal year and the financial reports must be released and published before April 30th of the following year.

9 This difference in auditing practice is due to the fact that Chinese law requires foreign accounting firms to set up joint ventures with local firms to audit local companies. When two different CPA firms are hired for A- and B-share audits, the audited firms will tend to require the two CPA firms to work jointly on the audits in an effort to save firm audit costs (Chen et al. 1999).
One recurring theme in the international finance literature is that foreign investors are less informed about domestic securities than local investors. Brennan and Cao (1997) argue that “while information about the domestic economy may be acquired virtually costlessly by regular reading of local press and normal business activities, information about foreign economies requires considerably more effort to acquire.” The authors derive and find empirical support that information asymmetry between foreign and domestic investors can cause a positive correlation between foreign equity flows and returns on local market indices. Coval and Moskowitz (1999) argue that local investors have an information advantage because “local investors can talk to employees, managers, and suppliers of the firm; they may obtain important information from the local media; and they may have close personal ties with local executives.”

Empirical studies find that domestic investors always buy (sell) stocks at a lower (higher) price (Choe et al. 2005), and they earn higher profits than foreign investors (Hau 2001; Dvorak 2005), providing consistent evidence that domestic investors are at an information advantage relative to foreign investors.

While the information disadvantage of foreign investors may be present in other countries, it is particularly relevant in China. China’s different language, culture and political system make it difficult for foreign investors to access and acquire information on Chinese firms. Furthermore, during the sample period, share manipulation and insider trading were rampant and investor protection rights were not legally codified (Chakravarty et al. 1998). Public law enforcement by the regulator or private litigations by investors was weak or virtually absent (Pistor and Xu 2005). Consistent with this notion, prior studies show domestic Chinese investors have more private

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10 Although Coval and Moskowitz (1999) examine local versus non-local investors within the same country, same arguments can easily be used to explain the information advantage of domestic investors relative to foreign investors.
information relative to foreign investors and the A-share market leads the B-share market in price discovery (Chan et al. 2007, Chakravarty et al. 1998).

Easley and O’Hara (2004) show that disclosure of high quality accounting information can change a firm’s information structure and reduce (increase) the amount of private (public) information observable only by informed investors (observable by both informed and uninformed investors). In addition, Diamond (1985) shows the disclosure of public information increases both informed and uninformed investors’ expected utility and reduces investors’ incentives to become informed by acquiring costly private information. Hence public disclosure substitutes for private information acquisition and reduces the information advantage of informed investors. Consistent with the theoretical prediction, Bhattacharya et al. (2011) shows that higher accrual quality is negatively associated with the adverse selection component of the bid-ask spread and the percentage of price impact, proxies for information asymmetry. Likewise, Heflin et al. (2010) and Welker (1995) document that firms’ financial disclosure rating by analysts is negatively associated with bid-ask spread. Frankel and Li (2004) and Aboody et al. (2005) find that the profitability and frequency of insider trading is negatively correlated with firms’ accounting information quality.

While quality financial reporting can reduce information asymmetry in the U.S. market as shown in the above mentioned studies, the results do not necessarily generalize to emerging markets such as China. On the contrary, Daske et al. (2008) and among other studies examining the relation between accounting quality and information asymmetry in the global stock markets show that quality of accounting information matters to capital market only in countries with strict law enforcement band in countries where firms have strong incentives to be transparent. However, a survey conducted by McKinsey finds that 71% of investors perceive accounting
information as an important factor influencing their foreign investment decisions.\textsuperscript{11} In addition, Bradshaw et al. (2004) shows financial reports are an important source of information for foreign investors in assessing the quality of individual firms. In this study, I examine whether quality of accounting information matters to investors, in particular foreign investors, in Chinese stock market. As discussed in the previous section, during the sample period, China was still in the early stage of its equity market development and there was limited alternative source for public information other than financial reports. Hence, the Chinese stock market provides an ideal setting to examine the role of financial reporting in the development of the stock market.

**Hypothesis Development**

Financial reporting involves managerial judgment, and managers can use their discretions to convey private information by making reported earnings more informative about the real economic performance of the firm. Because publicly disclosed earnings information is observable to both domestic and foreign investors, high quality accounting information can reduce the amount of private information observable only by domestic investors and level the information playing fields for domestic and foreign investors. Because domestic investors are more familiar with local firms and have better access to private information than foreign investors, high quality financial information will indicate a better flow of information to foreign investors than to domestic investors, resulting in a reduced information asymmetry between domestic and foreign investors.

To simplify the argument, following Wang (2003) and Chan et al. (2008), I define information asymmetry as the proportion of informed investors relative to uninformed investors, denoted as $\gamma$. When $\gamma = 1$, all investors are informed and there is no information asymmetry. The

\textsuperscript{11} See McKinsey and Company’s survey conducted in 2002 on global investor opinions.
proportion of informed investors within the A-market is denoted as $\gamma_A$ and the proportion of informed investors within the B-market is denoted as $\gamma_B$. Because domestic investors are more likely to acquire private information, the percentage of informed investors in the A-share market is higher than it is in the B-share market ($\gamma_A > \gamma_B$). That is, the aggregate private information in the A-market is higher than it is in the B-market, resulting in an information asymmetry between A- and B-share markets. I denote this information asymmetry between the two markets as $IA = \gamma_A - \gamma_B$ (1 $\geq$ IA $\geq$ 0). $IA = 1$ means all domestic investors are informed investors whereas none of foreign investors are informed. $IA = \gamma_A - \gamma_B = 0$ means there is no information asymmetry between domestic and foreign investors as all investors observe the same set of information across the two markets.

High quality accounting information can turn private information into public information and reduce investors’ incentive to become informed (Easley and O’Hara 2004, Diamond 1985), and providing high quality accounting information reduces the percentage of informed investors $\gamma$ in both markets (there is a decrease in both $\gamma_A$ and $\gamma_B$). Because there are more informed investors in the A-market, the decrease in $\gamma_A$ will be higher than in $\gamma_B$. Hence the measure of $IA$ will decrease, resulting in a decreased information asymmetry across the two markets.\(^{12}\) Hence the effect of high quality accounting information on the information asymmetry across the two markets is the net effect of the differential impacts on the information asymmetry within individual A- and B-share markets. Using return predictability to proxy for information asymmetry across the two markets, I conjecture that earnings quality can reduce the information asymmetry across the two markets.

\(^{12}\) In an extreme scenario, if we assume informed investors only exists in the A-market and there is no private information in the B-market ($\gamma_A = 1$ and $\gamma_B = 0$), providing high quality accounting information will decrease $\gamma_A$ but will have no impact on $\gamma_B$, resulting in a decreased $IA$. 
advantage of domestic investors and consequently reduce the predictability of A-share returns for B-share returns.

\[ H1: \text{The ability of A-share returns to predict B-share returns is negatively correlated with firms' earnings quality.} \]

**IV. Empirical Method**

**Measure of Earnings Quality**

I use three accruals-based proxies to measure firm earnings quality that are also used extensively in prior studies (e.g., Aboody et al. 2005; Francis et al. 2005; Biddle et al. 2009; Rajgopal and Venkatachalam, 2010). The first measure (\(EQ1\)) is the absolute value of modified Jones (1991) model estimates of abnormal accruals. The second measure (\(EQ2\)) is the absolute residual values from the modified Dechow and Dichev (2002, hereafter DD) model. The last measure, accrual quality (\(EQ3\)), is the standard deviation of the residuals from the modified DD model. I multiply each measure of earnings quality by negative one so that my measures of earnings quality increase in financial reporting quality.

Because firms are required to report accounting earnings based on both Chinese GAAP and IAS, I calculate two sets of earnings quality for each firm based on both standards: referred to as A-share earnings quality and B-share earnings quality respectively. To measure the A-share earnings quality, I estimate the modified Jones’ model and the DD model for each industry by pooling all firms issuing A-shares with valid Chinese GAAP-based accounting information.\(^{13}\)

Because only 80 firms issue IAS-based accounting information, it is impossible to estimate the Jones and DD models for each industry. Instead, I pool all firms issuing B-shares and estimate the two accrual models each year without controlling for industry classifications. A potential

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\(^{13}\) In my sample, there are a total of 927 firms that issue A-shares to domestic investors and report accounting information based on Chinese GAAP.
problem with this approach is that the measures of B-share earnings quality may be driven by industry classification because different industries may have different operating environments and different accruals generating processes. For example, firms in an industry with a volatile operating environment are likely to have high abnormal accruals and lower accruals quality relative to firms in an industry with a stable operating environment. To overcome this problem, as further discussed in the next section, I control for industry effects in the empirical models and examine how earnings quality affects the measures of information asymmetry for firms within the same industry. As the procedure of measuring A-share and B-share earnings quality is similar except for the control of industry effects, I will focus my discussion on the procedure for measuring A-share earnings quality only.\footnote{Because the three measures of earnings quality are based the accrual generating process under the U.S. GAAP, a valid concern is that whether the same accrual generating process also applies to the Chinese GAAP. A careful review of the Chinese GAAP indicates that the accounting standards guiding the revenue and liability recognition, two major components of accruals are very similar to those of the US GAAP. However, under the Chinese GAAP, firms are required to recognize depreciation expenses as a certain percentage of the total fixed assets. To ensure this difference does not drive my results, I also use current accruals, which excludes depreciation expenses as part of the accruals, as an alternative measure of accruals. Specifically, I estimate abnormal current accruals by regressing current accruals on changes in revenue. Using this alternative measure of abnormal accruals generates consistent results.}

