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Valuation effect of capital account liberalization: Evidence from the Chinese stock market

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ABSTRACT

This paper examines the valuation effect of capital account liberalization. Using an event study approach and the policy announcement for RMB Qualified Foreign Institutional Investors (short for RQFII) as the event date, we find that overall, the stock market responded positively to the capital account liberalization announcement. In addition, we provide some heterogeneity that firms with more stringent financing constraints earn higher returns than their counterparts. Finally, existing local institutions play an important role in determining announcement returns.

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1. Introduction

As an institutional arrangement of financial globalization, the opening of a capital account by countries since the 1990s has vastly improved the depth and breadth of financial globalization. Nevertheless, the recent international situation has become increasingly complicated. Issues on the reemergence of trade protectionism and fall of petroleum prices could reduce the total trade surplus of the world economy, thereby shrinking the liquidity of the US dollar worldwide. Although the newly initiated quantitative easing by US Federal Reserve in response to the COVID-19 pandemic can serve as a tool to inject liquidity into the world capital market mainly through security investment, the real effect, which is determined by the nature of security capital, could be limited and volatile. Moreover, the international financial market could experience huge and frequent fluctuations. In a situation with increasing economic and political uncertainty, the capital account liberalization (CAL) strategy of emerging economies could change. As the largest trading country and holder of international reserves, CAL policy choices in China are essential and could generate demonstration effects for other emerging markets. The financial globalization can be influenced deeply and even reversed. Examining whether and how China can benefit from CAL is essential to evaluate the CAL policy orientation.

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CAL can reduce capital costs and thus spur increased investments and improve economic efficiency (Bekaert et al., 2005). Generally, this CAL benefit is the most preferred. Factors such as financial distortion could weaken and even destroy the availability of such benefit (Eichengreen and Leblang, 2003). However, CAL can likewise be a source of economic instability and magnify distortions (Wei, 2018). As the largest developing country in the world, China has adopted a positive attitude toward CAL following the RMB exchange rate reform. In recent years, the Chinese government has implemented various CAL policies to open the country's capital account progressively. The RMB Qualified Foreign Institutional Investors (RQFII) program, which is a policy initiative allowing international investors holding an RQFII quota unprecedented access to Chinese onshore equity and fixed income securities markets, was announced by Chinese Prime Minister Li Keqiang during the Forum on the 12th Five-Year Plan and Mainland–Hong Kong Economic, Trade and Financial Cooperation on August 17, 2011. An increasing number of foreign institutions have applied for RQFII qualification. The State Administration of Foreign Exchange of China announced on December 29, 2018 that 205 foreign institutions from 15 countries (or regions) were approved as RQFII investors, with the aggregate quota reaching 646.672 billion RMB.

We attempt to address the valuation effect of CAL by searching for evidence from the stock market. Specifically, we analyze the stock market response to the symbolic event, that is, the RQFII policy announcement, and use August 17, 2011 as the event date. Employing an event-study approach and a sample comprising Chinese listed firms, our empirical analysis yields several interesting findings. Overall, we find that the stock market responded significantly positively to the RQFII announcement. The positive cumulative abnormal returns (CARs) suggest that the CAL policy is beneficial on average. Next, we conduct regression analyses to examine the potential determinants of CARs, specifically, financing constraints. Our regression results indicate a certain level of heterogeneity that firms with more stringent financing constraints earn higher returns than their counterparts. We argue that this finding is because the market expects the RQFII announcement, as a CAL tool, to provide overseas financing opportunities for firms, especially those with financing constraints.

Our results hold under various robustness checks. One way to check the sensitivity of our results is to choose alternative event windows and different market benchmarks. Another way to establish robustness is to consider alternative financing constraint measurements. Our results remain unaltered under different sensitivity test sets.

Moreover, we provide evidence that local institutions matter. We create a measure for quality of local institutions using the province-level marketization index, which is maintained by the National Economic Research Institute (NERI; Fan et al., 2003, 2011), to gauge the extent of marketization. Moreover, we provide additional evidence that firms' return differentials are significantly high when firms are located in provinces with high-quality local institutions. In other words, firms with tight financing constraints gain from CAL when the quality of local institutions is high. This finding is because firms located in places with high-quality domestic institutions can allocate resources efficiently, thereby alleviating the twin agency problems (Stulz, 2005).

