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## 9. The effects of financial sector opening on financial constraints in China

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As the threat of a Sino–US trade war continues, China has made new moves towards financial services liberalisation.<sup>1</sup> In his speech to the seventeenth Boao Forum in April 2018, Chinese President Xi Jinping announced a plan to further liberalise China’s financial markets. The Governor of the People’s Bank of China, Gang Yi, promulgated details of policies to open up the financial services sector, including removal of restrictions on foreign ownership of banks and asset management companies. China is determined to liberalise its financial services sector at this critical stage in its broader opening-up and domestic reforms.

There is considerable evidence that financial constraints are a key impediment to investment and the efficiency and growth of firms (Stein 2003; Li and Huang 2015). This is particularly important in developing countries such as China, where imperfections in capital markets remain. Financial constraints can arise from various sources. The literature identifies information asymmetries and agency problems as the most important factors influencing the allocation of financial resources to firms. Our chapter revisits the relationship between financial service liberalisation and financial constraints in China. We aim to investigate whether the financial constraints on Chinese firms have eased with financial sector liberalisation and through what channels financial sector openness has an impact.

Empirical studies of the effects of financial sector opening on developing countries have produced ambiguous results and are therefore not helpful in providing any clear policy guidelines. A transitional economy such as China’s inherits from its previous central-planning phase a repressed financial system in which active directed credit programs channelled funds at a subsidised price to large state-owned enterprises (SOEs). Financial sector opening and the entry of foreign financial institutions—aimed at phasing out these practices—are expected to lead to more efficient allocation of funds to business.

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<sup>1</sup> There are two aspects of financial liberalisation: financial sector opening and financial market liberalisation. In this chapter, we focus only on financial sector, which includes the banking services, insurance and securities sectors.

Our chapter first reviews the policies of China's financial sector opening. And, by using a foreign direct investment (FDI) restrictiveness index as an exogenous policy measure of China's financial services sector and a Chinese regional input–output table, we calculate China's financial sector opening with variations according to region, industry and year. By using the panel data for listed firms for 2010–15, four indices are used to measure China's firm-level financial constraints through internal and external finance channels. We then examine how financial liberalisation in China alleviates the financing constraints on Chinese firms.

We find that financial sector opening can significantly reduce the financial constraints on enterprises, mainly through external financing—especially bank credit. Opening of the financial sector will encourage enterprises to substitute trade credits with bank credits and upgrade their financing structure. By examining heterogeneity effects according to firm ownership and return on assets (ROA), we find that financial sector opening can eliminate financial discrimination and promote financing efficiency. Financial sector opening is most conducive to alleviating the financial constraints on private and profitable enterprises. The mechanisms of financial sector opening affect financial constraints mainly through collateral channels and by eliminating information asymmetry between financial institutions and listed enterprises.

Section two of this chapter provides a brief literature review. Section three reviews the impact of China's financial sector opening on the bank, insurance and security sectors. Measures of China's financial constraints are contained in section four, while sections five and six present and discuss the empirical results, before the final section provides a conclusion.

## Literature review

Financial sector opening is an important step in the liberalisation of financial services—which usually refers to the process by which the operation of a country's financial services sector and the allocation of financial resources gradually cast off government regulation and open up to market determination. Williamson and Mahar (1998) define the scope of financial liberalisation in six aspects: relaxing financial regulations, eliminating loan controls, providing free access to financial services, respecting financial institution autonomy, bank privatisation and liberalisation of international capital flows. In an ideal market without friction, enterprises can choose between internal and external financing without any difference in impact. The investment behaviour of an enterprise will not be restricted by its financial status and will be related only to its investment needs.

However, in the real economy, due to information asymmetry and principal–agent problems, financial markets are not completely efficient. Financing costs vary considerably, according to whether internal or external financing is chosen.

Fazzari et al. (1988) define the difference between external financing costs and internal financing costs as the financial constraints on a business. Financial sector liberalisation—especially the entry of foreign banking—could reduce information asymmetries, promote the market-oriented operation of financial institutions, improve financing efficiency and ease firms' financial constraints.

More empirical research investigates the effects of financial services liberalisation on financial constraints, but the results are still not consistent. Some research finds positive and significant effects from financial liberalisation on the alleviation of firms' financial constraints, such as Harris et al. (1994), Love (2003), Beck et al. (2005), Naeem and Li (2019) and Zhang and Zheng (2019). Early work was conducted by Harris et al. (1994), who empirically studied the relationship between financial liberalisation and financial constraints in Indonesia from 1981 to 1988. They compared conditions before and after financial liberalisation in Indonesia and found the external financial costs decreased and financial constraints improved. Love (2003) uses Euler's equation and structural equations to investigate the determinants of financial constraints and finds that, after controlling other factors—such as scale effects, business cycles and the legal environment—financial liberalisation reduces enterprises' financial constraints. Bekaert et al. (2005) show that liberalisation of the stock market will promote real economic growth by 1 per cent per year. Beck et al. (2005) find that financial liberalisation has much bigger effects on small firms, and financial liberalisation will alleviate financial constraints due to the institutional environment, such as laws and levels of corruption. Naeem and Li (2019) argue that financial sector reform can alleviate financial constraints and improve investment efficiency. Zhang and Zheng (2019) argue that financial constraints have significant impacts on innovation and the effects are stronger for non-SOEs and foreign-owned enterprises.

Some research—most of which focuses on developing countries—produces results with negative or heterogeneous effects. Haramillo et al. (1996) use panel data of manufacturing companies for the period 1983–88 in Ecuador and find that the country's financial reforms have no effects on the financial constraints of domestic companies. The imperfect development of capital markets has a greater impact on small and medium-sized enterprises (SMEs), but less impact on large enterprises. Laeven (2003) shows that financial liberalisation does not reduce financial constraints for large firms, and only reduces financial constraints on SMEs in 13 developing countries. According to Dell'Ariccia and Marquez (2004), financial liberalisation has intensified competition among banks, which has led to a continuous reduction in lending rates, making it easier for companies to obtain funds. But this has also increased the systemic risk of the entire economy. Koo and Maeng (2005) show that, although financial liberalisation can alleviate the financial constraints on South Korean companies, it mainly benefits SMEs. For large enterprises, financial liberalisation has not brought much improvement.

Some research has investigated the characteristics of China's financial markets. External (indirect) financing and banking finance are the main financing channels in China. Historically in China's banking sector, all banks were state-owned and credit was more inclined to go to SOEs. Non-SOEs face more serious financial constraints than their state-owned counterparts. According to Batra et al. (2003), although China has the largest banking system in the world, private companies face bigger financial constraints than SOEs. Huang (2005) also shows that financial constraints are among the biggest hindrance to the development of private companies. After its accession to the World Trade Organization (WTO) in 2001, China accelerated its financial liberalisation, gradually liberalising the local currency business of foreign banks on the mainland. Lin (2011) uses China's WTO accession policies to investigate the effects on financial constraints and finds that, on average, the entry of foreign banks had no significant impact on financial constraints, while different types of enterprises were affected differently and those with higher profitability and higher ROA as well as private firms were more likely to obtain loans.

