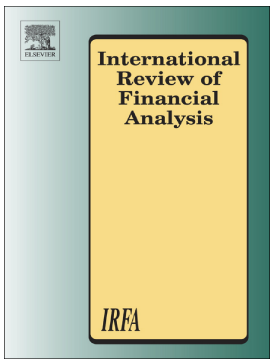

Learning Chinese? The changing investment behavior of foreign institutions in the Chinese stock market

Timo Korkeamäki, Nader Virk, Haizhi Wang, Peng Wang

PII: S1057-5219(18)30788-9
DOI: https://doi.org/10.1016/j.irfa.2019.05.011
Reference: FINANA 1360

To appear in: *International Review of Financial Analysis*

Received date: 4 December 2018
Revised date: 5 April 2019
Accepted date: 28 May 2019

Please cite this article as: T. Korkeamäki, N. Virk, H. Wang, et al., Learning Chinese? The changing investment behavior of foreign institutions in the Chinese stock market, International Review of Financial Analysis, https://doi.org/10.1016/j.irfa.2019.05.011

Learning Chinese? The changing investment behavior of foreign institutions in the Chinese stock market*

Timo Korkeamäki**
Hanken School of Economics, Helsinki, Finland
timo.korkeamaki@hanken.fi
ORCID 0000-0002-8925-6103

Nader Virk
Plymouth University, Plymouth, UK
nader.virk@plymouth.ac.uk
ORCID 0000-0001-6338-2198

Haizhi Wang
Illinois Institute of Technology, Chicago, IL, USA
hwang23@iit.edu
ORCID 0000-0002-7077-5798

Peng Wang
University of Southampton, Southampton, UK
peng.wang@soton.ac.uk
ORCID 0000-0002-0081-5598

April 4, 2019

Abstract

We analyze preferences of foreign institutional investors in the Chinese stock market in a sample that covers 2003 to 2014. We find that foreign investors changed their investment behavior during the sample period from generic patterns found in much of the world to China-specific patterns. The results suggest that foreign institutions learned to adjust their investment behavior to account for unique features of the Chinese market.

JEL classification: G11, G15

Keywords: foreign investor, institutional investor, Qualified Foreign Institutional Investor (QFII) scheme, China

* We thank Zuzana Fungacova, and seminar participants at the 2015 IFABS meeting in Hangzhou, China, 2015 FMA Annual Meeting in Orlando, FL, and 2015 EFMA meeting in Amsterdam, Netherlands for helpful comments, and Greg Moore for superb editorial assistance.

** Corresponding author

1. Introduction

The international capital markets present important opportunities for foreign institutional investors (FIIs) to allocate their assets and diversify their portfolios. Despite the increasing deepening and integration of global capital markets and declining barriers to international investment, institutional investors still allocate limited assets to foreign equities, contrary to what many standard asset-pricing models expect (Cooper & Kaplanis, 1994; Frenkel & Poterba, 1991; Tesar & Werner, 1995). It is plausible that obstacles exist which limit FIIs' ability to efficiently process relevant information. Ferreira et al. (2017) report that domestic institutions enjoy an advantage over foreign competitors in opaque markets. Building on the theoretical work of Van Nieuwerburgh and Veldkamp (2009), Choi et al. (2017) discuss the roles of information and learning of institutional investors in foreign markets. Their findings suggest that institutions tackle the informational challenges of foreign markets through selective and targeted research. However, Choi et al. (2017) emphasize the importance of learning for instructional investors in foreign markets. In other words, FIIs can utilize their sophistication and global market knowledge to gain competitive advantage through learning by focusing on a limited number of areas, industries, and firms.

China provides an interesting testing ground for theories and empirical regularities found in other markets. The Chinese market also has unique characteristics such as its underdeveloped legal infrastructure and corporate governance mechanisms, as well as extensive governmental involvement in corporate ownership (Allen et al., 2009). Financial analysis in China is hampered by a lack of historical data. For example, the main boards of the Shanghai and Shenzhen Stock Exchanges only opened in the early 1990s. Such unique features limit the ability of foreign institutions to use investment methods tested in other markets, and they thus impose a steep learning curve. At the same time, China's markets are attractive. Ferreira et al. (2017) considered domestic and foreign institutional holdings in each of the 32 countries in their sample, and found that the alphas for both institution types are the highest for China. The growth of the Chinese economy continues to outpace Western markets, and the Chinese stock market now accounts for over 10% of global market capitalization. It is difficult for global investors to ignore China (Carpenter et al., 2018).

China's Qualified Institutional Investor (QFII) scheme allows foreign institutional investors to invest directly in the domestic securities in China, including the A-share market, which, during our sample period, was the only way to invest in the equity of a large number of Chinese companies. The QFII program has grown rapidly since its introduction in 2002.

The total investment quota has increased from the original $424 million for 10 institutions to 284 approved foreign institutions and a combined quota of $93 billion as of July 2017.[1] Despite seemingly lively interest in QFII quotas, though, their combined total was only about 4% of the market capitalization of Shanghai and Shenzhen stock markets and, furthermore, foreign institutions utilized only a fraction of their quotas, possibly due to restrictions on asset allocation and repatriation of capital (Alford and Lau, 2015; Carpenter et al., 2018). Underrepresentation of the Chinese stock market in both world and emerging market indices has also contributed to the relative lack of institutional investment by reducing interest among institutions seeking to track those indices. The resulting pattern of limited and focused investment by QFIIs is in line with the finding of Choi et al. (2017) that foreign institutional investors tend to be selective, focusing on areas where they can leverage their expertise and learning abilities. Even though the QFII license requirements have been relaxed since the introduction of the scheme, the current requirements (e.g., $5 billion in assets under management) dictate that QFIIs are highly sophisticated global investors with an extensive ability to learn.

Early studies on foreign institutional investment in other markets indicate that institutional investors tend to follow the same general investment patterns, regardless of the market (Dahlquist & Robertsson, 2001; Ferreira & Matos, 2008). Institutional investors prefer prudent investment choices such as large firms in established industries with low volatility. They dislike firms with concentrated ownership (Dahlquist &Robertsson, 2001; Doidge et al., 2006). As an emerging market with high volatility and highly concentrated ownership, the Chinese market presents multiple challenges in implementing such principles.

Our focus in this paper is on changes in investment behavior of foreign institutional investors in the Chinese equity market during our sample period of 2003-2014. Prior studies on determinants of QFII investment tend to either consider a pooled sample of QFII holdings over longer periods of time (Liu et al., 2014; Zou et al., 2016), or QFII investor effects and behaviors with respect to specific changes in the market (e.g., Huang &Zhu, 2015). However, considering changes in determinants of QFII investment over time allows us to observe how QFII investment behavior evolves along with growth of Chinese equity markets, and with FIIs' increasing knowledge of the unique characteristics of those markets. Zhang et al. (2017), who study the network structure of QFII investments, attribute changes in that structure to the growing China-expertise of QFIIs. In a similar vein, we posit that QFIIs adjust their

[1] Information from Shanghai Stock Exchange web pages at http://english.sse.com.cn/overseasinvestors/qfii/intro/.

investment behavior over time as they gain experience about the Chinese market and as the level and local expertise of financial analysis in China improves generally.

It is important to consider major shifts in the regulatory environment during our sample period that might affect QFII preferences. First, the alignment of withholding tax rates on dividends paid to foreign investors in 2008 increased the withholding tax faced by foreign institutions from zero to 10%. The change simultaneously reduced uncertainty surrounding tax treatment of dividends. Second, the split-share structure reform of 2005 changed the role of state ownership in corporate governance by transferring the previously non-tradeable shares under state control to tradeable shares. The split-share structure reform was adopted on a firm-by-firm basis with the government's goal to complete the reform by the end of 2006 (Firth et al., 2010). While the split-share structure reform allowed the sale of previously non-tradeable shares, reductions in state ownership were not common. However, the reform resulted in alignment of incentives between state owners and private owners (Liao et al., 2014). The split-share structure reform also had an indirect impact on dividends. Michaely and Qian (2017) find a liquidity shock caused by the split-share reform that increased dividend payouts of Chinese firms.

We use quarterly data on QFII holdings to study foreign institutions' preferences in the Chinese market during the time period from 2003 to 2014. Our holdings data from the Wind database are similar in structure to the 13f filings used in US studies on institutional ownership. By ending our sample in 2014, we avoid contamination from recent alternative methods to access the Chinese A-share market via the Shanghai – Hong Kong Connect arrangement in 2014, the Shenzhen – Hong Kong Connect in 2016, and expansion of the Renmimbi Qualified Institutional Investor (RQFII) scheme from Hong Kong subsidiaries of Chinese institutions to a wider set of international institutions in 2014.

Similar to prior studies on determinants of institutional ownership (e.g., Bennett et al., 2003; Kang & Stulz, 1997), we analyze changes in institutional preferences over time by splitting our sample into sub-periods. In our main tests, we employ a setting where we contrast the investment behavior after 2008 against the time prior to 2009. We split our sample in the middle of our sample period in 2008 for several reasons. As noted, two significant regulatory changes occur around the middle of our sample period. Withholding taxation for foreign institutions was clarified in 2008, and by 2008, the split-share structure reform of 2005 was completed by most firms (Firth et al., 2016). Firth et al. (2016) further separate the effects of China's bull market that ended in 2007, with a similar split of their data. Finally, in the aftermath of the financial crisis, industry experts call for changes in the

way institutions view international equity allocation. In this view, emerging markets need to have a more stable weighting in global portfolios (Kang et al., 2010).

Consistent with the prediction of Choi et al. (2017) about concentrated holdings in an opaque market, we find that QFII holdings are limited to a tiny number of stocks. The quarterly average number of different stocks in a QFII portfolio with A-shareholdings varies between seven and 22, with a decreasing trend over time. Regarding determinants of QFII holdings, we find that in the early half of our sample period, QFII investments follow some of the same patterns that are reported for foreign institutional investors in other markets. They avoid penny stocks and stocks with high volatility, preferring high momentum returns and stocks that are cross-listed in other markets. In our analysis of time-specific sub-samples, we document significant over-time adjustments toward local market characteristics, so that after 2008, QFII behavior differs markedly from that reported in other markets. For instance, cross-listings are no longer an attraction, and volatility has a weak positive effect on holdings in the latter half of our sample. Interestingly, state ownership has a strong positive effect on QFII holdings, and QFIIs herd Chinese institutions after 2008. The finding on state ownership is somewhat surprising, as state ownership is often associated with weak incentive structures and poor monitoring (Megginson et al., 2014). QFII behavior becomes more China-specific in the latter half of our sample, suggesting that foreign institutions learned to adapt to the local market characteristics over time. The decreasing trend in the number of different investments in QFII portfolios is also consistent with the argument that as QFIIs come to understand China-specific risk factors they become better at focusing their investment strategies.