The growing macroeconomic literature posits the costs and benefits of CAL¹; however, limited research examines CAL from the micro perspective. One exception is Alfaro et al., 2017. Employing an event-study methodology with stock price and financial statement data, Alfaro et al., 2017 examined stock market response during the aftermath of capital control announcements in Brazil. In their study, the authors provided evidence for the significant decline of CARs of Brazilian firms following the imposition of capital controls on equity flows and found that large firms and exporting firms suffer less from capital controls. Our study sheds light on this strand of research on the opposite side of capital control, thereby providing firm-level evidence of CAL from the perspective of financing constraints.

The quality of domestic institutions is particularly important for firms to gain benefits from CAL, especially in economies with low-quality institutions (Ding et al., 2018; Ju and Wei, 2011). The twin agency problems (Stulz 2005) may nudge the composition of cross-border capital inflows to consist of less foreign direct investments or shorten the maturity of external debts (Wei, 2018). Specifically, Wei (2000) showed that countries with severe corruption systematically attract less foreign direct investment. Employing firm-level and cross-country data, Wei and Zhou (2018) found that weak public governance tends to reduce the share of external equity financing in total investments. Our study is consistent with this line of research and provides evidence that high-quality local institutions help firms gain increased benefits from CAL, especially those with tight financing constraints.

The remainder of the paper is organized as follows. Section 2 develops a simple hypothesis, and Section 3 describes the data and variables. Section 4 discusses our main findings, and Section 5 concludes the paper.

2. Hypothesis development

Traditional international capital flow theory (Meade, 1952; Mundell, 1962) states that international capital flows from countries with relatively low interest rates to those with high interest rates. Capital generally flows from rich to poor countries (Lucas, 1990) and stimulates poor countries' economic growth or promotes their financial development. However, results are mixed when the relationship between the CAL policy and economic growth is considered. After analyzing financial crisis prevention and markets' response to capital control at the national and international levels, Summers (2000) recognized that controls on international capital flows tend to be ineffective, raise costs, and create distortions. Removing restrictions on capital flows and placing high priority on efficient capital markets should be a necessary step in the process

¹ See the recent review paper of Wei (2018).

of domestic and international capital liberalization for emerging countries. Henry (2000, 2003) demonstrated that the growth rate in output per worker rises by 2.3 percentage points, the rate of capital stock increases by 1.1 percentage points per year, and aggregate dividend yield falls by 240 basic points when emerging economies open their stock markets to foreign investors. By contrast, CAL increases competition in the domestic financial sector and is deemed detrimental to local banks in poor countries (Claessens and Huizinga, 2001). However, current research on CAL and economic growth is mainly from the macro perspective. In our study, we use firm-level financing constraints to measure the degree of micro-level capital shortages and employ the stock market response to reflect the expectation of firms utilizing overseas funds from the CAL policy. Thus, we present the following hypothesis.

Hypothesis 1: Firms with more stringent financing constraints earn higher stock returns than their counterparts.

The institutional environment of recipient countries is an important country-specific “pull” factor that can explain the different effects of countries’ CAL. A strong institutional environment with creditors’ rights, contract enforcement, and satisfactory accounting standards is important for countries benefiting from financial liberalization (Eichengreen et al., 2011). In addition to the international institutional environment, the quality of domestic institutions is particularly important for firms to gain benefits from CAL, especially in economies with low-quality institutions (Ding et al., 2018; Ju and Wei, 2011). One possible reason is that a distorted domestic institution can lead to twin agency problems in which controlling shareholders can use their power to expropriate outside investors for private benefits, and government officials may use their power to improve their personal welfare at the expense of the shareholders (Wei, 2018). Hence, we can conjecture that a place or region with a superior institutional environment can help firms with financing constraints better utilize overseas funds from the CAL policy. Thus, we present the following hypothesis.

Hypothesis 2: CAL announcement returns depend on local institutions and are high for (financing-constraint) firms located in provinces with a highly market-oriented environment.

3. Data

Our sample covers all nonfinancial A-share corporations in China’s stock exchanges. Data on stock returns, market returns, and financial variables are extracted from the China Stock Market and Accounting Research (CSMAR) Database, which is maintained by GTA Information Technology. After financial firms (firms that tend to have different financial structures and measurements) and special-treated firms are removed, our sample comprises 1206 listed firms at the end of 2010. Table 1 presents the summary statistics of the key variables used.

