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Taming the "Casino Stocks": Impact of Enhanced Visibility via Shanghai Hong Kong Stock Connect on Firms' Information Environment

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ABSTRACT

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In this paper, I investigate whether enhanced visibility by allowing foreign participation in the domestic capital market improves the supply, demand and overall information in the market. Using the Shanghai Hong Kong Stock Connect (where foreign investors are allowed to trade in stocks listed in the Shanghai Stock Exchange through Hong Kong) as a natural experiment, the author documents an improved supply (lower earnings aggressiveness), higher demand (greater analyst forecast accuracy), greater incentives for managers to meet or beat market expectations, and an overall improvement in the information environment for the connected firms. The results contribute to the current literature by (1) circumnavigating the endogeneity issues of whether foreign investments lead to higher firm-specific information, or higher firm-specific information leads to greater foreign investments; and (2) when enforcement of securities law is weak and costly to implement, whether improving domestic firms' visibility by allowing them to be traded in a developed capital market increases corporate transparency and the information environment of the domestic capital market. The findings should be of interest to policymakers as the results suggest that when enforcement is costly, greater transparency may be achieved by allowing foreign participation in the domestic market.

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1 Introduction

The information environment surrounding stock markets and listed firms is a function of the strength of a country's information dissemination mechanisms. Such information dissemination mechanisms typically consist of financial analysts, who, through their various investment and industry reports disseminate firm specific and industry specific information (Piotroski and Wong, 2012). Closely tied to information dissemination mechanisms is the firms' and managers' incentives to improve corporate transparency. In this paper, I examine the effect of increased visibility on the supply, demand and overall information environment of Chinese firms.

On November 17^{th} 2014, the Chinese government implemented the Shanghai - Hong Kong Stock Connect Program (SCP) which allows investors (including foreign investors) registered in Hong Kong to invest in connected firms listed on the Shanghai Stock Exchange. Using this event, and implementing a difference in difference design, I examine three ways through which visibility may affect firms' information environment. In my first hypothesis, I examine whether implementation of the SCP has enhanced the supply of firms' accounting information. Specifically, I study whether firms reduced their earnings aggressiveness subsequent to the SCP. Earnings aggressiveness, the inverse of accounting conservatism, is considered as a proxy for financial statement transparency (Bhattacharya et al., 2003). Timely incorporation of economic losses in accounting earnings incentivizes managers to reflect economic losses in their earnings faster than economic gains (Ball et al., 2000). This is particularly interesting in the Chinese context as Piotroski and Wong (2012) suggest that the financial reporting environment of the Chinese listed firms is opaque and continues to rank well below key developed and large developing economies[1]. Given that one of the major reasons for initiating the SCP is to enhance the international reputation of Chinese firms through greater visibility[2] it is interesting to note whether the SCP has actually helped to increase transparency.

My second hypothesis is divided into two parts and examines the changes in demand for

[1] World Economic Forum's Global Competitiveness Report (2011)

[2] The Shanghai Stock Exchange website claims that "the Stock Connect will improve global investors" awareness of the value of the A shares on the Shanghai Stock Exchange" and that "the Stock Connect will open up the A share market to a much broader global investor base, introducing international institutional and individual investors to the mainland stock market. It will also potentially speed up the maturing of the investment behavior of mainland institutional and individual investors alike". http://english.sse.com.cn/investors/shhkconnect/introduction/significance/

information after implementation of the SCP. First, I examine whether the SCP has led to greater analyst scrutiny for the connected firms. Specifically, I hypothesize that the SCP has led to greater forecast accuracy as analysts are incentivized to scrutinize the connected firms in greater detail due to the increased demand for information by foreign investors. Greater forecast accuracy implies that analysts are better able to gauge the financial performance of these firms. Second, I examine manager's incentives to meet or beat analyst expectations. I predict that increased visibility and investments by foreign investors give managers greater incentives to meet or beat analyst expectations. This is particularly interesting in the Chinese context as firms' capital raising abilities are dominated by the presence of a large state owned banking sector (Boyreau-Debray and Wei, 2005). Therefore, unlike the U.S. capital market (Graham et al., 2005), managers may have little interest managing market expectation. However, the introduction of the SCP may incentivize managers to be more market oriented due to reduced cost of capital resulting from increased liquidity via foreign participation (Cohn and Pringle, 1973). Thus, I hypothesize that managers meet or beat analyst forecasts by a greater frequency after implementation of the SCP.

Finally, I study the effect of the SCP on the overall information environment in the Chinese stock markets. Thus, I examine whether foreign participation via the SCP has decreased stock price synchronicity for the connected Chinese firms. Stock price synchronicity is a measure of firm specific information that is available in the market. Durnev et al. (2003) find that greater stock price asynchronicity not only indicates greater impounding of information in the capital market that allocates resources, but is also linked to higher total and productivity growth. Reviewing the information environment of the Chinese listed firms, Piotroski and Wong (2012) suggest that market returns explain approximately 45.3% variation in weekly firm level returns (as compared to 2.1% in U.S.). Thus, my study examines whether the co-movement of the Chinese stocks with the market has reduced post the SCP.

Current literature on the effect of visibility on firms' information environment was pioneered by Merton (1987) who modeled the impact of investor base on firms' expected returns. Incorporating investor recognition in the traditional Capital Asset Pricing Model (Sharpe, 1964), he theoretically argued that the expected returns should de-

crease with the size of firm's investor base, i.e. the degree of investor recognition (investor recognition hypothesis). Following Merton (1987), several papers have looked at the importance of visibility for firms. For instance, Blankespoor et al. (2013) study the impact of visibility via Twitter messages on firms' information environment and find that the dissemination of firm level information via Twitter is associated with lower bid ask spreads for firms that are not highly visible. Analyzing the effect of cross listing on firms' information environment, Lang et al. (2003) find that firms that cross list on the U.S. exchanges have greater analyst coverage and increased forecast accuracy than firms that do not cross list. Baker et al. (2002) study the impact of international cross listing on visibility and find that international firms listing their shares on the New York Stock Exchange (NYSE) or the London Stock Exchange (LSE) experience a significant increase in visibility via greater analyst coverage and print media attention (The Wall Street Journal or Financial Times). However, interpretation of the results in most papers is obfuscated by endogeneity problems. Usually firms' information environment is endogenously determined by institutional factors (Wang et al., 2008). Second, changes in information environment are usually linked to changes to these institutional factors, making it harder to isolate and attribute changes in information environment to enhanced visibility. Finally, firms with better reporting quality and governance structures may choose to enhance visibility. The SCP does not suffer from these problems as it was not followed by any institutional changes. Moreover, the government decided that all firms listed in the SSE 180 and 380 indices may be traded via the SCP, thereby reducing the effect of firms self selecting into higher quality by deciding whether to participate or not. This makes studying the effect of the SCP on the connected firms' information environment a clean natural experiment, thereby adding to our understanding of the effect of visibility on information environment.

The Chinese capital market provides a unique setting to test my hypotheses. With the presence of large state owned firms (SOEs), government control over information dissemination via media, presence of large state owned banks as primary and preferred lender of capital (Allen and Shen, 2012), and rampant earnings management partly due to regulations[3] and partly due to inefficient capital market, the Chinese market oper-

[3]Firms seeking a seasoned equity offering must have a three year average return on equity greater than or equal to 10% and have a return on equity greater than or equal to 10% in the year preceding the offering. Moreover, firms seeking a rights issuance must have a three year average return on equity

ates under conditions of high information asymmetry (Bhabra et al., 2008; Piotroski and Wong, 2012). Discussing China's capital markets, Wang et al. (2008) point out that the institutional factors such as the presence of the SOEs and state owned banks creates distortions in firms' incentives to provide information. This is driven partly due to preferential access to capital and/or government bailouts in times of financial distress. Moreover, the Chinese stock market exhibits strong momentum effects, thereby reflecting the behavioral biases of unsophisticated, and primarily, retail investors (Choi et al., 2010). These institutional factors provide an interesting setting to test the effect of visibility on market information. While on one hand greater visibility allows foreign investors to invest in the Chinese capital market, thereby reducing the overall cost of capital (Armstrong et al., 2010), institutional factors might prohibit such an action. After a difficult first decade from 1990 to 2000, China's stock market earned a reputation as a casino, manipulated by speculators and insiders. The reputation earned in the 2000s still persists today. An Economist article dated May 26th, 2015 names the Chinese stock market as "A Crazy Casino"[4]. Therefore, it is possible that the stock markets are dominated by speculators who trade on market sentiments instead of firm fundamentals. In such a case, the SCP would have no effect in increasing the market's overall information environment. The reputation of the Chinese stock markets may act as a barrier to increased information and investments.