Total accruals ($TA$) are computed based on balance sheet data because direct information on firms’ cash flows is not available until 1999.\footnote{Hribar and Collins (2002) show that measuring accruals from balance sheets can bias the measure of discretionary accruals because non-operating events such as mergers and acquisitions, discontinued operations, or foreign currency transactions can impact current asset and liability accounts but do not impact accounting earnings. However, Chinese firms were unlikely to experience those non-operating events because merger and acquisition and foreign investment were extremely rare during the sample period.} Specifically, I compute $TA$ as

$$TA_{j,t} = \Delta CA_{j,t} - \Delta CL_{j,t} - \Delta CASH_{j,t} + \Delta STDEBT_{j,t} - DEPN_{j,t}$$

where $\Delta CA_{j,t}$ is the change in total current assets, $\Delta CL_{j,t}$ is the change in current liabilities, $\Delta CASH_{j,t}$ is the change in cash, $\Delta STDEBT_{j,t}$ is the change in short-term debt, and $DEPN_{j,t}$ is the depreciation expense. I use a cross-sectional model of discretionary accruals, where for each year I estimate the model for every industry classified based on DataStream FTA1 industry.
classification codes. Therefore, this approach partially controls for industry-wide changes in economic conditions that affect total accruals while allowing the coefficients to vary across time. Specifically, I estimate a modified cross-sectional Jones model each year based on all firms issuing A-shares:

\[
\frac{T_{A,t}}{A} = k_{1,t} \frac{1}{A_{t-1}} + k_{2,t} \frac{\Delta R_{EV,j,t}}{A_{t-1}} + k_{3,t} \frac{P_{PE,j,t}}{A_{t-1}} + e_{j,t}
\]

where \(\Delta R_{EV,j,t}\) is the change in revenues and \(P_{PE,j,t}\) is the gross value of property, plant, and equipment for firm \(j\) at year \(t\). The coefficient estimates from Equation (1) are used to estimate the firm-specific normal accruals (\(NA_{j,t}\)) for the sample firms:

\[
NA_{j,t} = \hat{k}_{1,t} \frac{1}{A_{t-1}} + \hat{k}_{2,t} \frac{\Delta R_{EV,j,t} - \Delta A_{R,j,t}}{A_{t-1}} + \hat{k}_{3,t} \frac{P_{PE,j,t}}{A_{t-1}}
\]

where \(\Delta A_{R,j,t}\) is the change in accounts receivable. Following the literature, I estimate the industry specific regressions using the change in reported revenues, implicitly assuming no discretionary choices with respect to revenue recognition. In turn, abnormal or discretionary accruals (\(AA_{j,t}\)) for the sample firms are:

\[
AA_{j,t} = \frac{T_{A,j,t}}{A_{t-1}} - NA_{j,t}
\]

Because both large positive and negative discretionary accruals represent high information asymmetry, I compute the absolute value of discretionary accruals to proxy earnings quality, denoted as \(EQI\).

My second measure of earnings quality is the modified DD model used in Francis et al. (2005). The DD measure is based on the extent to which working capital accruals map into

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16 I assign all firms in the sample into one of 10 industries based on DataStream classification. I use DataStream rather than CSMAR industry classification because CSMAR’s two classifications render either too few industries (six) or too many (eighty-seven). Hence, a reasonable compromise is a ten-industry classification from DataStream.

17 The three A-share earnings quality measurements are estimated based on all firms issuing A-shares. However, in the empirical tests, I only focus on firms issuing both A- and B-shares.

18 As discussed before, I also estimate a similar regression by replacing total accruals with current accruals and excluding the property, plant, and equipment on the right hand side of the equation.
realized cash flows from operations. DD argue that the higher the magnitude of the estimation errors, the lower the quality of reported earnings. Similarly, I run a cross-sectional estimation of the following model each year for each industry

\[
\frac{TCA_{j,t}}{\text{Asset}_{j,t}} = \varphi_{1,t} \frac{CFO_{j,t-1}}{\text{Asset}_{j,t}} + \varphi_{2,t} \frac{CFO_{j,t}}{\text{Asset}_{j,t}} + \varphi_{3,t} \frac{CFO_{j,t+1}}{\text{Asset}_{j,t}} + \varphi_{4,t} \frac{\Delta REV_{j,t}}{\text{Asset}_{j,t}} + \varphi_{5,t} \frac{PPE_{j,t}}{\text{Asset}_{j,t}} + e_{j,t}
\]

where \( TCA_{j,t} = \Delta CA_{j,t} - \Delta CL_{j,t} - \Delta CASH_{j,t} + \Delta STDEBT_{j,t} \) and \( CFO_{j,t} \) is the difference between earnings before extraordinary items and total accruals \( TA_{j,t} \). Likewise, I take the absolute value of the firm’s residual from Equation (3) as the measure of my second earnings quality, denoted as \( EQ2 \). My last measure of earnings quality is the standard deviation of the residuals from Equation (3) from year \( t-2 \) to \( t \), denoted as \( EQ3 \).

To save space, I compute a combined measure of earnings quality by obtaining the sum of the decile rankings of each measures of earnings quality based on A- and B-share accounting data. Specifically, each year, I rank all six measures of earning quality (three based on A-share accounting information and three based on B-share accounting information). The combined measure of \( EQ \), denoted as \( EQ\_COMB \), is the natural logarithms of the sum of the six decile rankings scaled by sixty.\(^{19}\)

**Measure of Foreign Investors’ Information Disadvantage and Test of Hypothesis**

If domestic investors have an information advantage relative to foreign investors, the A-share market plays a key role in discovering information. Returns on the A-shares will have predictive ability for subsequent returns on B-shares. Hence, in order to measure the information advantage of domestic investors over foreign investors, I follow Chakravarty et al. (1998) and

\(^{19}\) In some years, firms do not have a valid measure of accrual quality (\( EQ3 \)). In this case, I assign a value of zero for all firms missing \( EQ3 \) and then scale the sum of rankings by forty.
Chan et al. (2007) and use a Vector Autoregressive Model (VAR) for multiple markets to examine the dynamic relationship between returns in the A-share and B-share markets. The VAR tests are designed to address the question of whether the ability of A-share returns to predict B-share returns is better than the ability of B-share returns to predict A-share returns. Specifically, I estimate the following equations jointly:\(^{20}\)

\[
r_{j,t}^B = a_j^B + a \sum_{k=1}^{K} r_{t-k}^A + b \sum_{k=1}^{K} r_{t-k}^B + e_{j,t}^B \\
r_{j,t}^A = a_j^A + c \sum_{k=1}^{K} r_{t-k}^A + d \sum_{k=1}^{K} r_{t-k}^B + e_{j,t}^A
\]  

Equations (4) and (5), \(r_{j,t}^B\) and \(r_{j,t}^A\) are the market adjusted daily A-share and B-share returns of company \(j\) on day \(t\). Daily returns are adjusted by equal-weighted market returns to capture the portion of returns specific to individual firms and unexpected by the market.\(^{21}\) If the sum of the lagged A-share returns predicts today’s B-share returns of the same firm, then A-shares returns are said to *granger cause* B-shares returns. I estimate Equations (4) and (5) with one-day (\(K=1\)), sum of three-day (\(K=3\)), and five-day (\(K=5\)) lagged returns. I use up to 5-day lagged returns to reduce concerns that the lead-lag return relationship is due to non-synchronous trading between A-shares and B-shares. All standard errors are White heteroskedasticity consistent and are clustered at the firm level to adjust for potential error correlation within firms. Under the hypothesis that domestic investors have more private information than foreign investors, the estimate of coefficient (\(a\)) on the sum of lagged A-share returns \(\sum_{k=1}^{K} r_{t-k}^A\) in Equation (4) should be greater than the estimate of coefficient (\(d\)) on the sum of lagged B-share returns \(\sum_{k=1}^{K} r_{t-k}^B\) in Equation (5).

\(^{20}\) Since the regressors are the same for both regressions, the VAR model can be efficiently estimated by running ordinary least square (OLS) on each equation individually. Further, the model also alleviate the concern that the cross-autocorrelations between A- and B-share returns are the manifestation of the high autocorrelations of B-share returns combined with the high contemporaneous correlation between A- and B-share returns.

\(^{21}\) Results are similar if I use raw returns.
After confirming the information advantage of domestic investors over foreign investors, following Chordia and Swaminathan (2000) and Hou (2008), I compute an average delay of B-share relative to A-share in incorporating information for each firm at any given year. The measure of delay is based on Equation (4) and (5), and it reflects the extent of information disadvantage of foreign investors relative to domestic investors. Empirically, each year I regress individual firms’ daily B-share returns on contemporaneous A-share and B-share market returns and the one-, three-, or five-day lagged A-share returns:

\[ r_{j,t}^B = a_j + a_1 R_{M,t}^A + a_2 R_{M,t}^B + e_{j,t} \]  
\[ r_{j,t}^B = a_j + a_1 R_{M,t}^A + a_2 R_{M,t}^B + \sum_{k=1}^{K} b_k r_{t-k}^A + e_{j,t} \]

In Equation (6) and (7), \( r_{j,t}^B \) is firm \( j \)'s B-share daily raw returns. \( R_{M,t}^A \) and \( R_{M,t}^B \) are the same day equally-weighted A and B market returns respectively. \( r_{j,t-k}^A \) is firm \( j \)'s lagged A-share daily raw returns. I use one-(\( K=1 \)), three- (\( K =3 \)), or five-day (\( K=5 \)) lagged daily A-share returns in Equation (7) in order to show the robustness of the results.\(^{22} \) The measure of B-share price delay relative to A-share, denoted as \( \text{DELAY} \), is the fraction of firm \( j \)'s B-share return variation explained by the lagged A-share returns beyond A- and B-share market returns. The variable \( \text{DELAY} \) is calculated as one minus the ratio of the R-squared from regression (6) to the R-squared from regression (7). Following Hou (2008), I perform a logistic transformation \( \ln\left(\frac{\text{DELAY}}{1-\text{DELAY}}\right) \) and use this transformed delay as the dependent variable for the empirical analysis. This economic transformation removes the excess skewness and kurtosis of the original price delay measure while preserving the monotonicity. I then estimate the following equation:

\[ \text{logit(DELAY)}_{j,t} = \beta_0 + \beta_1 \text{EQ\_COMB}_{j,t} + \beta_2 \text{MKTCAP\_DIF}_{j,t} + \beta_3 \text{RETVOL\_DIF}_{j,t} \]

\(^{22} \) I use daily raw rather market adjusted return because I include market return in Equation (6) and (7). In effect, the delay measure captures the firm specific information transfer from A-shares to B-shares beyond market wide information.
\[ + \beta_4 POSRET_{B,j,t} + \beta_5 STOWN_{j,t} + \beta_6 SHSE_{j,t} + \beta_i Year + \beta_i Industry_i + e_{j,t} \]  

My hypothesis predicts that the coefficient on \textit{EQ\_COMB}_{j,t} will be significantly negative, suggesting that high earnings quality can decrease the information disadvantage of foreign investors relative to domestic investors.