For financing constraints, we are interested in firms that cannot fund all their projects not owing to financial or economic distress or bankruptcy risk but because of potential credit constraints or inability to borrow or issue equity or dependency on bank loans, illiquid assets, or similar phenomena (Lamont et al., 2001). We consider several proxies when measuring financing constraints at the firm level. The most well-known index is the KZ index constructed by Kaplan and Zingales (1997, 2000), in which they run a financing constraints ordered logistic model scaling firms’ characteristics and use data from 49 firms from 1970 to 1984. We follow the authors’ approach and perform an ordered logistic cash flow model, Tobin’s Q, leverage, dividends, and cash holdings. In addition, we obtain coefficients and estimate the KZ index using the data of Chinese listed firms. The larger the value of the proxy of the KZ index, the tighter the financing constraints of a firm.

Moreover, we consider several alternative financing constraint measures at the firm level. Whited and Wu (2006) added sales growth rate into the equation of Kaplan and Zingales (1997) to capture the concept that only firms with satisfactory investment opportunities are likely to invest adequately to be constrained (hereafter referred to as the WW index). A large WW index value indicates that firms face high financing constraints. Hadlock and Pierce (2010) focused on firm size and age and developed a linear and quadratic term function for the two variables (hereafter referred to as the SA index). The larger the SA index value, the less tight the financing constraints of a firm.²

Several single variables can also be used as financing constraint proxies, such as firm size (Sheridan and Roberto, 1988; Fama, 1990) and age (Hadlock and Pierce, 2010). When young and small firms mature, their financing constraints are relieved. The larger the firms’ assets or the older the firm, the less tight their financing constraints.

Furthermore, we consider an additional financing constraint measurement based on data at the board member and top management team (TMT) level. Specifically, firms with political connections are believed to be less financially constrained, as connected board members generally have excellent relationships with banks, especially in China (Li et al., 2008). We follow Ding et al. (2018) and construct a measure of political connectedness at the firm level. By manually tracking their curriculum vitae, we can identify whether a TMT or board member holds a secretarial position in the party committee of the Communist Party of China (CPC). Party membership can entail political connections that help firms relax production process constraints and positively affect firms’ profitability (Li et al., 2008). If a TMT or board member is currently (or previously) a secretary of the CPC, then he/she is identified as a politically connected member. We take the number of politically connected firm mem-

² In our regression in Section 4, we take the opposite value of the WW index as the independent variable to be consistent with the benchmark. A similar process is applied to the other alternative variables of financing constraints, namely, firm size, firm age, and political connections.

Table 1
Summary statistics.

Variables	Obs.	Mean	SD	Minimum	Maximum
CAR (5, 5)	1206	0.0169	0.0617	-0.2809	0.3319
KZ index	1206	0.4608	0.8867	-3.8196	4.6114
Alternative financing constraint measures					
Dummy_WW index	1206	0.5489	0.49781	0	1
SA index	1206	-4.1551	1.5175	-9.7679	-1.13832
Political_connection	1206	-0.9917	1.4328	-10	0
Assets	1206	-21.846	1.2918	-26.0949	-18.9761
Age	1206	-8.0342	0.7251	-8.8980	-5.9026
Control variables					
Size	1206	7.5433	1.4478	2.0794	12.560
Leverage	1206	1.4209	1.4748	0.0530	14.642
Ownership	1206	0.6128	0.48732	0	1
ROA	1206	0.0459	0.05779	-0.3890	0.2082
Marketization indices					
Financial_industry	1206	10.8201	1.2301	5.9	12.66
Competition	1206	8.5438	2.1491	-1.87	12.1
Protection	1206	5.5232	1.6834	-1.91	8.93
Credit_funds	1206	13.0954	0.9671	10.98	14.61

bers as the value of the firm's financing constraints (hereafter referred to as the Political_connection variable). The larger the Political_connection value, the fewer the financing constraints.

In terms of controls, we construct a few other variables at the firm level, including Size (logarithm of firms' employees), Leverage (ratio of debt to total assets), Ownership (equal to SOEs), and ROA (return on assets). Detailed information on the definition of the variables is presented in Appendix A.

4. Empirical results

4.1. Market response to RQFII announcement

We employ an event-study approach to examine the reaction of the stock market to the RQFII announcement, in which the effective implementation date of the RQFII announcement is August 17, 2011. We select the top search phrases around the event date, specifically in August 2011. Next, we use the Baidu (the largest search engine in China) index to identify the score of the top search phrases in Chinese. The bigger the number, the larger the search scale of the event. Table 2 presents an illustrative example, and the RQFII announcement is evidently the most relevant news according to the Baidu index.