The results documented in the paper suggest that increased visibility via the SCP played an incremental role in the development of the Shanghai stock market. I find that earnings aggressiveness for firms connected through the SCP reduces, which suggests an increase in transparency and earnings informativeness. Analyst forecast accuracy also increases after the announcement of the SCP. This suggests that analysts scrutinize the connected firms more due to the increased demand for information by foreign investors. Moreover, I find that there is an incremental increase in managers' propensity to meet or beat analyst forecasts, indicating that while managers of the connected firms preferred to meet or beat analyst expectations even prior to the announcement of SCP, they choose to do so with a higher magnitude than before. Finally, stock price synchronicity for the connected firms reduces after implementation of the SCP, implying that more firm

greater than or equal to 6% (Piotroski and Wong, 2012)

[4]http://www.economist.com/blogs/freeexchange/2015/05/chinas-stockmarket

specific information is being impounded in the market for the connected firms. Thus, the presence of foreign investors enhances the local market's information environment, which is essential for market development. Taken together, these findings reflect an overall improvement in both the supply and the demand of information, leading to an overall improvement in the availability of firm specific information.

The paper contributes to the literature in two broad areas. First, from an accounting perspective, the paper contributes to the literature by examining how market forces affect the availability of accounting information, and increased scrutiny by market participants. Most papers studying such phenomenon have been restricted to the effects of mandatory disclosures on liquidity (La Porta et al, 1998; Christensen et al., 2013). Evidence on how opening up markets to foreign investments affect disclosure policies and investor behavior is limited as policies such as the SCP are rarely implemented. Furthermore, when the implementation of monitoring and enforcement agencies are prohibitively expensive, the paper highlights an alternative mechanism through which managers may be induced to exhibit market oriented behavior.

Second, from a policy-maker's perspective, the paper highlights an interesting mechanism through which market reforms could be initiated, with lesser costs than implementation and enforcement of mandatory disclosures or creation of regulations. By allowing firms to compete for foreign investments, firms may improve their information environment as a signal of their quality. Firms weigh in the costs of increased transparency to the benefits of foreign investment and self select into higher or lower quality firms. Investors can observe this signal, and re-balance their portfolios in favor of higher quality firms. Thus, incentives exist for firms trying to achieve higher valuation and lower cost of capital to produce high quality information. This aligns the incentives of managers to be more market oriented. This is especially important for the Chinese markets as there exist perverse incentives for managers to produce less transparent information (Piotroski and Wong, 2012). Thus visibility plays an important role in enhancing the overall information environment in the capital market.

The rest of the paper is structured as follows. Section 2 provides an institutional background of the Chinese stock market. Section 3 provides a literature review and develops hypotheses. Section 4 explains the research design implemented to test my hypotheses,

and section 5 details the data and empirical results. Finally, section 6 concludes.

2 Institutional Background

To facilitate trading, the Chinese government set up the Shanghai Stock Exchange in 1990, followed by the Shenzhen Stock Exchange in 1992. The development of China's securities markets, however, has been a constant regulatory challenge. The transformation of the traditional SOEs into market based companies has been fraught with numerous challenges [5]. Although the SOEs listed themselves in the stock markets, they were still run by managers who preferred the old operating and management cultures based on social goals and political connections. Furthermore, a lack of regulations since the introduction of stock markets led to numerous scandals and frauds in the stock markets[6]. In the early stages of securities market development, local governments and provincial branches of People's Bank of China (PCOB) regulated the Shanghai and the Shenzhen stock markets. However, the stock markets lacked a proper enforcement agency until the creation of the State Council Securities Commission, which was the precursor to the China Securities Regulatory Commission (CRSC). The CRSC drafts and enforces securities rules and approves all public share issues through domestic or foreign stock exchanges[7]. However, the stock markets were still marred with numerous scandals, so much so that Wu Jinglian, a noted Chinese economist, characterized China's stock market as a "...casino manipulated by speculators, misled by the central government's visible hand to unfairly support the SOEs, and without a strong link to fundamentals"[8].

Confidence in the Chinese stock markets has been strongly linked to its macroeconomic performance. There is very little firm specific information, and herding behavior prevails. The government, in an effort to the increase corporate governance of the Chinese firms, allowed very limited participation of foreign investors through the Qualified Financial Institutional Investor (QFII) program in 2003 (along with reforms in 2005).

[5] See Huang (2015) for review

[6] Shi Chenxia, 2012, "Political Determinants of Corporate Governance in China", Routeledge Publications.

[7] See the Chinese Securities Regulatory Commission in wikipedia: `https://en.wikipedia.org/wiki/China_Securities_Regulatory_Commission`.
Also, see the CRSC website: `http://www.csrc.gov.cn/pub/csrc_en/about/` for a list of functions performed by CSRC

[8] Wu Jinglian: Voice of Reform in China

However, such measures have failed to yield results as the QFIIs are unable to influence management decisions or governance due to restrictions in ownership of the Chinese firms. Furthermore, foreign investors' interest in the Chinese stock markets have been dampened by the imposition of strict capital control measures which restrict foreign investors from moving money abroad. The government also mulled over the possibility of adopting IFRS as a market signal for the quality of the firms. However, its adoption has been put on hold due to fears that in the absence of strong enforcement agencies, principles based accounting will obfuscate information more than improve it (Hung et al., 2013).

The SCP is the latest effort by the government to reform the SOEs and the governance of the Chinese firms in general. The expectation is that the SCP will introduce the mainland Chinese firms to foreign investors (principally, the institutional investors) through Hong Kong. Institutional investors, unlike domestic investors, do not trade entirely on macroeconomic conditions, but also on firm specific information. Thus, firms need to disclose more and better quality information to attract the foreign investors. The expectation is that the market forces induced by increased demand for information and better firm performance by foreign investors would increase transparency and improve corporate governance as firms compete for foreign investment.

On 10^{th} April 2014, the China Securities Regulatory Commission (CSRC) and the Securities & Futures Commission of Hong Kong (SFCHK) jointly made an announcement that a pilot program known as the Shanghai-Hong Kong Stock Connect would be launched within the year. Under this program, the Shanghai Stock Exchange and the Stock Exchange of Hong Kong Limited would allow investors from the other region to trade a specified range of eligible shares listed on the either stock exchange via a securities company or a brokerage located in the local market.

Approximately seven months later, the SCP was implemented on the 17th November, 2014. The primary goal of the SCP is that it gives both mainland China and Hong Kong an economic boost and contribute to their economic and financial development as well as mutual market access, thereby helping to strengthen the integration between Hong Kong's and the mainland's capital markets. While the SCP allows global, institutional and individual investors to invest in certain Shanghai A-shares, mainland investors may

trade in Hong Kong H-shares via the SSE. For China, this is a step towards (1) internationalization of renminbi (RMB), (2) enhancement of governance structures for mainland Chinese firms, and (3) inclusion of Chinese stocks in MSCI Emerging Markets Index[9]. For Hong Kong, the benefits accrue from increased participation from mainland Chinese investors, leading to increased liquidity.

The decision to connect Hong Kong to the mainland Chinese stock markets was deemed prudent because Hong Kong stock market is free from various restrictions and administrative interventions faced by the Shanghai stock market, has a much longer history and is more standardized. The Hong Kong stock market is considered to be more efficient than the Shanghai stock market. However, because of its "special" relationship with mainland China when compared to other major financial centers in the world, the Hong Kong stock market is much more closely related to the Shanghai stock market. Some 61 leading Chinese companies in various industries are listed both in the Hong Kong and Shanghai stock market, though with different market prices for the shares of the same company (the stock prices in Shanghai Stock Exchange typically trades at a premium to Hong Kong Stock Exchange). Many scholars have studied the relationship between the Hang Seng and the Shanghai Composite Index. For example, Zhang and Cui (2005) used a rescaled range analysis on the Hang Seng and the Shanghai Composite Index and argued that the performance of the Hong Kong stock market during 1997 and 1998 is statistically similar to that of the Shanghai stock market in the years after 2001. Li and Chen (2006) found that there is a tail dependence between the Shanghai Composite Index and the Hang Seng Index based on a copula method. That is, when there is a great increase or decrease in the log return of one of the markets, there is a possibility of large movement in the log return of the other market.

Although these two markets are different in some key factors such as regime, system,

[9]China's A-shares have traditionally not been included in MSCI Emerging Markets Index since the shares are inaccessible to foreign investors. The government hopes that through the SCP, A-shares would be included in MSCI EM Index. However, results of MSCI 2016 Classification Review, announced on June 14, 2016 delayed the inclusion of Chinese A shares stating " Over recent months, the Chinese authorities have introduced significant improvements in the accessibility of the China A shares market for global investors. These improvements touch the major categories previously cited as impediments to inclusion: (1) resolution of the issues regarding beneficial ownership,(2) enhanced regulations on trading suspension, which was flagged as the most critical by investors, and (3) QFII policy changes aimed at addressing quota allocation and capital mobility restrictions. See `https://www.msci.com/documents/10199/4b1ba122-5f18-4a36-91c0-41a9b358c2ff`

rules and regulations, listed companies, investors etc., they are correlated[10]. But compared to the relatively young Shanghai stock market, the Hong Kong stock market has a long history of development and more complete rules and regulations and is therefore more efficient. The Shanghai stock market has been, since early 2000s, undertaking more reforms as the Chinese government exerts efforts to standardize its financial market and get better aligned to the WTO requirements and regulations (Tu and Wang, 2016). Thus, it makes logical sense for the government to use Hong Kong's platform as a step towards market reforms for the Chinese firms.

