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**The Influence of The Entry of Foreign Banks on The Financing Constraints of Small
and Medium-Sized Enterprises in China**

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Abstract

Since China joined the WTO in 2001, its foreign trade has developed rapidly. From December 11, 2006, China officially granted the national treatment to foreign banks, RMB deposit and loan business will be fully open to foreign banks, which marks the comprehensive entry of foreign banks into China. However, it is worth asking whether foreign banks with abundant capital and advanced management concepts can provide substantial help to Chinese SMEs related to easing financing constraints. This paper uses cash flow sensitivity model and data of A-share listed company data in China to study the influence of foreign banks' entry on financing constraints of Chinese SMEs. The result shows the entry of foreign banks has significantly aggravated the financing constraints of SMEs. The financial constraints of SMEs with an export business are modestly eased as a result of more study, whereas those of SMEs without an export business are greatly worsened. This study draws attention to the issue of the factors which may affect the financing constraints and in particular the influence of the entry of the foreign banks.

Key words: Foreign banks, small and medium-sized enterprises, financing constraint, business size.

JEL Classification: A12, B17, F4

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1. Introduction

Since China acceded to the World Trade Organization (WTO) in 2006, the liberalization of its financial markets and the globalization of its capital markets have been greatly enhanced. Following the rules of WTO, China treats foreign banks as “nationals”. With gradually easing China's restrictions on foreign banks, the incorporation of foreign banks has become a trend and the main form of business for the foreign capital market in China.

Abundant capital and advanced management make foreign banks have been given high hopes in the early stage of entering China. In November 2018, China Banking and Insurance Regulatory Commission issued Regulation of the People's Republic of China on the Administration of Foreign-funded Banks, aiming at further open the bank industry outside the world, which attracts more foreign banks entering China. By the end of 2020, banks from 54 countries and regions had set up offices in China, bringing the total number of foreign banks' operating offices in China to 946. In 2020, 13 foreign banks' operating offices in China were added. The total assets of foreign banks in China reached 3.78 trillion yuan, up 8.57% year on year. There is no doubt that the entry of foreign banks has expanded the scale of China's financial market, improved the structure of the financial market, and greatly improved the overall financing problems of Chinese enterprises.

However, the impact of the entry of foreign banks on China's SMEs has been debated, especially in the term of financing constraints. Financing is becoming increasingly difficult as the number and scale of small and medium-sized firms grows. Small and medium-sized businesses have distinct advantages in product innovation and research and development as

compared to huge corporations, but they are constantly pushed to overlook their financial resource allocation position. Because of the combination of economic instability and a competitive market, capital chain churn frequently causes disconnected issues. The burden of developing small and medium-sized firms in China is made more difficult by the unfavorable financial condition. Furthermore, the credit guarantee system is insufficient, resulting in limited financing channels, impeding the quick growth of small and medium-sized businesses and, as a result, harming overall economic development.

As foreign banks have unique investment strategies and different understandings of the Chinese market, the investment evaluation system, strategies, and choices of potential clients for foreign banks on Chinese SMEs will be very different from those of local banks in China. As to whether the entry of foreign banks is helpful to ease financing constraints of SMEs, different people hold different opinions. Concerns have been expressed that will the entry of foreign banks have a positive, negative, or almost no impact on financing constraints of small and medium-sized enterprises in China.

This research report collects and summarizes the theories and data provided by previous valuable references for analysis. To begin, the impact of foreign bank entry on financing constraints of various types of businesses is explored using theoretical theories. Then, with the financial data from A-share listed companies, the cash flow sensitivity of cash model is employed as the main empirical framework for conducting empirical research to analyze the influence of the entry of foreign banks on the financing constraints of small and medium-sized enterprises in China. The result shows the entry of foreign banks has significantly aggravated the financing constraints of SMEs. And we surprisingly find that the financial constraints of

SMEs with an export business are modestly eased as a result of more study, whereas those of SMEs without an export business are greatly worsened.

This paper makes important contribution to two strands of literature. First, this paper contributes to the literature discussing the influence of the entry of the foreign banks on the financing constraints. It is recognized that the entry of the foreign banks will aggravate the financing constraints on the small and medium-sized enterprises (Wu et al., 2008; Chen and Yao, 2017) and provides the support evidence that the foreign banks through the selection of high-quality customer resources, worsen the financing problems to low-end customers. Foreign banks' selection of high-quality consumers will increase the risk for traditional Chinese banks, and then Chinese banks would even lower the number of loans to poor customers to alleviate the adverse selection problem (Ongena et al., 2015).