Using the event-study approach framework, we examine the market response to the event. First, we estimate a market model over a 180-day estimation window ending 11 days before the announcement date. A value-weighted average return of stocks in our sample is adopted as the market return. Next, we calculate CARs over an 11-day (-5, 5) event window centered on the announcement date (i.e., August 17, 2011) and test their statistical significance. Table 3 reports the average of the CARs, which is positive and significantly different from zero. This finding indicates that the market gained 1.69% on average during the 11-day event window. In addition, we illustrate the ratio of firms with positive CARs to the total number of firms. We find that 749 of 1206 firms experience an increase in their abnormal return during the 11-day event window. To establish robustness in our findings, we consider different market benchmarks and alternative event windows. However, our findings remain unaltered. The estimated CARs are all positive and significant. Table 3 lists all the estimated CARs.

4.2. Heterogeneous effect of financing constraints

In this subsection, we further explore the heterogeneous effect of the CAL policy across different firms. Specifically, we consider the following benchmark regression model.

Table 2
Most Relevant News in August 2011.

Big events	Highest Baidu index
RQFII	41,137
World Internet Conference (held in China)	2567
CPI increment	1171
Culture industry support policy	611
Private enterprise encouragement policy	579
GDP growth rate	135

Notes: This table reports the Baidu index for top search phrases during the event month (i.e., August 2011). The bigger the number, the larger the search scale of the event.

Table 3
Stock market response.

Benchmark	Average CAR	Positive/all firms
CAR (5,5)	0.0169***	749/1,206
CAR (5,5)_SHCI	0.0203***	787/1,206
CAR (5,5)_Hushen300	0.0242***	816/1,206
CAR (5,5)_Zhongzheng100	0.0274***	846/1,206
Alternative event windows	Average CAR	t-statistic
CAR (1,1)	0.0027***	3.1328
CAR (2,2)	0.0033***	2.7836
CAR (5,10)	0.0081***	3.7882
CAR (10,5)	0.0118***	5.4361
CAR (10,10)	0.0028	1.1486
CAR (20,20)	-0.0096***	-2.6434
CAR (40,40)	0.0083	1.3898

Note: *, **, and *** denote 10%, 5%, and 1% significance levels, respectively.

Table 4
Heterogeneous effect of financing constraints.

Dep. = CAR	Benchmark model		Alternative event window		Alternative market benchmark		
	[-5, 5]	[-5, 5]	[-2, 2]	[-5,10]	SHCI	Hushen300	Zhongzheng100
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Financing constraints	0.0117*** (5.731)	0.0068*** (2.995)	0.0029* (1.796)	0.0078*** (2.758)	0.0068*** (3.009)	0.0068*** (3.011)	0.0069*** (3.034)
Size		-0.0057*** (-4.318)	-0.0011 (-1.102)	-0.0057*** (-3.592)	-0.0057*** (-4.317)	-0.0057*** (-4.343)	-0.0057*** (-4.325)
Leverage		-0.0003 (-0.262)	0.0003 (0.408)	-0.0014 (-1.109)	-0.0003 (-0.301)	-0.0004 (-0.360)	-0.0004 (-0.386)
Ownership		-0.0067* (-1.745)	-0.0038 (-1.425)	-0.0002 (-0.038)	-0.0066* (-1.726)	-0.0063 (-1.644)	-0.0063 (-1.643)
ROA		-0.0716** (-2.119)	-0.0331 (-1.284)	-0.0842* (-1.891)	-0.0705** (-2.077)	-0.0711** (-2.083)	-0.0696** (-2.029)
Province FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0340 (0.735)	0.0869** (2.019)	0.0535* (1.912)	0.0901 (1.360)	0.0906** (2.106)	0.0955** (2.181)	0.0989** (2.243)
Observations	1209	1206	1206	1206	1206	1206	1206
R-squared	0.060	0.083	0.026	0.067	0.082	0.082	0.081

Notes: T-values are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% significance levels, respectively.

$$CAR_i = \alpha_0 + \alpha_1 * Financing\ Constraint_i + \gamma C_i + \varphi_j + \varphi_k.$$