While the SCP is a novel idea, there are some limitations to the program. Under the SCP, investors in Hong Kong and the mainland are allowed to trade and settle shares listed on the other market through their local brokers.However, local jurisdiction determines the securities laws of their respective regions. That is, Chinese securities laws dictates the governance of SSE while Hong Kong securities laws dictate the governance of HKSE. This may potentially cause problems when cross border disputes arise. Given that there are substantially different securities laws between the mainland and Hong Kong under the "one country - two systems" arrangement,securities disputes may encounter conflict of laws. These uncertainties have led to lower trading activities through the SCP. However, the Chinese government and the CSRC have been proactive in ironing out many of these issues, and a more integrated trading platform is to be expected as the SCP matures, especially now that the Shenzhen stock market is also connected to Hong Kong via a similar set up.

3 Literature Review and Hypothesis Development

Merton (1987) highlights the importance of visibility via recognition hypothesis in reducing firm's cost of capital. Underlying his hypothesis is an information cost structure whereby "for Party A to convey useful information to Party B, requires not only that Party A has a transmitter and sends accurate message, but also that Party B has a receiver" (Merton, 1987; page 489). This is the fundamental intuition behind my study where Party A is the firm providing information (measured by earnings aggressiveness)

[10]Economist news article dated October 21^{st} 2014 `http://www.economist.com/blogs/freeexchange/2014/10/chinas-stockmarket`

and Party B refers to whether the analysts can credibly use that information. The final test measures the overall market impact of the changes in demand and supply of information.

3.1 Visibility and Earnings Aggressiveness

Ball et al. (2000) state that accounting conservatism implies more timely incorporation of economic losses versus gains into earnings, thereby reducing information asymmetry. They argue that conservatism is related to informativeness, since conservative accounting provides information that managers may wish to withhold. Earnings aggressiveness, the inverse of accounting conservatism, decreases transparency and information content of earnings as such aggressive reporting is more likely to reflect biased and optimistic reporting by the management, adding more noise to earnings. Bhattacharya et al. (2003) study earnings opacity (which includes earnings aggressiveness, loss avoidance and income smoothing) in 34 countries to explore the links between financial accounting information and corporate governance. Under the assumption that better accounting information assists investors in making good investment decisions, they find that an increase in the overall earnings opacity in a country is linked to an increase in the cost of equity and cost of trading in the stock market of that country. Their study is particularly relevant as reported earnings could be opaque due to an interaction of at least three, among many other, factors: (1) managerial motivation, (2) accounting standards, and (3) the enforcement of accounting standards.

Investigating corporate transparency, Bushman et al. (2004) conclude that transparency is higher in those countries where the political economy is characterized by low state ownership of enterprise, low state ownership of banks, and low risk of state expropriation of firm's' wealth. This is interesting as the Chinese economy is typified by the presence of large state owned banks and enterprises. Explaining the institutional details of the Chinese market, Piotroski and Wong (2012) further suggest that there exist political, legal and cultural incentives for the lack of transparency in China. Such incentives include the regulatory costs of reporting losses (Bushman and Piotroski, 2006; Chen and Yuan, 2004; Aharony et al., 2000), the political costs of disclosing negative outcomes (Gul, 2006; Guedhami and Pittman, 2006), the need to hide propping activities and related

party transactions (Jian and Wong, 2010), and the presence of state ownership (Bushman and Piotroski, 2006). These factors incentivize managers to supply less transparent information to the market.

Under such conditions, the SCP may have a mitigating effect by coercing firms to supply more information. Foreign investors demand timely and reliable financial information to assess the risks, payoffs, and value of listed companies (Piotroski and Wong, 2012). By allowing foreign investors to participate in the Shanghai stock market may increase the demand for information. This may force firms to divulge more information. Using earnings aggressiveness as a proxy for accounting information, I hypothesize that:

H1*: Earnings aggressiveness is lower for the connected firms than for the unconnected firms after implementation of the SCP*

3.2 Visibility and Analyst and Manager behavior

Investors do not accept managers' communications at face value; they often closely examine and evaluate their disclosures, which leads to significant changes in market values (Lev, 1992). For example, a study of 25 Barron's articles written by Professor Briloff, who generally criticizes companies for attempting to portray a better than actual performance (higher profitability and growth, better solvency), indicated that on the day Barron's hit the stands the stock prices of the subject companies decreased on average by 8% (Foster, 1979).

Analysts, therefore, provide a critical role in acquisition and dissemination of firm-specific information in the market. As a result, they play an important role as a market participant. Analyst coverage in emerging economies is typically determined by factors over and beyond those in developed economies. For instance, the presence of corruption, covert related party transactions, tunneling of firm's funds and the suppression of bad news provide incentives for firms to obfuscate information. This leads to both increased forecast errors and greater forecast dispersion. Investigating the effect of corruption on analyst forecasts, Faccio (1999) claim that corruption can increase the impact of political connections on analyst forecasts by aiding politicians in transferring benefits to

the politically connected firms, obscuring the disclosures of such firms about the impact of their connections on financial performance and subjecting analysts to undue pressure from the firms and politicians.

Previous research has suggested that the analyst forecast errors for the mainland Chinese listed firms are nearly twice as large as those for the Hong Kong listed firms, and significantly larger than those of other developed and developing Asia Pacific countries (Ang and Ma, 1999). This provides evidence that perhaps the Chinese analysts operate in an environment of limited information or have limited incentives to provide accurate forecasts.

Research examining the effect of foreign investment on analyst forecast accuracy have found that the forecast accuracy and analyst coverage strengthens in the presence of foreign investors, implying that either the demand of information by foreign investors leads to greater scrutiny by analysts, or that firms with foreign investments choose to disclose more information. Moreover, while managers are compelled by the market to meet or beat analyst forecasts, they are also subjected to greater scrutiny by the analysts. The increased scrutiny is a function of greater demand for information by foreign investors. Increased analyst scrutiny leads to lower dispersion of analyst forecasts. Lower dispersion of forecasts implies lesser divergence of opinions. Interestingly, research has found that analyst forecast errors and forecast dispersion are positively correlated (Diether et al., 2002).

This leads to the first part of my second hypothesis that:

H2(a): *Analyst forecast accuracy is higher for the connected firms than for the unconnected firms after implementation of the SCP.*

The second part of the hypothesis examines the incentives of the management to meet or beat market expectation. The literature on the U.S. market suggests that meeting or beating analysts' expectations leads to positive excess returns during post-earnings announcement periods (Adut et al., 2011; Bartov et al., 2002; Kross et al., 2011). Moshirian, et al. (2009) analyze a sample of 13 emerging countries including China over the decade from 1996 to 2005 and find that investors can act on the valuable in-

formation provided by stock analysts to make abnormal gains in emerging markets. In a related study on the Chinese firms, Truong (2011) also documents that trading on earnings surprises is profitable in China. Hence, the Chinese firms may be incentivized to dampen analysts' expectations, just like firms in the U.S. (Pownall and Waymire, 1989).

Given the importance that foreign investors place on meeting or beating analyst forecasts (Richardson et al., 2004), I hypothesize that the incentives of management to meet or beat analysts' earnings forecasts would increase after the adoption of SCP. This leads to the hypothesis that:

H2(b): *Managements' incentives to beat analyst forecast are higher for the connected firms than for the unconnected firms after implementation of the SCP.*

3.3 Visibility and Stock price synchronicity

In efficient markets such as the U.S., stock prices react instantaneously to new information. That is, the firm level residual returns exhibit low cross sectional correlation, low serial correlation, and approximate a log normal distribution. In markets with a limited flow of firm-specific information or presence of significant trading frictions, stock returns will not have these features. That is, a limited supply of firm specific information is expected to produce firm level stock returns that are highly correlated with market movements (Roll 1988; Morck et al., 2000; Durnev et al. 2003), while a systematic suppression of bad news will produce a stock return distribution that is significantly left skewed and subject to a greater frequency of stock return crashes (Jin and Myers 2006; Chen et al., 2001). Finally, the presence of market frictions, the absence of arbitrageurs and the activities of noise traders can result in a delayed reaction to new information, yielding serial correlated returns and momentum effects (Jegadeesh and Titman 1993; Chan et al., 1996).

China's stock prices exhibit high levels of co-movement. In their study on stock return synchronicity, Morck et al., (2000) measure the average co-movement of weekly returns for securities traded on the local stock exchanges of 40 countries during 1995. Measured

as both (a) the fraction of security prices moving together in an average week and (b) as the average R^2 of firm-level regressions of returns on the local and the U.S. market indices; stock return synchronicity is designed to measure the amount of firm-specific information that is being impounded into the stock prices (Roll, 1988). The synchronization of stock returns in a given market is expected to increase in the absence of new firm-specific information. Morck et al., (2000) find that, on average, 57.9% of stock prices in the U.S. co-move in a given week, and market returns can be explained for approximately 2.1 percent of variation in firm-level returns. These percentages are the lowest of all the countries, consistent with strong information and regulatory environment that characterizes the U.S. markets. In contrast, they find that nearly 80 percent of the Chinese stocks move together in an average week, and market returns explain approximately 45.3 percent of the variation in weekly firm-level returns. These statistics highlight the significant differences that exist in both the information and the regulatory environments of the mature US market versus the developing Chinese market.