Secondly, the paper adds to the literature on the influence of the foreign banks on the financing constraints of the small and medium-sized enterprise. The existing literatures show the whole Chinese small and medium-sized enterprises are affected negatively by the entry of the foreign banks, however, there are no detailed literature to divide the whole small and medium-sized into subsample, like the companies with foreign operation businesses and the companies without foreign operation businesses. This paper, however, gives a result that the entry of the foreign banks will ease modestly the financing constraints of small and medium-sized enterprises with foreign banks and will worsen the companies without the foreign operation business.

The remainder of the paper proceeds as follows. Section 2 reviews related literature and develops hypotheses. Section 3 describes the data and describes the sample and variable

construction. Section 4 first investigates the influence of the entry of the foreign banks on the financing constraints of small and medium-sized companies and then, provides the robust check to get the idea that the entry of the foreign banks will ease modestly the financing constraints of small and medium-sized enterprises with foreign banks and will worsen the companies without the foreign operation business. Finally, the Section 5 makes the conclusion.

2. Literature Review and Hypotheses Development

The relationship between foreign banks and the financial constraints of SMEs has been a hot topic of discussion for some time. Some academics believe that foreign banks' involvement into the SME lending market contributes to easing the financial constraints of SMEs, while others disagree. The repercussions of foreign banks entering China are both conceptually and factually dubious. In the parts that follow, we'll go over pertinent theories and empirical evidence.

2.1 Pertinent Theories and Empirical Evidence Review

Classical financial theories, such as those proposed by Modigliani and Miller (1958), hold that in a perfect capital market, an enterprise's external and internal capital can be completely replaced, so investment behavior is unaffected by the company's financial situation and is solely dependent on investment demand. Greewald et al. (1984) were the first to bring the issue of information asymmetry into the study of capital markets and to develop the idea of financing advantage in imperfect markets. Myers and Majluf (1984) argue that the gap between internal and external finance costs, or the degree of financial constraints that businesses experience, is

linked to the degree of information asymmetry. Fazzari et al. (1988) state there were large disparities in financing costs inside and outside the company due to capital market imperfections, and the cost of internal capital was much lower than the cost of external capital.

In addition to the problem of information asymmetry, Bernanke and Gertler (1989) point out that in an imperfect capital market, the agency problem makes the cost of external financing higher than the cost of internal financing, and due to the existence of such financing constraints, enterprises' investment behavior is influenced not only by investment demand but also by internal capital. Kaplan and Zingales (1997) summarized the commonly used definition of financing constraint: There is a disparity between the internal and external financing costs of firms due to an imperfect market (asymmetric information, agency cost, etc.).

Opler et al. (1999) state enterprises with a high degree of financing constraint have larger cash reserves than those with a low degree of financing constraint. Kim et al. (1998) and Harford (1999) come to the same conclusion based on their empirical findings. Additionally, they discovered a link between corporate cash holdings and cash flow volatility. Enterprises with severe financing limitations have bigger cash holdings, are more sensitive to cash flow, and have a higher desire to hoard cash (Almeida et al., 2008).

2.2 Different attitudes towards the impact on the financial constraints of SMEs due to the entry of the foreign banks

For many SMEs, bank loan financing is one of their fundamental methods to expand their business scale. However, most of the traditional banks in China guarantee loans by the

mortgage, while the intellectual property rights, plant, equipment, or inventories that SMEs can guarantee are very limited, making it difficult for them to obtain funds from banks smoothly (Wu et al., 2008). Jiang et al. (2014) state that the entry of foreign banks has increased the accessibility of financing for some Chinese SMEs. Hasan and Xie (2013) further point the reason that those small and medium-sized enterprises that have no financing opportunities in Chinese traditional banks can obtain financing channels through foreign banks. Clarke et al. (2013) reveal all enterprises, including small and medium-sized enterprises and large enterprises, will have lower barriers to financing in countries with high levels of foreign bank presence.

Hypothesis 1: The entry of foreign banks will ease the financial constraints for SMEs.

Many academics, however, fear that foreign banks' involvement will exacerbate SMEs' financial constraints. Lin (2011) suggest Chinese businesses face financial constraints. State-owned firms are in a strong leadership position in several areas due to China's unique national circumstances. In China, the applicable rules and regulations punish private firms unfairly, with more strict criteria on external funding of small and medium-sized enterprises, and the financial sector is hesitant to lend to small and medium-sized enterprises (Pessarossi et al., 2012). Luo et al. (2018) point the political relationships of private firms play a vital role in easing financial constraints. Chantapong (2016) show that financial constraints have a strong inhibitory influence on private firms' R&D spending, and state-owned firms do not have financial constraints whereas private enterprises do.