Other studies have tried to explore the effects of financial opening on the performance of banks and enterprises. Berger et al. (2009) collected China's bank data for the period 1994–2003 and found that Chinese state-owned banks were less efficient than foreign banks. The entry of foreign banks had a positive and significant effect, enhancing the efficiency of Chinese domestic banks. Huang (2005) also used this policy shock in the banking sector and a difference-in-differences method to study its impacts on total factor productivity (TFP). The final regression results show that the entry of foreign banks increased the TFP of all enterprises by 2.03 per cent. However, the entry of foreign banks reduced the TFP of SOEs and collective enterprises and increased the TFP of private enterprises. Meanwhile, Lai et al. (2016) find the entry of foreign banks in a certain region had no significant impact on the aggregate productivity of that region; companies in that region that relied more on financial support in the production process would be better developed. The impact of foreign banks on domestic enterprises comes more through the improvement of technological upgrading, rather than through efficiency enhancement of the redistribution of resources in the region.

## China's financial sector opening

Financial sector opening has played a very important role in the development of the domestic economy and the efficient allocation of production factors. China entered the WTO in 2001. The establishment of the China (Shanghai) Pilot Free-Trade Zone in 2013 was another key node of China's financial service liberalisation. With 2001 and 2013 as the dividing years, we introduce China's financial sector opening policies in two stages after 2001.

## Development stage (2001–13)

China's entry to the WTO was a landmark event in bringing China into the global economy. It adopted a model of gradual opening and made corresponding commitments within the WTO to liberalise its financial institutions such as banks and the securities and insurance sectors.

### *WTO commitments*

#### *Bank services sector*

China made a commitment that immediately on its accession to the WTO it would allow foreign banks to conduct foreign currency business without any limitations on market access or national treatment. Within two years of China's accession, foreign banks were able to conduct domestic currency business with Chinese enterprises, subject to certain geographical restrictions. After entry into the WTO in 2001, China committed to a five-year phase-in period for foreign banking services. Specifically, China would cancel the geographical restrictions on foreign banks gradually over five years. The geographical restrictions on Shanghai, Shenzhen, Tianjin and Dalian were lifted in 2001, followed later in the same year by those on Guangzhou, Zhuhai, Qingdao, Nanjing and Wuhan. The geographical restrictions on Kunming, Beijing and Xiamen were lifted before 2003, as were those on Shantou, Ningbo, Shenyang and Xi'an the following year. Within five years of China's accession, foreign banks were able to conduct domestic currency business with Chinese enterprises and individuals, and all geographical restrictions were lifted (Tables 9.1 and 9.2).

Table 9.1 China's WTO commitments on banking services I

	Cross-border supply	Consumption abroad	Commercial presence	Presence of natural persons
Limitations on market access	Unbound, with exceptions <sup>1</sup>	None	a. Geographic coverage b. Clients c. Licensing	Unbound except as indicated in horizontal commitments
Limitations on national treatment	None		Except for geographical restrictions and client limitations on local currency business	Unbound except as indicated in horizontal commitments
Additional commitments	Foreign financial leasing corporations will be permitted to provide financial leasing services at the same time as domestic corporations			

<sup>1</sup> Unbound except for the following: Provision and transfer of financial information, financial data processing and related software by suppliers of other financial services; advisory, intermediation and other auxiliary financial services on all activities listed in subparagraphs (a) through (k), including credit reference and analysis, investment and portfolio research and advice, advice on acquisitions and on corporate restructuring and strategy.

Source: WTO (n.d.).

Table 9.2 China's WTO commitments on banking services II

	2001	2002	2003	2004	2005	2006
Clients for foreign currency business	No limitation	No limitation	No limitation	No limitation	No limitation	No limitation
Clients for renminbi	Chinese enterprises	Chinese enterprises	Chinese enterprises	All Chinese clients	All Chinese clients	All Chinese clients
Geographical limitation for operation of foreign exchange	No limitation	No limitation	No limitation	No limitation	No limitation	No limitation
Geographical limitation for operation of renminbi	Four cities: Shenzhen, Shanghai, Dalian, Tianjin	Nine cities: Guangzhou, Zhuhai, Qingdao, Nanjing, Wuhan	12 cities: Kunming, Beijing, Xiamen	16 cities: Shantou, Ningbo, Shenyang, Xi'an	No limitation	No limitation
Qualifications for engaging renminbi	Three years of business operation in China and being profitable for two consecutive years prior to the application; otherwise, none.					
Licensing criteria for establishing a subsidiary	Total assets of more than US\$10 billion at the end of the year prior to filing the application.					
Licensing criteria for establishing a branch	Total assets of more than US\$20 billion at the end of the year prior to filing the application.					
Licensing criteria for establishing a Chinese-foreign joint bank or a Chinese-foreign joint finance company	Total assets of more than US\$10 billion at the end of the year prior to filing the application.					

Source: WTO (n.d.).

### *Insurance services sector*

China has also gradually liberalised its insurance sector. According to China's WTO commitment on insurance services, foreign non-life insurance providers are permitted to set up a branch or a joint venture in China and may hold a 51 per cent equity share of that. Within two years of China's WTO accession, foreign non-life insurance providers were permitted to establish whole ownership of a joint venture. On accession, large-scale insurance and reinsurance for commercial risk, international marine, aviation and transport and joint ventures with foreign equity of no more than 50 per cent were permitted; within three years of accession, foreign equity shares could increase to 51 per cent; and, within five years of accession, wholly foreign-owned subsidiaries were permitted.

The geographical restrictions on foreign insurance companies were also phased out. Relative to the open stage of the banking industry, liberalisation of the insurance sector has been relatively brief. In 2003, China released the geographical restrictions on Shanghai, Dalian, Shenzhen and Foshan, and, in 2004, on another 10 cities (Beijing, Chengdu, Chongqing, Fuzhou, Suzhou, Xiamen, Ningbo, Shenyang, Wuhan and Tianjin). All geographical restrictions on foreign insurance companies were lifted before 2005 (Tables 9.3 and 9.4).

Table 9.3 China's WTO commitments on insurance services I

	Cross-border supply	Consumption abroad	Commercial presence	Presence of natural persons
Limitation on market access	Unbound except for: reinsurance, international transport insurance and brokerage for large-scale commercial risks	Unbound for brokerage. Other, none	a. Establishment form b. Geographic coverage c. Business scope d. Licences	Unbound except as indicated in horizontal commitments
Limitation on national treatment	None	None	None, with exceptions <sup>1</sup>	Unbound except as indicated in horizontal commitments

<sup>1</sup> None, except for: Foreign insurance institutions shall not engage in the statutory insurance business; on accession, a 20 per cent cession of all lines of primary risk for non-life, personal accident and health insurance businesses with an appointed Chinese reinsurance company shall be required; one year after accession, 15 per cent shall be required; two years after accession, 10 per cent shall be required; and three years after accession, 5 per cent shall be required; and four years after accession, no compulsory cession shall be required.

Source: WTO (n.d.).