Stock price synchronicity is important not only to gauge firm-specific information in the market, but is also a proxy for (a) informed trades, (b) more efficient capital allocation and (c) future economic growth (Durnev et al., 2003). The underlying logic for the three are as under. First, if stock markets consist of noise traders, then trades emanating in the markets shall follow macroeconomic news and market trends. Trades arising due to firm-specific information implies the presence of informed traders who trade on that information. Second, trading on firm-specific information leads to greater allocation efficiency of capital. When investors trade on firm-level information, they ensure that more capital is allocated to firms with better information environment. Third, if capital is efficiently allocated by informed traders, efficient investment of the acquired capital by firms shall induce greater economic development. Thus, lower stock price synchronicity not only implies more firm specific information, but also the presence of informed traders who allocate capital efficiently :- which leads to greater future growth.

I re-examine the Chinese firms' stock price synchronicity after the introduction of the SCP. If the SCP leads to greater firm-specific information in the market, I expect stock price synchronicity to decrease for the connected firms. That is:

H3: *Stock price synchronicity is higher for the connected firms than for the unconnected*

firms after implementation of the SCP.

4 Research Design

4.1 Earnings Aggressiveness

Similar to Bhattacharya et al. (2003), I use accruals to measure earnings aggressiveness. The underlying logic is that as earnings aggressiveness is the tendency to delay the recognition of losses and speed up the recognition of gains, assuming cash flow realizations to be equal, one would expect accruals to increase as earnings aggressiveness increases (Bhattacharya, 2003). That is, assuming cash flow realizations to be constant, the only way managers can increase earnings is by increasing accruals.

Consistent with Bhattacharya et al. (2003), I use scaled accruals from balance sheet and income statement information[11]. Therefore, scaled accruals is defined as:

$$ACC_{kt} = \left(\frac{\Delta CA_{kt} - \Delta CL_{kt} - \Delta Cash_{kt} + \Delta STD_{kt} - Dep_{kt} + \Delta TP_{kt}}{TA_{kt-1}} \right) \quad (1)$$

where:

ACC_{kt} = scaled accruals for firm k in year t

ΔCA_{kt} = change in total current assets for firm k in year t

ΔCL_{kt} = change in total current liabilities for firm k in year t

$\Delta Cash_{kt}$ = change in cash for firm k in year t

ΔSTD_{kt} = change in short term portion of long term debt included in total current liabilities for firm k in year t

Dep_{kt} = depreciation and amortization expense for firm k in year t

ΔTP_{kt} = change in income taxes payable for firm k in year t

TA_{kt-1} = total assets for firm k in year $t-1$

[11]The accruals measure is different from Ball et al. (2000) who check whether negative economic income, as reflected by the stock returns, is more quickly incorporated into accounting earnings than positive economic income. This metric would be inappropriate in this setting as stock returns in the Chinese markets are driven mostly by macroeconomic fundamentals rather than firm specific information (Piotroski and Wong, 2012)

The first hypothesis claims that earnings aggressiveness would decrease after implementation of the SCP for firms that are connected via SCP, thereby increasing earnings informativeness. I compute earnings aggressiveness using eq. (1) and for a period of one year before and two years after implementation of the SCP, that is, accruals in the year 2013 is delineated as pre SCP while accruals in the years 2014 and 2015 is marked as post SCP. I match the firms connected through the SCP to the unconnected firms using a one to one nearest neighbor match based on propensity scores[12]. After matching, I use a Difference in Difference (DID) estimator to examine the impact of the SCP on firm-specific information. That is,

$$\begin{aligned} ACC_{kt} = \alpha_0 + \beta_1 d(Post) + \beta_2 d(Connect) + \boldsymbol{\beta_3 d(Post) \cdot d(Connect)} \\ + \gamma_1 d(Shenzhen) + \gamma_2 ROA + \gamma_3 log(TotalAssets) + \gamma_4 SOE\% \\ + \sum_{1}^{i} FE_{industry_i} + \varepsilon_{i,t} \end{aligned} \tag{2}$$

where, ACC_{kt} is the earnings aggressiveness measure derived from eq. (1). $d(Post)$ is a dummy that takes one after implementation of the SCP ($17^{th} November, 2014$) and $d(Connect)$ equals one if the firm is a connected firm. $d(Shenzhen)$ is a dummy which takes 1 if the matched unconnected firm belongs to the Shenzhen stock exchange. I include ROA, log(total assets) and SOE% as control variables. As per my hypothesis, I expect a negative and significant β_3.

4.2 Manager and Analyst behavior

I use analyst forecast accuracy as the proxy to identify changes in analyst behavior after implementation of the SCP. In line with Richardson et al. (2004) and Duru et al. (2002), I define forecast error as the absolute value of actual earnings per share minus the median forecast of earnings per share, scaled by the stock price at the beginning of the month. The stock price deflator is used to control for potential spurious relations resulting from cross - sectional scale differences in earnings per share (Richardson et al., 2004). Thus, a negative forecast error implies that analysts are more accurate in their

[12] See section 5.3 for further details on the matching process

estimation of firms' earnings per share. Thus, the scaled forecast error (FE) is defined as:

$$FE_{i,m,t} = Abs\left[\frac{Actual\ EPS_{i,t} - Forecast\ EPS_{i,m,t}}{Price_{i,m-1}}\right] \tag{3}$$

where $FE_{i,m,t}$ is the absolute forecast error for the firm i on month m for the year t. $Actual\ EPS_{i,t}$ is the actual EPS registered by the firm i for the year t. Note that the database for actual analyst forecast, CSMAR Analyst forecast database, provides only the year end actual EPS from the annual reports filed by the Chinese firms. Thus the $Actual\ EPS_{i,t}$ depicts the year ending EPS as shown in the annual report. $Forecast\ EPS_{i,m,t}$ is the analyst forecast for firm i for the month m of the year t. $Price_{i,m-1}$ is the stock price of the firm one month prior to the forecasted EPS.

I estimate $FE_{i,m,t}$ from eq. (3) and use DID estimator on the propensity score matched sample of the connected and the unconnected firms.

$$\begin{aligned} FE_{i,m,t} = {} & \alpha_0 + \beta_1 d(Post) + \beta_2 d(Connect) + \boldsymbol{\beta_3 d(Post) \cdot d(Connect)} \\ & + \gamma_1 d(Shenzhen) + \gamma_2 ROA + \gamma_3 log(TotalAssets) + \gamma_4 SOE\% \\ & + \sum_{2013}^{2015} FE_{year} + \sum_{1}^{12} FE_{month} + \varepsilon_{i,t} \end{aligned} \tag{4}$$

This regression is similar to eq. (2) except that $d(Post)$ takes a value of one after announcement of the SCP instead of the implementation of SCP (10 April, 2014 instead of 17 November 2014). I calculate analyst forecast errors for firms one year prior to the announcement of SCP (April 2013 to March 2014) and classify the period as pre SCP announcement date. Similarly, I classify the forecast errors computed during one year after the announcement date (April 2014 to March 2015) as post SCP announcement date. I choose to use the announcement date instead of the implementation date for measuring the effect of SCP on forecast accuracy because I expect analysts to start

paying attention to the connected firms not after the implementation, but after the announcement of SCP. Analysts, anticipating the increased demand from foreign investors once the SCP is implemented, will build up their coverage and portfolio in line with foreign investors' demands prior to implementation of the SCP. I have also incorporated two fixed effects, namely year and month. The year fixed effects capture any systematic yearly changes in analyst forecast errors while the month fixed effects capture systematic changes between months. The rationale for using month fixed effects is that analyst forecasts in China are concentrated in some months and sparse in others. Furthermore, Richardson et al. (2004) suggest that managers tend to walk down analyst forecasts in a bid to meet or beat market expectations. Thus there may be monthly variation as the firm gets closer to releasing their annual reports. This justifies the use of month fixed effects. According to my hypothesis, I expect the coefficients on β_3 to be negative and significant, implying that forecast errors have reduced after the announcement of SCP.

To examine the incentives for managers to manage market expectation, I examine the magnitude with which firms beat analyst forecast. I use the proxy for analyst optimism/bias used by Richardson et al. (2004) and Duru et al. (2002). The proxy is similar to that of analyst forecast error defined in eq. (3), except that unlike eq. (3), this proxy has signed errors instead of absolute errors. That is, the proxy for beating analyst forecast is computed as:

$$Beat_{i,m,t} = \left[\frac{Actual\ EPS_{i,t} - Forecast\ EPS_{i,m,t}}{Price_{i,m-1}} \right] \tag{5}$$

Thus, according to eq. (5), the bigger the difference between $Actual\ EPS_{i,t}$ and $Forecast\ EPS_{i,m,t}$, the greater the magnitude by which the managers beat analyst forecasts. Just like eq. (3), I use one month lagged stock price as the deflator.