A long literature starting with Yang (2017) recognizes the entry of foreign banks has significantly reduced the financing barriers for large enterprises, while the financing difficulties of small and medium-sized enterprises have further intensified. Chen and Yao (2017) further emphasize thirty-five percent of foreign banks identified large state-owned enterprises as clients worth their best efforts to retain. Yamaguchi (2018) has the same idea that due to the difference in credit decision-making patterns between foreign banks and local banks, the entry of foreign banks not only failed to effectively contribute to the financing of small and medium-sized enterprises but also worsened. As a further step, Song (2012) gives the reasons that compared with local banks, which have mastered many “soft” information of enterprises due to long-term operation, foreign banks have increased the dependence of credit decisions on the “hard” condition of enterprises. Sahin and Dogukanli (2014), using the impulse response function and variance decomposition method, combined with the analysis theory of VAR, draws a conclusion that the influence of foreign banks on the credit supply of SMEs is negative, with a time lag of six months.

Clarke et al. (2003) propose the concept of “market-skimming” ---Foreign banks through the selection of high-quality customer resources, worsen the financing problems to low-end customers. Foreign banks' selection of high-quality consumers will increase the risk for traditional Chinese banks, and then Chinese banks would even lower the number of loans to poor customers to alleviate the adverse selection problem (Ongena et al., 2015). Empirical studies show that foreign banks have a significant “market-skimming” effect in many developing countries. For example, Gormley (2010) mentions that in India, only 10% of the

top-scale companies can make a profit from foreign banks. However, 76% of other companies' financing difficulties will increase with the entry of foreign banks.

After studying the relationship between foreign banks and SMEs in India, Cull et al. (2010) reveal that as a result of the systemic decline in domestic bank lending, foreign banks only provided funds to a small number of highly profitable enterprises when they entered, and after foreign banks entered, enterprises were eight percentage points less likely to obtain loans. Gormley (2005) mentions that in developing countries, the entry of foreign banks tends to have the opposite effect on financing for small enterprises. The foreign banks in Mexico influence the SMEs in the same way (Beck and Peria, 2010).

Finally, Liyan (2008) states in the initial stage of entry, foreign banks tend to choose high-quality large enterprises and ignore small and medium-sized enterprises. Dong et al. (2014) find that foreign banks' admission is advantageous to foreign firms but destructive to local enterprises in terms of financing. Chen et al. (2018) further suggest that the entry of foreign banks is beneficial to the regions near to the financial center, like Beijing and Shanghai, but has no obvious effect on other regions.

Hypothesis 2: The entry of foreign banks will worsen the financing constraints of SMEs.

3. Data and Methodology

3.1. Data

The study employs three data sources, all free of survivorship bias: (1) Wind, (2) China Stock Marketing & Accounting Research (CSMAR), and (3) BankScope database.

From CSMAR, we acquire full and detailed information on each loan of a listed company from CSMAR. The CSMAR database has extensive information on bank lending. From 1994 to 2012, we got 22,863 samples from CSMAR. This data includes information such as the issuing bank, currency, amount, period, interest rate, loan type, and so on for the selected listed companies borrowing from banks. Simultaneously, CSMAR database delivers detailed enterprise data such as the company's basic situation, financial status, production, and sales, and so on.

From Wind, we sort out the financial data of Listed Chinese A-share manufacturing companies from 2006 to 2012, including cash holdings, operating cash flow, investment cash flow, long-term and short-term liabilities, net working capital, income, capital expenditure, etc. We give up the companies that were listed between 2006 and 2012, and select the companies that were listed before January 1, 2005, as samples, to avoid the occurrence of cash holdings that are much higher than normal levels. At the same time, listed companies in *ST and ST will also be excluded by us, because their companies have operational or financial problems. In order to ensure the same financing environment, only A-share companies are selected in this sample, while B-share and H-share companies are excluded. After screening, we finally obtained a sample of 443 companies for this study with their financial data. Wind also provides a financial data documentation in the term of financing, which elaborates on the financing of each enterprise.

From BankScope database, we download the detailed information about the banks. The Bank Scope database offers detailed business trade information and credit analysis data for nearly 12,800 significant banks worldwide (210 Chinese banks, 1,673 North American banks,

and 9,500 banks from other countries), as well as major financial institutions. Each bank analysis reported in BankScope includes multi-level financial data over a long period of time, global and domestic bank ranks, national sovereignty and risk rating, and detailed information on shareholders and branches. From the data, we can collect the operation of foreign banks in China from 1994 to 2006, including: total deposits, total loans, total assets, the number of branches. To be specific, the database offers us the basic data of 20 foreign banks in 31 provinces, municipalities, and autonomous regions in China from 2006 to 2012 are collected, including the number of branches, asset scale and employees of these 20 foreign banks with the location, name, opening and closing dates of each bank office in China.