To alleviate the concern of omitted correlated variable problems, following prior studies, I include a vector of variables that may affect the predictability of A-share returns for B-share returns that may also correlate with the measures of earnings quality.\textsuperscript{23} Kang and Stulz (1997) show foreign investors tend to invest more in firms with large market capitalization because small firms are informationally opaque. So, it is possible that firm size both determine firm earnings quality and B-share information delay. I include market capitalization \textit{MKTCAP} to control for firm size effect. Holding the A-share market constant, as foreign investors invest more, the difference between A- and B-share market sizes will decrease. Accordingly, the difference in the information environment between A- and B-share markets will decrease. Hence, I expect the coefficients on \textit{MKTCAP\_DIF} to be positive. \textit{MKTCAP} is calculated as the natural logarithms of tradable shares outstanding multiplied by year end stock price. \textit{MKTCAP\_DIF} is the difference between A- and B-share market capitalizations and scaled by the B-share market capitalization. I also include A- and B-share return volatility (\textit{RETVOL}) as an additional control for the two markets’ information environment. As the proportion of insiders increases, information uncertainty increases. Hence, the difference in information uncertainty between the two markets (\textit{RETVOL\_DIF}) should be positively correlated with information delay. \textit{RETVOL} is

\textsuperscript{23} Stock turnover is not controlled for because turnover is a proxy for stock liquidity, which is an outcome of reduced information asymmetry. Mei et al. (2005) use A-share turnover to proxy for the speculative trading from domestic investors and find a positive correlation between A-share turnover and B-share discounts. Hence stock turnover also captures non-information asymmetry related trading characteristics. My results are not sensitive to the control of stock turnover.
calculated as the natural logarithm value of the standard deviation of daily stock returns. \( \text{RETVOL\_DIF} \) is the difference between A- and B-share return volatility and scaled by the B-share return volatility. \( \text{POSRET\_B} \) is a dummy variable equal one if the cumulative B-share return for the year is positive. Because the government prohibited short selling before 2001, I expect that the coefficient on \( \text{POSTRET\_B} \) to be negative, suggesting that the delay is more severe for bad news than for good news.

I include the variable \( \text{STOWN} \), measured as the percentage of shares owned by the government over the total number of shares outstanding, to control for the firm governance or information opaqueness. Prior studies examining Chinese stock markets show a large controlling state ownership is associated with weak corporate governance. For example, Liu and Lu (2007) demonstrate that firms with a large state ownership are more likely to manage earnings. I expect the coefficient on \( \text{STOWN} \) to be positive. I also include a dummy variable \( \text{SHSE} \) because Tang (2011) finds that the level of information asymmetry is higher for firms listed on the Shanghai Stock Exchange. \( \text{SHSE} \) takes the value of one if firm \( j \) trades on Shanghai Stock Exchange and zero otherwise; and I expect the measure of information delay to be higher for firms listed on SHSE. Further, I include industry dummy variables to control for any industry effects. In addition, as discussed in the previous section, when \( \text{EQ} \) is measured based on IAS accounting information, including the industry dummy variable can also mitigate the measurement errors in the \( \text{EQ} \). Lastly, I include year dummy variables to control overall market conditions on individual firm daily returns. All the standard errors are White heteroskedasticity consistent and clustered at the firm level.

V. Data and Empirical Results

Sample Selection and Descriptive Statistics
I use the China Stock Market & Accounting Research database (CSMAR) provided by GTA information technology to obtain accounting and daily stock return information. The sample consists of 76 public companies issuing both A- and B-shares listed on the Shanghai and Shenzhen Stock Exchanges that have valid daily returns and accounting data. The sample period spans from 1995 to 2000. I restrict the sample period to 2000 because the B-share market opened up to domestic investors in 2001 and the two markets were not segregated anymore. All variables are winsorized at the 1st and 99th percentile to reduce the influence of outliers. The final sample consists of 422 firm years.

Table 1 presents a comparison of earnings and stock characteristics between A-shares and B-shares. The measure of A-share earnings quality (based on Chinese GAAP) is higher in absolute value than B-share (based on IAS), suggesting that accounting information prepared under the IAS is of higher quality than that under the Chinese GAAP. For example, the average $EQ1$ for A-share and B-shares are -0.154 and -0.098 respectively. Nevertheless, unreported results show that financial ratios prepared under the two standards are highly correlated. For example, the correlation coefficient for current assets scaled by average total assets measured under the two standards is 0.98, the correlation for the current liability scaled by average total assets is 0.99, 0.83 for receivables scaled by average total assets, 0.93 for revenue scaled by average total assets, and 0.97 for the total net incomes. The high correlations are consistent with the findings in Eccher and Healy (2000). The mean of the combined measure of $EQ$ is 0.338 with a median value of 0.342. A-share prices are on average three times of those of B-shares. The average A-share price is 10.963 RMB while B-share is only 3.071 RMB. The average market capitalization of B-shares is smaller than A-shares (1.592 for A-shares vs. 1.219 for B-shares), consistent with the notion that information asymmetry between domestic and foreign
investors causes lower demands for B-shares from foreign investors relative to A-shares. The B-shares are also more volatile than A-shares as the average A-share return volatility (0.039) is smaller than the B-share return volatility (0.044). Consistent with Tang (2011), the supply (SUPPLY) of B-shares, measured as the natural logarithms of number of tradable shares outstanding, is higher than that of A-shares. The cumulative return of A-shares (MOMENT) is higher than for B-share cumulative returns. Lastly, on average the government holds 37.6% of total shares outstanding, and more than half of the sample firms are listed on Shanghai exchange.

Results of Testing Hypothesis H1

Results of Testing Foreign Investors Information Disadvantage

Table 2 presents the VAR estimation results. Consistent with the prediction, one-day, three-day, and five-day lagged A-share returns are all important in predicting B-share returns and the coefficients on lagged A-share returns are positive and statistically significant at the 1% level across all model specifications. The importance of lagged A-share returns in predicting B-share returns holds for returns at the five-day lag (the coefficient estimate $a$ is 0.047 with a t-value of 15.68 when $K = 5$), suggesting that the non-synchronous trading between A- and B-shares is not driving the results. The economic magnitude of the effect is also very large. A one percent increase in the market-adjusted return of yesterday’s A-shares leads to a 10-basis point increase in the B-share market-adjusted return. Thus, lagged A-share returns do contain information about future returns of B-shares beyond that contained in lagged B-share returns.

Lagged B-share returns also predict A-share returns for all three lag specifications. However, the magnitude of the effect is much smaller than that of lagged A-share returns on B-share returns and is not economically large. A one percent increase in yesterday’s B-share returns only leads to a one basis point increase in market-adjusted A-share returns. More
importantly, the estimated coefficient \( c \) from Equation (5) is much smaller than the estimated coefficient \( a \) from Equation (4), and the F-statistics easily reject the cross-equation restriction of \( a = d \) at the 1% level for all three lag specifications. Thus, lagged A-share returns have a much stronger predictive power for B-share returns than vice versa. In addition, both A-share and B-share returns exhibit a significant negative autocorrelation (the only exception is that the one-day lagged A-share returns is not a significant predictor of current A-share returns).

In sum, the results in Table 2 indicate a two-way lead-lag relation between A-share returns and B-share returns for the same firm. However, the ability of A-share returns to predict B-share returns is much stronger than the ability of B-share returns to predict A-share returns. This asymmetric return predictability cannot be explained by the non-synchronous trading. Consistent with the expectation, the results suggest that A-share investors (domestic) have more private information than B-share (foreign) investors.

**Results of Testing H1**

In this section, I first present the distribution of variables used to test H1. Panel A of Table 3 reports the distributions of \( \text{logit}(\text{DELAY}) \) based on the one-day, three-day, and five-day lag specifications. The unreported results show that measure of delay increase monotonically from 0.047 to 0.138 as the number of lags increase from one day to five days, suggesting that lagged A-share returns are important in predicting current B-share returns. The logistic transformation of the measures of delay show smaller skewness as expected. The \( \text{logit}(\text{DELAY}_3) \) has a mean of -3.328 and standard deviation of 1.753 whereas unreported \( \text{DELAY}_3 \) has a mean of 0.093 and a standard deviation 0.167, which is almost twice as large as the mean. In addition, the difference of return volatility between the two markets is negative for most of the firms and has a wide distribution with mean -0.021 and a standard deviation of 0.643.
Panel B reports Pearson correlation coefficients between the measures of delay and firm characteristics. To save space, I only report the five-day lag delay, logit(DELAY_5), and using the one-day and three-day lag delay are qualitatively the same and results are not reported. Consistent with H1, earnings quality (EQ_COMB) and logit(DELAY_5) is negatively correlated at the 10% level. Consistent with expectations, Logit(DELAY_5) is positively correlated with the return volatility difference and negatively and significantly correlated with POSRET_B. Likewise, the information delay is positively and significantly correlated with volatility difference as expected and the delay is also higher for firms with negative cumulative B-share returns.