I employ a difference in difference regression similar to eq. (2) and eq. (4).

$$\begin{aligned} Beat_{i,m,t} = \alpha_0 + \beta_1 d(Post) + \beta_2 d(Connect) + \boldsymbol{\beta_3 d(Post) \cdot d(Connect)} \\ + \gamma_1 d(Shenzhen) + \gamma_2 ROA + \gamma_3 log(TotalAssets) + \gamma_4 SOE\% \\ + \sum_{2013}^{2015} FE_{year} + \sum_{1}^{12} FE_{month} + \varepsilon_{i,t} \end{aligned} \tag{6}$$

The variable definitions are the same as eq. (4). The variable of interest is $d(Post) \cdot d(Connect)$. I hypothesize that the presence of foreign investors incentivizes managers to beat analyst forecasts, thereby managing market expectations. Thus I expect a positive coefficient on β_3.

4.3 Stock price synchronicity

Stock price synchronicity explains how much of the variation of a firm's returns is explained by the market returns. The method is a proxy for firm specific information that is available in the market. In the presence of high firm specific information, stock price synchronicity is expected to be low. R^2 statistic from market model has typically been the most commonly used proxy for stock price synchronicity. A high R^2 indicates a high degree of stock price synchronicity. Roll (1998) claims that individual stocks in the U.S. exhibit low R^2, which suggests that much of the firm specific information is incorporated into stock prices.

My measure of stock price synchronicity follows Morck et al. (2000). I first estimate the market model using linear regression:

$$R_{i,t} = \beta_{i0} + \beta_{i1} R_{m,t} + \varepsilon_{i,t} \tag{7}$$

where $R_{i,t}$ is the return of stock i on day t and $R_{m,t}$ is the market return on day t. Typically, while analyzing the U.S. markets, Roll (1988) and Piotroski and Roulstone (2004) include industry returns to explain stock returns in the regression model. However, in Chinese markets, including industry returns as an additional factor maybe problematic because in some markets the industry is dominated by very few large SOEs, making it difficult to disentangle the industry effect from the market effect. When the industry

returns are computed using the few companies from an industry, they reflect company specific news rather than industry news (Chan and Hameed, 2006).

Using Morck et al. (2000) , I define stock price synchronicity as:

$$SYNCH_{i,t} = log\left(\frac{R^2}{1-R^2}\right) \tag{8}$$

where R^2 is calculated from eq. (7) for firm i in the month t. $SYNCH_{i,t}$ is measured for each firm based on the daily return observations of the month.

I hypothesize that stock price synchronicity has reduced for firms that are connected via SCP. I compute stock price synchronicity using eq. (7) and eq. (8) for a period of one year before and after implementation of the SCP, that is, November 2013 to October 2014 is delineated as pre SCP while November 2014 to November 2015 is marked as post SCP. I use DID estimator similar to the design in previous settings to examine the impact of SCP on firm-specific information.

$$\begin{aligned} SYNCH_{i,t} = \alpha_0 &+ \beta_1 d(Post) + \beta_2 d(Connect) + \boldsymbol{\beta_3 d(Post) \cdot d(Connect)} \\ &+ \gamma_1 d(Shenzhen) + \gamma_2 ROA + \gamma_3 log(TotalAssets) + \gamma_4 SOE\% \\ &+ \sum_{2013}^{2015} FE_{year} + \varepsilon_{i,t} \end{aligned} \tag{9}$$

where, $SYNCH_{i,t}$ is the stock price synchronicity derived from eq. (8). As per my hypothesis, I expect a negative and significant β_3.

5 Data and Empirical Results

5.1 Sample Selection

Firms participating under SCP include[13]:

- All constituent stocks of SSE (Shanghai Stock Exchange) 180 Index,

[13]Detailed information on SCP may be found at Hong Kong Stock Exchange website `http://www.hkex.com.hk/eng/market/sec_tradinfra/chinaconnect/Documents/Investor_FAQ_En.pdf`

- All constituent stocks of SSE 380 Index, and
- All SSE listed shares that are not included as constituent stocks of the two indices but which have corresponding H shares listed on the Hong Kong Stock Exchange (HKEX)

with the exception of

- SSE listed shares which are not traded in RMB (B shares), and
- SSE listed shares which are under risk alert[14]

On the 10^{th} of April 2014, the government announced an initial list of 568 firms that would participate in SCP. The list has undergone several iterations since the initial announcement as firms dropped out of the two SSE indices and new firms were added to the same. Table 1 details the list of firms participating under SCP. Of the 568 firms, 445 firms that participated under the initial list continue to do so. This implies a change of 123 firms (roughly 21.65%). In my sample, I only examine the 445 firms that have participated in SCP since the latter's inception. Of the 445 firms, 18 are deleted due to missing data. 274 are state owned enterprises (SOEs) while 153 are privately owned. Furthermore, 61 firms are cross listed in HKEX. Of the 61 firms, 53 are SOEs. Since I study the impact of the SCP on the mainland Chinese firms' information environment, I exclude the cross listed firms as they already have a better information environment due to being cross listed. The final sample consists of 366 firms of which 221 are SOEs and 145 are private.

[Insert Table 1 here]

Data on individual analysts' forecasts of annual earnings per share is obtained from The China Listed Firms Research Series:- The China Listed Company Financial Database - Analyst Forecasts database. This dataset is a section of the China Stock Market

[14]This refers to shares that are placed under "risk alert" by SSE including shares of "ST companies", and shares subject to the delisting process under the SSE Rules. For details, please refer to the SSE Listing Rules at`http://www.sse.com.cn/lawandrules/sserules/listing/stock/c/c_20150912_3985869.shtml`, and SSE Risk Alert Board Provisional Trading Arrangement at `http://www.sse.com.cn/lawandrules/sserules/listing/stock/c/c_20150912_3985876.shtml`

Financial Database (CSMAR)[15]. Data on accounting variables is collected from CSMAR - Balance Sheet and Income Statement database, and information on daily stock and market returns is assembled from CSMAR Trading data[16]. Information on SOEs and percentage of state ownership is gathered from CSMAR Shareholder Research database .

5.2 Descriptive Statistics

Table 2, Panel A shows the descriptive statistics as on 31^{st} December 2012, of the firms that are connected to Hong Kong via SCP. All figures in the table have been converted from Chinese Renminbi (RMB) to U.S. Dollars using the conversion rate on the 31^{st} December 2012. The average assets of the connected firms are $7 billion, and ranges from the minimum of $46 million to a maximum of $515 billion. These statistics are comparable to the firms traded on the U.S. stock exchanges. The median total assets is about 8 times lower than the average. This is mostly due to the presence of large SOEs in the Shanghai Stock Exchange.

The return on assets is 5.5% on average for the connected firms, and ranges from -7% to 36%. ROA of the Chinese firms seem to be higher than the average U.S. firms. This is partly driven by the widespread earnings management indulged by the Chinese management (Piotroski and Wong, 2012). The return on equity exhibits a similar pattern where the average (median) is 9.39% (8.40%) and ranges from -4.43% to 49.34%. Net income ranges from -$163.85 million to $5.5 billion, with an average of $145.31 million. Interestingly, the net income becomes positive from the lower quartile. Overall, these three numbers (ROA, ROE and Net Income) are not surprising since previous research finds that the reported earnings of Chinese firms cluster around 0, 6 and 10% annually. Because the CSRC uses a "bright-line" regulatory benchmark to grant approvals for IPOs and rights offerings and to initiate performance-related delistings, listed Chinese firms have an incentive to manage reported earnings to meet these specific performance benchmarks (Piotroski and Wong, 2012). There is also an acute lack of loss making firms

[15]The data has been collected from `csmar.gtadata.com` as the dataset is unavailable in Wharton Research Database Services (WRDS)

[16]CSMAR Balance Sheet, Income Statement and Trading data are available via Wharton Research Database Services (WRDS)

[14]Data available at `csmar.gtadata.com`

in China due to the stringent requirement by the CSRC that firms that make losses for two consecutive years are liable to be delisted from the mainland Chinese stock markets.

Debt ratio (total liabilities/total assets) stands at an average of 42%, ranging from 0.04% to 95%. The Chinese firms are usually highly levered when compared to their U.S. counterparts. This is largely due to the access that the SOEs get to loans from the state banks. The average market value for the Chinese firms stands at $2.2 billion as of the end of 2012. The state ownership percentage for the connected firms stands at a little under 30% for both mean and median. This ranges from 0 to 77% percent for the connected firms. These numbers are hardly surprising given that over half of the firms participating in SCP are SOEs. The state remains the largest shareholders for these firms and directs the businesses and appoints the managers for the firms.