The dependent variable is each firm's market response to the RQFII announcement, that is, the 11-day CARs. The benchmark variable of interest, namely, *Financing Constraint_i*, is captured by the KZ index. Large values indicate that firms experience increased difficulties while gaining external financing. We also control for a set of variables at the firm level, including *Size*, *Leverage*, *Ownership* and *ROA*, which is labelled C_i in the model. φ_j and φ_k are industry and province fixed effects for capturing time-invariant heterogeneities across industries and provinces, respectively. Standard errors are clustered at the firm level to account for any serial correlation among the firms. Table 4 presents the regression results using the market model and 11-day event window. First, we perform a preliminary analysis without controlling for industry or province fixed effects in Column (1) and provide a complete model in Column (2). We find that the estimated coefficients of the KZ index are positive and significant, thereby indicating that firms with financing constraints have high RQFII announcement returns. The tighter the financing constraints of a firm, the more benefits the firm gains from the CAL policy. This positive and significant result follows the conventional wisdom that the market believes that the CAL policy would attract increased external funds for firms and thus alleviate the financing constraints experienced by the domestic firms.

Next, we conduct a series of sensitivity tests to ensure the robustness of our results. The first set of robustness checks considers alternative event windows. Specifically, we consider a (-2, 2) and (-5, 10) event window and report the results in Columns (3) and (4) of Table 4, respectively. The financing constraint coefficients remain positive and significant and numerically close to the corresponding coefficients in our benchmark. These findings indicate that the use of alternative event windows does not alter our findings. We consider an alternative market benchmark as another way to check the sensitivity of our results. As shown in Columns (5) to (7) of Table 4, our results are consistent if we change the market benchmark to the Shanghai Composite Index, the Hushen 300 Index, or the Zhongzheng 100 Index.

Table 5
Robustness checks.

Dep. = CAR (5, 5) Variables	Composite index		Single index		
	Dummy_WW index (1)	SA index (2)	Political_connection (3)	Assets (4)	Age (5)
Financing constraints	0.0156*** (3.719)	0.0085*** (5.379)	0.0036*** (3.327)	0.0102*** (5.395)	0.0080** (2.944)
Control variables	Yes	Yes	Yes	Yes	Yes
Province FEs	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes
Constant	0.0764* (4.048)	0.0929** (2.439)	0.1035*** (2.700)	0.2795*** (5.002)	0.1757*** (3.232)
Observations	1206	1206	1206	1206	1206
R-squared	0.087	0.095	0.082	0.096	0.083

Notes: T-values are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% significance levels, respectively.

Table 6
Role of local institutions.

Dep. = CAR (5, 5) Variables	Financial_industry (1)	Competition (2)	Protection (3)	Credit_funds (4)
Financing constraints	-0.0269* (-1.773)	-0.0067 (-1.133)	-0.0047 (-0.805)	-0.0045 (-0.173)
Marketization index	-0.0000 (-0.012)	0.0005 (0.505)	0.0013 (0.890)	-0.0044* (-1.843)
Interaction	0.0032** (2.175)	0.0017** (2.270)	0.0022** (2.032)	0.0009 (0.431)
Control variables	Yes	Yes	Yes	Yes
Province FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
Constant	0.0796 (1.551)	0.0745 (1.546)	0.0703 (1.395)	0.1455*** (2.684)
Observations	1206	1206	1206	1206
R-squared	0.087	0.088	0.089	0.085

Notes: T-values are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% significance levels, respectively.

Our third set of sensitivity analyses verifies whether our results are robust to alternative financing constraint measures. Table 5 presents the empirical results. Columns (1) and (2) employ the regression results with the WW index dummy variable, with the SA index as an alternative financing constraint measure. Both indices are composites, as mentioned above. Their estimated coefficients remain positive and significant. This finding is consistent with our benchmark model. In addition to the composite indices, we consider three single financing constraint indices, as mentioned above. The coefficients of Political_connection, Assets, and Age are significantly positive and reported in Columns (3), (4), and (5), respectively. The use of alternative measures for firms' financing constraints does not affect our results, in which the financing constraint coefficients are unanimously positive and significant.