Table 4 reports the results of estimating Equation (8). The coefficients on EQ_COMB are negative and significant across all model specifications. Under the one-day lag specification, the coefficient on EQ_COMB is -2.051 (t = -1.90), and the same coefficients are -1.334 (t = -2.10) for the three-day lag specification and -1.369 (t = -2.15) for the five-day lag specification. All the coefficients are statistically significant at the 10% level or better. The coefficients on the MKTCAP_DIF are all positive and significant across the three model specifications. On the other hand, the coefficients on RETVOL_DIF are all positive as expected, but are not significant. Consistent with the prediction, the B-share information delay is reduced when there is positive news relative to negative news in the B-share market as short-selling to arbitrage negative news is prohibited. The coefficients on STOWN are negative for all the model specifications, contrary to the expectation. The coefficients on SHSE are all positive and significant, providing evidence that a significant difference exists across the two exchanges in the level of information asymmetry between domestic and foreign investors. Lastly, the R-squared for two of the model

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24 Unreported results also show that the three measures of earnings quality is negatively and significantly correlated with all three measures of delay at the 10% level or better except for the coefficient between logit (DELAY_5) and EQ3.
specifications are greater than 40%, suggesting that the model specification explains a significant amount of variation in the information delay.

The Impacts of Earnings Quality on Information Asymmetry around Earnings Announcements

In this section, I examine the impact of earnings announcements on the ability of A-share returns to predict B-share. Earnings announcements are a significant information disclosure event, through which investors obtain detailed information about firms’ future performance. This is particularly true for Chinese firms because before 2001 many institutions such as analyst followings and credit rating agency were not established. Earnings disclosures or announcements were major channels for investors to obtain information about firm performance. If accounting information can reduce information asymmetry, I expect the information asymmetry between domestic and foreign investors should decrease in the month after earnings announcements; further, the reduction should be more pronounced for firms with high earnings quality. To examine this issue, I use a subset of firms with identified earnings announcement dates. During my sample period, all publicly listed firms are required to issue financial reports twice a year, and the final sample consists of 256 earnings announcements for 74 individual firms. Based on daily return information, I examine the changes in the predictability of A-share returns for B-share returns in the two months surrounding the earnings announcement dates (30 days before the date of announcement to 30 days after). Specifically, I examine the following equation:

\[
\tau_{it}^B = \beta_0 + \beta_1 \tau_{it-1}^A + \beta_2 \tau_{it-1}^B + \beta_3 POST + \beta_4 \tau_{i,t-1}^A * POST + \beta_5 \tau_{i,t-1}^B * POST + \beta_6 \text{Month} + \beta_7 \text{Year} + \beta_8 \text{Industry} + \epsilon_{i,t}
\]

where \(POST\) is a dummy variable equal to one if the month is after the earnings announcements and zero otherwise. All the other variables are the same as previously defined. I expect the

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25 I do not examine the changes in \(DELAY\) in this section because the variable \(DELAY\) is measured at firm-year level. Since each firm only has a maximum of two earnings announcements each year, the maximum number of observation for each firm period is too small to estimate Equation (6) and (7).
coefficient estimates on $r_{t-1}^A \times POST_t$ in Equation (9) to be negative and significant, suggesting that the predictability of A-share returns for B-share returns is reduced significantly in the month after earnings announcements. I also include month, year and industry dummies to control for the differential performance in each month, year, and industry that may explain the POST effects. To examine whether the reduction is more pronounced for firms with high earnings quality, I partition the sample into high- and low-earnings quality subsamples based on the distribution of $EQ\_COMB$ and estimate the two equations separately for the two subsamples. Specifically, firms falling into the bottom quartile of the distribution of $EQ\_COMB$ are classified as the low quality subsample and firms falling into the top quartile are classified as the high quality subsample.

In order to improve the power of the test, I restrain the event window to 30 days before and 30 days after earnings announcements. Because each firm has only a maximum of 25 trading days after excluding weekends and holidays, the sample observations become too small for the three-day or five-day lag specification tests. Hence, in this section, I only estimate Equation (9) with one-day lag specification. Empirical results of estimating Equation (9) are reported in Table 5. Consistent with Table 2, the coefficient on $r_{t-1}^A$ is positive and significant, suggesting that lagged A-share return can predict current B-share returns. More importantly, the coefficient on $r_{t-1}^A \times POST$ is negative and significant at the 10% level (coefficient = -0.042 $t = -1.84$), consistent with the prediction that the predictive power reduces in the month after earnings announcements. The remaining two columns in Table 5 report results for the high- and low-accounting quality subsamples. As shown in the table, the coefficient on $r_{t-1}^A \times POST$ is -0.084 with t p-value of -3.16, whereas the same coefficient for the low quality subsample is -0.045 with a t-value of -0.98. Hence the decrease in the predictive ability is only significant for the high-quality subsample but not for the low-quality subsample. The reduction is also economically
large. In the month before an earnings announcement, a one-percent decrease in lagged A-share returns leads to an eight-basis point reduction for current B-share returns, and in the month after the announcement, it can only leads to a four-basis points reduction. In sum, results in this section provide additional support to the hypothesis that high quality accounting information can reduce the information disadvantage of foreign investors. In particular, this reduction is more pronounced around the time when accounting information is announced.

VI. Earnings Quality and the B-share Discount

One consistent feature of the Chinese stock market is that B-shares trade at a significant discount relative to A-shares. A-share prices were on average three times higher than B-shares during the sample period. One common explanation for the B-share discount is domestic investors have more private information about the quality of the firm they invested than foreign investors. Results from the precious section show that providing high quality accounting information can reduce foreign investors’ information disadvantage because of more private information observed only by domestic investors are now also observable to foreign investors. In this section, I further examine the pricing effect of providing high earnings quality. Specifically, I examine whether earnings quality is negatively correlated with the B-share discount. Further, I also examine whether higher return predictability (higher information asymmetry) will also lead to a higher B-share discount if we believe that accounting quality reduces B-share discounts through reducing information asymmetry. Given the documented evidence that accounting information quality is negatively correlated with return predictability, the combined results will suggest that providing high quality accounting information can reduce the B-share discount through the reduction in foreign investors’ information disadvantage relative to domestic investors.
There is a large literature examining the relationship between earnings quality and cost of equity. For example, Francis et al. (2004, 2005) and Aboody et al. (2009) show that accrual quality is a priced factor as their measures of cost of equity is negatively correlated with earnings quality; however, Core et al. (2008) show that accrual quality is not priced based on two-step cross sectional regression tests. Kim and Qi (2010) use the same methodology and find that accrual quality is priced after controlling for low-priced stocks. The mixed results from prior studies can be driven by the noise contained in the measure of cost of equity. In this study, I measure cost of equity using the B-share discount as it reflects the difference in expected return required by domestic and foreign investors. Hence, the B-share discount captures the pricing effect of information asymmetry. Both Chan et al. (2008) and Tang (2011) provide empirical evidence that the information disadvantage of foreign investors explains a significant portion of the variation in the B-share discount. In this section, I empirically examine whether high quality accounting information can reduce the B-share discount through the reduction in foreign investors’ information disadvantage relative to domestic investors.

In addition, there is also a large literature examining whether information asymmetry can affect cost of capital. The results have been mixed. Huges et al. (2005) model the relationship between information asymmetry and cost of equity, and they show that private information about systematic factors affect factor risk premium. Easley and O’Hara (2004) show that information asymmetry between informed and uninformed investors causes uninformed investors to demand higher risk premiums, resulting in a higher cost of equity. Consistent with this prediction, Easley et al. (2002) document a positive correlation between PIN and a measure of expected returns. On the other hand, Lambert et al. (2012) show that in a perfect competition setting, investors’ average information precision regarding firms’ cash flow information (and not the distribution of
information across investors, i.e., information asymmetry) affects the cost of capital. Mohanram and Rajgopal (2009) find that the correlation between PIN and excess returns is not robust to different time periods and alternative empirical specifications. Bhattacharya et al. (2012) use path analysis and show that an indirect path from earnings quality to cost of capital mediated by information asymmetry is dominated by a direct path through earnings precision. A recent paper by Armstrong et al. (2011) shows that, after controlling for the number of traders, a proxy for market friction, their various measures of information asymmetry are positively correlated with expected returns. However, Armstrong et al. do not show whether providing accounting information can reduce the information asymmetry and subsequently reduce cost of equity. The unique setting in my study provides a better way to measure cost of equity and offers a natural control for market friction.

As shown in the development of H1, the effect of providing high quality accounting information on the information asymmetry between A- and B-share markets incorporates the separate effects on the information asymmetry within A- and B-share markets. The following discussion is to show how providing high quality of accounting information affect the B-share discount after controlling for the effects on A- and B-share prices separately.

For the ease of argument, I denote the B-share discount as \( \delta \) and it is the difference between A- and B-share price of the same stock, \( \delta = P_A - P_B \). Because A-share price is higher than B-share price \( (P_A > P_B) \), \( \delta \) is greater than 0 (Chakravarty et al. 1998, Chan et al. 2008). The goal of this section’s empirical exercise is to show whether earnings quality can explain the cross sectional variations in the B-share discount.