3.2. Methodology

The cash flow sensitivity of investment model was traditionally used as the fundamental study paradigm in the field of corporate financing restrictions. The positive association between investment and cash flow is viewed as evidence of financing restrictions. However, this methodology is rapidly being superseded with the cash flow sensitivity of cash model due to the insurmountable flaws of the cash flow sensitivity of investment mode motive identification (Lian, 2008). The cash flow sensitivity of cash model is used in this paper to generate the methodology model based on Almeida et al (2004). The core of the model is that, in the face of financing constraints, businesses prioritize cash holdings based on the precautionary motive rather than the opportunity cost of cash holding and liquidity convenience. Appropriate cash flow retention from operating activities in order to build up internal funds for future investment projects. As a result of the financing constraints, the change in corporate cash asset holdings

and cash flow will have a positive relationship. According to Opler et al. (2006), this study multiplied the corporate cash flow index by the index of foreign bank entry degree to create an interaction item, which was then put into the benchmark model to examine the impact of foreign bank entry degree on corporate financing constraints.

We determine the changes in corporate cash holdings. The variables measured include volatility of corporate operating cash flows, business asset, short-term debt, net working capital, revenue, and expenditure. This paper adapts the *fixed-effects estimator model*, and the model is as follows,

$$Dcash_{i,t} = \alpha + \beta_1 CF_{i,t} + \beta_2 FBank_{i,t} + \beta_3 CF_{i,t} \times FBank_{i,t} + \beta_4 Asset_{i,t} + \beta_5 Debt_{i,t} + \beta_6 Nwc_{i,t} + \beta_7 Reve_{i,t} + \beta_8 Exp_{i,t} + \varepsilon_{i,t} \quad (1)$$

where $Dcash_{i,t}$ is the changes in corporate cash holdings, the i and t represent individual firms and time, respectively, $CF_{i,t}$ is the current operating cash flow to individual company, $Asset_{i,t}$ is the business asset, $Debt_{i,t}$ is the short-term debt, $Nwc_{i,t}$ is the net working capital, $Reve_{i,t}$ is the revenue, $Exp_{i,t}$ is the capitalized expenditure, $FBank_{i,t}$ is the indicator of the degree of entry of foreign banks, and $\varepsilon_{i,t}$ is the error term.

The parameters of the operating cash flow and the operating cash flow times the indicator of the degree of entry of foreign banks are the most important to estimate out of all the parameters to be evaluated. Companies with financing constraints will keep a portion of their cash flows and hold them in cash or cash equivalents for future investment needs, so the estimated value of the parameter of the operating cash flow should be positive. At the same time, the estimated value of the parameter of the operating cash flow times the indicator of the degree of entry of foreign banks should be negative if the introduction of foreign banks can successfully alleviate the financing constraints of firms.

To investigate the impact on the entry of foreign banks, this paper constructs the indicator of the degree of entry of foreign banks. The indicator of the degree of entry of foreign banks stands for the number of foreign bank branches in each region, which represents the penetration strength of foreign banks in that region. The penetration strength increases as the number of branches increases. The data cover the period from 1998 to 2006, according to *China Financial Statistics Yearbook*.

4. Results and Discussion

4.1. Main Results

When we include the control variables that known to capture the cash flow, our variable $CF_{i,t}$ is statistically significant at the 1% level for the sample of all samples of small and medium-sized companies. Also, $Asset_{i,t}$, $Debt_{i,t}$, and $NWC_{i,t}$ are all statistically significant at the 1% level, and $Reve_{i,t}$ and $Exp_{i,t}$ are statistically significant at the 5% level. We find that our results are not only statistically significant, but also economically significant.

According to Table 3, the result shows a significant positive cash flow regression coefficient, indicating that SMEs face financial constraints. However, we find little indication that business asset has a substantial impact on changes in cash holdings. The regression coefficients for short-term debt and net working capital are all highly positive, implying that as short-term debt and net working capital grow, businesses will keep more cash assets. The regression coefficients for capital expenditure are all strongly negative, implying that businesses with higher growth will need more cash for investment project expansion,

diminishing cash holdings. Meanwhile, an increase in enterprise capital expenditure will result in a decrease in cash assets held.

This research mainly focuses on the regression coefficient of the interaction term $CF \times FBank$. The sign of the regression coefficient of the interaction term is positive and significant at the 1% significance level in Table 3. This demonstrates that, for SMEs, foreign bank entry aggravates the financial constraints of SMEs, which accords with the previous literature. The significant positive relationship emphasizes the impact is not just unobvious.

4.2. Additional Results

To investigate the relationship between the change of dependent variable cash holding and different independent variables, we adopt the quadratic nonlinear relation method and the interaction between variable times variable method, Table (4) and Table (5) respectively. The results show that operating cash flow, the business scale, and the short-term debt are positive, which means the change in these variables can result the change in the same way. As shown in Table (4), the conclusion of our Table (3) is proved. Similarly, the change of cash holdings of our enterprise is significantly affected by the size of the enterprise, compared with other dependent variables. Meanwhile, the regression coefficients of changes in short-term liabilities and changes in net working capital are all significantly positive, indicating that the increase in short-term liabilities and net working capital will make enterprises hold more cash assets, which is consistent with our conclusion in Table (3). The regression coefficients of enterprise income are all negative, indicating that enterprises with higher income will use more cash for

investment project expansion, thus reducing the holding of cash assets. Meanwhile, the increase of enterprise capital expenditure will also reduce the holding of cash asset.