Table 9.4 China's WTO commitments on insurance services II

		2001–03	2004–06
Form of establishment	Non-life insurance	Foreign insurers allowed to establish as a branch or as a joint venture with 51 per cent foreign ownership	Foreign insurers allowed to establish as a wholly owned subsidiary
	Life insurance	Foreign insurers allowed 50 per cent ownership in a joint venture with the partner of their choice	
	Insurance brokerage	Joint venture with foreign equity of no more than 50 per cent allowed	Joint venture with foreign equity of 51 per cent allowed
Geographic coverage		2003: Shanghai, Guangzhou, Dalian, Shenzhen and Foshan	2004: Beijing, Chengdu, Chongqing, Fuzhou, Suzhou, Xiamen, Ningbo, Shenyang, Wuhan, Tianjin 2005: No geographical restrictions

		2001–03	2004–06
<b>Business scope</b>	Non-life insurance	Provide 'master policy' insurance/insurance of large-scale commercial risk	Provide the full range of non-life insurance services to both foreign and domestic clients
	Life insurance	Provide individual (not group) insurance to foreigners and Chinese citizens	Provide health insurance, group insurance and pension/annuities insurance to foreigners and Chinese citizens
	Reinsurance	Provide reinsurance services for life and non-life insurance as a branch, joint venture or wholly foreign-owned subsidiary, without geographical or quantitative restrictions on the number of licences issued	
<b>Licence qualifications</b>	Investor shall be a foreign insurance company established for more than 30 years and a WTO member; shall have had a representative office for two consecutive years in China; shall have total assets of more than US\$5 billion at the end of the year prior to application, except for insurance brokers.		
<b>Total assets requirement</b>		2002: more than US\$400 million	2003: more than US\$300 million 2005: more than US\$200 million

Source: WTO (n.d.).

### *Security services sector*

China's WTO commitments on the securities sector relate mainly to limitations on market access: joint ventures are allowed to manage investment funds, but their stakes cannot exceed 33 per cent, relaxing three years after accession (Table 9.5).

**Table 9.5 China's WTO commitments on securities**

Limitations on market access	
<b>Cross-border supply</b>	Unbound except for the following: Foreign securities institutions may engage directly (without a Chinese intermediary) in B-shares business
<b>Consumption abroad</b>	None
<b>Commercial presence</b>	Unbound, except for the following: On accession, representative offices of foreign securities institutions in China may become 'special members' of all Chinese stock exchanges
	On accession, foreign service suppliers will be permitted to establish joint ventures with foreign investment up to 33 per cent to conduct domestic securities investment fund management
	Within three years of China's accession, foreign investment shall be increased to 49 per cent
	Within three years of accession, foreign securities institutions will be permitted to establish joint ventures, with foreign minority ownership not exceeding one-third, to engage (without a Chinese intermediary) in underwriting A shares and in underwriting and trading B and H shares as well as government and corporate debt, and launching of funds
	Criteria for authorisation to deal in China's financial industry are solely prudential (that is, containing no economic needs test or quantitative limits on licences)
<b>Presence of natural persons</b>	Unbound except as indicated in horizontal commitments



## Relevant policies after WTO accession

Since entering the WTO, China has accelerated the pace of reform in its financial sector to comply with its accession commitments, implementing active liberalisation policies in the areas of banking, insurance and securities.

### Banking services sector

In line with its WTO commitments on the banking services sector, China published its ‘Regulations of the People’s Republic of China on the Administration of Foreign-Funded Financial Institutions (Amended)’ in December 2001. The geographical and customer restrictions on foreign-funded banks’ handling of foreign exchange business were cancelled. Foreign banks are allowed to operate foreign exchange business for Chinese companies and Chinese residents and also local currency business in four cities: Shanghai, Shenzhen, Tianjin and Dalian.

In January 2002, ‘The Rules for Implementing the Regulations of the People’s Republic of China on the Administration of Foreign Financial Institutions (Amended)’ were published, and in December of the same year, renminbi business was opened to foreign banks in five cities: Guangzhou, Qingdao, Zhuhai, Nanjing and Wuhan. In December 2003, ‘The Regulations on Equity Investment of Foreign Financial Institutions in Chinese Financial Institutions’ was promulgated, allowing foreign banks to operate in local currency business in four cities—Jinan, Fuzhou, Chengdu and Chongqing—and operate renminbi business for domestic enterprises in areas where renminbi business has been opened for local currency business. The state-owned commercial banks in China also started to reform their shareholding system in the same year.

In 2004 and 2005, foreign banks were allowed to operate local currency business in Kunming, Beijing, Xiamen, Shenyang, Xi’an, Shantou, Ningbo, Harbin, Changchun, Lanzhou, Yinchuan and Nanning. On 27 October 2005, China Construction Bank Corporation was listed on the Hong Kong Stock Exchange. Subsequently, the Bank of China and the Industrial and Commercial Bank of China were also listed. Finally, in 2006, with the promulgation of the ‘Regulations on the Administration of Foreign-Funded Banks’ and their implementation rules, the geographical and nonprudential restrictions on foreign investment essentially disappeared, the banking sector achieved comprehensive liberalisation and WTO commitments were successfully completed.

China continued to maintain an open attitude and expand the operating scope for foreign banks. In June 2007, foreign corporate banks with qualifications to operate renminbi retail business were allowed to issue bank cards satisfying the Chinese bank card business and technical standards, and enjoying the same treatment as

Chinese banks. In December 2008, foreign banks were allowed to trade on the interbank bond market and underwrite financial bonds and nonfinancial corporate debt financing instruments, but they were required to report to the local banking regulatory bureau. In June 2010, the ‘Notice on the Relevant Matters Concerning the Establishment of Sub-Branches of Foreign-Funded Banks in Cities and Counties with High Density of Foreign-Oriented Enterprises’ was issued, allowing foreign-invested banks to set up branches in the qualifying cities and counties. After China’s WTO accession in 2001, the speed of liberalisation for foreign banks improved significantly. However, development slowed with the impact of the Global Financial Crisis in 2008. As shown in Table 9.6, the number of foreign banks in China is constantly expanding.

**Table 9.6 Development of foreign banks in China**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of foreign banks	192	211	254	312	274	311	338	360	387	412
Total assets of foreign banks (RMB billion)	4,159	5,823	7,155	9,279	12,525	13,448	13,492	17,423	21,535	23,804

Note: The data series starts in 2003 as this is the year the China Banking Regulatory Commission began to provide detailed statistics on foreign banks in China.

Source: CBRC (various years).

## Insurance services sector

Under China’s WTO accession commitments, the transition period for the insurance services sector was only three years, which was shorter than that for the banking sector. At the same time as China entered the WTO, in December 2001, the ‘Regulations of the People’s Republic of China on the Administration of Foreign-Invested Insurance Companies’ were announced by the State Council. China’s insurance sector has since entered a new era of comprehensive reform and liberalisation.

On 11 December 2004, China liberalised the operations of foreign-invested insurance companies, allowing foreign life insurance companies to provide health insurance, group insurance and pension/annuity insurance business, and cancelling geographical restrictions on the establishment of foreign-invested insurance institutions. The proportion of foreign equity in insurance brokerage companies can now exceed 51 per cent.