The paper proceeds as follows. Section 2 provides information on the Chinese QFII scheme and develops our hypotheses. Section 3 presents the data and the results of our regression analysis are reported in Section 4. Section 5 concludes.

2. Institutional background and hypotheses development

Since 2002, foreign institutional investors have been permitted to apply for an investment quota to invest in the Chinese A-share market through the QFII scheme. Applicants must meet the strict criteria set by the China Securities Regulatory Commission (CSRC). These criteria include capital requirements, business experience and assets under management. After the CSRC evaluates the application and grants QFII status, the State

Administration for Foreign Exchange (SAFE) allocates a specific quota to each approved QFII. Under the scheme, no QFII may hold more than 10% of any company's A-shares, and the combined holdings of all QFII investors may not exceed 30% of the total outstanding A-shares of any firm.

From the initial aggregated quota of $424 million allocated to 10 foreign institutions in 2003, the QFII scheme has grown to $93 billion, distributed across 248 institutions. Despite the fast growth of the combined quota, it remains at barely 4% of the total A-share market capitalization of the Shanghai and Shenzhen exchanges. As we note in the introduction, QFIIs seldom use their full quota allocation. Strict regulations on repatriation and asset allocation seem to play a role in limiting investment.[2] During the sample period of our study, 2003-2014, the QFII scheme was the *only* means of access by foreign investors to the Chinese A-share market. Since 2014, the Connect programs between Shanghai and Shenzhen exchanges and Hong Kong have allowed retail access to the A-share market, while the RQFII scheme, which originally allowed Hong Kong subsidiaries of Chinese institutions to trade in the A-share market, has been expanded to Hong Kong subsidiaries of institutions from other countries. By ending our sample in 2014, we are able to focus on the effects of the QFII program.

Investors who wish to take advantage of the special characteristics of a foreign market need to develop expertise in local regulation and market characteristics. The special market characteristics play a very important role in China; as Allen et al. (2018) note, the models for economic growth in the country deviate significantly from the thoroughly-studied models in the developed markets. In their advertising, foreign institutions with QFII quotas tend to highlight the importance of local knowledge in the Chinese market. Already prior to opening of the Chinese A-share market to foreign institutional investors via the QFII scheme, Leung and Young (2002) predicted that local knowledge would play an important role for foreign institutions in China. However, deep knowledge and understanding of the Chinese corporate culture, paired with a high level of financial sophistication, may have been a rare combination, particularly in the early part of our sample period. For instance, the CFA institute reports that fewer than 10 CFA charters were annually awarded to China prior to 1999. In 2018, China had more candidates taking CFA exams than US and UK combined.[3] Furthermore, the brief

[2] "Use it or lose it" regulations introduced in 2016 require QFIIs to be active. When a QFII fails to use 60-70% of their quota within a year of approval, they risk loss of their qualified investor status. This was not the case during our sample period.
[3] Information from cfainstitute.org.

history of the modern Chinese stock market makes quantitative analysis of the Chinese market challenging.

Foreign institutions can generate benefits for both firms in the market and local investment professionals. In a World Bank report, Kim et al. (2003) stress the importance of Chinese institutional investment skills for the growth of the economy. They view foreign institutions as a conduit for importing investment analysis skills and developing the level of Chinese investment profession. Foreign institutions can also be effective monitors, and thus help Chinese firms improve their often-criticized problems with corporate governance. Bena et al. (2017) report this role of foreign institutional investors in their global sample, while Huang and Zhu (2015) find that QFIIs have had a positive effect on corporate governance of Chinese firms during the implementation of the split-share structure reform as they were somewhat immune to the political influences in the country, relative to their domestic counterparts.

Concentrated ownership and heavy state presence are special characteristics of the Chinese market. In a recent paper, Allen et al. (2018) report that government continues to retain tight control over the Chinese corporations through both direct ownership and politically-motivated appointments. It is essential for foreign investors in China to understand the effects of political ties on Chinese firms and their owners. Those ties may even be viewed as a local "abundant risk factor" that gives foreign institutions special incentive to study (Choi et al., 2017). Besides direct state ownership by both local government and central government, legal person shares also serve to increase state presence in the ownership structure of Chinese firms. Delios and Wu (2005) report that government-related institutions own more than 80% of all legal person shares, and Calomiris et al. (2010) argue that their role in corporate governance is very similar to government-owned shares. Legal person identity, as a policy measure, was created to channel the transformation of SOEs to private corporations. Nonetheless, the concentration of government-related institutions in legal person shares creates a perception of indirect state presence in firms.

Concentrated ownership and government ownership are often linked to a lack of transparency, low disclosure quality, and an entrenchment effect. Fan et al. (2007) report that politically connected firms tend to underperform, while Chaney et al. (2011) find that they are opaque due to the poor quality of their accounting information. Examining eight East Asian countries, Claessens et al. (2002) find that, consistent with the entrenchment effect, deviation between control rights and cash flow rights of the largest shareholder diminishes firm value. Xu and Wang (1999) suggest that ownership concentration improves

performance of Chinese firms, but that state ownership has an inverse effect. State presence can lead to politically motivated election of the CEO (Fan et al, 2007), or other forms of government interference that reduce operating performance (Sun & Tong, 2003).

These practices, along with reduced information transparency, make it more challenging for foreign investors to analyze state-controlled firms. In a recent paper, Firth et al. (2016) study the effects of mutual fund ownership on the dividend policies of Chinese firms. They find that mutual funds affect corporate decision-making through the exit threat they pose, and that their effect on corporate governance may substitute for the shortcomings posed by government ownership.

However, investing in firms with higher ownership concentration and state presence may also function as a mechanism to safeguard investments in China. Politically linked firms often enjoy favorable treatment by the government and state banks. Wang et al. (2008) suggest that these benefits may come in the form of lower cost for debt, financial support, and bailouts during periods of financial distress. Consistent with Shleifer and Vishny (1986), concentrated ownership confers monitoring benefits that enhance firm performance also in China (Sun & Tong, 2003; Xu & Wang, 1999). Furthermore, it may be easier for QFIIs to deal with a limited number of concentrated owners, even if they are state bureaus. Concentration among few owners and bureaus may also be helpful to QFIIs in accumulating reliable information. Calomiris et al. (2010) find that sales of government-owned shares tend to generate negative announcement returns in China. Their findings suggest that political ties provide benefits that offset any detrimental value effects of government ownership.

As we observe quarterly QFII holdings from the scheme's early days through a period of expansion of both the scheme and the Chinese market, we expect to see significant changes in the investment behavior of foreign institutions in China. In our analysis, we follow closely the empirical models that previous studies by Kang and Stulz (1999), Dahlquist and Robertsson (2001), and Gompers and Metrick (2001) created to describe institutional investment. Our main hypothesis is that the preferences of institutional investors evolve toward China-specific determinants as they accrue specific expertise related to the Chinese market and its special characteristics.[4]

[4] With China-specific determinants, we refer to the special characteristics that make the Chinese market different from its Western counterparts, such as the role of both local and central governments as owners, the high levels of turnover and volatility, and the young age of the majority of listed firms in China.

H1: *China-specific determinants of foreign institutional investment are more relevant in the latter half of our sample.*

Our second hypothesis stems from the theoretical work of Van Nieuwerburgh and Veldkamp (2009) and empirical findings of Choi et al. (2017). Their intuition is that foreign institutional investors follow highly concentrated research strategies in an opaque market, focusing on select abundant risk factors. Such concentration entails a deviation from the traditional portfolio theory. Its goal is to generate and exploit pockets of comparative advantage, based on global expertise and a strong ability to learn. Since such a strategy also requires high-level sophistication related to local market characteristics, we thus hypothesize that concentration of investment increases over time.

H2*: QFII investments in the Chinese A-share market are more concentrated in the latter half of our sample.*

3. Data

3.1 QFII holdings data

We obtain quarterly holdings for each foreign institutional investor in the Chinese A-share market from the Wind database. Our sample includes all QFII holdings from the fourth quarter of 2003 to the end of 2014, for a total of 45 quarters. With quarterly holdings data, our dataset is comparable to the 13f filings data used in studies on US institutional investment. Each record includes the total volume, market valuation, and percentage of tradable shares held by the QFII at the end of that quarter. For instance, in 2008Q2, QFII Citibank held 71,850,806 shares in Vanke A (000002.SZ) with a market valuation of these shares of RMB 647,370,000, or 0.76% of the total tradable shares of Vanke A.

Figure 1 provides information regarding the A-share portfolios of QFIIs. The number of QFIIs with A-share investments rises during our sample period from 3 to 82. The percentage of Chinese firms with QFII investments also initially rises rapidly from less than 2% in 2003 to over 26% in 2007. Thereafter, the percentage declines. Some of this decline reflects the steady increase in the number of listed firms in China. Figure 1 also indicates that QFIIs have become more focused in their equity investments over time, despite the increase in

investment opportunities.[5] Starting in 2011, the average number of different shares in portfolios of QFIIs holds steady at around seven. The quarterly observation of a QFII portfolio with the largest number of A-shares contains 57 different companies. Given that the total number of listed companies exceeded 2,000 during this period, it is clear that QFIIs are highly selective in their investment decisions, a finding consistent with Choi et al. (2017).

[Insert Figure 1 about here]

3.2 Distribution of QFIIs among countries and categories

We utilize the CSRC classification of QFIIs into the following categories: 1) asset management company, 2) insurance company, 3) security company, 4) commercial bank, and 5) others. The "others" category includes pension funds, sovereign funds, university endowments, and trust funds. We also group QFIIs by their nationalities and regions. Some QFIIs such as Credit Suisse (Hong Kong) Limited or UBS Global Asset Management (Singapore) Ltd are obvious branches or subsidiaries of their parent company. For these QFIIs, we use Capital IQ to trace each parent company's country location to identify the QFII's original nationality.[6]

[Insert Table 1 about here]

Table 1 shows the distribution of QFIIs across categories and countries. Our sample includes 114 QFIIs. Among them are 53 asset management companies, six insurance companies, nine security companies, 26 commercial banks, and 20 institutions classified as "others".[7] These QFIIs represent 19 countries. Among them, the US has the largest number of QFIIs (23), followed by Hong Kong (16), the UK (12), Japan (10), and Singapore (10). We further group countries into three regions: Anglo-Saxon countries, Continental Europe, and Asia. Fifty six (56) QFIIs are from Asia, while 40 and 18 of them are from Anglo-Saxon countries and Continental Europe, respectively.