As shown in the development H1, providing high quality accounting information can reduce information asymmetry between informed and uninformed investors and make private
information available to uninformed investors; hence, the demand from uninformed investors to hold the risky assets will increase. Subsequently, both \( P_A \) and \( P_B \) increase as the quality of accounting information increases. However, because there are more uninformed investors in the B-share market than in the A-share market, \( P_B \) will increase more than \( P_A \). The discount \( \delta = P_A - P_B \) will decrease, resulting in a reduced B-share discount. Therefore, the effect of accounting information on the B-share discount also incorporates its separate effects on A-share price and B-share price. In the extreme case, suppose providing high quality accounting information can make all private information observable for all investors in both markets, then the information advantage of domestic investors will be eliminated and the discount becomes \( \delta = P_A - P_B = 0 \). A- and B-share price will converge.

To test the prediction, I estimate the following equation:

\[
PRCDIF_{j,t} = \beta_0 + \beta_1 EQ\_COMB_{j,t} + \beta_2 MKTCAP\_A_{j,t} + \beta_3 MKTCAP\_B_{j,t} \\
+ \beta_4 RETVOL\_DIF_{j,t} + \beta_5 SUPPLY\_DIF_{j,t} + \beta_6 MOMENTUM\_DIF_{j,t} \\
+ \beta_7 STOWN_{j,t} + \beta_8 SHSE_{j} + \beta_9 Year + \beta_{10} Industry_k + \epsilon_{j,t}
\] (10)

where \( PRCDIF \) is the daily B-share discount calculated as the difference between the average A-share and B-share prices scaled by B-share prices. The coefficient on \( EQ\_COMB \) should be negative and significant, indicating that high earnings quality can reduce the B-share discount. I include firm market size for A- and B-share, \( MKTCAP\_A \) and \( MKTCAP\_B \) respectively, to control for different information environment of the two markets.\(^{26}\) I expect a positive (negative) coefficient on A-share (B-share) market capitalization as the A-share (B-share) information environment increases, the B-share discount increases (decreases). I also include \( RETVOL\_DIF \) to control for the differential risk preference across domestic and foreign investors. Karoly and

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\(^{26}\) I do not include \( MKTCAP\_DIF \) as in Equation (8) in this model. This is because the dependent variable is the share price difference; and including \( MKTCAP\_DIF \) will cause a mechanical positive relationship between B-share discounts and capitalization differences as the difference in share prices increases will mechanically leads to a higher difference in market capitalization holding the number of shares outstanding constant. But my results are not sensitive to the inclusion of \( MKTCAP\_DIF \). The coefficient on \( EQ\_COMB \) becomes even larger with a higher statistical significance after including \( MKTCAP\_DIF \).
Li (2003) argue that because domestic investors have limited investment options relative to foreign investors, domestic investors are risk tolerant. Hence, higher stock return volatility leads to higher A-share prices relative to B-share prices. Consistent with Equation (8), I expect a positive coefficient on \textit{RETVOL\_DIF}. Following Bergstrom and Tang (2001) and Tang (2011), I control for the supply side of investment opportunities for domestic and foreign investors. Both papers document that price differences are smaller for firms with more A-shares and fewer B-shares. Hence, I expect the coefficient on \textit{SUPPLY\_DIF} to be negative. The variable \textit{SUPPLY} is measured as the natural logarithms of the number of tradable shares outstanding. \textit{SUPPLY\_DIF} is the difference between A-share and B-share \textit{SUPPLY} and scaled by the B-share \textit{SUPPLY}. I also include the difference in cumulative returns (\textit{MOMENTUM\_DIF}) across A- and B-shares to control for the different trading strategies for domestic and foreign investors. Choe et al. (2005) shows that foreign investors tend to invest more as stock prices increase. Under this hypothesis, the B-share discount should be positively correlated with \textit{MOMENTUM\_DIF} because foreign investors tend to purchase more when share prices increase. \textit{MOMENTUM} is measured as the cumulative annual daily log returns. \textit{MOMENTUM\_DIF} is the difference across the two markets and then scaled by the B-share price. I use the B-share price to scale because many firms’ B-share cumulative returns are negative. I also expect firms listed on Shanghai Exchange and firms with more state ownership will suffer higher B-share discounts as foreign investors find more difficult to obtain information about those firms.

The unreported results show that the B-share discount (\textit{PRCDIF}) is positive with a mean of 3.541. Table 6 reports multivariate analysis results. Results reported in column (i) show earnings quality is negatively correlated with the B-share discount. The coefficient on \textit{EQ\_COMB} is -1.131 with a t-value of -2.51. Hence, as firms’ earnings quality increases, the B-
share discount decreases due to reduced information risk faced by foreign investors. The B-share discount is also smaller for firms with large B-share market capitalization as the coefficient on MKTCAP_A is negative and significant for all model specifications. The coefficient on volatility difference is positive as expected but is not significant, consistent with the results in Table 4. Consistent with Bergstrom and Tang (2001) and Tang (2011), the B-share discount decreases as the difference in A-share supply and B-share supply increases. The coefficient on MOMENTUM_DIF is negative, opposite to the expectation, but not significant. The coefficients on SHSE are positive but not significant, and as expected the B-discount is higher for firms with higher government ownership.

Further, I also examine whether information asymmetry is related to cost of equity. To conduct this test, I estimate Equation (10) by replacing EQ_COMB with the measure of information delay logit(DELAY). Column (ii) Table 6 provides the empirical results. To save space, I only report results based on the five-day lag delay and using the one- and three-day lag specifications yield similar results and are not reported. As shown in column (ii), the coefficient on delay is positive and significant at the 5% level, providing evidence that information asymmetry is positively correlated with the cost of capita.

VII. Robustness Test

The Relation between Earnings Quality and Foreign Investors’ Information Disadvantage after the Regulation in 2001

In March 2001, the Chinese government opened the B-share market to domestic investors with foreign currency holdings. This shift in policy significantly changed the information structure of the B-share market and reduced the information asymmetry across the two markets. In this section, I utilize this exogenous reduction in the information asymmetry between the two markets and examine whether my measures of information asymmetry decrease significantly
post the regulation. A significant decrease in the ability of A-share returns to predict B-share returns will lend credence to the use of this measure as a proxy for the information asymmetry between domestic and foreign investors prior to the regulation.

To examine the impact of the regulation on the B-share market, I first examine the changes in stock characteristics around the policy switch. In order to capture the market reactions to the policy change and minimize the concern of contamination from other market-wide economic events, I choose an event window starting six months prior to and six months after the policy change. Importantly, I want to examine whether the measure of information asymmetry decreases significantly after the regulation. Results are presented in Panel A, Table 7. As shown in the table, the variable logit(Delay) decrease by 0.453, 0.478, and 0.331 respectively after the regulation based on the one-, three- and five-day lag specifications, and the reduction is statistically significant at the 5% level for the three- and five-day lag, indicating that after the regulation, the ability of A-share returns to predict B-share returns is reduced.

I also re-estimate Equation (4) and (5) using observations from March 2001 to December 2004. I extend the test window to show the persistence of the changes in the ability of A-share returns to predict B-share returns. Panel B reports the results. Although A-share returns still predict B-share returns, both the magnitude and the statistical significance decrease significantly compared to the results reported in Table 2. For example, the coefficient $a$ from the one-day lag specification in Table 7 is 0.034, compared to 0.099 in Table 2. The predictability of B-share returns for A-share returns, however, increases significantly. The estimated coefficient $d$ from Equation (5) increases from 0.011 in Table 2 to 0.039. The F-statistics ($F = 0.05$) fail to reject the cross-equation restriction that $a = d$, suggesting that both markets can predict the other market with equal importance. The results in this table provide consistent evidence that the information

---

27 The results are qualitatively same if I use the same sample as in Panel A.
asymmetry between the two markets decreases significantly after deregulation. This decrease provides empirical support for the validity of my measures of information asymmetry between domestic and foreign investors.

In the meantime, B-share discount also decreases significantly after the regulation. As shown in Panel A, B-share prices increase on average by more than 5 RMB, and the increase is significant with a standard deviation only 1.73. On the other hand, A-share prices increase on average by less than 1RMB (0.74) and the increase is not significant with a standard deviation of 3.116. Hence, after the exogenous decrease in the information asymmetry between domestic and foreign investors, we also observe a significant reduction in the B-share discount. The result suggests that reducing information asymmetry can reduce cost of capital. Further, since we do not expect any significant changes in accounting information provided by firms around the same time,\(^2\) the setting effectively isolates the effect of accounting information precision on the B-share discount. Hence, the reduction in the B-share discount after the regulation provides reliable evidence that reducing information asymmetry can reduce cost of capital.

**Potential Measurement Errors in Earnings Quality**

Hribar and Nichols (2007) show that the measure of absolute discretionary accruals is an increasing function of the variance of a firm’s underlying operating performance. Hence without controlling for firms’ operating performance, the results documented so far maybe flawed. Following Hribar and Nichols, I control for firm operating performance, \(OPVOL\), in Equation (8) to alleviate the effect of potential measurement error in earnings quality. \(OPVOL\) is calculated as

\(^2\)To empirically check the changes of earnings quality around the regulation, I pool the data from 2000 and 2001 and rank the six measures of earnings quality over the two years. Then I calculate a comprehensive measure of earnings quality (\(EQ\_COMB\)) in the same manner as discussed in the previous section. I find that the comprehensive measure of earnings quality does not change significantly around the regulation. Specifically the means of \(EQ\_COMB\) are 0.374 and 0.354 in 2000 and 2001 respectively and the difference is not statistically significant with a p-value of 0.215.
the standard deviation of past three semi-annual sales.\textsuperscript{29} Including $OPVOL$ reduces the sample size to 313 firm-years due to the requirement of time-series data.