In the life insurance sector, foreign ownership is restricted to a maximum of 50 per cent. Apart from the market entry restrictions on non-life insurance businesses, the geographical restrictions and business scope have been gradually liberalised after China’s accession to WTO, the ratio of statutory reinsurance will

be reduced by 5 per cent every year until cancelled. The insurance sector was the first of the financial sectors to liberalise. Since 2005, except for foreign ownership restrictions (to a maximum of 50 per cent), foreign insurance companies have enjoyed national treatment basically. In 2012, China and the United States signed the ‘Joint Statement on Strengthening Sino–US Economic Relations’, which liberalised compulsory liability insurance for motor vehicle accidents and has already surpassed China’s WTO commitments.

After China entered the WTO, its insurance services sector experienced stable and rapid development (Table 9.7). The proportion of foreign capital in China’s insurance sector has remained about 5 per cent.

Table 9.7 Development of foreign insurance companies

	2005	2006	2007	2008	2009	2010	2011	2012
Number of head offices	40	41	43	48	52	53	51	52
Number of provincial branches	47	67	90	117	150	168	360	212

Source: NBS (various years[a]).

## Security services sector

After China’s accession to the WTO, the representative office of a foreign securities institution in China could apply for special membership of Chinese stock exchanges. Foreign-invested institutions were allowed to set up joint venture securities companies and foreign securities institutions could directly engage in B-share transactions.

In July 2002, the ‘Rules for the Establishment of Foreign-Funded Securities Companies’ were implemented to clarify the conditions and procedures for the establishment of foreign-invested securities companies and to stipulate the scope of their business. The rules stipulated that ‘the proportion of shares held by foreign shareholders (the proportion of equity held by a shared securities company) should not exceed one-third’. In 2012, the maximum limit on foreign capital in joint venture securities companies was increased to 49 per cent.

In October 2002, the China Securities Regulatory Commission (CSRC) promulgated the ‘Measures for the Administration of the Acquisition of Listed Companies’ and the ‘Measures for the Administration of Information Disclosure of Shareholders’ Changes in Listed Companies’. Foreign-invested companies were allowed to participate in the merger and acquisition of listed companies. In November 2002, the CSRC and the People’s Bank of China jointly promulgated the ‘Interim Measures for the Administration of Domestic Securities Investment by Qualified Foreign Institutional Investors’, introducing qualified foreign institutional investors (QFII) into the Chinese securities market, taking effect in July 2003. The first QFII,

UBS Securities Asia Limited, placed an order to buy four A shares, marking the first step for foreign investment to enter the Chinese A-share market. In June 2007, the CSRC issued the ‘Pilot Measures for the Administration of Overseas Securities Investment by Qualified Domestic Institutional Investors’ and related notices. In 2011, the Renminbi Qualified Foreign Institutional Investors (RQFII) scheme was launched, based on the QFII scheme.

## Accelerated stage (2013 – today)

The establishment of the China (Shanghai) Pilot Free-Trade Zone in 2013 was not only an important measure in the liberalisation of the financial services sector, but also indicated that China’s service industry had entered a new stage.

### *Banking services sector*

In September 2014, the ‘Implementation Measures for Administrative Licensing of Foreign-Invested Banks’ were promulgated, unifying the market access standards for Chinese and foreign banks. In addition, the regulations requiring foreign banks to apply to establish branches one at a time were cancelled, and the minimum requirements for working capital for a sub-branch were cancelled. In November 2014, the ‘Regulations on the Administration of Foreign-Invested Banks’ were amended to allow foreign banks, Sino–foreign joint venture banks and foreign bank branches to engage in bond trading on the interbank market in accordance with the business scope approved by the China Banking Regulatory Commission.

In July 2017, the ‘Measures for Administrative Licensing of Chinese Commercial Banks’ were revised, further relaxing the threshold for foreign banks to invest in Chinese banks. On 24 February 2018, the ‘Measures for Administrative Licensing of Foreign-Invested Banks (Revised)’ stipulated that the procedures for the establishment and mergers of sub-branches shall be reviewed, and only the approval of the opening of branches shall be retained. On the same day, the ‘Measures for Administrative Licensing of Foreign-Funded Banks (Revised)’ stipulated that ‘foreign-invested legal banks and joint venture banks in China may invest in Chinese financial institutions’, abolishing the relevant restrictions in the 2003 measures. As shown in Table 9.8, after 2013, the number of foreign-invested banks continued to grow.

Table 9.8 Development of foreign banks, 2013–17

	2013	2014	2015	2016	2017
Number of foreign banks	419	437	464	475	483
Total assets of foreign banks (RMB billion)	25,577	27,921	26,820	29,286	32,438

Source: CBRC (various years).

### *Insurance services sector*

In September 2013, the Shanghai Free-Trade Zone was officially listed and the China Pacific Insurance (Group) and Public Insurance became the first enterprises to settle in the new zone. In September 2014, Shanghai Life Insurance received approval from the China Insurance Regulatory Commission to raise funds. There are plans to expand the foreign currency policy and other businesses in the free-trade zone in future.

Shanghai Life Insurance was the first national insurance company approved after the promulgation of the ‘Opinions of the State Council on Accelerating the Development of the Modern Insurance Services Industry’. It was also the first legal personal finance institution registered in the Shanghai Free-Trade Zone. On 30 May 2018, the ‘Regulations on the Administration of Foreign-Invested Insurance Companies (Draft for Comment)’ were proposed, stipulating that the maximum for foreign-invested shares in joint venture life insurance companies should be increased to 51 per cent, relaxing the stipulation in the 2004 ‘Foreign Investment Insurance Company Regulations’ that ‘the proportion of foreign-invested shares in joint venture life insurance companies must not exceed 50 per cent’.

After 2013, the number and assets of foreign-invested insurance companies continued to grow, but the scale of foreign-invested companies remained relatively stable (Table 9.9).

Table 9.9 Number of Sino–foreign joint venture insurance institutions, 2013–17

	2013	2014	2015	2016	2017
Number of head offices	55	57	57	57	57
Provincial branches	224	276	304	327	354
Total assets of foreign-invested insurance companies (RMB100 m)	82,886.95	101,591.47	123,597.76	153,764.66	169,377.32

Source: NBS (various years[a]).

### *Securities services sector*

In May 2014, the State Council issued the ‘Opinions on Further Promoting the Healthy Development of the Capital Market’, which outlined the overall plan for cross-border investment and financing, liberalisation of the securities and futures sectors and strengthening of cross-border supervision and coordination. On 28 April 2018, the ‘Administrative Measures for Foreign-Invested Securities Companies’ provided new regulations for foreign-invested securities companies, deleting the shareholder requirements that the proportion of foreign-owned shares not exceed China’s WTO commitments, and stipulating that the restriction of foreign-invested shares to 51 per cent would be relaxed in three years.

## Measures of financial sector opening

### FDI regulatory restrictiveness index

The FDI regulatory restrictiveness index (FDIR index) gauges the restrictiveness of a country’s FDI rules by looking at the four main types of restrictions on FDI: 1) foreign equity limitations; 2) discriminatory screening or approval mechanisms; 3) restrictions on the employment of foreigners as key personnel; and 4) other operational restrictions—for example, restrictions on branching, capital repatriation or landownership by foreign-owned enterprises. Restrictions are evaluated on a scale from 0 (open) to 1 (closed). Financial sector opening was measured based on this index, covering financial sectors and three subsectors of banking, insurance and securities. The FDI index is drawn from the Organisation for Economic Co-operation and Development (OECD) database.