3.3 Variable description

[5] Wang (2014) reports a decline in the total number of companies with QFII investment status.
[6] Both Credit Suisse (Hong Kong) Limited and UBS Global Asset Management (Singapore) Ltd are regarded as QFIIs from Switzerland.
[7] Our sample only includes QFIIs with investments in the A-share market. A number of foreign institutions with QFII licenses had no holdings in the A-share market during our sample period.

We calculate the total foreign institutional holdings in a particular stock by aggregating the percentage ownership of QFIIs in that firm in each quarter. Foreign institutional ownership for a specific stock *i*, $FOWN_i$, is defined as

$$FOWN_{i,t} = \sum_{m=1}^{M} percentage\ of\ share\ holding\ by\ QFII_m\ in\ firm\ i\ in\ quarter\ t, \quad (1)$$

where the summation for each quarter is operated across holdings of *M* number of QFIIs in stock *i*. Subsequently, we assign the quarterly *FOWN* measure to each stock as calculated from above. Firms with null *FOWN* in the quarter are assigned a value of zero. We collect firm characteristics and stock prices for all firms listed on the Shanghai and Shenzhen stock exchanges. In our regression tests, we exclude financial firms (CSRC industry code=J) due to their different accounting standards. Our stock return data come from Wind database, and our accounting data are from RESSET.

To facilitate comparisons with institutional investment patterns reported from other markets, we closely follow the work of Kang and Stulz (1997), Dahlquist and Robertsson (2001) and Gompers and Metrick (2001) in our choice of independent variables. See Appendix A for the variables and their definitions. We also provide the summary statistics for all A-shares listed on the Shanghai and Shenzhen exchanges in Table 2. Panel A reports statistics for the full sample period. In Panel B, we divide the sample so that the first part contains the period 2003Q4-2008Q4 and the second half covers the period of 2009Q1-2014Q4.

Panel A of Table 2 reveals that foreign institutions in the overall sample held only 0.181% of a firm's tradable A-shares. However, the maximum ownership of QFIIs in a firm exceeds 27%.[8] The average listing history of the firm is less than 8.5 years, highlighting the brevity of the history of capital market development in China. The average dividend yield (0.7 %) for the Chinese firms is substantially lower than the corresponding dividend yield in the US (2.21%). This may suggest expropriation of outside/minority shareholders by controlling shareholders in Chinese listed firms. (see, for example, Faccio et al., 2001). We also note that 9.5% of our sample firms are part of the two indices of the Shanghai Stock Exchange 180 (SSE180) Index or Shenzhen Stock Exchange Component (SICOM) Index, represented by the S180_dum, while 3% of the firms are cross-listed on the Hong Kong Stock

[8] Recall that the regulatory upper limit for combined QFII holdings in a firm is 30%.

Exchange or the New York Stock Exchange.[9] On average, state ownership and legal person ownership represent 13.6% and 14.5% of the shares in issue, respectively. The average leverage for a Chinese firm is 44%, which is almost twice that reported in Ferreira and Matos (2008) for the sample of firms across 27 countries. Our sample period matches that used by Zou et al. (2016) who contrast QFII holdings with those by domestic mutual funds in a pooled setting; although our descriptive statistics are largely similar to those of Zou et al. (2016), several marked differences deserve mention. Their average firm age is significantly greater than what we indicate in Table 2. The likely reason for this is that we measure firm age from stock listing. We view the firm history prior to stock listing as having less relevance in China due to underdeveloped legal infrastructure and accounting norms. Some other differences between our findings and those in Zou et al. (2016) may be attributable to differences in data sources. By using the Wind database for holdings and stock returns, we rely on an established and well-utilized data source that is used widely by both academics and practitioners.

[Insert Table 2 about here]

As we are interested in changes in QFII behavior over time, we observe how the descriptive statistics change between the early half and the late half of our sample period. Panel B of Table 2 indicates that, with the fast growth of the market, the percentage ownership by QFIIs (*FOWN*) and government ownership (stateown and legal person own) decreases between the early and the late sub-periods. The significant drop in state ownership is explained both by new entrepreneurial firms entering the market and, to some extent, by privatization efforts of the Chinese government. Domestic institutions increase their average holdings from 12.1% to 15.0% (domestic_inst_lag), while the percentage of cross-listed shares increases slightly. Notably, despite the large number of new entrants to the market, the average market cap almost doubles from the early half to the latter half of our sample period.

3.4 Difference in means test

In Table 3, we report a comparison of summary statistics between firms with foreign investors (FOWN>0) and those with only domestic investors (FOWN=0), along with the *t*-

[9] For comparison, Ferreira and Matos (2008) report that 3.9% of their global sample firms are cross-listed in the US.

statistics for the difference in means. Most of the differences between the two groups are statistically different from zero at the one per cent level of significance, suggesting that QFIIs and domestic investors pay attention to different characteristics.[10]

Firms with foreign ownership have significantly higher market capitalization, dividend yield, share price, share turnover, lagged returns, leverage, ROA, and lagged domestic institutional ownership. In comparison to domestic investors, foreign investors also exhibit a greater preference for firms with concentrated ownership and firms with greater state ownership. QFIIs appear to dislike firms with high volatility, and low current ratio.[11] Legal person ownership is lower in firms with QFII ownership. While 22% of the QFII portfolio stocks belong to either the SSE180 or the SICOM index (S180_dum = 1), the comparable figure for firms not held by QFIIs is just 8.4%. The results in Table 3 are by and large consistent with previous findings from other markets; which suggests that international institutional investors are momentum investors who prefer prudent characteristics and liquidity (Dahlquist & Robertsson, 2001; Gompers & Metrick, 2001).

[Insert Table 3 about here]

3.5 Decile descriptive statistics for firms with positive FOWN

To highlight the differences within the QFII-held sample for the firm-specific preferences, we divide the sample of firms with positive foreign ownership into 10 equal percentiles in Table 4. The deciles show increasing foreign ownership such that D1 is the decile with the least QFII ownership and D10 is the decile with the most foreign ownership. Note that Table 4 includes only firms with QFII ownership. While Table 3 indicates that large size attracts foreign investors, Table 4 shows that, among firms with foreign ownership, the percentage of foreign ownership is actually larger in smaller firms. QFII ownership is also tilted toward younger (AGE) firms with lower book to market (BM). These findings starkly contrast with previous findings from other markets. QFII holdings are higher in stocks with

[10] The differences we report between firms with QFII ownership and those with only domestic shareholders resemble comparisons between QFII-held firms and firms owned by domestic institutions in Liu et al. (2014). This is explained by Chinese institutions' tendency to follow highly diversified investment strategies.

[11] Current ratio is used by Dahlquist and Robertsson (2001) as a proxy for short-term financial distress. It is a relevant measure of financial concerns in the Chinese setting. Megginson et al. (2014) report that Chinese firms tend to hold cash in response to potential financial constraints arising from deteriorating connections to state-owned banks.

higher lagged returns, which is consistent with the momentum-investing pattern documented in other markets. Perhaps the most surprising monotonic increases across FOWN deciles are in state ownership and legal person ownership.

[Insert Table 4 about here]

3.6 Increased focus of QFII investments

Hypothesis 2 implies that QFII investments become more focused over time. Recall that Figure 1 shows that the number of different A-shares in an average QFII portfolio has declined during our sample period. To further observe the level of concentration within QFII portfolios, we calculate the value of individual QFII investments for each institution. Figure 2 indicates that the decline in the number of different shares has been accompanied by a significant increase in the average RMB-value of each stock investment.[12] The *t*-statistic for comparison of average investment size between the early and late sub-periods is 7.99. This suggests a significant increase in the focus of QFII investments, thus supporting Hypothesis 2.

[Insert Figure 2 about here]

4. Regression analysis

4.1 Methodology

As Figure 1 indicates, foreign institutional investors only invested in a tiny sub-set of the Chinese A-share market, so the resulting large proportion of zeros in firm-level holdings data deserves some attention. A number of previous studies on international institutional investment tackle this issue implicitly by defining their measure of institutional investment in firm *x* as deviation from the market value weight of that firm (e.g., Dahlquist & Robertsson, 2001; Kang & Stulz, 1997). In our view, this variable is poorly suited to the Chinese setting as market weights may not be a good benchmark for an emerging market such as China. As our purpose is to elucidate the determinants of QFII investment decisions, we argue that a

[12] Figure 2 is based on 2014 RMB values.

non-zero investment in a Chinese firm is a better reflection of QFII investment decisions than their choices to deviate from the market weights of individual Chinese firms, which forces us to deal with the clustering of QFII holdings at zero.

Tobit models are often used in cases when data are truncated at zero. However, such models assume that the underlying process follows the normal distribution even if the data are observationally truncated (Cook et al., 2008). This assumption does not hold with proportional data that are by definition censored at zero (and one). In our setting, the ratio of combined QFII holdings over shares outstanding can hardly take negative values, particularly since shorting of Chinese A-shares was not allowed prior to 2010 and remains complicated after that (Carpenter et al., 2018).[13]

From the estimation standpoint, the problem is that the decision by the investor to invest a non-zero amount may be based on a process that is different from the process that determines the amount of investment once the decision to invest has been made. This sequence is supported by the finding of Choi et al. (2017) that institutional investors tend to focus their investments in an emerging market on narrow areas where they can expect to achieve a comparative advantage over domestic investors. Also, a comparison between our Tables 3 and 4 suggests that the decision on whether to invest in a Chinese A-share is driven by characteristics that are different from those determining the extent of the investment. In such situations, a zero-inflated beta model is appropriate. Following Cook et al. (2008), we specify a zero-inflated beta model that applies a logistic regression model for whether the proportional variable equals zero or not, and a two-parameter beta model for any values between zero and one.[14] In our setting, the model is set to explain deviations from zero, and values between zero and one, for $FOWN_{i,t}$, which is the aggregated holdings in stock *i* by all the QFIIs in quarter *t*. While the zero-inflated beta model is more appropriate to our setting, a Tobit model yields results that are qualitatively quite similar to those we report in our regression tables.