The table (5), however, gives us a confused result, because the revenue times expense is positive. As mentioned before, enterprises with higher income will use more cash for investment project expansion and the more expense spent by the companies, the more cash will change. It should be the negative, however, the results are positive. The theory from Chen and Yao (2017) seems to explain these results. The expense may have a oppose effect on the change in cash when the company is in the period of expansion. The company may increase the short-term debt, instead of expense to expand its scale, which is proved by the result of short-term debt times revenue. Similarly, table (5) also proves that the financial constraints of small and medium-sized enterprises are worsened due to the entry of the foreign banks.

4.3. Robustness Checks

In Table (7), we further divide the data we used into SMEs with major export or import operations and SMEs without those major enterprises to investigate the impact of foreign banks on financial constraints. We define firms that operate foreign business more than one third of their total business volume as small and medium-sized enterprises with overseas operations, and vice versa, based on financial statements. This result further develops the conclusion obtained in Table 3. The regression coefficient of interaction term $CF \times FS$ is the focus of this paper.

In the result of estimating enterprises, like accommodation industry, catering industry, information transmission industry, financial industry, health and security industry, culture

industry, and sports industry as samples, the regression coefficient sign of interaction term is positive, but not significant. This shows that, overall, the entry of foreign banks has no significant impact on the financing constraints of Chinese enterprises. The regression coefficient sign of interaction terms was negative and significant at the significance level of 5% in the sub-sample of SMEs having international activity. The regression coefficient sign of the interaction term is positive and significant at the 1% significance level in the case of small and medium-sized firms without an overseas company. These two empirical findings suggest that foreign bank entry will ease the financing constraints of SMEs with international operations while aggravating the financing constraints of SMEs without international operations. Its explanation is that, on the one hand, although the business of foreign banks in China is developing rapidly, but in general, the degree of entry of foreign banks is still relatively low; On the other hand, foreign banks in China lock in a limited number of high-end customers, so that their customer coverage is too narrow. Foreign banks, in comparison to SMEs without any abroad business, place a greater emphasis on "hard conditions," that is, they are more likely to trust SMEs with overseas business to help them overcome their financing limits.

The outbreak has had a huge impact on the global economy, causing global stock market gloom, and the U.S. stock market has triggered four fusing. Because the stock market is the basis of market confidence, investors will look for confidence in the market failure, which will reduce investment interest, making small and medium-sized enterprise financing less likely and demanding. At the same time, the epidemic will limit market consumption in all countries, causing a drop in demand for products and services, which will result in a drop in enterprise market benefit. According to a large data analysis of business viability, 90 percent of businesses

will fail if the outbreak lasts longer than six months. Most small and medium-sized businesses are currently struggling to keep their cash flow afloat, and government financial subsidies and tax exemptions can only help a limited percentage of the time. In connection with this, if a company does not resume for an extended period of time, it will enter a vicious cycle of no clean profits, failure to service maturing loans, less market credit, greater financing costs, and stricter financing conditions. In table (7), we collect and analyze the data before the COVID-19 and after COVID-19. The 2020 COVID-19 pandemic will have a significant impact on China's economy. The emergence of COVID-19 has reshaped the structure of China's economy and dramatically changed the financing strategies of foreign banks operating in China. The findings demonstrate that the regression coefficient of cash flow signs is positive, which means that the financial constraints exist before and after COVID-19. The parameter of capital expenditure shows that the SMEs are willing to expand their size after COVID-19. The difference between before and after the pandemic is considerable, indicating that after the epidemic, firms' need for funding has increased significantly. It is a common sense that the foreign banks' participation in financing Chinese firms has improved significantly since the outbreak. However, the financial constraints for small and medium-sized private businesses is worsen.

5. Conclusions

Foreign banks have established 195 branches and 14 locally registered legal organizations in China so far, with total assets of more than \$100 billion, representing for around 2% of the banking industry's total assets. Foreign banks, on the other hand, are rapidly growing their

business kinds and breadth, and can presently give more than 100 business sorts. Foreign banks are gradually becoming a vital element of China's banking system as their business scope and operational area expand. The development of foreign banks in China is anticipated to be boosted significantly as more international banks open today. This paper uses data from A-share listed companies to test based on the cash flow sensitivity of cash model. The paper's conclusion is that foreign bank entry has a negative influence on financial constraints of SMEs.