Results are presented in Table 8. The results are consistent with those reported in Table 4. After controlling for firm operating volatility, the coefficients on $EQ\_COMB$ remain statistically significant, suggesting that the potential measurement error does not drive the results obtained in Table 4. The coefficients on all the other control variables are qualitatively similar as those reported in Table 4.

Kothari et al. (2005) show the importance of controlling for firm performance in estimating discretionary accruals. Following their suggestion, I include year $t$ return on assets in Equation (1) when estimating expected (normal) accruals to control for the non-randomness of expected accruals. The results based on this measure of abnormal accruals are qualitatively similar and are not reported.

VIII. Conclusion

In this paper, I take the advantage of the segmented stock markets in China to examine a question that is important to the understanding of the role of earnings quality in emerging capital markets. Based on a sample of 76 individual firms which issue both A- and B-shares prior to 2001, I find that the predictability of A-share returns for B-share returns of the same firm are stronger for firms with low earnings quality, and that this negative relationship between earnings quality and the predictability of A-share returns for B-share returns is robust to controlling for other firm characteristics. I also document a significant reduction in the predictability of A-share returns for B-share returns in the month after earnings announcements. This reduction is

\textsuperscript{29}Before 2001, Chinese firms were required to issue financial reports twice a year instead of on a quarterly basis. I use the standard deviation of sales to control for operating volatility rather than the standard deviation of cash flows from operation because cash flows from operation are not directly observable before 2001. Instead, cash flows from operation is calculated as the difference between earnings before extraordinary items and total accruals, resulting in a noisy proxy for operating environments. Nevertheless, I also use the standard deviation of cash flows from operation to control for operating volatility. The results are qualitatively the same and are not reported.
significant only for firms with higher earnings quality. Further, I find that earnings quality is also negatively correlated with the B-share discount. The combined results suggest that earnings quality can reduce the information asymmetry between domestic and foreign investors in the Chinese stock market and subsequently foreign investors find those firms less risky, resulting in a lower B-share discount. The opening of the B-share market to domestic investors in 2001 changed the information structure in the B-share market and reduced the information asymmetry between the two markets. Consistent with the expectation, I find that both the predictability of A-share returns for B-share returns and the B-share discount decrease significantly after the policy change.

By documenting a negative correlation between earnings quality and the B-share discount, my paper shows that earnings quality is priced in the international equity market and firms in emerging markets can reduce their cost of foreign equity capital by issuing more transparent financial reports. Further, my paper also documents evidence that information asymmetry is related to the cost of equity. The results of this paper also suggest that providing high earnings quality is important for emerging markets to attract foreign investment and to maintain economic growth for local firms and economy.
References


Appendix A: Major Events in the Chinese Stock Market between 1990 and 2002

December, 1990: The Shanghai Stock Exchange was established.

July, 1991: The Shenzhen Stock Exchange was established.

October, 1991: Shanghai Vacuum Electron Devices Company Limited issued one million special RMB-denominated shares at par of RMB100 (US$18.8) each to overseas investors, becoming the first B-share in China’s securities market. The company became listed on the SSE in February 1992.

October, 1992: China’s State Council established the State Council Securities Committee (SCSC) and the China Securities Regulatory Commission (CSRC). The SCSC oversaw the securities market on behalf of the State Council and was responsible for drafting relevant laws, rules, and regulations for securities market, developing long-term strategies, delivering guidance and coordinating among central and local governments, and conducting the supervision and inspection of market activities. The CSRC reported to the SCSC and was responsible for developing market rules and regulations, supervising the securities firms and listed companies and their issuance and selling of securities to the public, and overseeing the oversea listings of domestic companies. After April 1998, the SCSC merged with the CSRC.


April, 1993: The Provisional Regulation on the Issuing and Trading of Shares was promulgated to regulate share issuance and trading as well as the acquisition of listed companies.

June, 1993: The Implementation Rules on Information Disclosure of Companies Issuing Public Shares was introduced. This rule set up standards for the required information disclosure of listed companies. During the same time period, the first Chinese company issued H-shares on the Hong Kong Stock Exchange.

August, 1993: The Provisional Measures on Prohibiting Fraudulent Conducts Relating to Securities was promulgated. This new rule specified the criteria for defining illegal trading activities and the related supervisory sanctions.

October, 1993: Treasury bond futures were introduced by the Shanghai Exchange to the general public in Shanghai but were soon suspended in 1995. Around the same time, the commodity futures market also started to develop.

July, 1994: The Company Law was implemented and set out specific provisions for the conditions of setting up a company, the organization of a company, share issuance and transfer, corporate bonds, liquidation procedures and legal liabilities.

December, 1996: The daily price change floor and ceiling limits were set at a range of 10% in either direction in order to reduce price volatility.

November 1997: The *Provisional Administrative Procedures on Securities Investment Fund* was issued, which facilitated the development of the securities investment fund industry.

April, 1998: Both the Shanghai and Shenzhen Stock Exchange created a “Special Treatment” (ST) category to distinguish the shares of companies with financial problems from the shares of other companies. The daily price change floor and ceiling limits for these firms were restricted to 5%.

December, 1998: The *Securities Law* was issued. This new law confirmed the importance of the capital market and formalized its legal status in China for the first time.

September, 1999: The *Provisional Measures for Public Offering Review Committee* was issued

February, 2001: The B-share market opened up to Chinese domestic investors

December, 2002: China launched the Qualified Foreign Institutional Investor (QFII) program to allow licensed foreign institutional investors to trade A-shares on the secondary market.
Appendix B: Variable Definitions:

Variables Related to Earnings Quality:

\( EQ1 \) absolute value of discretionary accruals based on the modified Jones model multiplies negative 1;

\( EQ2 \) absolute value of residuals from Equation (3) multiplies negative 1;

\( EQ3 \): standard deviation of Equation (3) residuals from \( t-2 \) to \( t \) multiplies negative 1;

\( EQ\_COMB \) a combined measure of earnings quality \( EQ1 \), \( EQ2 \), and \( EQ3 \);

\( TA \) \( \Delta CA_{j,t} - \Delta CL_{j,t} - \Delta CASH_{j,t} + \Delta STDEBT_{j,t} - DEPN_{j,t} \)

\( TCA \) \( \Delta CA_{j,t} - \Delta CL_{j,t} - \Delta CASH_{j,t} + \Delta STDEBT_{j,t} \);

\( \Delta CA \) change in total current assets;

\( \Delta CL \) change in current liabilities;

\( \Delta CASH \) change in cash;

\( \Delta STDEBT \) change in short-term debt;

\( DEPN \) depreciation and amortization expense;

\( \Delta REV \) change in revenues;

\( PPE \) gross value of property, plant, and equipment;

\( \Delta AR \) change in accounts receivable from the preceding year;

\( CFO \) difference between earnings before extraordinary items and total accruals;

\( OPVOL \) operating volatility measured as the standard deviation of sales from previous three interim earnings statements;

Variables Related to Stock Market

\( DELAY \) calculated as one minus the ratio of the R-squared from Equation (6) to the R-squared from Equation (7);

\( MKTCAP \) natural logarithms of market capitalization of outstanding tradable A- or B-shares;
\( MKTCAP\_DIF \) difference between A-share and b-share MKTCAP and scaled by B-share MKTCAP;

\( MOMENTUM \) cumulative daily log returns;

\( MOMENTUM\_DIF \) difference between A-share and B-share MOMENTUM and scaled by B-share price;

\( POST \) coded as one if a month is right after the earnings announcements and zero otherwise;

\( POSRET \) indicator variable take value of one if the cumulative return of the year is positive and zero otherwise;

\( PRCDIF \) average daily B-share discount calculated as the difference between A-share and B-share prices scaled by the B-share price;

\( r^M_{j,t} \) daily equal-weighted market adjusted returns of A-shares (M=A) or B-shares (M=B) of company j on day t;

\( RETVOL \) standard deviation of annual daily return for A- or B-shares;

\( RETVOL\_DIF \) difference between A-share and B-share RETVOL and scaled by the B-share RETVOL;

\( SHSE \) coded as one if a company is listed on the Shanghai Stock Exchange and zero if listed on the Shenzhen Stock Exchange;

\( STOWN \) percentage of shares owned by the government;

\( SUPPLY \) natural logarithms of total number of tradable shares;

\( SUPPLY\_DIF \) difference between A-share and B-share SUPPLY and scaled by the B-share SUPPLY.
Table 1: Summary Statistics

This table provides summary statistics for firms issuing both A- and B-shares between 1995 and 2000. Variable definitions are in Appendix B.