4.2 Stock preferences of QFIIs for the full period and sub periods

[13] For instance, retail investors hold approximately 80% of the market. This significantly constrains the supply of available shares to borrow.

[14] Ferrari and Cribari-Neto (2004) recommend the use of the two-parameter beta distribution in a regression model with the variable of interest restricted to (0,1). In addition to their work, see Cook et al. (2008) for details on the zero-inflated beta model.

After we examine the stock preferences of QFIIs for our entire sample period, we divide the sample into two sub-periods to examine whether QFII preferences shift over time. In essence, we follow prior studies such as Bennett et al. (2003), who study the preferences of US institutional investors in time-specific sub-periods, reporting changes in those preferences over time,[15] as well as Kang and Stulz (1997), who study foreign institutional holdings in the Japanese market separately for the 1976-1983 and 1984-1991 sub-periods.

Table 5 illustrates regression results for the full sample period and for early and late halves of our sample, respectively. While the results on some of the determinants of foreign investment are consistent with prior studies, it is clear that the investment behavior of foreign institutions in China differs from that of other markets. For our full sample period, foreign institutional investors exhibit a strong preference for high book-to-market firms, firms that are cross-listed abroad, and firms with fewer financial concerns, as reflected by the coefficient for *Current ratio*. While these findings align with existing literature on foreign institutional investment in other markets, some of the additional comparisons between prior studies and evidence from China may reflect the uniqueness of the Chinese market. For example, the Chinese A-share market is characterized by extremely high trading activity (Chui & Titman, 2017; Liao et al., 2014), which may be off-putting to QFIIs, even if they typically prefer highly liquid stocks in other markets. Similarly, Chui and Titman (2017) find that the momentum effect commonly found in other markets does not exist in the Chinese A-share market. Thus, our finding that QFIIs appear to be momentum investors, with a tilt toward firms with high previous quarter returns ($RET_{t-3,t}$), may actually reflect preferences that deviate from those reported in studies of foreign institutional investment in other markets.

Prior studies on institutional investment report a strong and consistent institutional preference for liquidity and large firms (e.g., Dahlquist & Robertsson, 2001; Ferreira & Matos, 2008). Consistent with Doigde et al. (2006), and Ferreira and Matos (2008), the QFII investors avoid firms with concentrated ownership as measured by our H5 variable. Furthermore, consistent with US findings, QFIIs exhibit a perhaps surprisingly strong preference for firms with higher stock price. Consistent with the results reported in Liu et al. (2014), QFIIs prefer firms with higher state ownership and higher legal person ownership; both variables enter with very strong positive coefficients.

Results for the sub-periods are reported in columns 2 and 3 of Table 5. We observe a clear shift in QFII preferences over time. Many of the relations mentioned above are present

[15] Bennett et al. (2003) split their quarterly sample from 1983 to 1997 into two sub-periods of 30 quarters each.

only in either the first half or the second half of our sample period. The only variables with consistent and statistically significant coefficients in both sub-periods are TURN and PRC. In other words, regardless of time period, QFIIs prefer shares with low liquidity and high share price. Some of the consistencies between our findings and those of earlier studies on foreign institutional investment in other markets are only present in the first sub-period. For instance, QFIIs prefer cross-listed shares and shares with high momentum returns only during the first half of our sample period. Overall, it appears that QFIIs have adjusted their investment behavior (a potential outcome of their learning) to focus on specific local factors during the latter period. This is consistent with Hypothesis 1.

The coefficient on lagged holdings for domestic institutions is negative and significant in the first sub-period, but positive and significant in the second sub-period. This can be explained either in terms of institutional learning that leads QFII investments to follow the patterns used by local institutions, or in terms of local institutions gaining sophistication over time, making the coefficient on lagged holdings for domestic institutions a valid benchmark for QFII portfolios. The preference for firms with state and legal person ownership is more prominent in the latter half of our sample period. These results suggest that after the initial investment experience in the Chinese stock market in the first period, QFIIs obtain local knowledge and adjust their investment behavior accordingly in the second period.[16] Evidence in Calomiris et al. (2010) suggests that government ownership provides benefits that outweigh the potential costs of government interference in firm management. Moreover, Huang and Zhu (2015) report that QFIIs may combine their efforts with state ownership to affect corporate governance. This provides QFIIs with yet another motive for holding stocks with government ownership, and is consistent with QFIIs learning China-specific investment patterns over time.

[Insert Table 5 about here]

4.3 Evidence from interactions

As our focus is on changes in QFII behavior over time, we further examine the QFII investment behavior in an alternative empirical setting where we run regressions for the

[16] We also estimated alphas for the QFII portfolios in our sample. While they are not significantly different from zero in either sub-period, they shift from weakly negative to positive, and the shift is statistically significant.

entire sample period, and focus on interactions with the post-2008 period, as shown in Equation (2),

$$FOWN_{i,t} = \alpha_i + \beta_i post2008_t + \sum_{j=1}^{J} \gamma_{i,j} X_{i,j,t} + \sum_{j=1}^{J} (\delta_{i,j} post2008_t \times X_{i,j,t}) + \varepsilon_{i,t}, \quad (2)$$

where *post2008* is an indicator that takes the value of one for the time period after 2008, and $X_{i,j,t}$ is a vector of j determinants of foreign institutional investment, as suggested by prior studies, that we use in Table 5. Our main interest is in the $\delta_{i,j}$-coefficients as any significant coefficients will indicate a shift in investment preferences of the QFIIs. For the sake of brevity, we only report the coefficients of those interactions in Table 6. We continue to use the zero-inflated beta regression as our testing method.

As suggested by Table 6, the determinants of QFII holdings experience a significant shift between the earlier and the latter parts of our sample period. The first column of Table 6 indicates that QFIIs exhibit a stronger preference for larger firms with greater book-to-market, turnover, stock price, and current ratio in the period after 2008. Relative to the early part of our sample, they also show a stronger dislike for concentrated ownership as measured by our *H5* variable. All these findings suggest a move towards more prudent investment, in line with earlier findings regarding foreign institutional investment in other markets. However, QFIIs also become less interested in momentum returns and are significantly more attracted to government-owned firms as indicated by coefficients for both *Stateown* × *post2008* and *Legalown* × *post2008*. Lagged holdings of Chinese domestic institutions also have a significantly stronger positive effect on QFII holdings after 2008.

Given the growing number of foreign institutions throughout our sample period (Figure 1), differences in the QFII behavior between the early and the late periods could potentially be explained by new QFII entrants with different preferences. In column (2) of Table 6, we re-estimate the model in Equation (2) with $FOWN_{i,t}$ capturing only those QFIIs present in both halves of our sample. As column (2) of Table 6 shows, changes in the group of QFIIs that are more mature in the Chinese market closely mirror those changes we report for the full sample of QFIIs in column (1) of Table 6. In column (3) of Table 6, we further consider whether changes in the corporate population between the early and the late periods of our sample drive our results as the number of listed firms in the Chinese market climbed steadily during our sample period. The tests reported in column (3) of Table 6 only include holdings

in those firms listed prior to 2009. Again, differences between column (3) and the earlier columns of Table 6 are minimal. The only marked difference is in the coefficient for *AGE* × *post2008*, which is no longer statistically significant in this setting. This finding suggests that our earlier results regarding the negative coefficient on *AGE* are partially explained by firms listed after 2009 that attracted QFII attention.

Dahlquist and Robertsson (2001) report that foreign institutional holdings in Sweden are, to a large extent, driven by US institutions and their investment patterns. As Table 1 indicates, roughly 20% of the QFIIs come from the US. Our (untabulated) tests at the institutions' home country level suggest that some of the changes we report in Table 6 are not present in the sub-sample of US institutions. While US institutions also exhibit an increased preference for firms with state ownership and legal person ownership in the latter period, their preference does not change between the early and the late periods regarding *BM*, *VOL*, *PRC*, or *H5*. Interestingly, the US institutions are not attracted by domestic mutual funds in either sub-period, and their preference for smaller firms (as measured by *MKTCAP*) increases significantly, which is opposite to the reaction in the full sample.

4.4 QFII preferences and international risk environment

The sample period covers a turbulent time period. After the Chinese stock market plunged in February 2007, the global recession in 2007-2009 ensued. In this sub-section, we consider whether changes in risk level affected foreign institutions' investment patterns in China. As a shift by QFIIs to firms with state ownership is one of the most persistent results we report, we are particularly interested in testing whether the growing attraction for state-owned firms is driven by increased risk levels during the financial crisis. Governments are expected to intervene during times of market turbulence, but the intervention may be beneficial or detrimental to other stockholders. A bailout of a troubled firm is positive, which would make it more attractive to hold government-owned firms during a period of market turbulence. If, however, a government's expected reaction to turbulence is nationalization or other forms of appropriation of other shareholders' rights, the effect would be negative.

We first introduce a dummy variable to proxy for changing global business conditions. It takes a value of one if the quarter belongs to period from 2007Q4–2009Q2, and zero otherwise. We continue to use the methodology of Equation (2), and note that our definition of the crisis period captures the last five quarters of our early sub-sample and the first two quarters of the latter sub-sample. The results of this estimation are reported in the first

column of Table 7. The interesting part of the analysis in column (1) of Table 7 relates to the triple interaction variable between post2008, state ownership, and crisis. The coefficient for that interaction enters with a weak negative sign. This suggests that uncertainty during the crisis period fails to explain our finding that QFIIs increase their investments in firms with state ownership in the latter half of our sample period.

[Insert Table 6 about here]

We repeat the above exercise using the Chicago Board Options Exchange (CBOE) volatility index, commonly known as the VIX, as an alternative proxy for the global risk environment. The estimations using the quarterly volatility expectations are presented in the second column of Table 7. The triple interaction between post2008, state ownership and VIX has a negative effect on the QFII investment, which further suggests that interest among QFIIs for firms with state ownership is not based on the safety of government backing of those firms during times of uncertainty.

4.5 Regulatory changes and changes in QFII preferences

As noted, the rapid growth of the Chinese market was paralleled by changes in the regulatory infrastructure. The literature identifies two significant reforms with potential effects on the determinants of QFII investment choices that occur in our sample period. These reforms could play an important role in the shift in QFII preferences that we observe in Tables 5 and 6.