As shown in Figure 9.1, China’s total FDI index and financial services FDIR index decreased over time, indicating that China was continuing to liberalise its markets. After joining the WTO in 2001, China accelerated its opening-up. After 2013, the FDIR index began to decline rapidly, while the financial services sector declined relatively slowly. This shows that China has maintained a relatively cautious attitude towards the liberalisation of financial services. Although China is constantly promoting its opening to the world, it still has a large gap compared with the average openness of OECD countries, as shown in Figure 9.2.

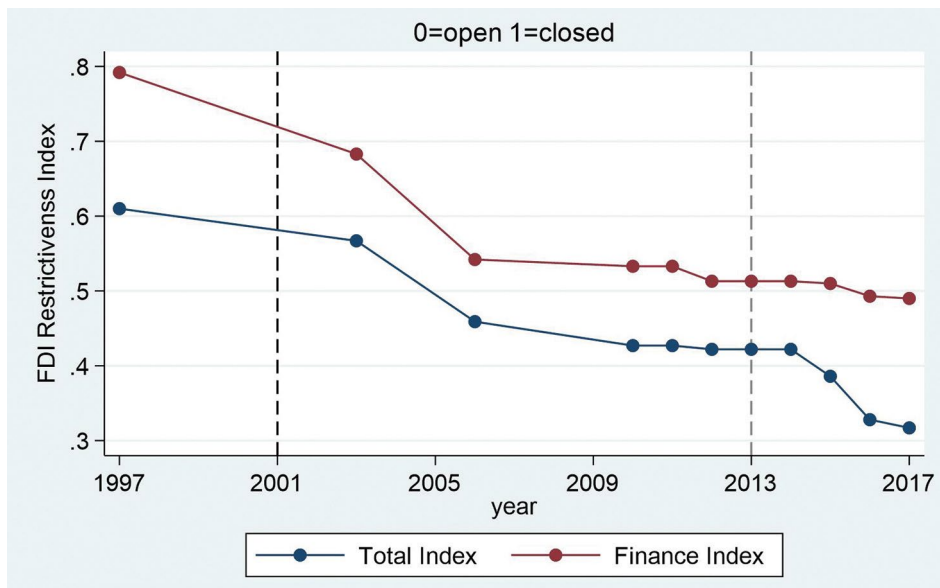


Figure 9.1 FDI restrictiveness index of China

Source: OECD (n.d.).



## Financial constraints in China

### Measures of financial constraints

First, from the perspective of business operations, companies with good business conditions generally have greater cash flow, meaning a considerable proportion of projects could be financed through the company's internal finance. At the same time, companies with good business practices have lower credit risk and less chance of defaulting. Wang and Lu (2018) uses corporate cash flow indicators to measure financial constraints, with the method  $(\text{operating profit} + \text{depreciation})/\text{total assets}$ . The greater the cash flow, the greater is the amount of financing the company can obtain through its own operations, and the lower is the financial constraint the enterprise suffers. Han and Wang (2012) use the operating cash flow as an indicator to measure the internal financial constraints on enterprises. The higher the net profit of enterprises, the stronger is their internal financing ability and the fewer financial constraints they encounter.

Besides internal finance, external finance is an important way for enterprises to obtain finance. The interest paid can reflect the external financing situation of the enterprise. Altman et al. (1977) believe the interest coverage ratio can be used as an indicator of corporate liquidity and corporate financial information, and can be used to measure the financial constraints on an enterprise. The formula for calculating the interest coverage ratio is the enterprise's earnings before interest and tax/interest expense. Li and Yu (2013) use the logarithm of corporate interest payments as an indicator to measure corporate financial constraints. The greater the interest expenses, the lower are the financial constraints.

Banks are not the only source of external financing for Chinese companies. Informal financing, such as trade (commercial) credit, is an important source of financing for most companies. Enterprises in the upstream supply chain can increase their accounts payable by using their strong market position and provide financial support for the development and operation of the company. Wang (2012) finds commercial credit is an important channel through which Chinese export enterprises can obtain external financing. This measure is  $(\text{accounts payable}/\text{current sales})$ . The higher the indicator, the lower are the financial constraints suffered by the company.

Many scholars estimate the financial constraints on enterprises by constructing a series of indices. Kaplan and Zingales (1997), Cleary (1999) and Whited and Wu (2006) constructed indices called KZ, ZFC and WW, respectively. The common feature of these indices is that they contain more information from enterprises and are more comprehensive than the single measure of financial constraints. However, the selection of some variables in the process of construction includes qualitative and quantitative information on corporate financial constraints, which are easily



influenced by personal subjectivity, producing measurement errors. Hadlock and Pierce (2010) cast serious doubt on the validity of the KZ index as a measure of financial constraints, while offering mixed evidence on the validity of other common measures of such constraints. They also find that firm size and age are particularly useful predictors of financial constraint levels, and propose a measure of financial constraints called the ‘SA index’ based solely on these firm characteristics.

## Measures of financial constraints in China

According to the literature above, our chapter uses the following four indicators to measure the financial constraints on Chinese listed companies.

### *Financial constraint 1: Internal financing*

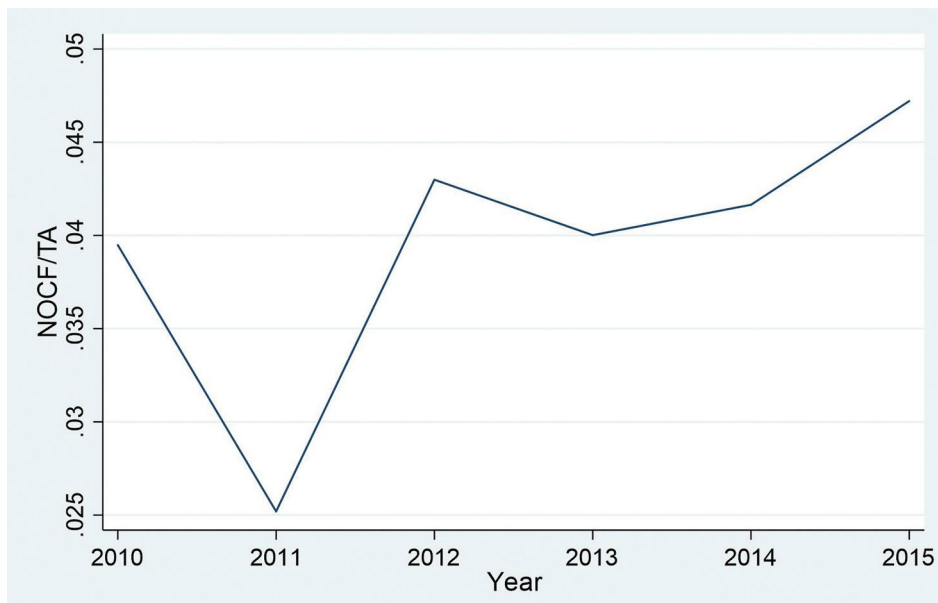


Figure 9.3 Internal financing of Chinese listed companies, 2010–15

Source: Calculated by the authors.