4.3. Role of local institutions

In this subsection, we further explore the role of local institutions in determining the impact of the CAL policy across firms. We create a measure for quality of local institutions using the province-level marketization index, which is maintained by the NERI (e.g., Fan et al., 2011; Ding et al., 2020). This index is constructed using enterprise and household survey statistics and covers five fields with 23 basic indicators. This index assigns each province a comprehensive score based on official statistics and academic surveys to reflect its marketization level. A high score indicates that a province has high-quality local institutions. We construct four marketization measures, namely, Financial_industry, Competition, Protection, and Credit_funds.³

Table 6 illustrates that the interaction effects between financing constraints and marketization are positive in Columns (1)–(4) of Table 6. This finding means that the high marketization levels of provincial firms are consistent with large gains from the CAL policy, especially for firms that are highly financially constrained. The role of local institutions is a vital factor in the effect of the RQFII announcement. It also implies that pushing the market-oriented reform is a precondition or policy mix for CAL.

³ A detailed definition is presented in Appendix A.

5. Conclusions

Drawing on China's RQFII announcement, we examine the stock market response to the CAL policy using the abnormal returns of 1,206 Chinese listed companies. Using an event-study approach, we provide evidence that the stock market responded positively to the CAL policy. Specifically, the CAL policy announcement return is positively related to firms with increased stringent financing constraints. This finding implies that CAL can help alleviate financial distortion and proves the idea of "using liberalization to push reform" in CAL, which is a general principle of the China economic opening up policy. Moreover, this study finds that local institutions matter, which indicates that accelerating the marketization process may be effective in enhancing the effect of the CAL policy. It has important policy significance for the local government and is valuable for firms' site selection for investment.

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Appendix A. Variable descriptions

Variable	Index	Description	Data source
Financing constraints	KZ index	A composite index of five variables, namely, cash flow/asset (CF_{it}/A_{it-1}), debt/asset (LEV_{it}/A_{it-1}), dividend/asset (DIV_{it}), cash holdings (C_{it-1}), and Tobin's Q (Q_{it}). Let $kz1$, $kz2$, and $kz3$ equal 1 if CF_{it}/A_{it-1} , DIV_{it} , and C_{it-1} are less than their median, respectively. Let $kz4$ and $kz5$ equal 1 if LEV_{it}/A_{it-1} and Q_{it} are larger than their median, respectively. Get $KZ = kz1 + kz2 + kz3 + kz4 + kz5$, and run the ordered logistic regression of KZ on the five variables using the data of the Chinese listed companies.	CSMAR
	WW index	Based on the KZ index, sales growth rates at firm and industry levels are also included in the calculation of the WW index. The WW index dummy variable equals 1 if the WW index is larger than the median, and 0 otherwise.	CSMAR
	SA index	We estimate an ordered logistic model in which a firm's financing constraint status is modeled as a linear and quadratic term function for firm size and age.	CSMAR
	Political_Connection	A count variable that counts the number of total political ties (firms' board members holding a secretarial position in the CPC or its branches)	CSMAR
	Assets	Denotes the logarithm of firms' total assets	CSMAR
	Age	Denotes the logarithm of firms' age in days from first listing to Dec. 31, 2010, which is the last accounting date before the RQFII announcement	CSMAR
Stock return	Stock_Return	Daily comparable closing returns (with reinvested cash dividend)	CSMAR
Market benchmarks	Market_Return	Daily aggregated market returns (with reinvested cash dividend)	CSMAR
	Return_SHCI	Shanghai Composite Index daily value-weighted average return	CSMAR
	Return_Hushen300	Hushen 300 Index daily value-weighted average return	CSMAR

(continued on next page)

Variable descriptions (continued)

Variable	Index	Description	Data source
	Return_Zhongzheng100	Zhongzheng 100 Index daily value-weighted average return	CSMAR
Firm size	Size	Denotes the logarithm of firms' employees + 1	CSMAR
Leverage	Leverage	Ratio of total debts to total assets	CSMAR
Ownership	Ownership	A dummy variable that equals 1 if the firm is registered as a state-owned firm, and zero otherwise	CSMAR
ROA	ROA	Return on assets	CSMAR
Marketization	Financial_Industry	Denotes marketization of the financial industry, which is a weighted value of Competition (70.8%) and Credit_Funds (29.2%)	NERI (Fan et al., 2003, 2011)
	Competition	Denotes competition among the financing institutions of a province, which is the ratio of non-stated institutions' deposits to all deposits	
	Protection	Denotes protection of producers' legitimate rights and interests, which is measured by two indices, that is, number of legal cases (economic disputes) and court's efficiency in resolving legal cases (economic disputes); the higher the value, the stronger the legal protection	
	Credit_Funds	Denotes marketization of credit fund allocation, which is the ratio of non-stated sectors' short-term loans to all short-term loans.	

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