China issued a new regulation in 2008 regarding taxation of foreign investors. It set the withholding tax rate for dividends paid to foreign-owned entities at 10%, in comparison to the zero per cent rate that was in effect prior to the reform. It also clarified issues related to capital gains taxation of QFIIs (although many questions in that area remain).[17] It also provided tax incentives for QFIIs to locate their analytical activity in China, increasing, at least indirectly, the effect of local expertise in the management of QFII portfolios. However, our results in Table 6 suggest that the effect of the change in dividend tax withholding rate had no marked effect on QFII preferences related to dividends. The coefficient on post2008 × DIV is not statistically significant. This non-finding also suggests that the increase in

[17] For more information on the effects of the tax reform, see PwC (2014).

dividends in conjunction with the split-share structure reform reported by Michaely and Qian (2017) had no impact on QFII preferences.

The split-share structure reform, launched in 2005, is another significant regulatory change with potential implications for QFIIs. With the reform, state-owned shares and legal person shares became tradeable. In each company, holders of these previously non-tradeable shares were to negotiate the amount of compensation with the holders of the firm's tradeable shares as those holders would suffer dilution. The government hoped to complete the reform by the end of 2006. Indeed, already in January 2006, 1,302 firms had completed the reform (Firth et al., 2010). Huang and Zhu (2015) examine how QFII ownership of tradeable shares affected the progress of the reform at firm level. They find that the presence of institutional ownership (both foreign and domestic) sped up the process.[18] They further report that QFII ownership had a positive effect on the value of the deal to the holders of tradeable A-shares. Their findings suggest that political ties between firms and Chinese institutions tipped the balance in negotiations toward the interests of firms. Foreign institutional owners and (state) owners of previously non-tradeable shares could not exert such power. However, Liao et al. (2014) find that related-party transactions continue to be common in firms with state ownership even after the split-share structure reform, and they question the reform's effects on corporate governance.

It is possible that the split-share structure reform accounts in part for our finding that QFIIs are more drawn to state-owned firms in the latter half of our sample. However, when we re-estimate the specification used in the first column of Table 5 separately for each year of our sample, we note that the preference for state ownership and legal person ownership reaches the conventional levels of statistical significance only from 2008 onwards (untabulated). Since the split-share structure reform was to a large extent completed by the beginning of 2006, it appears that while Huang and Zhu (2015) find that QFIIs played an important corporate governance role in state-owned firms during the split-share structure reform, the split-share structure reform had no immediate effect on QFII investment decisions. The annual regressions also reveal that the strong preference for state and legal ownership persists throughout the latter half of our sample period, reducing the concern that QFIIs would have increased their holdings around the split-share structure reform only to extract benefits from the negotiation process.

[18] Li et al. (2011) find that greater state ownership of non-tradeable shares leads to greater compensation to the holders of A-shares. They attribute this to the government's incentive to complete reforms quickly without disturbing the stock market.

4.5 The effect of central versus local government ownership on QFII preferences

Government ownership comes with benefits and disadvantages. Political connections can provide the firm with valuable access to subventions and financing from state-owned banks, but they can also lead to expropriation due to corrupt officials (Chaney et al., 2011; Fan et al., 2007; Sun & Tong, 2003). Wang et al. (2008) also report that, in contrast to Chinese firms owned by the central government, local-government SOEs tend to use smaller local auditing firms. This likely reduces the transparency of firms under local government power. Cheung et al. (2010) also report significant differences between firms that have influence from local governments and those with central government involvement. They find that shareholders benefit from investing in firms that are either controlled by central government or that have directors affiliated with the central government.

To further study the role of government ownership in attracting QFII investments, we define an indicator variable *Central_govt* for firms that have the central government as the controlling shareholder as indicated by the CSMAR database on corporate ownership. The indicator variable takes the value of one for firms that have a firm or an institution owned by the central government as their controlling shareholder, and zero otherwise. While our entire sample has 915 firms with state ownership greater than zero, 290 of those firms have the value of *Central_govt* equal to one.

We include *Central_govt* in our main specification from Table 6, and report the results regarding ownership variables in Table 8. Again, other controls and interactions are included in the regressions but omitted from the table for the sake of brevity. Somewhat surprisingly, the Table 6 finding of increased QFII investments in firms with state-owned firms appears to be driven mainly by firms that are not controlled by central government. The coefficient on the triple interaction term *Central_govt* × *Stateown*× *post2008* is negative and statistically significant.

[Insert Table 8 about here]

Given that Wang et al. (2008) report reduced transparency for firms owned by local governmental entities, our Table 8 evidence provides further support for the suggestion that foreign institutional investors have found new alternative ways to overcome opacity issues in the Chinese market during our more recent sub-sample. Our result is also interesting in light of Cheung et al.'s (2010) finding that local government ownership expropriates value from

minority shareholders. It should be noted that in their paper, the sample period is limited to 2001-2002. Also, they only consider short-term event-study evidence in conjunction with related party transactions. It is possible that the reported expropriation by the local government is more related to the pricing of the transaction and less relevant to the ongoing operations of the firm.

4.6 Industry concentration of QFII investments

Investment analysis may require more local knowledge in certain sectors, and therefore, observing industry preferences of QFII investors may shed further light on how their investment objectives have evolved over time. In untabulated tests, we add industry fixed effects (CSRC definition) to our regression specification from Table 5, and observe whether coefficients on those industry indicators change between the early and the late halves of our sample period. We find that in the early half of the sample, none of the industry indicators exhibit a statistically significant coefficient. However, in the latter half of the sample, the QFII investments are higher (at the 10%-level or better) for Real Estate, Construction, Accommodation, and Information Technology. Liu et al. (2014) classify Real Estate and Construction sectors in China as ones requiring specific local knowledge. Also, in their sample of 2003-2009, Liu et al. (2014) find a QFII preference for transportation, metals and non-metals, and machinery, which industries they view as ones that do not require great levels of local knowledge. It therefore appears that QFII interest has shifted towards areas requiring more local knowledge. This is consistent with our Hypothesis 1.

5. Conclusions

July 9, 2003 saw the first transaction by a QFII (UBS AG) on the Chinese A-share markets. The QFII scheme developed rapidly since then, and QFIIs play a very important role in Chinese capital markets today. In this paper, we compile a comprehensive dataset to examine the determinants of QFII holdings. We focus particularly on the evolvement of QFII investment patterns over time as foreign institutional investors gain experience along with the development of the Chinese equity market. We find evidence regarding the QFII investment behavior that is in line with findings documented in previous studies in developed markets;

for example, QFIIs are drawn to firms with prudent characteristics and firms that are cross-listed in other markets.

Nonetheless, we also document some investment behaviors of FIIs that is new to the literature, and may be specific to the unique institutional environment in China. For instance, in contrast to evidence from other markets, QFIIs operating in China prefer small firms with low stock turnover.

We further find that QFII investments tend to be narrowly targeted, and that the level of concentration of investments only has increased over time. The average A-share portfolio of a QFII investor includes fewer than 10 of the more than 2,000 listed Chinese companies; and more than half of the firms listed in the Chinese A-share market have no QFII investments. Meanwhile, the average value of individual QFII share investments increased significantly during our sample period. These findings are consistent with the hypothesis that, in an opaque market, foreign institutions can benefit from their competitive advantages in narrowly defined areas. Thus, they pursue highly concentrated investment strategies.

We think that the most interesting result is that QFIIs appear to have identified certain China-specific key variables to adjust their investment strategy in the course of our sample period. In particular, QFIIs have tilted their investments toward firms with high volatility and firms with high degrees of state ownership. Our evidence also suggests that they have begun to follow Chinese mutual fund investments more closely, and herd after them. We interpret these changes as evidence of institutional learning that has allowed QFIIs to take local Chinese characteristics into account in their investment decisions.

Appendix A. Variable definitions

FOWN	Percentage of shareholdings of all QFIIs in a firm's tradeable shares. Measured quarterly (see Equation 1).
AGE	Firm age calculated as the number of months since first-day return appears in the Wind database. In regressions, we use the natural logarithm of the variable.
DIV	Dividend yield calculated as cash dividend divided by closing share price, log-transformed for our regression analysis.
BM	Book-to-market ratio, i.e. book value of total assets divided by market capitalization, both measured at the end of the calendar year prior to the quarterly observation, logged for regression analysis.
PRC	Closing share price. The natural logarithm is used in regressions.
TURN	Average monthly turnover during the most recent three months, logged for regression analysis.
VOL	Stock return volatility estimated as the standard deviation of monthly returns over the previous year. Unlike the studies of Gompers and Metrick (2001) and Yan and Zhang (2007) which use two years, we use a one-year period to preserve sample size.
$RET_{t-3,t}$	Cumulative gross return over the past three months.

$RET_{t-12,t-3}$	Cumulative gross return over the nine months preceding the beginning of the filing quarter.
Leverage	Total debt divided by total assets.
Current ratio	Current assets divided by current liabilities.
ROA	Return on assets calculated as net income divided by the book value of total assets.
MKTCAP	Market capitalization calculated as the closing share price, multiplied by total shares outstanding, and logged for regression analysis.
Crosslisting_dum	Dummy variable that equals one if stock is cross-listed on an exchange outside mainland China. The cross-listed shares in our sample are foreign listings on either the Hong Kong Stock Exchange (HKSE) or the New York Stock Exchange (NYSE).
S180_dum	Dummy variable that equals one if the stock is included on the Shanghai Stock Exchange 180 (SSE180) Index or Shenzhen Stock Exchange Component (SICOM) Index. Both indices select firms based on market capitalization, profitability, liquidity, and market position within its branch.
Domestic_inst_lag	One quarter lag of domestic institutional ownership.
H5	Herfindal 5 index, an indicator of ownership concentration calculated as the sum of squared ownership proportions held by each of the top five shareholders.
State own	Proportion of state-held shares at the end of each quarter.
Legal person own	Proportion of legal persons holding shares at the end of each quarter.

References

Alford, A.W., & A.W. Lau (2015). A foreign investor's guide to accessing the Chinese equity market. *Journal of Portfolio Management, 41*(5), 31-40.

Allen, F., Qian, J., & Qian, M. (2009). A review of China's financial system and initiatives for the future. In J. Barth, J. Tatom and G. Yago (Eds.), *China's Emerging Financial Markets*, The Milken Institute Series of Financial Innovation and Economic Growth. New York: Springer, 3-72.

Allen, F., Qian, J., & Qian, M. (2018). *A review of China's institutions*. CEPR Discussion paper DP13269.

Bena, J., M.A. Ferreira, P. Matos, & P. Pires (2017). Are foreign investors locusts? The long-term effects of foreign institutional ownership. *Journal of Financial Economics, 126*, 122-146.