Panel B of table 2 depicts the descriptive statistics of the firms traded in Shanghai Stock Exchange that are not connected through SCP. A quick glance at the statistics confirms that the unconnected firms are smaller, less profitable, have lower income, higher debt levels, and lesser market value than the connected firms. This is not surprising as most of the big firms are the ones that participate in SCP. The percentage of state ownership, though lower for unconnected firms, is still high at 23%.

Panel C of table 2 shows the descriptive statistics of the firms listed in Shenzhen stock exchange. There are several interesting features about the Shenzhen firms that are remarkably different from Shanghai. The firms trading in Shenzhen are typically smaller than their counterparts in Shanghai stock exchange. The most salient features of Shenzhen firms are the returns on equity, which is higher than Shanghai, and the percentage of state ownership, which is significantly smaller. Overall the descriptive statistics for the Shenzhen firms suggest that they have more private firms, have lesser debt and exhibit higher returns on equity. This is in line with the overall view of the Shenzhen Stock Exchange, which has smaller and more technology oriented firms, unlike the Shanghai Stock Exchange, which is dominated by large SOEs.

[Insert Table 2 here]

5.3 Propensity score matching

To test my hypotheses, I use propensity matched DID estimate. I first match the firms connected via the SCP to the unconnected firms in both the Shanghai and Shenzhen stock markets using nearest neighbor matching for the year ending 2012 (December, 2012). I match firms on the basis of:

- return on assets
- size (total assets)
- level of government shareholding
- industry

Table 3 shows the results of the propensity score matching of the connected firms on the universe of the unconnected firms in the Shanghai and the Shenzhen stock markets. The match on the mean of log(Total Assets) is successful as we have a paired t-test at 1.63. The match on the median of log(Total Assets) is even stronger as shown by the non - parametric Wilcoxon rank sum test. The match on return on assets (ROA) has been successful as depicted by the paired t-test of 0.38. However, the match on the median is significantly different, at 5.80 in the Wilcoxon rank sum test. The match on state ownership (SOE%) is by far the best, with a t-statistic of 0.33 and a Wilcoxon rank sum statistic of 0.47. The industry match is a one to one match, and is not presented in the table.

[Insert Table 3 here]

5.4 Empirical Results

5.4.1 Earnings Aggressiveness

Table 4 depicts the results of the effect of SCP on earnings aggressiveness of the connected firms. The first column shows the DID model without the controls or the fixed effects. The second column adds the control variables to the model in column one. The third column depicts the DID regression without the controls but with the fixed effects. The fourth column is the full model which includes both the fixed effects and the control variables.

The coefficient of interest, β_3 is negative and marginally significant at 10% ($p - value < 0.0514$). This suggests that SCP has been instrumental in reducing earnings aggressiveness for the connected firms as it drops by 1.4% after implementation of the SCP. The results conform with my hypothesis that enhanced visibility via participation of foreign investors plays an instrumental role in increasing earnings informativeness, thereby reducing information asymmetry.

The coefficient on $log(Total\ Assets)$ is positive suggesting that larger firms tend to have higher accruals. It is likely that this result is driven by the possibility that large firms have higher levels of accruals, and is not indicative of earnings aggressiveness. Interestingly, I find a negative and significant coefficient on the $SOE\%$. This indicates the possibility that the SOEs do not have any incentive to engage in aggressive earnings reporting. This behavior could be explained by two plausible reasons. First, capital markets are not the main source of funds for the SOEs. They typically raise capital from the central and other state owned banks. Therefore, the SOEs do not have any incentives to engage in aggressive financial reporting behavior. Second, the managers of the SOEs are not subject to capital market scrutiny as their tenure is dictated by the government and not the markets. Given that the SOEs fulfill many social and political objectives, the managers' tenure are not subject to capital market fluctuations alone. This reduces their incentive to report higher earnings.

Overall, the results indicate that the presence of foreign investors has a mitigating effect in aggressive earnings reporting behavior, even in the absence of any changes in enforcement rules. This implies that when enforcement is costly, a possible alternative way to enhance financial reporting quality could be to subject firms to the scrutiny of foreign investors. Finally, the results also give credence to the Chinese government's aim to increase transparency in financial reporting of the mainland Chinese firms via the implementation of SCP.

[Insert Table 4 here]

5.4.2 Analyst Behavior

In this section I describe the results of H2(a), which claims that analyst forecast accuracy should increase after the announcement of SCP for the connected firms. Table 5 shows

the results of H2. Similar to table 4, I use four DID regressions where column one ignores the control variables and the fixed effects. Column two adds the control variables to the regression in column one. Column three adds the fixed effects to the regression in column one and column four includes both the control variables and the fixed effects.

We find that for the unconnected firms, forecast accuracy decreases after the announcement of SCP ($d(Post)$ significant at 1%). This result could be a function of two factors. First, it could suggest that the analysts transferred their attention from the unconnected firms to the connected firms after the announcement of SCP. Second, the result could indicate the presence of information asymmetry for the firms that are not in the SSE 180 and SSE 380 (which are the firms that participate in SCP).

The coefficient on $d(Connect)$ is negative and very significant. This suggests that the analyst scrutiny has been higher for the connected firms even before the announcement of SCP. This is not surprising as the connected firms comprise of the largest firms in the Shanghai stock exchange, representing over 80% of market value of the exchange. Large firms also typically have a larger number of analyst following. This could also reduce the information asymmetry for the connected firms. Thus, overall, the firms that participate under SCP had greater forecast accuracy than the rest even before the announcement of SCP.

Our main variable of interest is the interaction between $d(Post)$ and $d(Connect)$. Results show that there has been an increase in analyst accuracy after the announcement of SCP. The SCP has invited more analyst scrutiny for the connected firms, suggesting that the analysts responded to increased demand for information by foreign investors by increasing their scrutiny of the connected firms. This, therefore, brought about an incremental increase in their forecast accuracy after the announcement of SCP.

The dummy variable that takes one if the firm is listed in Shenzhen stock market ($d(Shenzhen)$ is significant and negative. This is probably due to the fact that the Shenzhen stock market is dominated by large, mostly technology firms, and have a larger participation of private firms than the SOEs. Private firms not only invite greater analyst scrutiny, but also have more incentive to provide timely information. Given that unlike the private firms, the SOEs do not typically rely on stock markets to raise capital, the markets are more valuable to private firms. This makes private firms more market

oriented, and increases the incentives of the management to provide more information to the investors. Furthermore, while the SOEs are protected by the government from the downside risk of bankruptcy, the private firms are not. That makes investments in private firms riskier, which invites greater analyst participation and higher scrutiny.

$Log(TotalAssets)$, interestingly, shows a positive and significant relation with analyst forecast errors. This suggests a counterintuitive argument that larger firms have lesser forecast accuracy. One possible explanation for this result is that in China, large firms are too complex, with diverse operations, making it harder to forecast their earnings accurately. The coefficient on ROA is negative and significant, which implies that there is greater forecast accuracy for more profitable firms. This result is intuitive as analysts may choose to focus more on these profitable firms.

Overall, the results suggest that while forecast accuracy for the connected firms was already higher than a matched sample of unconnected firms, the announcement of SCP led analysts to increase their scrutiny of the connected firms, thereby incrementally increasing forecast accuracy.

[Insert Table 5 here]

5.4.3 Manager Behavior

H2(b) hypothesizes that availability of foreign investments force firms to be more market oriented, that is, they prefer to meet or beat analyst forecasts more after the announcement of SCP than before. Prior research has documented that most domestic Chinese investors are noise traders (Piotroski and Wong, 2012). Given the high levels of stock price synchronicity in the Chinese market, prior research has concluded that most investors trade on macroeconomic and market specific news rather than firm specific information. Under such circumstances, the incentives for managers to beat analyst forecasts are lower since the market does not trade on the basis of firm specific information.

Table 6 describes the results of eq. (6). Similar to previous models, I estimate four regressions with various combinations of control variables and fixed effects. I focus on column four for the analysis of the results. $d(Post)$ is insignificant, suggesting that there has been no change in the propensity of the unconnected firms to beat analyst

forecasts after implementation of the SCP. $d(Connect)$ on the other hand, is positive and significant. This indicates that firms that are connected through the SCP were already beating analyst forecasts. Given that the connected firms represent the largest firms that are traded in Shanghai stock exchange, it is plausible that the managers for these firms have an incentive to beat analyst forecasts.

The coefficient on the variable of interest, $d(Connect) * d(Post)$ is positive and significant. This suggests that there is an incremental increase in the magnitude with which managers beat analyst forecasts after announcement of the SCP. Thus, the presence of foreign investors increase the incentives of the Chinese firms to beat analyst expectations.

The matched firms listed on the Shenzhen stock market display a greater propensity to meet or beat analyst forecasts. This is not entirely surprising as more private firms are listed in the Shenzhen Stock Exchange. Prior research documents that private firms in China are more incentivized to walk down analyst forecasts through management earnings forecast than the SOEs, and are more likely to beat analyst earnings estimates (Huang, 2016). I find that the coefficient on total assets is negative and significant. This could be partly driven by the fact that large Chinese firms have access to other sources of capital (especially state owned banks), reducing their incentives to manage market expectations. Profitable firms (as measured by ROA) tend to beat market expectations. Finally, I do not find any significance for the coefficient on state ownership.