Our regression suggests that it is specifically influenced by the company's relative size. Foreign banks' participation exacerbated the financial constraints faced by SMEs as a whole. The "skimming" effect makes small and medium-sized firms the losers of foreign bank entry, but the entry of foreign banks can substantially ease the financing constraints of small and medium-sized enterprises with foreign operation business. A large number of small and medium-sized private enterprises with less transparent information, so the borrower "hard" information quality standard quality of foreign capital bank customers list, these enterprises in the low-end, easier for foreign banks in the process of "preferred choice" crowding out. Foreign bank entry is an important manifestation of financial openness in a bank-oriented financial system. In China's financial industry, where inefficiencies appear to be ingrained, foreign institutions are frequently held in high regard. The impact of international banks' arrival, on the other hand, is complicated. According to the findings of this paper's research, since small and medium-sized private firms' financing issues intensify, and small and medium-sized enterprises are elements influencing China's economic growth, foreign banks' entry may impede China's economic growth to some extent. Without a question, this is a bleak conclusion. With the deepening of the entry of foreign banks and the increasing competition in the credit

supply market, it is also worth exploring in the future that foreign banks will eventually shed their harmful influence on SMEs and integrate into the local market.

This study emphasizes the need of understanding the elements that may influence funding limitations, particularly the impact of foreign bank entry. This study contributes significantly to two lines of research. To begin with, this research adds to the literature by analyzing the impact of foreign bank entry on funding limitations. It is acknowledged that foreign banks' entry will exacerbate financing limits for small and medium-sized businesses, and there is evidence that foreign banks, by selecting high-quality customer resources, exacerbate financing challenges for low-end customers. The selection of high-quality consumers by foreign banks will increase the risk for traditional Chinese banks, prompting Chinese banks to reduce the volume of loans to poor customers in order to mitigate the adverse selection problem. The research also contributes to the literature on the impact of foreign banks on small and medium-sized business financing limitations. Existing literatures show that the entry of foreign banks has a negative impact on the entire Chinese small and medium-sized enterprise sector; however, there is no detailed literature to divide the entire small and medium-sized enterprise sector into subsamples, such as companies with foreign operation businesses and companies without foreign operation businesses. This article, on the other hand, finds that foreign bank entry will only somewhat improve the financing limitations of small and medium-sized organizations with foreign banks, while it will aggravate the situation for companies without a foreign operation business. At the end of the study, it is a potential conclusion can be induced that the entry of the foreign banks may affect the whole Chinese economy, but it still needs to work to prove it.

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Table1: Sample Statistics of selected company's condition of business

The table reports descriptive statistics for the sample of condition of business from 2006-2012, including current cash flow, business size, short term debt, net working capital, revenue, capital expenditure, and the indicator of the degree of entry of foreign banks. We use *Dcash* to represent the changes on holding cash or cash equivalent calculated by increase in cash and cash equivalents/Total assets at the beginning of period; *CF* to represent cash flow calculated by net operating cash flow/total assets at the beginning of the period; *FBank* to represent the indicator of the degree of entry of foreign banks by using PCA; *Asset* to represent business scale calculated by the natural log of total assets at the end; *Debt* to represent short term debt calculated by difference between ending and beginning current liabilities/Total assets at beginning; *NWC* to represent net working capital calculated by the difference between ending and beginning/Total assets at beginning; *Reve* to represent the revenue calculated by Main business income growth rate; *Exp* to represent total expenditures on fixed assets, intangible assets and other long-term assets/total assets at the beginning of the period. By using PCA, we get the indicator of the degree of entry of foreign banks. The final sample includes 443 companies.

Variables	Number of observations	Mean	StdDev	Min	Max	Medium
<i>Dcash</i>	2658	0.022	0.081	-0.156	0.322	0.158
<i>CF</i>	2658	0.056	0.082	-0.142	0.332	0.190
<i>FBank</i>	368	-0.590	1.681	-0.662	9.271	5.823
<i>Asset</i>	2658	0.068	0.398	0.017	0.332	0.437
<i>Debt</i>	2658	0.042	0.132	-0.215	0.564	0.176
<i>Nwc</i>	2658	0.013	0.121	-0.268	0.443	0.273
<i>Reve</i>	2658	0.067	0.073	0.024	0.347	0.147
<i>Exp</i>	2658	0.258	0.262	-0.370	1.151	0.577

Table 2: Correlations

The table shows the correlation between our variables, using the financial data of the sample of small and medium-size enterprise and matching T-notes. *CF* represents cash flow; *FBank* represents the indicator of the degree of entry of foreign banks; *Asset* represents business scale; *Debt* represents short term debt; *Nwc* represents net working capital; *Reve* represents the revenue; *Exp* represents total expenditures on fixed assets; and Sample periods is from January 2006 to 2012.