<table>
<thead>
<tr>
<th>Firm Characteristics</th>
<th>A-Share Market</th>
<th>B-Share Market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>EQ1</td>
<td>422</td>
<td>-0.154</td>
</tr>
<tr>
<td>EQ2</td>
<td>422</td>
<td>-0.067</td>
</tr>
<tr>
<td>EQ3</td>
<td>306</td>
<td>-0.076</td>
</tr>
<tr>
<td>PRICE</td>
<td>422</td>
<td>10.963</td>
</tr>
<tr>
<td>MKTCAP</td>
<td>422</td>
<td>1.592</td>
</tr>
<tr>
<td>RETVOL</td>
<td>422</td>
<td>0.039</td>
</tr>
<tr>
<td>SUPPLY</td>
<td>422</td>
<td>3.594</td>
</tr>
<tr>
<td>MOMENT</td>
<td>422</td>
<td>0.233</td>
</tr>
<tr>
<td>STOWN</td>
<td>422</td>
<td>0.376</td>
</tr>
<tr>
<td>SHSE</td>
<td>422</td>
<td>0.540</td>
</tr>
</tbody>
</table>
Table 2: Relationship between A-Share and B-Share Returns

This table reports the results of estimating Equations (4) and (5). K stands for the number of lagged daily A- or B-share returns. All standard errors are heteroscedasticity-consistent and clustered at the firm level. $r_{j,t}$ is the daily market adjusted return for A- or B-shares. Italics indicate the p-values of the coefficient estimates. The F-statistics refer to testing the null hypothesis that the coefficient estimate of $a$ from Equation (4) equals the coefficient estimate of $b$ from Equation (5). *** indicates that the F-statistics are significant at the 1% or lower. Variable definitions are in Appendix B.

$$r_{j,t}^B = a_j^B + a \sum_{k=1}^{K} r_{t-k}^A + b \sum_{k=1}^{K} r_{t-k}^B + e_{j,t}^B$$ (4)

$$r_{j,t}^A = a_j^A + c \sum_{k=1}^{K} r_{t-k}^A + d \sum_{k=1}^{K} r_{t-k}^B + e_{j,t}^A$$ (5)

<table>
<thead>
<tr>
<th></th>
<th>k=1</th>
<th>k=3</th>
<th>k=5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent</strong></td>
<td>$r_t^B$</td>
<td>$r_t^A$</td>
<td>$r_t^B$</td>
</tr>
<tr>
<td><strong>Intercept</strong></td>
<td>-0.000</td>
<td>-0.002</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>-0.39</td>
<td>-3.35***</td>
<td>2.45</td>
</tr>
<tr>
<td>$\sum r_{t-k}^A$</td>
<td>0.099</td>
<td>0.006</td>
<td>0.063</td>
</tr>
<tr>
<td></td>
<td>15.53***</td>
<td>1.05</td>
<td>17.12***</td>
</tr>
<tr>
<td>$\sum r_{t-k}^B$</td>
<td>-0.123</td>
<td>0.011</td>
<td>-0.061</td>
</tr>
<tr>
<td></td>
<td>-9.99***</td>
<td>4.03***</td>
<td>-11.46***</td>
</tr>
<tr>
<td><strong>F Test:</strong></td>
<td>$a = d$</td>
<td>282***</td>
<td>294.38***</td>
</tr>
</tbody>
</table>
Table 3: Delay of B-share Price Adjustment Relative to A-share Price

This table provides summary statistics and correlation coefficients between \textit{DELAY} and firm characteristics. The variable \textit{DELAY} is measured as one minus the ratio of the R-squared from Equation (6) to the R-squared from Equation (7). Logit represents the logistic transformation of \textit{DELAY}. Equation (6) and (7) are estimated using daily raw stock returns at three- or five-day lags. Bold number in Panel B and C indicate coefficients with a p-value of five percent or less. \textit{Italics} in Panel B indicate the p-values of the correlation coefficients. Variable definitions are in Appendix B.

\begin{align}
\tau_{j,t}^B &= a_j^B + a_1R_{M,t}^A + a_2R_{M,t}^B + e_{j,t}^B \\
\tau_{j,t} &= a_j^B + a_1R_{M,t}^A + a_2R_{M,t}^B + \sum_{k=1}^{K} \alpha_k \tau_{t-k}^A + e_{j,t}^B
\end{align}

Panel A: Variable Distribution

<table>
<thead>
<tr>
<th>Firm Characteristics</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>25th</th>
<th>75th</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logist(Delay_1)</td>
<td>422</td>
<td>-4.817</td>
<td>-4.654</td>
<td>-5.987</td>
<td>-3.342</td>
<td>2.366</td>
</tr>
<tr>
<td>Logit(Delay_3)</td>
<td>422</td>
<td>-3.328</td>
<td>-3.477</td>
<td>-4.457</td>
<td>-2.463</td>
<td>1.753</td>
</tr>
<tr>
<td>Logit(Delay_5)</td>
<td>422</td>
<td>-2.567</td>
<td>-2.812</td>
<td>-3.647</td>
<td>-1.713</td>
<td>1.621</td>
</tr>
<tr>
<td>EQ_COMB</td>
<td>422</td>
<td>0.364</td>
<td>0.371</td>
<td>0.300</td>
<td>0.438</td>
<td>0.112</td>
</tr>
<tr>
<td>MKTCAP_DIF</td>
<td>422</td>
<td>0.491</td>
<td>0.293</td>
<td>0.018</td>
<td>0.776</td>
<td>0.715</td>
</tr>
<tr>
<td>RETVOL_DIF</td>
<td>422</td>
<td>-0.021</td>
<td>-0.195</td>
<td>-0.322</td>
<td>-0.006</td>
<td>0.643</td>
</tr>
</tbody>
</table>

Panel B: Pearson Correlation

\begin{tabular}{cccccccc}
& \textit{EQ_COMB} & \textit{MKCAP_DIF} & \textit{RETVOL_DIF} & \textit{POSRET_B} & \textit{STOWN} & \textit{SHSE} \\
\textit{Logit(Delay_5)} & -0.085 & -0.028 & 0.229 & -0.301 & -0.007 & 0.047 \\
& 0.080 & 0.564 & < .0001 & < .0001 & 0.887 & 0.336 \\
\textit{EQ_COMB} & -0.004 & -0.089 & -0.023 & -0.008 & -0.003 \\
& 0.993 & 0.068 & 0.637 & 0.868 & 0.945 \\
\textit{MKTCAP_DIF} & -0.251 & 0.152 & -0.073 & -0.426 \\
& < .0001 & 0.002 & 0.131 & < .0001 \\
\textit{RETVOL_DIF} & -0.100 & 0.072 & 0.086 \\
& 0.039 & 0.141 & 0.078 \\
\textit{POSRET_B} & -0.024 & 0.002 \\
& 0.616 & 0.973 \\
\textit{STOWN} & 0.264 & < .0001 \\
\end{tabular}
Table 4: Relationship between Earnings Quality and the Delay of B-share Price

This table provides the results of estimating the following equation:

\[
\text{logit}(\text{DELAY}_{j,t}) = \beta_0 + \beta_1 \text{EQ_COMB}_{j,t} + \beta_2 \text{MKTCAP_DIF}_{j,t} + \beta_3 \text{RETVOL_DIF}_{j,t} + \beta_4 \text{POSRET_B}_{j,t} + \beta_5 \text{STOWN}_{j,t} + \beta_6 \text{SHSE}_{j} + \beta_7 \text{Year} + \beta_i \text{Industry}_i + \epsilon_{j,t}
\]  

(8)

All standard errors are heteroscedasticity-consistent and clustered at the firm level. *Italicics* indicate the t-values of the coefficient. Variable definitions are in Appendix B.

<table>
<thead>
<tr>
<th>Predicted Sign</th>
<th>Logit (DELAY_1)</th>
<th>Logit (DELAY_3)</th>
<th>Logit (DELAY_5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-3.930</td>
<td>-3.118</td>
<td>-3.245</td>
</tr>
<tr>
<td>EQ_COMB -</td>
<td>-2.051</td>
<td>-1.334</td>
<td>-1.369</td>
</tr>
<tr>
<td>MKTCAP_DIF +</td>
<td>0.529</td>
<td>0.628</td>
<td>0.572</td>
</tr>
<tr>
<td>RETVOL_DIF +</td>
<td>0.095</td>
<td>0.127</td>
<td>0.082</td>
</tr>
<tr>
<td>POSRET_B -</td>
<td>0.244</td>
<td>0.611</td>
<td>0.502</td>
</tr>
<tr>
<td>STOWN +</td>
<td>-0.919</td>
<td>-0.464</td>
<td>-0.439</td>
</tr>
<tr>
<td>SHSE +</td>
<td>0.487</td>
<td>0.463</td>
<td>0.449</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>422</td>
<td>422</td>
<td>422</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.200</td>
<td>0.425</td>
<td>0.440</td>
</tr>
</tbody>
</table>
Table 5: The Effects of Earnings Quality on the Ability of A-Share Returns to Predict B-Share Returns around Earnings Announcements

This table reports the results of estimating Equations (9) using daily returns in two months’ surrounding earnings announcements. All standard errors are heteroscedasticity-consistent and clustered at the firm level. Italics indicate the t-values of the coefficient estimates. Variable definitions are in Appendix B.

\[
\hat{r}_{j,t}^B = \beta_0 + \beta_1 r_{t-1}^A + \beta_2 r_{t-1}^B + \beta_3 POST + \beta_4 r_{t-1}^A \times POST_t + \beta_5 r_{t-1}^B \times POST_t + \beta_6 Month + \beta_7 Year + \beta_8 Industry + \epsilon_{j,t} \tag{9}
\]

<table>
<thead>
<tr>
<th>Variable</th>
<th>Expected Sign</th>
<th>Full Sample</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.014</td>
<td>0.002</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.66</td>
<td>0.95</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>(r_{t-1}^A)</td>
<td>+</td>
<td>0.080</td>
<td>0.102</td>
<td>0.095</td>
</tr>
<tr>
<td></td>
<td>5.22</td>
<td>3.82</td>
<td>3.99</td>
<td></td>
</tr>
<tr>
<td>(r_{t-1}^B)</td>
<td>?</td>
<td>-0.077</td>
<td>-0.060</td>
<td>-0.127</td>
</tr>
<tr>
<td></td>
<td>-4.23</td>
<td>-1.60</td>
<td>-3.39</td>
<td></td>
</tr>
<tr>
<td>(POST)</td>
<td>?</td>
<td>-0.001</td>
<td>0.000</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>-0.08</td>
<td>0.04</td>
<td>-0.95</td>
<td></td>
</tr>
<tr>
<td>(r_{t-1}^A \times POST)</td>
<td>-</td>
<td>-0.042</td>
<td>-0.084</td>
<td>-0.045</td>
</tr>
<tr>
<td></td>
<td>-1.84</td>
<td>-3.16</td>
<td>-0.98</td>
<td></td>
</tr>
<tr>
<td>(r_{t-1}^B \times POST)</td>
<td>?</td>
<td>0.001</td>
<td>-0.010</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>0.06</td>
<td>-0.22</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>Month Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>15,515</td>
<td>3,827</td>
<td>3,922</td>
<td></td>
</tr>
<tr>
<td>(R^2)</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td></td>
</tr>
</tbody>
</table>
Table 6: Earnings Quality and the B-share Discount

This table provides the results of estimating the following equation:

\[
PRCDIF_{j,t} = \beta_0 + \beta_1 EQ\_COMB_{j,t} + \beta_2 MKTCAP\_A_{j,t} + \beta_3 MKTCAP\_B_{j,t} + \beta_4 RETVOL\_DIF_{j,t} + \beta_5 SUPPLY\_DIF_{j,t} + \beta_6 MOMENTUM\_DIF_{j,t} + \beta_7 STOWN_{j,t} + \beta_8 SHSE_{j,t} + \hat{\beta}_t Year + \hat{\beta}_k Industry_k + \epsilon_{j,t} \tag{10}
\]

All standard errors are heteroscedasticity-consistent and clustered at the firm level. Italics indicate the t-values of the coefficient estimates. Variable definitions are in Appendix B.