Internal financing refers mainly to a company’s own funds and the accumulation of funds in the production and operating processes. In the long run, enterprises can obtain internal financing by improving their operational efficiency, which is a fundamental of guaranteeing the source of production. We use the ratio of net operating cash flow (NOCF) to total assets (TA) to measure the internal financing of enterprises. As can be seen from Figure 9.3, internal financing is greatly affected by the business conditions of the enterprise, and there was significant fluctuation during the period 2010–15.

### *Financial constraint 2: External financing*

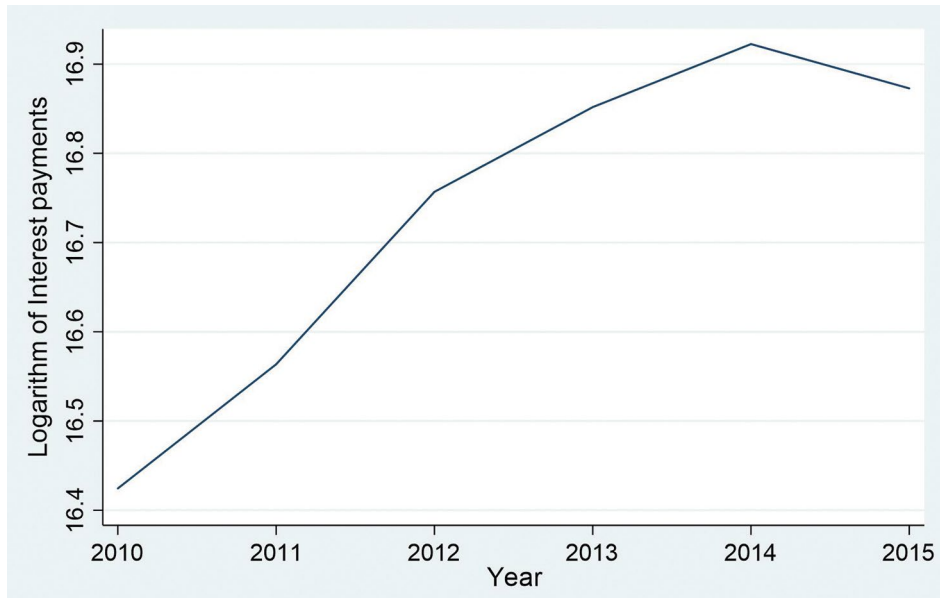


Figure 9.4 External financing of Chinese listed companies, 2010–15

Source: Calculated by the authors.

We follow Li and Yu (2013) by using the logarithm of interest expenses as an indicator to measure external financial constraints. The more interest payments a company makes, the greater is its external financing support and the lower are the external financial constraints. The level of interest payments made by Chinese companies significantly increased after 2010 (see Figure 9.4). This shows that the number of funds obtained by Chinese listed companies through external financing channels has increased.

### *Financial constraint 3: Trade credit*

We use trade credit (accounts payable/operating income) as another measure of the external financial constraints on enterprises. The accounts payable of the enterprise refer to the debt caused by time inconsistencies between obtaining materials and paying for goods. The larger the indicator, the higher is the amount of finance the company can obtain from its partner companies. By using the money of its partner companies, an enterprise can alleviate its own financial constraints. To eliminate differences in company size from the measurement indicators, we divide the accounts payable by the company's operating income.

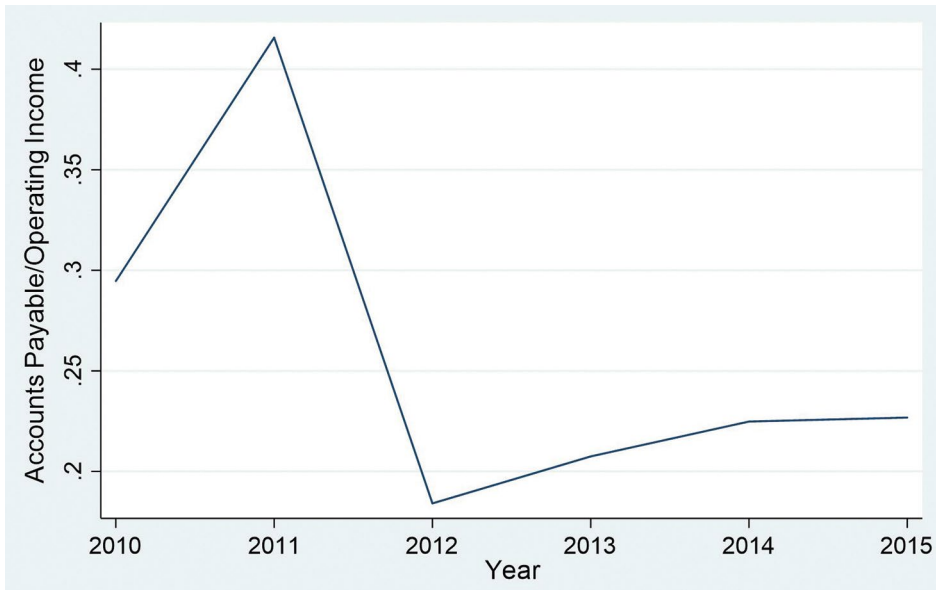


Figure 9.5 Trade credit of Chinese listed companies, 2010–15

Source: Calculated by the authors.

As can be seen from Figure 9.5, from 2010 to 2015, the average proportion of accounts payable in the current year's sales was 0.25. In 2011, the highest value was 0.415, and in 2012, the lowest value was 0.19—indicating a significant downward trend. On the one hand, this shows that the market environment in China has improved and the problem of arrears between enterprises has gradually eased. On the other hand, in Chinese listed companies, the role of trade credit in erasing corporate financial constraints continues to decrease.

#### *Financial constraint 4: SA index*

Finally, we chose the SA index followed by Wu and Huang (2017) as an indicator of financial constraints. Compared with a single financial indicator, index-based indicators use more information to measure the financial constraints on enterprises. The formula for calculating the SA index is Equation 9.2.

#### Equation 9.2

$$SA = -0.737\text{size} + 0.043\text{size}^2 - 0.04\text{age}$$

Size =  $\ln(\text{total assets}/1,000,000)$  and age represents the company's listing period. The result calculated by SA is negative. The greater the absolute value of SA, the more serious are the financial constraints faced by the company.

## Estimation and results

### Empirical model specification

This chapter studies the average effects of China's financial sector opening on financial constraints. We estimate the following linear regressions (Equation 9.3).

#### Equation 9.3

$$Y_{icjt} = \beta_0 + \beta_1 FL_{cjt} + \theta X'_{icjt} + \alpha_i + \delta_t + \epsilon_{icjt}$$

In this equation,  $i$ ,  $c$ ,  $j$  and  $t$  represent firm, region, industry and year, respectively. The dependent variable is a firm-level financial constraint. The baseline regression uses four measures of financial constraints as the dependent variables. FL is the financial sector opening index, as denoted before. Here, we want to look at the direct impact of financial sector opening, so we control only for firm fixed effects,  $\alpha_i$ , which absorb any unobserved time-invariant firm effects;  $\delta_t$  is year fixed effects and  $X_{icjt}$  controls for time-varying firm-level variables such as firm size and profitability. The average impact of financial sector opening is captured by  $\beta_1$ . If  $\beta_1$  is negative, financial sector opening has improved the financial constraints in China.