	<i>CF</i>	<i>Asset</i>	<i>Debt</i>	<i>Nwc</i>	<i>Reve</i>	<i>Exp</i>	<i>FBank</i>
Panel: The sample of small and medium-size enterprise							
<i>CF</i>	1.0000						
<i>Asset</i>	0.6732 (0.0186)	1.0000					
<i>Debt</i>	0.2342 (0.2867)	0.4537 (0.2333)	1.0000				
<i>Nwc</i>	0.5428 (0.1435)	0.6534 (<0.0001)	0.1733 (0.2432)	1.0000			
<i>Reve</i>	0.8743 (<0.0001)	0.7638 (0.2153)	-0.3422 (0.2731)	0.0537 (0.5534)	1.0000		
<i>Exp</i>	-0.6835 (0.2654)	-0.0655 (0.1578)	0.4362 (0.2643)	-0.5273 (0.2189)	-0.7635 (0.1922)	1.0000	
<i>FBank</i>	0.5472 (0.4632)	0.6389 (<0.0001)	0.6729 (0.1256)	0.3678 (0.2890)	0.3278 (0.6789)	0.7684 (0.0356)	1.0000

Table 3: Main Regression Results

The table shows the results for the in-sample regression:

$$Dcash_{i,t} = \alpha + \beta_1 CF_{i,t} + \beta_2 FBank_{i,t} + \beta_3 CF_{i,t} \times FBank_{i,t} + \beta_4 Asset_{i,t} + \beta_5 Debt_{i,t} \\ + \beta_6 Nwc_{i,t} + \beta_7 Reve_{i,t} + \beta_8 Exp_{i,t} + \varepsilon_{i,t}$$

where $Dcash_{i,t}$ is the changes in corporate cash holdings, the i and t represent individual firms and time, respectively, $CF_{i,t}$ is the current cash flow to individual company, $FBank_{i,t}$ is the degree of the entry of the foreign banks, $Asset_{i,t}$ is the business asset, $Debt_{i,t}$ is the short-term debt, $Nwc_{i,t}$ is the net working capital, $Reve_{i,t}$ is the revenue, $Exp_{i,t}$ is the capitalized expenditure, and $\varepsilon_{i,t}$ is the error term. The panel reports results of the changes in corporate cash holdings: small and medium-size enterprises. The model parameters are estimated by minimizing the equally weighted sum of squared errors. The t-statistics based on four-lag Newey-West adjusted standard errors are reported in parentheses below the estimated coefficients. *- stat. sign. at 10% level; **- stat. sign. at 5% level; ***- stat. sign at 1% level. Sample periods is from January 2006 to 2012.

Small and medium-size enterprises	
Panel: Dependent variable is the changes in corporate cash holdings, $Dcash_{i,t}$	
$CF_{i,t}$	0.477*** (0.067)
$FBank_{i,t}$	0.045*** (0.011)
$CF_{i,t} \times FBank_{i,t}$	0.427*** (0.016)
$Asset_{i,t}$	0.010 (0.023)
$Debt_{i,t}$	0.332*** (0.067)
$Nwc_{i,t}$	0.492*** (0.021)
$Reve_{i,t}$	0.016*** (0.063)
$Exp_{i,t}$	-0.247** (0.007)
<i>Constant</i>	-0.235 (0.042)
<i>Obs.</i>	2,658
<i>R-squared</i>	0.192

Table 4 Nonlinear quadratic relation

We adopt the quadratic nonlinear relation method to detect the relationship between the change of dependent variable cash holding and different independent variables.

$Dcash_{i,t}$ is the changes in corporate cash holdings, the i and t represent individual firms and time, respectively, $CF_{i,t}$ is the current cash flow to individual company, $FBank_{i,t}$ is the degree of the entry of the foreign banks, $Asset_{i,t}$ is the business asset, $Debt_{i,t}$ is the short-term debt, $Nwc_{i,t}$ is the net working capital, $Reve_{i,t}$ is the revenue, $Exp_{i,t}$ is the capitalized expenditure, and $\varepsilon_{i,t}$ is the error term. The t-statistics based on four-lag Newey-West adjusted standard errors are reported in parentheses below the estimated coefficients. *- stat. sign. at 10% level; **- stat. sign. at 5% level; ***- stat. sign at 1% level. Sample periods is from January 2006 to 2012.