Bennett, J., R. Sias, & L. Starks (2003). Greener pastures and the impact of dynamic institutional preferences. *Review of Financial Studies, 16*, 1203-1238.

Calomiris, C.W., R. Fisman, & Y. Wang (2010). Profiting from government stakes in a command economy: Evidence from Chinese asset sales. *Journal of Financial Economics, 96*, 399-412.

Carpenter, J.N., F. Lu, & R.F. Whitelaw (2018). *The real value of China's stock market.* BOFIT Discussion Paper 2/2018.

Chaney, P.K., M. Faccio, & D. Parsley (2011). The quality of accounting information in politically connected firms. *Journal of Accounting and Economics, 51*, 58-76.

Cheung, Y-L, P.R. Raghavendra, & A. Stouraitis (2010). Helping Hand or Grabbing Hand? Central vs. Local Government Shareholders in Chinese Listed Firms. *Review of Finance, 14*, 669-694.

Choi, N., M. Fedenia, H. Skiba, & T. Sokolyk (2017). Portfolio concentration and performance of institutional investors worldwide. *Journal of Financial Economics, 123*, 189-208.

Chui, A.C.W., & S. Titman (2017). *Investor composition and stock return patterns: A study of momentum in the Chinese A- and B-share markets*. Unpublished working paper, Hong Kong Polytechnic University.

Claessens, S., S. Djankov, J.P.H. Fan, & L.H.P. Lang (2002). Disentangling the incentive and entrenchment effects of large shareholdings. *Journal of Finance, 57*, 2741-2771.

Cook, D.O., R. Kieschnickand, & B.D. McCullough (2008). Regression analysis of proportions in finance with self-selection. *Journal of Empirical Finance, 15*, 860-867.

Cooper, I.A., & Kaplanis, E. (1994). What explains the home bias in portfolio investment? *Review of Financial Studies, 7*(1), 45-60.

Dahlquist, M., & G. Robertsson (2001). Direct foreign ownership, institutional investors, and firm characteristics. *Journal of Financial Economics, 59*, 413-440.

Delios, A., and Z.J. Wu (2005). Legal Person Ownership, Diversification Strategy and Firm Profitability in China. *Journal of Management and Governance, 9*, 151-169.

Doidge, C., G.A. Karolyi, K. Lins, D. Miller, & R. Stulz (2006). Private benefits of control, ownership and the cross-listing decision. *Journal of Finance, 64*, 425-466.

Faccio, M., L.H.P. Lang, & L. Young (2001). Dividends and expropriation. *American Economic Review, 91* (1), 54-78.

Fama, E.F., & MacBeth, J.D. (1973). Risk, Return and Equilibrium: Empirical Tests. *Journal of Political Economics, 81*, 607-636.

Fan, J.P.H., T.J. Wong, & T. Zhang (2007). Politically Connected CEOs, Corporate Governance, and Post-IPO Performance of China's Newly Partially Privatized Firms. *Journal of Financial Economics, 84*, 330-357.

Ferrari, S., & F. Cribari-Neto (2004). Beta regression for modeling rates and proportions. *Journal of Applied Statistics, 31*, 799-815.

Ferreira, M.A., & P. Matos (2008). The colors of institutions' money: the role of institutional investors around the world. *Journal of Financial Economics, 88*, 499-533.

Ferreira, M.A., P. Matos, J.P Pereira, & P. Pires (2017). Do locals know better? A comparison of the performance of local and foreign institutional investors. *Journal of Banking and Finance, 82*, 151-164.

Firth, M., C. Lin, & H. Zou (2010). Friend or a foe? The role of state and mutual fund ownership in the split share structure reform in China. *Journal of Financial and Quantitative Analysis, 45*, 685-706.

Firth, M., J. Gao, J. Shen, & Y. Zhang (2016). Institutional stock ownership and firms' cash dividend policies: Evidence from China. *Journal of Banking and Finance, 65*, 91-107.

Frenkel, K.R., & Poterba, J.M. (1991) Investor diversification and international equity markets. *American Economic Review, 81*(2), 222-226.

Gompers, P.A., & A. Metrick (2001). Institutional investors and equity returns. *Quarterly Review of Economics, 116*(1), 229-259.

Huang, W., & T. Zhu (2015). Foreign institutional investors and corporate governance in emerging markets: Evidence of a split-share structure reform in China. *Journal of Corporate Finance, 32*, 312-326.

Kang, J-K., &R.M. Stulz (1997). Why is there a home bias? An analysis of foreign portfolio equity ownership in Japan. *Journal of Financial Economics, 46*, 3-28.

Kang, X., F. Nielsen, & G. Fachinotti (2010). The 'New Classic' Equity Allocation? *MSCI Research Insight*, October.

Kim, Y., I.S.M. Ho, & M. St. Giles (2003). *Developing institutional investors in People's Republic of China.* World Bank Country Study Paper.

Leung, M.K., & T. Young (2002). China's entry to the WTO: Managerial implications for foreign banks. *Managerial and Decision Economics, 23*, 1-8.

Li, K., T. Wang, Y-L. Cheun, & P. Jiang (2011). Privatization and risk sharing: Evidence from the split share structure reform in China. *Review of Financial Studies, 24*, 2499-2525.

Liao, L., B. Liu, & H. Wang (2014). China's secondary privatization: Perspectives from the split-share structure reform. *Journal of Financial Economics, 113*, 500-518.

Liu, N., D. Bredin, L. Wang, & Z. Yi (2014). Domestic and foreign institutional investors' behavior in China. *European Journal of Finance, 20* (7-9), 728-751.

Megginson, W.L., B. Ullah, & Z. Wei (2014). State ownership, soft-budget constraints, and cash holdings: Evidence from China's privatized firms. *Journal of Banking and Finance, 48*, 276-291.

Michaely, R., & M. Qian, (2017). *Stock liquidity and dividend policy: Dividend policy changes following an exogenous liquidity shock*. Unpublished working paper, Cornell University.

PwC (2014). The long-awaited withholding tax policies for QFIIs/RQFIIs capital gains released – mixed feelings? Available at https://www.pwc.com/sg/en/financial-services-tax-bulletin/assets/fstaxbul201411.pdf.

Shleifer, A., & R.W. Vishny (1986). Large shareholders and corporate control. *Journal of Political Economy, 94*, 461-488.

Sun, Q., & W.H.S. Tong (2003). China share issue privatization: the extent of its success. *Journal of Financial Economics, 70*, 183-222.

Tesar, L., & Werner, I.M. (1995). Home bias and high turnover. *Journal of International Money and Finance, 14*(4), 467-493.

Van Nieuwerburgh, S., & L. Veldkamp (2009). Information immobility and the home bias puzzle. *Journal of Finance, 64*, 1187-1215.

Wang, P. (2014). Foreign institutional investor trading in Chinese A-share markets. *Managerial Finance, 40*, 1007-1023.

Wang, Q., T.J. Wong, & L. Xia (2008). State ownership, the institutional environment, and auditor choice: Evidence from China. *Journal of Accounting and Economics, 46*, 112-134.

Wooldridge, J.M. (2002). *Econometric Analysis of Cross Section and Panel Data*. (1st edn.). The MIT Press

Xu, X., & Y. Wang (1999). Ownership structure and corporate governance in Chinese stock companies. *China Economic Review, 10*, 75-98.

Yan, X.M., & Z. Zhang (2007). Institutional investors and equity returns: Are short-term institutions better informed? *Review of Financial Studies, 22*, 893-924.

Zhang, Y., X. Cao, F. He, & W. Zhang (2017). Network topology analysis approach on China's QFII stock investment behavior. *Physica A: Statistical Mechanics and its Application, 473*, 77-88.

Zou, L., T. Tang, & X. Li (2016). The stock preferences of domestic versus foreign investors: Evidence from qualified foreign institutional investors (QFIIs) in China. *Journal of Multinational Financial Management, 37-38,* 12-28.