### Data

Data for Chinese firms listed on the Shanghai and Shenzhen stock markets are obtained from the China Stock Market & Accounting Research Database. Following the literature, financial firms are excluded from the sample; we Winsorize the variables at the first and ninety-ninth percentile of their distribution to eliminate the effect of extreme values. The sample period for the whole dataset is 2010–15, with the number of firm observations ranging from 1,838 (in 2010) to 2,601 (in 2015). The data report detailed financial information on enterprises and their ownership type, location and industry code. FDI restrictiveness index is from the OECD database. The industry classification has been coordinated with that of China's input–output table for 2012, according to the two-digit industry division standards of the CSRC in 2006. Table 9.10 provides some summary statistics for the key variables scaled by capital stock.

Table 9.10 Summary of listed company indicators

Variable	No.	Mean	SD	Min.	Max.
Account/operating income	14,000.00	0.25	3.90	0.00	419.95
Log of fixed assets	14,000.00	19.98	1.79	7.59	27.32
Ownership	14,000.00	0.73	0.44	0.00	1.00
SA index	13,000.00	3.44	0.28	2.74	4.16

Variable	No.	Mean	SD	Min.	Max.
NOCF/TA	13,000.00	0.04	0.08	-1.28	0.88
ln(interest)	12,000.00	16.75	2.26	2.37	21.65
ln_size	13,000.00	21.88	1.20	19.24	25.81
ROA	13,000.00	0.04	0.10	-2.07	8.44
Survey	14,000.00	0.64	0.48	0.00	1.00
FL	14,000.00	0.03	0.05	0.00	0.30

## Empirical results

This chapter aims to investigate the effects of financial sector opening on financial constraints in China. Using measures of financial constraints, we can identify the channels through which FL could improve firms' financial constraints. The estimation results for Equation 9.3 are shown in Table 9.11. Financial sector opening can significantly reduce the SA index as shown in Column (4), but the internal financing situation of enterprises is not significantly affected by FL, as shown in Column (2). FL also enhances external financing through bank credits, which are measured by the interest expense, as in Column (2). FL has significant, negative effects on trade credit in Column (3), which means FL could provide more formal financing channels for financial institutions and will substitute informal finance with trade credit.

Table 9.11 Baseline results

Variables	(1) Internal finance FC1	(2) Bank credit FC2	(3) Trade credit FC3	(4) SA index FC4
FL	-0.3275 (0.6391)	18.2239** (9.0205)	-15.8121* (8.8590)	-6.2624*** (0.3044)
ln_size	-0.0044** (0.0020)	1.1307*** (0.0302)	0.0015 (0.0288)	0.0517*** (0.0010)
ROA	0.0540*** (0.0074)	-0.6218*** (0.1183)	0.5961*** (0.1074)	0.0097*** (0.0037)
Constant	0.1391*** (0.0467)	-8.7081*** (0.6878)	0.5711 (0.6570)	2.3880*** (0.0226)
Firm fixed effect	YES	YES	YES	YES
Year fixed effect	YES	YES	YES	YES
Observations	12,739	11,763	13,179	13,181
R-squared	0.4647	0.8743	0.4094	0.9898

FC = financial constraint

\*\*\*  $p < 0.01$  \*\*  $p < 0.05$  \*  $p < 0.1$

Note: Standard errors are in parentheses.

## Robustness checks

This chapter examines firms' heterogeneity by ownership type and ROA. Financial sector opening could reduce information asymmetry, promote the market-oriented operation of financial institutions, improve financing efficiency and ease firms' financial constraints. We then try to investigate two channels by which FL alleviates financial constraints—through collateral and information asymmetry.

First, we investigate whether FL will have a heterogeneous effect according to firm ownership. We generate an ownership dummy with non-SOEs as 1 and SOEs as 0. We then introduce the interaction terms of FL and the ownership dummy in our baseline specification. The results in Table 9.12 show that FL has stronger effects for private firms for bank loans, and FL could also improve private firms' financial structure, with the substitution of informal trade credit. With the opening of China's financial sector, the degree of Mercerization of the finance sector has been continuously accelerating. The decision-making of financial institutions no longer follows the ownership attributes of the company as a single indicator. With competition from foreign financial institutions, domestic financial banks and institutions could learn how to increase the efficiency of their loans. Private firms with higher productivity and better performance could then be targeted by foreign and domestic banks.

Table 9.12 Results by firm ownership type

Variables	(1) Internal finance FC1	(2) Bank credit FC2	(3) Trade credit FC3
Ownership*FL	1.4413 (0.9457)	40.4255*** (13.4688)	-54.9765*** (12.9541)
ln_size	-0.0046** (0.0020)	1.1276*** (0.0302)	0.0070 (0.0288)
ROA	0.0539*** (0.0074)	-0.6231*** (0.1183)	0.5957*** (0.1073)
Constant	0.1159*** (0.0449)	-8.6411*** (0.6630)	0.7353 (0.6325)
Firm fixed effect	YES	YES	YES
Year fixed effect	YES	YES	YES
Observations	12,739	11,763	13,179
R-squared	0.4648	0.8744	0.4102

FC = financial constraint

\*\*\*  $p < 0.01$  \*\*  $p < 0.05$  \*  $p < 0.1$

Note: Standard errors are in parentheses.

Second, we investigate the heterogeneous effects of ROA. The return rate of the project is one of the most important indicators for investors. We use ROA to represent the profitability of the company: the higher the ROA, the stronger is the business capability. We then also introduce the interaction term of ROA with FL. The results in Table 9.13 show financial sector opening has stronger effects for firms with better operating performance and eases financial constraints through both bank credit and trade credit. China's financial sectors have become more and more market-oriented, and companies with better operating performance could have received more external financing support. Companies with higher profit have better expected returns and could raise funds more easily through external financing.

Table 9.13 Results by firms' ROA

Variables	(1) Internal finance	(2) Bank credit	(3) Trade credit
ROA*FL	0.4681 (0.2910)	8.4049* (4.4884)	51.7222*** (4.1156)
ln_size	-0.0045** (0.0020)	1.1352*** (0.0302)	0.0003 (0.0286)
ROA	0.0359*** (0.0135)	-0.9095*** (0.1959)	-1.3590*** (0.1885)
Constant	0.1316*** (0.0438)	-8.2808*** (0.6510)	0.1854 (0.6147)
Firm fixed effect	YES	YES	YES
Year fixed effect	YES	YES	YES
Observations	12,739	11,763	13,179
R-squared	0.4648	0.8743	0.4179

\*\*\*  $p < 0.01$  \*\*  $p < 0.05$  \*  $p < 0.1$

Note: Standard errors are in parentheses.