Small and medium-size enterprises	
Panel: Dependent variable is the changes in corporate cash holdings, $Dcash_{i,t}$	
$CF_{i,t}$	0.310*** (0.317)
$FBank_{i,t}$	0.421** (0.094)
$CF_{i,t} \times FBank_{i,t}$	0.277*** (0.255)
$CF_{i,t} \times FBank_{i,t}^2$	-0.305*** (0.254)
$Asset_{i,t}$	0.006** (0.012)
$Debt_{i,t}$	0.055** (0.578)
$Nwc_{i,t}$	0.421** (0.094)
$Reve_{i,t}$	0.477*** (0.509)
$Exp_{i,t}$	-0.278 (0.124)
<i>Constant</i>	-0.021 (0.986)
<i>Obs.</i>	2,658
<i>R-squared</i>	0.542

Table 5 Interaction term

We use the interaction term method to detect the relationship between the change of dependent variable cash holding and different independent variables. $Dcash_{i,t}$ is the changes in corporate cash holdings, the i and t represent individual firms and time, respectively, $CF_{i,t}$ is the current cash flow to individual company, $FBank_{i,t}$ is the degree of the entry of the foreign banks, $Asset_{i,t}$ is the business asset, $Debt_{i,t}$ is the short-term debt, $Nwc_{i,t}$ is the net working capital, $Reve_{i,t}$ is the revenue, $Exp_{i,t}$ is the capitalized expenditure, and $\varepsilon_{i,t}$ is the error term. The t-statistics based on four-lag Newey-West adjusted standard errors are reported in parentheses below the estimated coefficients. *- stat. sign. at 10% level; **- stat. sign. at 5% level; ***- stat. sign at 1% level. Sample periods is from January 2006 to 2012.

Small and medium-size enterprises	
Panel: Dependent variable is the changes in corporate cash holdings, $Dcash_{i,t}$	
$CF_{i,t}$	0.581*** (0.013)
$FBank_{i,t}$	0.482** (0.283)
$CF_{i,t} \times FBank_{i,t}$	0.004*** (0.009)
$CF_{i,t} \times Exp$	-0.056*** (0.013)
$Asset_{i,t}$	0.015*** (0.009)
$Debt_{i,t}$	0.112*** (0.162)
$Nwc_{i,t}$	0.040*** (0.008)
$Reve_{i,t}$	0.037*** (0.030)
$Exp_{i,t}$	-0.055*** (0.031)
<i>Constant</i>	-0.115*** (0.185)
<i>Obs.</i>	2,658
<i>R-squared</i>	0.532

Table 6 Subsamples

In order to explore the financing impact of foreign banks, we further subdivide the data we used into SMEs with major export or import businesses and SMEs without those major business. According to the company's financial statements, we classify enterprises that export or import more than one third of their total business volume as small and medium-sized enterprises with foreign business, and vice versa.

	SMEs with foreign business	SMEs without foreign business
Panel: Dependent variable is the changes in corporate cash holdings, $Dcash_{i,t}$		
$CF_{i,t}$	0.419*** (0.018)	0.318*** (0.270)
$FBank_{i,t}$	0.128*** (0.032)	0.983*** (0.007)
$CF_{i,t} \times FBank_{i,t}$	-0.018*** (0.028)	0.624*** (0.267)
$Asset_{i,t}$	0.003*** (0.038)	0.002*** (0.018)
$Debt_{i,t}$	0.278*** (0.022)	0.073*** (0.070)
$Nwc_{i,t}$	0.006*** (0.000)	0.076*** (0.056)
$Reve_{i,t}$	0.067** (0.368)	0.523*** (0.036)
$Exp_{i,t}$	-0.472** (0.265)	-0.283** (0.201)
<i>Constant</i>	-0.018*** (0.460)	-0.378** (0.645)
<i>Obs.</i>	973	1,269
<i>R-squared</i>	0.362	0.427

Table 7 Subperiods

The 2020 COVID-19 pandemic will have a significant impact on China's economy. The emergence of COVID-19 has reshaped the structure of China's economy and dramatically changed the financing strategies of foreign banks operating in China. Panel A sorted out the company's financial status from January 1, 2019, to January 1, 2020. Panel B sorted out the company's financial data from January 1, 2020, to September 30, 2021. Panel A represents the collation results before the outbreak of COVID-19, while Panel B represents the collation results after the outbreak of COVID-19.

	Before the COVID-19	After the COVID-19
Panel: Dependent variable is the changes in corporate cash holdings, $Dcash_{i,t}$		
$CF_{i,t}$	0.638*** (0.047)	0.310*** (0.054)
$FBank_{i,t}$	0.050*** (0.086)	0.205*** (0.007)
$CF_{i,t} \times FBank_{i,t}$	0.515*** (0.028)	0.534*** (0.047)
$Asset_{i,t}$	0.0414*** (0.096)	0.229*** (0.587)
$Debt_{i,t}$	0.049*** (0.003)	0.229*** (0.587)
$Nwc_{i,t}$	0.076*** (0.056)	0.523*** (0.271)
$Reve_{i,t}$	-0.067*** (0.768)	0.278*** (0.062)
$Exp_{i,t}$	-0.272** (0.345)	-0.235** (0.211)
<i>Constant</i>	-0.023*** (0.297)	-0.003*** (0.020)
<i>Obs.</i>	1,076	1,076
<i>R-squared</i>	0.453	0.352