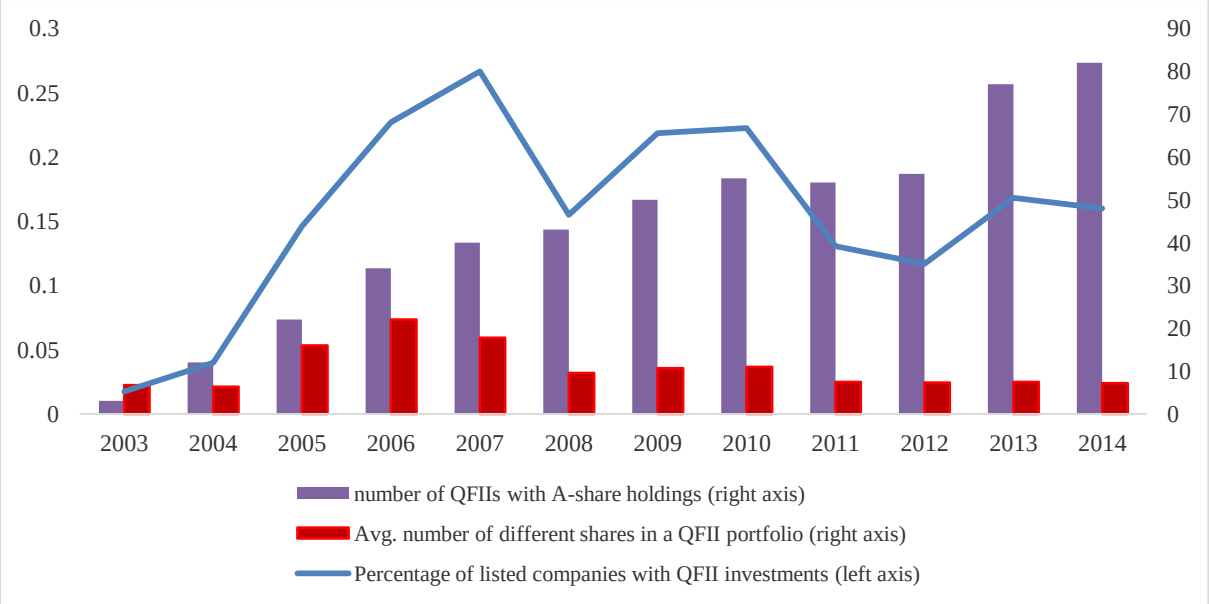

Fig 1. QFII holdings relative to the A-share market

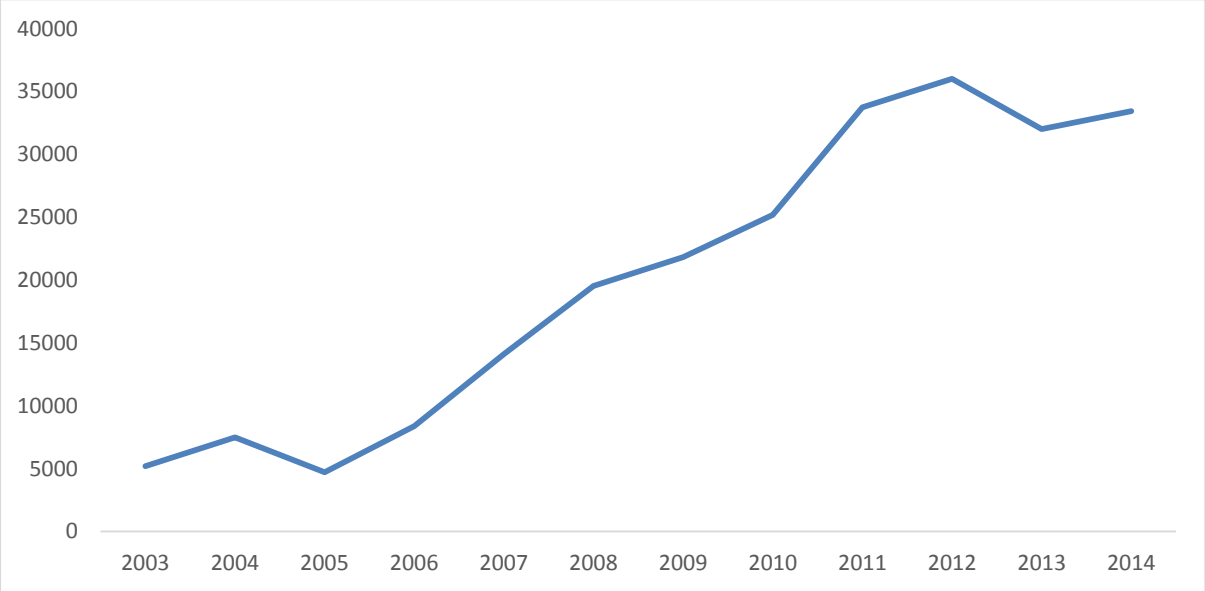

Fig 2. Average size of individual A-share investments by QFIIs

(in RMB 10,000, inflated to 2014)

Table 1

Distribution of QFIIs across categories and countries

	Asset management companies	Insurance companies	Security companies	Commercial banks	Others	Total
Australia	1	0	0	0	0	1
Canada	1	0	0	1	2	4
France	2	0	0	4	0	6
Germany	1	0	0	1	0	2
Hong Kong	13	1	1	1	0	16
Japan	5	1	4	0	0	10
Korea	1	0	0	2	3	6
Kuwait	0	0	0	0	1	1
Macau	0	0	0	0	1	1
Malaysia	0	0	0	0	2	2
Netherlands	1	0	0	3	0	4
Norway	0	0	0	0	1	1
Qatar	0	0	0	0	1	1
Singapore	5	0	0	3	2	10
Switzerland	2	0	0	2	1	5
Taiwan	0	4	4	0	0	8
UAE	0	0	0	0	1	1
UK	9	0	0	3	0	12
US	12	0	0	6	5	23
Total	53	6	9	26	20	114
Anglo-Saxon	23	0	0	10	7	40
Continental Europe	6	0	0	10	2	18
Asia	24	6	9	6	11	56

This table shows the distribution of QFIIs by categories and countries. Our sample period is from 2003Q4 to 2014Q4. We group the QFIIs into five categories; namely, 1-asset management companies, 2-insurance companies, 3-security companies, 4-commercial banks and 5- others. All the QFIIs are further divided into three regions. The Anglo-Saxon countries include Australia, Canada, the UK and the US, Continental Europe includes France, Germany, Netherlands, Norway and Switzerland, and Asia includes Hong Kong, Japan, Korea, Kuwait, Macau, Malaysia, Qatar, Singapore, Taiwan, and the UAE.

Table 2

Descriptive statistics

Panel A: Full sample

N = 71,503	mean	median	S.D.	min	max
FOWN (%)	0.181	0	0.941	0	27.29
BM	1.078	0.715	1.216	0.075	11.035
MKTCAP (mil, RMB)	7970	3040	49500	9.23	5670000
VOL	0.068	0.060	0.042	0.0001	0.252
TURN	0.194	0.096	0.235	0.0006	2.534
PRC (RMB)	12.29	8.89	12.293	0.48	273.99
AGE (month)	98.92	97	68.82	1	286
DIV	0.007	0.002	0.010	0	0.272
$RET_{t-3,t}$	0.008	0	0.130	-0.322	0.449
$RET_{t-12,t-3}$	0.015	0	0.236	-0.565	0.756
S180_dum	0.095	0	0.293	0	1
Crosslisting_dum	0.03	0	0.170	0	1
Stateown	0.136	0	0.216	0	0.743
Leverage	0.440	0.450	0.269	0.002	1.755
Current ratio	0.024	0.014	0.032	0.002	0.230
H5	0.180	0.151	0.124	0.013	0.582
Legal person own	0.145	0.0003	0.221	0	0.75
ROA	0.019	0.013	0.038	-0.155	0.178
Domestic_inst_lag	0.137	0.070	0.168	0	0.749

Panel B: Time subsamples

	Mean (first half) 2003Q4-2008Q4	Mean (second half) 2009Q1-2014Q4
FOWN (%)	0.302	0.125
BM	1.318	0.997
MKTCAP (mil, RMB)	5300	9290
VOL	0.085	0.060
TURN	0.241	0.172
PRC (RMB)	8.895	12.800
AGE (month)	87.144	115.769
DIV	0.006	0.007
$RET_{t-3,t}$	0.002	0.015
$RET_{t-12,t-3}$	0.017	0.014
S180_dum	0.116	0.091
Crosslisting_dum	0.029	0.031
Stateown	0.266	0.067
Leverage	0.438	0.466
Current ratio	0.015	0.025
H5	0.190	0.172
Legal person own	0.221	0.088
ROA	0.020	0.017
Domestic_inst_lag	0.121	0.150
Number of observations	27,738	50,825

The table reports the descriptive statistics. Our sample period runs from 2003Q4 to 2014Q4. The data are obtained from the Wind Database and RESSET. FOWN is total foreign institutional ownership in tradable shares. MKTCAP is market capitalization in RMB million. AGE is firm age measured as the number of months from the first day of return appears on Wind. BM is book-to-market ratio and it is winsorized at the 1st and 99th percentiles. DIV is cash dividend (after tax) divided by stock closing price; DIV is winsorized at the 1st and 99th percentiles. PRC is stock closing price, and is denoted in RMB. VOL is the monthly volatility over the previous year, winsorized at the 1st and 99th percentiles. TURN is average monthly turnover rate over the previous quarter. $RET_{t-3,t}$ is cumulative gross return over the current quarter. $RET_{t-12,t-3}$ is cumulative gross return over the nine months preceding the beginning of filing quarter. Both $RET_{t-3,t}$ and $RET_{t-12,t-3}$ are winsorized at the 1st and 99th percentiles. S180_dum is a dummy variable takes the value of one if the stock is included in either the Shanghai 180 Index or Shenzhen Component Index, zero otherwise. Crosslisting_dum is a dummy variable that equals one if the firm is cross-listed on the Hong Kong Stock Exchange or New York Stock Exchange, and zero otherwise. Stateown is state ownership fraction of the firm. Leverage is calculated as total debt divided by total asset. Current ratio is calculated as current assets divided by current liabilities. It serves as proxy for the firm's ability to pay short-term obligations, and is winsorized at the 1st and 99th percentiles. H5 denotes the Herfindal 5 index, which is winsorized at the 1st and 99th percentiles. Legal person own denotes the legal person ownership fraction of the firm. ROA denotes return on asset (ROA) is winsorized at the 1st and 99th percentiles. Domestic_inst_lag denotes one lag of domestic institutional ownership, and is winsorized at the 1st and 99th percentiles.

Table 3
Difference in mean test, QFII holding vs Non QFII holding firms

	Mean (QFII holding)	Mean(non -QFII holding)	Difference in Mean	Median (QFII holding)	Median (non-QFII holding)	Difference in Median
BM	1.059	1.079	-0.020	0.717	0.715	0.002
MKTCAP(mil, RMB)	15500	7300	8250***	5640	2890	2750***
VOL	0.060	0.069	-0.008***	0.055	0.060	-0.005***
TURN	0.205	0.193	0.012***	0.121	0.094	0.027***
PRC (RMB)	15.322	12.024	3.298***	11.33	8.72	2.61***
AGE (month)	104.65	98.41	6.24***	105	96	9***
DIV	0.011	0.006	0.005***	0.007	0.002	0.005***
$RET_{t-3,t}$	0.020	0.0007	0.013***	0.012	-0.0005	0.0125***
$RET_{t-12,t-3}$	0.049	0.011	0.038***	0.033	-0.003	0.036***
S180_dum	0.220	0.084	0.136***	0	0	0
Crosslisting_dum	0.057	0.027	0.030***	0	0	0
Stateown	0.165	0.133	0.032***	0	0	0
Leverage	0.456	0.439	0.017***	0.469	0.448	0.021***
Current ratio	0.021	0.024	-0.003***	0.013	0.014	-0.001***
H5	0.207	0.178	0.029***	0.181	0.148	0.033***
Legal person own	0.128	0.147	-0.019***	0	0.0005	-0.0005***
ROA	0.032	0.018	0.014***	0.022	0.012	0.010***
Domestic_inst_lag	0.157	0.135	0.022***	0.101	0.067	0.034***

This table reports difference in mean and difference in median (ranksum) tests of firm characteristics between two groups, i.e. QFII holding stocks and non-QFII holding stocks. The first three columns report the average values for QFII holdings, non-QFII holdings, and their differences, respectively. The last three columns report the median values for QFII holdings, non-QFII holdings, and their differences. See Appendix A for variable descriptions. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 4 Decile descriptive statistics