[Insert Table 6 here]

5.4.4 Stock price synchronicity

I hypothesize that increased scrutiny from foreign investors via the SCP increases the firm level information available in the market. I argue that more foreign investment leads to larger number of informed trades, and since the informed traders trade on firm specific information, it would lead to greater scrutiny of connected firms. Table 7 shows the results of eq. (9). Similar to previous tables, I focus on the results of the fourth column in my analysis.

The coefficients on $d(Post)$ and $d(Connect)$ are insignificant, which suggests that there

is no difference for the unconnected firms after implementation of the SCP, and that before the SCP, the information environment of connected firms was not different from the unconnected firms. Our coefficient of interest, β_3 is negative and significant at 10%. This suggests that after implementation of the SCP, the stock price synchronicity for the connected firms reduced by 11%. The result suggests that foreign investors demand more firm-specific information to justify their investments.

Interestingly, the fact that there is no difference in firm-specific information before SCP between the connected and the unconnected firms, but a marginally significant increase for the connected firms after SCP implies that foreign investors brought about the change in stock price synchronicity. This also speaks to the the problem of causality that researchers usually face when addressing the impact of foreign investment. Do foreign investors invest in firms that provide more information, or do firms provide more information at the behest of foreign investors after the investments have been made? My results suggest that firms provide more information at the behest of foreign investors.

I also use control variables to account for other factors that may affect stock price synchronicity. I use $d(Shenzhen)$ as a dummy variable that equates to 1 if the matched unconnected firm trades in Shenzhen Stock Exchange. Given that the coefficient is insignificant, I conclude that there is no difference in stock price synchronicity between firms that trade in Shanghai Stock Exchange when compared to Shenzhen Stock Exchange.

Finally, I find that ROA has a negative and highly significant (at less than 0.01%) coefficient, as does the log of total assets. This suggests that bigger and profitable firms have more firm specific information in the market. Interestingly, I find the coefficient on SOE% to be negative and significant at 10%. Consistent with findings in Table 4 (where the SOEs report less aggressive earnings), the result reaffirms the notion that the SOEs have lower incentives to manage market expectations. This is also consistent with prior literature which suggests that the SOEs have lower incentives to disclose more information to the market (Piotroski and Wong, 2012).

[Insert Table 7 here]

6 Conclusion

In this paper, I study the effect of enhanced visibility via the Hong Kong Shanghai Stock Connect on the information environment of the connected mainland Chinese firms. I find evidence of lower earnings aggressiveness, greater analyst forecast accuracy, and greater incentives for managers to meet or beat market expectations (analyst forecasts). I also find that there is an overall improvement in information environment of firms that are connected through SCP.

The paper contributes to our understanding of the impact of increased visibility on firms by utilizing a natural experiment wherein the Chinese government decided to allow the top 568 firms listed in the Shanghai Stock Exchange to be traded via the Hong Kong Stock Exchange. This setting is unique and helps us understand the impact of opening up markets and subjecting firms to foreign investors. Previous studies examining the effect of foreign investment on firm's information environment, governance structures and earnings management decisions have been riddled with the problem of endogeneity. That is, do high quality firms attract foreign investors, or does foreign investment turn low quality firms into high. The setting allows me to circumnavigate this issue and I find that there is an overall beneficial impact of increased visibility and scrutiny of foreign investors for the local market.

The findings are of importance to academics and policymakers. For academics, this is an interesting result as previous studies (Christensen et al., 2016, LaPorta et al., 1998) have shown that presence of enforcement agencies is critical for the development of financial markets. However, such actions are costly to implement in an environment of entrenched managers and lack of political will. Under such conditions, subjecting firms to the scrutiny of foreign investors may help to alleviate governance and transparency problems. Furthermore, firms are incentivized to become more market oriented as access to foreign funds helps reduce their cost of capital. Overall, the effect of visibility creates more firm-specific information in the market, improving transparency and market efficiency.

From a policymaker's perspective, my study examines an alternative way to improve firms' transparency and market efficiency. By increasing firms' visibility and allowing foreign investment, policymakers might be able to discipline firms and managers in an

environment where enforcement is costly and hard to implement. Policymakers may consider mechanisms that allow firms to fight for capital and routes to lower their cost of capital to not only make them more market oriented, but also better behaved.

There is a lot of scope for further research in this area. Future research could investigate whether the connected firms improved their governance structures after the implementation of SCP. Studies could also investigate whether SCP has resulted in a lower cost of capital for the connected firms. Finally, future studies could also examine whether Hong Kong Shenzhen Stock Connect, which was launched on 5th December 2016 has had a similar effect on the connected firms in the Shenzhen Stock Exchange.Overall, the findings of the paper supports our understanding that increased visibility has a beneficial effect for the capital markets.

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Table 1: The number of firms participating in Shanghai - Hong Kong Stock Connect

Total firms participating in SCP	568
Minus - firms that dropped out of SCP	(123)
Minus - firms with missing data	(18)
Minus - cross-listed Hong Kong firms	(61)
Total firms in the sample	**366**
SOEs in sample	221
Private firms in sample	145

Table 1 depicts the sample selection of total firms that participated in SCP. 568 initial firms were announced on 10^{th} April, 2014 - the day of the announcement of SCP. 123 firms have been replaced since the initial announcement, and the list of firms as of 24^{th} August, 2016. Of the list, 18 firms have missing data, and 61 firms are cross listed in Hong Kong. The final sample of 366 firms contains 221 state owned enterprises (SOEs) and 145 privately owned firms.

Table 2: Descriptive Statistics as of 31^{st} December 2012 (in $ millions)

Panel A: SSE Firms Connected Through Shanghai Hong Kong Stock Connect							
Variable	Mean	Median	Minimum	Lower Quartile	Upper Quartile	Maximum	Std Dev
Total Assets	6,964.62	855.82	46.25	485.87	2,030.39	515,765.63	44,955.43
Return on Assets	5.46%	3.99%	-6.92%	2.15%	7.75%	35.51%	0.05
Return on Equity	9.39%	8.40%	-15.35%	4.10%	13.23%	49.34%	0.07
Net Income	145.31	40.81	(163.85)	15.45	85.66	5,463.74	516.61
Total Liability/Total Assets	41.84%	42.28%	0.04%	27.51%	56.85%	94.98%	0.21
Market Value	2,227.09	996.69	236.95	641.08	2,258.28	34,476.06	3,784.94
State shareholding (%)	27.89%	28.98%	0.00%	0.00%	51.01%	77.39%	0.26

Panel B: SSE Firms Not Connected Through Shanghai Hong Kong Stock Connect							
Variable	Mean	Median	Minimum	Lower Quartile	Upper Quartile	Maximum	Std Dev
Total Assets	584.70	334.83	4.05	149.56	549.10	8,577.46	950.16
Return on Assets	3.96%	1.42%	-42.51%	-0.63%	4.33%	550.71%	0.30
Return on Equity	5.70%	2.87%	-473.23%	-1.18%	7.57%	1372.25%	0.93
Net Income	6.17	3.95	(620.88)	(0.82)	14.82	403.11	60.74
Total Assets/Total Liability	48.85%	44.29%	0.00%	25.14%	62.42%	825.40%	0.57
Market Value	591.81	412.03	123.71	294.49	629.98	7,445.77	671.38
State shareholding (%)	23.20%	23.65%	0.00%	0.00%	41.48%	83.74%	22.86%

Panel C: Stocks Traded In The Shenzhen Stock Exchange							
Variable	Mean	Median	Minimum	Lower Quartile	Upper Quartile	Maximum	Std Dev
Total Assets	686.69	242.29	144.76	27.17	4,987.76	0.30	6,893.22
Return on Assets	4.13%	3.86%	1.36%	-10.98%	25.15%	-377.05%	0.14
Return on Equity	13.31%	5.89%	2.44%	-20.76%	38.82%	-282.44%	2.47
Net Income	21.86	8.94	2.95	(37.21)	247.59	(314.15)	87.18
Total Assets/Total Liability	33.38%	28.29%	13.60%	0.89%	88.89%	0.01%	0.41
Market Value	789.46	423.72	267.89	139.11	7,361.05	103.12	1,385.09
State shareholding (%)	9.94%	0.00%	0.00%	0.00%	69.92%	0.00%	19%

Table 3: Propensity Score Matched Sample

Variable	Connected		Not Connected		Paired t-test	Wilcoxon rank sum test
	Mean	Median	Mean	Median		
Log(Total Assets)	8.83	8.59	8.68	8.60	(1.63)	(0.54)
Return on Assets	5.46%	3.99%	4.86%	2.49%	(0.38)	(5.80)
State shareholding (%)	27.89%	28.40%	27.02%	28.81%	(0.33)	(0.47)

Table 3 shows the results of a one to one nearest neighbor propensity score match between the connected and the matched sample of unconnected firms. Given that there are 366 firms connected through SCP, the matched unconnected firms consist of 366 firms that are the closest to the connected firms on attributes such as log(total assets), return on assets and the percentage of state shareholding. The firms have also been matched on industry, but the variable has been omitted as industry match entails a one to one exact match.