<table>
<thead>
<tr>
<th>Predicted</th>
<th>(i)</th>
<th>(ii)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.628</td>
<td>1.483</td>
</tr>
<tr>
<td></td>
<td>2.50</td>
<td>2.47</td>
</tr>
<tr>
<td>EQ_COMB</td>
<td>-1.131</td>
<td>-2.51</td>
</tr>
<tr>
<td>LOGIT(DELAY_5)</td>
<td>+</td>
<td>0.094</td>
</tr>
<tr>
<td>MKTCAP_A</td>
<td>+ 3.075</td>
<td>3.098</td>
</tr>
<tr>
<td></td>
<td>10.29</td>
<td>10.21</td>
</tr>
<tr>
<td>MKTCAP_B</td>
<td>-4.313</td>
<td>-4.287</td>
</tr>
<tr>
<td></td>
<td>-16.75</td>
<td>-16.65</td>
</tr>
<tr>
<td>RETVOL_DIF</td>
<td>+ 0.014</td>
<td>0.028</td>
</tr>
<tr>
<td></td>
<td>0.20</td>
<td>0.29</td>
</tr>
<tr>
<td>SUPPLY_DIF</td>
<td>-5.527</td>
<td>-5.594</td>
</tr>
<tr>
<td></td>
<td>-3.80</td>
<td>-3.95</td>
</tr>
<tr>
<td>MOMENTUM_DIF</td>
<td>+ -0.001</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>-0.02</td>
<td>0.017</td>
</tr>
<tr>
<td>STOWN</td>
<td>+ 0.547</td>
<td>0.571</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>2.11</td>
</tr>
<tr>
<td>SHSE</td>
<td>+ 0.052</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td>0.32</td>
<td>0.10</td>
</tr>
<tr>
<td>Year Dummy</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>422</td>
<td>422</td>
</tr>
<tr>
<td>R^2</td>
<td>0.849</td>
<td>0.851</td>
</tr>
</tbody>
</table>
Table 7: Changes in Firm Characteristics around the 2001 Regulation Shift

Panel A of this table reports changes in stock market characteristics between the period from August 2000 to January 2001 and from March 2001 to August 2001. Panel B of this table reports the results of estimating Equations (4) and (5) using observations post regulation between March 2001 and December 2004. All standard errors are heteroscedasticity-consistent and clustered at the firm level. *Italic* indicates the t-values of the coefficient estimates. The letter $k$ stands for the number of lagged daily stock returns. F-statistics refer to testing the null hypothesis that the coefficient estimate of $a$ from Equation (4) equals the coefficient estimate of $b$ from Equation (5). *** indicates the F-statistics are significant at the 1% level. Variable definitions are in Appendix B.

### Panel A:

<table>
<thead>
<tr>
<th>Firm Characteristics</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>25th</th>
<th>75th</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALOGIST(Delay_1)</td>
<td>76</td>
<td>-0.453</td>
<td>-0.442</td>
<td>-2.369</td>
<td>1.649</td>
<td>3.121</td>
</tr>
<tr>
<td>ALOGIT(Delay_3)</td>
<td>76</td>
<td>-0.478</td>
<td>-0.424</td>
<td>-1.721</td>
<td>0.373</td>
<td>1.915</td>
</tr>
<tr>
<td>ALOGIT(Delay_5)</td>
<td>76</td>
<td>-0.331</td>
<td>-0.277</td>
<td>-1.199</td>
<td>0.575</td>
<td>1.466</td>
</tr>
<tr>
<td>APRC_A</td>
<td>76</td>
<td>0.742</td>
<td>0.967</td>
<td>-0.749</td>
<td>1.973</td>
<td>3.116</td>
</tr>
<tr>
<td>APRC_B</td>
<td>76</td>
<td>5.095</td>
<td>4.946</td>
<td>4.100</td>
<td>6.142</td>
<td>1.730</td>
</tr>
<tr>
<td>APRCDIF</td>
<td>76</td>
<td>-3.026</td>
<td>-2.973</td>
<td>-3.523</td>
<td>-2.379</td>
<td>0.956</td>
</tr>
<tr>
<td>AMKTCAPT_A</td>
<td>76</td>
<td>0.069</td>
<td>0.085</td>
<td>-0.045</td>
<td>0.161</td>
<td>0.171</td>
</tr>
<tr>
<td>AMKTCAP_B</td>
<td>76</td>
<td>0.616</td>
<td>0.614</td>
<td>0.414</td>
<td>0.794</td>
<td>0.234</td>
</tr>
</tbody>
</table>

### Panel B:

$$ r_{t,k}^B = a^B_j + a \sum_{k=1}^K r_{t-k}^A + b \sum_{k=1}^K r_{t-k}^B + e_{j,t}^B $$  

$$ r_{t,k}^A = a^A_j + c \sum_{k=1}^K r_{t-k}^A + d \sum_{k=1}^K r_{t-k}^B + e_{j,t}^A $$  

<table>
<thead>
<tr>
<th>k=1</th>
<th>k=3</th>
<th>k=5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$r_{t,k}^B$</td>
<td>$r_{t,k}^A$</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>0.24</td>
<td>0.52</td>
</tr>
<tr>
<td>$\sum r_{t-k}^A$</td>
<td>0.034</td>
<td>0.014</td>
</tr>
<tr>
<td></td>
<td>9.74**</td>
<td>3.05***</td>
</tr>
<tr>
<td>$\sum r_{t-k}^B$</td>
<td>0.068</td>
<td>0.039</td>
</tr>
<tr>
<td></td>
<td>15.12***</td>
<td>7.86***</td>
</tr>
<tr>
<td>F-Test $\alpha = d$</td>
<td>0.05</td>
<td>6.02**</td>
</tr>
</tbody>
</table>
Table 8: The Effects of Earnings Quality on the B-share Information Delay after Controlling for Firm Performance

This table reports the results of estimating Equation (8) after controlling for firm operating performance. All standard errors are heteroscedasticity-consistent and clustered at the firm level. Italics indicate t-values of the coefficient estimates. Variable definitions are in Appendix B.

\[
\text{logit}(\text{DELAY})_{jt} = \beta_0 + \beta_1 \text{EQ\_COMB}_{jt} + \beta_2 \text{OPVOL}_{jt} + \beta_3 \text{MKTCAP\_DIF}_{jt} \\
+ \beta_4 \text{RETVOL\_DIF}_{jt} + \beta_5 \text{POSRET\_B}_{jt} + \beta_6 \text{STOWN}_{jt} + \beta_7 \text{SHSE}_{jt} \\
+ \beta_t \text{Year} + \beta_i \text{Industry} + e_{jt}
\]

<table>
<thead>
<tr>
<th>Predicted Sign</th>
<th>Logit (DELAY_1)</th>
<th>Logit (DELAY_3)</th>
<th>Logit (DELAY_5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-3.698</td>
<td>-3.736</td>
<td>-3.660</td>
</tr>
<tr>
<td></td>
<td>-4.36</td>
<td>-6.66</td>
<td>-6.50</td>
</tr>
<tr>
<td>EQ_COMB</td>
<td>-</td>
<td>-3.110</td>
<td>-1.456</td>
</tr>
<tr>
<td></td>
<td>-2.60</td>
<td>-2.32</td>
<td>-2.27</td>
</tr>
<tr>
<td>OPVOL</td>
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<td>-0.674</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>-0.27</td>
<td>-0.72</td>
</tr>
<tr>
<td>MKTCAP_DIF</td>
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<td>0.365</td>
<td>0.625</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.79</td>
<td>5.86</td>
</tr>
<tr>
<td>RETVOL_DIF</td>
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<td>0.450</td>
<td>0.074</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.47</td>
<td>0.15</td>
</tr>
<tr>
<td>POSRET_B</td>
<td>-</td>
<td>-0.527</td>
<td>-0.372</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-1.40</td>
<td>-1.48</td>
</tr>
<tr>
<td>STOWN</td>
<td>+</td>
<td>0.048</td>
<td>0.252</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.09</td>
<td>0.81</td>
</tr>
<tr>
<td>SHSE</td>
<td>+</td>
<td>0.516</td>
<td>0.573</td>
</tr>
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<td></td>
<td>1.69</td>
<td>3.39</td>
</tr>
<tr>
<td>Year Dummy</td>
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<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry Dummy</td>
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<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>313</td>
<td>313</td>
<td>313</td>
</tr>
<tr>
<td>R²</td>
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<td>0.166</td>
<td>0.156</td>
</tr>
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</table>