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D10-D1
FOWN (%)	0.243	0.472	0.688	0.932	1.240	1.614	2.061	2.746	4.010	8.191	7.685***
BM	1.523	1.255	1.117	1.057	0.976	0.879	0.995	0.948	0.895	0.943	-0.580***
MKTCAP (mil,rmb)	24600	22800	15400	15700	16700	13700	12100	12000	10500	11700	-12900***
VOL	0.066	0.061	0.062	0.060	0.059	0.056	0.057	0.060	0.062	0.063	-0.003
TURN	0.201	0.211	0.229	0.209	0.201	0.188	0.202	0.199	0.214	0.194	-0.007
PRC (RMB)	8.879	13.124	14.550	16.148	16.213	16.392	17.177	18.759	17.050	14.968	6.089***
AGE(month)	125.084	112.355	112.308	113.819	106.728	102.054	99.816	93.913	94.736	85.541	-39.543***
DIV	0.010	0.011	0.011	0.010	0.011	0.011	0.009	0.012	0.011	0.013	0.003***
$RET_{t-3,t}$	0.015	0.009	0.016	0.015	0.019	0.020	0.020	0.031	0.027	0.034	0.018**
$RET_{t-12,t-3}$	0.025	0.014	0.035	0.038	0.047	0.062	0.061	0.052	0.086	0.072	0.047***
S180_dum	0.263	0.263	0.234	0.239	0.194	0.234	0.178	0.183	0.160	0.247	0.016
Crosslisting_dum	0.126	0.069	0.034	0.035	0.028	0.057	0.041	0.067	0.062	0.058	-0.068***
Stateown	0.107	0.126	0.146	0.151	0.145	0.149	0.174	0.186	0.207	0.261	0.154***
Leverage	0.496	0.480	0.445	0.449	0.449	0.422	0.444	0.472	0.458	0.441	-0.056***
Current ratio	0.016	0.021	0.022	0.021	0.021	0.025	0.024	0.020	0.021	0.018	0.002
H5	0.255	0.218	0.204	0.204	0.202	0.185	0.181	0.192	0.208	0.224	-0.031
Legal person own	0.061	0.088	0.110	0.112	0.116	0.119	0.148	0.151	0.169	0.204	0.143***
ROA	0.015	0.023	0.026	0.032	0.034	0.035	0.040	0.039	0.039	0.041	0.027***
Domestic_inst_lag	0.140	0.137	0.140	0.161	0.180	0.171	0.178	0.173	0.169	0.123	-0.017*

This table reports descriptive statistics for the 10 QFII deciles. The sample includes only positive QFII ownership (n=6417). The sample is then segregated into deciles using yearly FOWN breakpoints. The numbers in the columns under the headings D1-D10 are mean values in each decile. D1 is the decile with least QFII ownership, and D10 is the decile with the largest foreign ownership. Se Appendix A for variable descriptions. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 5

Determinants of foreign ownership in Chinese stock markets

	Full period 2003Q4-2014Q4	First half 2003Q4-2008Q4	Second half 2009Q1-2014Q4
BM	0.058***	-0.022	0.116***
	[3.307]	[-0.737]	[5.080]
MKTCAP	-0.089***	-0.092***	-0.019
	[-7.159]	[-4.640]	[-1.177]
VOL	0.003	-0.167***	0.015
	[0.163]	[-3.618]	[0.830]
TURN	-0.045***	-0.105***	-0.044***
	[-4.865]	[-4.813]	[-4.349]
PRC	0.250***	0.194***	0.350***
	[12.083]	[5.250]	[14.539]
AGE	-0.033***	0.023	-0.039**
	[-2.646]	[1.162]	[-2.318]
DIV	-0.003	-0.009	0.000
	[-0.753]	[-1.278]	[0.078]
$RET_{t-3,t}$	0.216***	0.371***	0.094
	[2.676]	[3.200]	[0.820]
$RET_{t-12,t-3}$	0.024	-0.008	0.017
	[0.522]	[-0.106]	[0.266]
S180_dum	-0.006	-0.019	-0.165***
	[-0.237]	[-0.468]	[-4.423]
Crosslisting_dum	0.123***	0.148**	0.041
	[2.872]	[2.263]	[0.736]
Stateown	0.956***	0.093	0.725***
	[19.715]	[0.867]	[10.735]
Leverage	0.052	0.134	-0.059
	[0.798]	[1.299]	[-0.687]
Current ratio	-1.209**	-4.574***	0.382
	[-2.419]	[-2.799]	[0.804]
H5	-0.888***	-0.221	-1.253***
	[-10.333]	[-1.432]	[-12.515]
Legalown	0.841***	0.156	0.719***
	[16.702]	[1.491]	[11.443]
ROA	2.861***	1.455***	2.118***
	[10.609]	[3.238]	[6.008]
Domestic_inst_lag	0.020	-0.253**	0.144**
	[0.358]	[-2.461]	[2.244]
Constant	-2.549***	-2.615***	-4.374***
	[-10.058]	[-6.051]	[-12.609]
Wald Chi-Square	1177.14***	205.4***	831.91***
Observations	71,503	24,634	46,869

This table reports the results from our baseline regressions, using zero-inflated beta regression. The dependent variable is quarterly aggregated foreign ownership of QFIIs. Non-QFIIs in each quarter are assigned a value of zero. Our sample period runs from 2003Q4 to 2014Q4. Results for the full period are reported in first column and the estimation outputs for the first half (2003Q4–2008Q4) and second half (2009Q1–2014Q4) of the sample period are reported in the second and third columns, respectively. See Appendix A for detailed variable

descriptions. BM, MKTCAP, VOL, TURN, PRC, AGE, DIV are log scaled. *T*-statistics are reported in brackets. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 6

Changes in QFII preferences

	Full sample	Only QFIIs present prior to 2009	Only firms listed prior to 2009
BM×*post2008*	0.117***	0.112***	0.123***
	[3.262]	[3.022]	[3.110]
MKTCAP×*post2008*	0.048**	0.051**	0.043*
	[2.207]	[2.253]	[1.870]
VOL×*post2008*	0.146***	0.166***	0.137***
	[3.132]	[3.442]	[2.731]
TURN×*post2008*	0.086***	0.091***	0.096***
	[3.891]	[4.058]	[4.190]
PRC×*post2008*	0.098**	0.093**	0.113**
	[2.370]	[2.174]	[2.533]
AGE×*post2008*	-0.060**	-0.048*	-0.023
	[-2.378]	[-1.809]	[-0.680]
DIV×*post2008*	0.011	0.013	0.014
	[1.273]	[1.508]	[1.507]
$RET_{t-3,t}$×*post2008*	-0.247	-0.312*	-0.234
	[-1.505]	[-1.789]	[-1.351]
$RET_{t-12,t-3}$×*post2008*	-0.730***	-0.712***	-0.706***
	[-5.481]	[-5.242]	[-5.136]
S180_dum×*post2008*	0.005	0.007	-0.004
	[0.049]	[0.066]	[-0.039]
Crosslisting_dum×*post2008*	-0.161	-0.170	-0.241
	[-0.834]	[-0.867]	[-1.246]
Stateown×*post2008*	0.596***	0.608***	0.668***
	[4.935]	[4.893]	[5.382]
Leverage×*post2008*	-0.217	-0.161	-0.210
	[-1.640]	[-1.165]	[-1.464]
Current ratio×*post2008*	5.528***	5.713***	6.664***
	[3.524]	[3.548]	[3.824]
H5×*post2008*	-0.891***	-0.956***	-0.881***
	[-5.096]	[-5.223]	[-4.698]
Legalown×*post2008*	0.516***	0.499***	0.686***
	[4.439]	[4.060]	[5.418]
ROA×*post2008*	0.244	0.271	0.084
	[0.436]	[0.467]	[0.143]
Domestic_inst_lag×*post2008*	0.403***	0.412***	0.455***
	[3.477]	[3.382]	[3.679]
Constant	-2.816***	-2.847***	-2.393***
	[-7.643]	[-7.662]	[-6.143]
Wald Chi-Square	1597.35***	1435.26**	1538.96***
Observations	71,503	71,503	58,317

This table reports the results from the regression in Equation (2), using zero-inflated beta regression. The dependent variable is the quarterly aggregated foreign ownership of QFIIs. Non-QFIIs in each quarter are assigned a value of zero. Our sample period runs from 2003Q4 to 2014Q4. For the sake of brevity, we only report the coefficients on the interaction terms. Column 1 reports the results for the full sample. Column 2 reports the results with the sample of QFIIs prior to 2009, and Column 3 reports the results for the sample of firms listed prior to 2009. See Appendix A for detailed variable descriptions. BM, MKTCAP, VOL, TURN,

PRC, AGE, DIV are log scaled. *T*-statistics are reported in brackets. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10 level.

Table 7

International risk environment and QFII preferences

Risk measure	Crisis indicator	VIX level
post2008	-1.025**	-1.303***
	[-2.199]	[-2.774]
Crisis	-0.215***	
	[-5.309]	
Crisis × post2008	0.528***	
	[6.559]	
Crisis × post2008 × Stateown	-0.312	
	[-1.452]	
Vix		-0.005***
		[-2.730]
Vix × post2008		0.021***
		[6.776]
Vix × post2008 ×		-0.017*
Stateown		[-1.892]
Controls	Yes	Yes
Wald Chi-Square	1668.65***	1651.43***
Observations	71,503	71,503

This table reports the estimation results using an international risk aversion proxy for the full period. We use a zero-inflated beta regression and Equation 2 with variables and interactions for risk environment added. *Crisis* is a dummy variable that takes a value of 1 if the quarter falls within the period 2007Q4–2009Q2, and zero otherwise. We repeat the estimation by replacing *Crisis* with the Chicago Board Options Exchange (CBOE) volatility index or *VIX*, as an alternative proxy for international risk environment and report the regression results in second column. *T*-statistics are reported in brackets. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 8

QFII interest in central vs local government-owned firms

Gov't ownership measure	Coefficient
post2008	-1.012**
	[-2.163]
Stateown	0.078
	[0.826]
Stateown x post2008	0.628***
	[5.167]
Legalown	0.153*
	[1.662]
Legalown x post2008	0.474***
	[4.063]
Central_govt	-0.014
	[-0.438]
Central_govt × post2008 × Stateown	-0.129***
	[-2.774]

Controls	Yes
Wald Chi-Square	1609.14***
Observations	71,503

This table reports zero inflated beta regression results. We use CSMAR database-based segregation of SOEs into SOEs with central government as controlling shareholder and SOEs with provincial/municipal government as the controlling shareholder. We introduce Central_govt dummy variable in the regression Equation (2). It takes a value of one for firms with central government as controlling shareholder, and zero otherwise. *T*-statistics are reported in brackets. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.