Third, we try to explore the mechanisms of FL on financial constraints. A company's fixed-asset investment plays an important role in that company's development. On the one hand, fixed-asset investment is accompanied by an expansion of scale, updating of production equipment and an increase in productivity. In a market-oriented environment, productivity improvement is conducive to enterprises obtaining greater profits and improving their internal financing capacity. On the other hand, in the process of external financing, fixed assets can be used as collateral to reduce the default risk of corporate borrowing and improve the probability of successful financing. We use the logarithm of fixed assets as an indicator of the collateral status of an enterprise, and introduce the interaction term of fixed assets to FL. The results in Table 9.14 show that all the coefficients of the interaction term

are positive and significant. With the opening of the financial sector, a company with much collateral can effectively alleviate its financial constraints through both internal and external channels.

Table 9.14 Results by firms' collateral

Variables	(1) Internal finance	(2) Bank credit	(3) Trade credit
Collateral*FL	0.0522*** (0.0150)	0.9257*** (0.2188)	-1.1998*** (0.2076)
ROA	0.0537*** (0.0074)	0.6081*** (0.1182)	0.5989*** (0.1073)
ln_size	-0.0059*** (0.0021)	1.1066*** (0.0309)	0.0339 (0.0295)
Constant	0.1335*** (0.0440)	-8.1821*** (0.6540)	0.0835 (0.6214)
Firm fixed effect	YES	YES	YES
Year fixed effect	YES	YES	YES
Observations	12,737	11,761	13,177
R-squared	0.4653	0.8745	0.4111

\*\*\* p < 0.01 \*\* p < 0.05 \* p < 0.1

Note: Standard errors are in parentheses.

Fourth, we try to investigate channels of information asymmetry, which is one of the main causes of financial constraints on enterprises. Financial institutions cannot clearly understand the operating situation of those demanding capital (enterprises), which causes a huge gap between the cost of internal financing and the cost of external financing. It is important for financial institutions to investigate listed companies to eliminate information asymmetry between these institutions and enterprises. By surveying listed companies, financial institutions can verify the publicly disclosed information of those companies, and also have direct communication with the company's managers, eliminating barriers to information-sharing. We generate a dummy variable with the unit of whether the listed companies have been surveyed by financial institutions (such as banks and insurance and securities institutions), and 0 otherwise. The results in Table 9.15 show that a company surveyed by a financial institution is more likely to receive financial support from a bank and less likely to rely on credit finance. Surveys by financial institutions could well solve the problem of information asymmetry between enterprises and those institutions and alleviate the financial constraints on enterprises. We have not, however, found significant effects of financial opening on internal financing.



Table 9.15 Results by finance institution survey

Variables	(1) Internal financing	(2) Bank credit	(3) Trade credit
Survey*FL	0.0242 (0.0459)	0.1067** (0.0468)	-2.3075*** (0.6348)
ln_size	-0.0046** (0.0020)	-0.0306*** (0.0021)	0.0087 (0.0289)
ROA	0.0539*** (0.0074)	-0.0587*** (0.0079)	0.5965*** (0.1073)
Constant	0.1329*** (0.0440)	0.8758*** (0.0458)	-0.0135 (0.6211)
Firm fixed effect	YES	YES	YES
Year fixed effect	YES	YES	YES
Observations	12,739	13,181	13,179
R-squared	0.4647	0.8658	0.4100

\*\*\* p < 0.01 \*\* p < 0.05 \* p < 0.1

Note: Standard errors are in parentheses.

Last but not least, we change another measure of financial sector opening in our robustness checks. According to the policy summary in section three, China has gradually liberalised its banking sector since its entry to the WTO in 2001. The Chinese Government agreed to remove restrictions on foreign banks' local currency business in a number of cities every year during the first five years after accession (2001–06), with no restrictions on foreign banks anywhere in the country beyond that. This step-by-step deregulation of foreign banking provides a suitable policy experiment for analysing the effects of banking sector liberalisation on financial constraints. Following Lin (2011), we use a dummy variable,  $FBL_{ct}$ , indicating the timing and geographic variation of foreign bank entry into local currency business with firms in a particular city. For example, in the City of Beijing,  $FBL_{ct};2004 = 0$  and  $FBL_{ct};2005 = FBL_{ct};2006 = 1$ , since Beijing opened to foreign bank entry at the end of 2004.

The model specification is Equation 9.4.

Equation 9.4

$$Y_{icjt} = \beta_0 + \beta_1 FBL_{ct} * Ownership + \theta X'_{icjt} + \alpha_i + \delta_t + \epsilon_{icjt}$$

In this robustness test, we use Chinese firm-level data from the *Annual Survey of Industrial Enterprises* for 1998 to 2007, conducted by the National Bureau of Statistics of China (NBS various years[b]). This dataset covers all state-owned and non-state-owned industrial firms with more than RMB5 million in revenue. The regression results are shown in Table 9.16. We find that banking liberalisation alleviates financial constraints by improving both bank credit and trade credit for private firms, while the ratio of bank credit to trade credit also increases. This is consistent with our previous results, and shows that banking liberalisation upgrades the financing structure by substitution of trade credit with more bank credit.

Table 9.16 Regression results with banking sector liberalisation on WTO commitments

Variables	(1) Bank credit FC2	(2) Trade credit FC3	(3) Ratio FC2/FC3
FL*Ownership	0.165*** (0.00536)	0.0953*** (0.00384)	0.0482*** (0.00699)
ln_size	0.626*** (0.00308)	0.470*** (0.00234)	0.140*** (0.00407)
Constant	1.647*** (0.0181)	4.290*** (0.0136)	-2.610*** (0.0241)
Observations	1,038,451	1,433,281	967,787
R-squared	0.849	0.842	0.752
Firm fixed effect	YES	YES	YES
Year fixed effect	YES	YES	YES

FC = financial constraint

\*\*\* p < 0.01 \*\* p < 0.05 \* p < 0.1

Note: Standard errors are in parentheses.

## Conclusions

This chapter investigates the effects of China's financial sector opening on financial constraints on Chinese listed firms. We first systematically review the policies on China's financial sector opening and set up a relatively exogenous policy measure based on the OECD's FDI restrictiveness index. Then, based on the latest panel data for listed firms for the period 2010–15, we calculate four indices to measure China's firm-level financial constraints through internal and external financing channels. We find that China's financial sector opening alleviates financial constraints and upgrades the financing structure for China's listed firms. Financial openness also eliminates ownership discrimination and promotes financing efficiency, alleviating

the financial constraints on private and profitable enterprises. The mechanisms of the effects of financial sector opening on financial constraints occur mainly through collateral channels and the elimination of information asymmetry.

This chapter has some important policy implications. On the one hand, China's financial sector opening could alleviate financial constraints and upgrade the financing structure. On the other hand, policymakers should be aware that once they open their financial services trade to foreign competition, they may also invite more capital flows into their economies, which will bring greater competition to domestic financial institutions and tend to render the existing capital control regime less effective. As China is expected to accelerate its financial services liberalisation, the impact on financial markets and capital flows will become substantial, which implies that China's capital controls will become more porous in the future. Therefore, the pace of China's capital account liberalisation will proceed faster than expected.

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