Table 4: The effect of Shanghai Hong Kong Stock Connect on Earnings Aggressiveness

	Dependent variable:			
	$ACC_{kt} = \left(\frac{\Delta CA_{kt} - \Delta CL_{kt} - \Delta Cash_{kt} + \Delta STD_{kt} - Dep_{kt} + \Delta TP_{kt}}{TA_{kt-1}} \right)$			
	(1)	(2)	(3)	(4)
Intercept	-0.014^{***}	-0.045^{***}	-0.007	-0.035
	(0.004)	(0.015)	(0.029)	(0.035)
$d(Post)$	0.004	0.003	0.004	0.003
	(0.005)	(0.005)	(0.005)	(0.005)
$d(Connect)$	0.011^{**}	0.006	0.013^{**}	0.011
	(0.005)	(0.007)	(0.005)	(0.007)
$d(Post) \cdot d(Connect)$	-0.015^{**}	-0.014^{*}	-0.015^{**}	-0.014^{*}
	(0.007)	(0.007)	(0.007)	(0.007)
$d(Shenzhen)$		-0.006		-0.002
		(0.006)		(0.006)
ROA		0.001		0.001
		(0.005)		(0.005)
$log(Total\ Assets)$		0.005^{***}		0.005^{**}
		(0.002)		(0.002)
$SOE\%$		-0.024^{***}		-0.029^{***}
		(0.008)		(0.009)
Industry FE	No	No	Yes	Yes
Observations	1,473	1,473	1,473	1,473
Adjusted R^2	0.002	0.010	0.029	0.036

Note: *p<0.1; **p<0.05; ***p<0.01

Table 4 shows the effect of Shanghai Hong Kong Stock Connect on connected firms earnings aggressiveness. Earnings aggressiveness ACC_{kt} is defined as total accruals for firm k in year t. $d(Post)$ equals one for the months after the implementation of SCP. $d(Connect)$ is a dummy variable which takes the value of one if the firm is connected through SCP. $d(Shenzhen)$ equals one if the matched unconnected firm is traded in Shanghai Stock Exchange. Control variables include return on assets ROA, log of total assets $log(TotalAssets)$ and percentage of state ownership $SOE\%$. The numbers in parentheses represent the standard deviation of the variables.

Table 5: The effect of Shanghai Hong Kong Stock Connect on Analyst Forecast Accuracy

	Dependent variable:			
	$FE_{i,m,t} = Abs\left[\frac{Actual\ EPS_{i,t} - Forecast\ EPS_{i,m,t}}{Price_{i,m-1}}\right]$			
	(1)	(2)	(3)	(4)
Intercept	0.022***	0.021***	0.030***	0.028***
	(0.001)	(0.002)	(0.001)	(0.001)
$d(Post)$	0.006***	0.006***	0.004**	0.004**
	(0.001)	(0.001)	(0.002)	(0.002)
$d(Connect)$	−0.008***	−0.021***	−0.008***	−0.021***
	(0.001)	(0.001)	(0.001)	(0.001)
$d(Post) \cdot d(Connect)$	−0.006***	−0.006***	−0.006***	−0.006***
	(0.001)	(0.001)	(0.001)	(0.001)
$d(Shenzhen)$		−0.016***		−0.016***
		(0.001)		(0.001)
ROA		−0.047***		−0.047***
		(0.006)		(0.006)
$log(Total\ Assets)$		0.002***		0.002***
		(0.0002)		(0.0002)
SOE%		0.001		0.001
		(0.001)		(0.001)
Month FE	No	No	Yes	Yes
Year FE	No	No	Yes	Yes
Observations	8,448	8,448	8,448	8,448
Adjusted R^2	0.038	0.079	0.337	0.367
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 5 shows the effect of Shanghai Hong Kong Stock Connect on analyst forecast accuracy for the connected firms. Forecast accuracy is calculated as the absolute value of thedifference between year end actual earnings and monthly analyst forecasts, scaled by the stock price at the end of the last month. $d(Post)$ equals one for the months after the implementation of SCP. $d(Connect)$ is a dummy variable which takes the value of one if the firm is connected through SCP. $d(Shenzhen)$ equals one if the matched unconnected firm is traded in Shanghai Stock Exchange. Control variables include return on assets *ROA*, log of total assets $log(TotalAssets)$ and percentage of state ownership *SOE%*. The numbers in parentheses represent the standard deviation of the variables.

Table 6: The Effect of Shanghai Hong Kong Stock Connect on Firms' Incentives to Manage Market Expectations

	Dependent variable:			
	$Beat_{i,m,t} = \left[\frac{Actual\ EPS_{i,t} - Forecast\ EPS_{i,m,t}}{Price_{i,m-1}}\right]$			
	(1)	(2)	(3)	(4)
Intercept	-0.017^{***}	-0.022^{***}	-0.022^{***}	-0.028^{***}
	(0.001)	(0.003)	(0.001)	(0.003)
$d(Post)$	-0.006^{***}	-0.006^{***}	-0.002	-0.001
	(0.001)	(0.001)	(0.002)	(0.002)
$d(Connect)$	0.008^{***}	0.020^{***}	0.008^{***}	0.020^{***}
	(0.001)	(0.001)	(0.001)	(0.001)
$d(Post) \cdot d(Connect)$	0.005^{***}	0.005^{***}	0.005^{***}	0.005^{***}
	(0.001)	(0.001)	(0.001)	(0.001)
$d(Shenzhen)$		0.015^{***}		0.016^{***}
		(0.001)		(0.001)
ROA		0.024^{***}		0.024^{***}
		(0.006)		(0.006)
$log(Total\ Assets)$		-0.001^{***}		-0.001^{***}
		(0.0003)		(0.0003)
$SOE\%$		0.002		0.002
		(0.001)		(0.001)
$Month\ FE$	No	No	Yes	Yes
$Year\ FE$	No	No	Yes	Yes
Observations	8,448	8,448	8,448	8,448
Adjusted R^2	0.032	0.052	0.193	0.213
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 6 shows the effect of Shanghai Hong Kong Stock Connect on connected firms' incentives to manage market expectations. Incentive to beat $Beat_{i,m,t}$ is calculated as the difference between year end actual earnings and monthly analyst forecasts, scaled by the stock price at the end of the last month. $d(Post)$ equals one for the months after the implementation of SCP. $d(Connect)$ is a dummy variable which takes the value of one if the firm is connected through SCP. $d(Shenzhen)$ equals one if the matched unconnected firm is traded in Shanghai Stock Exchange. Control variables include return on assets ROA, log of total assets $log(TotalAssets)$ and percentage of state ownership $SOE\%$. The numbers in parentheses represent the standard deviation of the variables.

Table 7: Effect of Shanghai Hong Kong Stock Connect on Stock Price Synchronicity

	Dependent variable:			
	$SYNCH_{i,t} = log\left(\frac{R^2}{1-R^2}\right)$			
	(1)	(2)	(3)	(4)
Intercept	-0.891^{***}	-0.627^{***}	-0.857^{***}	-0.594^{***}
	(0.020)	(0.100)	(0.025)	(0.101)
$d(Post)$	-0.126^{***}	-0.125^{***}	-0.008	-0.006
	(0.047)	(0.047)	(0.064)	(0.064)
$d(Connect)$	0.012	0.044	0.012	0.045
	(0.028)	(0.038)	(0.028)	(0.038)
$d(Post) \cdot d(Connect)$	-0.110^{*}	-0.109^{*}	-0.110^{*}	-0.110^{*}
	(0.065)	(0.065)	(0.065)	(0.065)
$d(Shenzhen)$		0.041		0.042
		(0.039)		(0.039)
ROA		-0.214^{***}		-0.215^{***}
		(0.063)		(0.063)
$log(Total\ Assets)$		-0.035^{***}		-0.035^{***}
		(0.011)		(0.011)
$SOE\%$		0.089^{*}		0.089^{*}
		(0.052)		(0.052)
$YearFE$	No	No	Yes	Yes
Observations	16,836	16,836	16,836	16,836
Adjusted R^2	0.002	0.003	0.002	0.003
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 7 shows the result of the effect of foreign investment via SCP on stock price synchronicity. The R^2 is estimated from a market model for firm i in the month t. $Synch_{i,t}$ is measured for each firm based on daily return observations for the month. $d(Post)$ equals one for the months after the implementation of SCP. $d(Connect)$ is a dummy variable which takes the value of one if the firm is connected through SCP. $d(Shenzhen)$ equals one if the matched unconnected firm is traded in Shanghai Stock Exchange. Control variables include return on assets ROA, log of total assets $log(TotalAssets)$ and percentage of state ownership $SOE\%$. The numbers in parentheses represent the standard deviation of the variables.