

DOES FINANCIAL REPRESSION PROMOTE OUTWARD FOREIGN DIRECT INVESTMENT IN CHINA?

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Abstract

Using the time series data from 1982 to 2005, we conduct whether the financial repression is the motivation for outward foreign direct investment of China or not. The empirical result shows that the Chinese financial policies promote OFDI of China significantly and population dependency ratio does not. Although China accumulates amount of foreign reserve and promotes large OFDI under the financial policy, there exists the imbalance of the economic structure. And based on the results, this paper gives some suggestions.

Keywords: financial repression, outward foreign direct investment, OFDI, China

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1. Introduction

Developing countries were increasingly becoming an important force in the world's foreign direct investment in twenty-first Century, while foreign direct investment from Asia developing countries accounted for more than 70% of the total foreign direct investment (Wang, 2013). As the backbone of developing countries, China plays a more and more important role in global foreign direct investment. Since the reform and opening-up, China's OFDI has been steadily growing. After 2003, with the implementation of China's "going out" strategy, China's foreign direct investment has entered a stage of rapid growth (Figure 1). According to the statistical data of the world investment report issued by UNCTAD in 2014, China's OFDI (US \$102.9 billion) ranked the third in the world. The average annual growth rate is 14.1%.

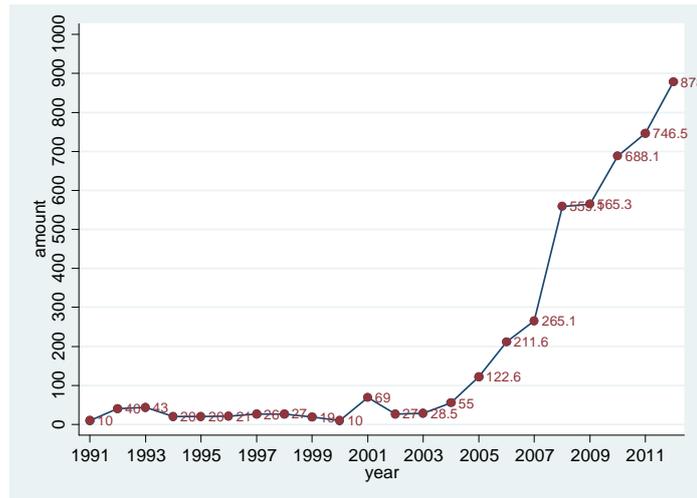


Figure 1: China's OFDI from 1982-2012

According to Denning's OIL theory, Chinese enterprises do not have the advantages mentioned by Denning. Then, why has China had large-scale foreign direct investment? A lot of scholars have studied the performance of China's OFDI in the world market in recent years. As for OFDI motives from developing countries, Peng (2008) believes that enterprises in these countries do not have the advantage of classical OFDI theory, he proposed to study foreign direct investment from developing countries from the perspective of institution. Buckley (2007) uses 1984-2001 of the data to analyze the motives of China's foreign direct investment and believes that China's unique institutional arrangements have promoted the foreign direct investment of Chinese enterprises. Domestic scholars such as Chen (2012), Hou (2014) and other studies believe that the combination of factors of production and unique system makes China's enterprises have advantages of direct foreign investment.

Different from previous studies, this paper discusses the motivation of foreign direct investment in China from the perspective of financial repression. As for the data, we adopt financial repression data from 1982-2005 issued by the International Monetary Fund (IMF).

2. Definition and Measurement of Financial Repression

2.1 Definition of Financial Repression

The concept was first proposed by Shaw (1973) and Mackinnon (1973) in the 1970s when they studied the relationship between finance and economic development in developing countries. They found that the phenomenon of "fragmentation economy" was prevalent in developing countries, and the government replaced financial market mechanism with financial control. The government, by setting lower market interest rates and higher inflation rates, made real interest rates negative, which led to a shortage of savings and a lack of capital supply. In addition, the government has provided financial support for state-owned enterprises and some industrial sectors at low interest rates through the formulation of related policies, such as policy loans, which makes the allocation efficiency of capital in developing countries

low. In their view, low interest rates and related policy have created inefficiency in the financial and economic sectors in developing countries, which Mackinnon called "financial repression."

2.2 Measurement of Financial Repression

As for the measurement of financial repression, the database issued by the International Monetary Fund (IMF) covers the financial depression policies of 91 economies including China over the period 1975-2005 and these policies are quantified. The database reflects China's financial reform from seven aspects: credit controls and reserve requirements, interest rate controls, entry barriers, state ownership, policies on securities markets, banking regulations and restrictions on the capital account. By setting standards, IMF quantified the seven dimensions and finally normalized the value between 0 and 1 (Table 1). The greater the value, the lower the depression. Compared with other databases which code financial liberalization using binary dummy variables, this database provides a much better measure of the magnitude and timing of financial policy changes than was previously possible. IMF's database can more accurately reflect the financial policy change of China.

Table 1: quantitative indicators of financial repression in China

year	credit	interest	entry	bank	privation	capital	securities	financial	standardization
1981	0	0	0	0	0	1	0	1	0.047619
1982	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0
1985	0.75	0	0	0	0	1	0	1.75	0.0833333
1986	0.75	0	0	0	0	1	0	1.75	0.0833333
1987	0.75	0	0	0	0	1	0	1.75	0.0833333
1988	0.75	0	0	0	0	0	0	0.75	0.0357143
1989	0.75	0	0	0	0	0	0	0.75	0.0357143
1990	0.75	0	0	0	0	0	1	1.75	0.0833333
1991	0.75	0	0	0	0	0	1	1.75	0.0833333
1992	0.75	0	0	0	0	0	1	1.75	0.0833333
1993	0.75	0	0	0	0	0	1	1.75	0.0833333
1994	0.75	0	0	0	0	1	1	2.75	0.1309524
1995	0.75	0	0	1	0	1	1	3.75	0.1785714
1996	0.75	0	0	1	0	1	1	3.75	0.1785714
1997	0.75	0	0	2	0	1	1	4.75	0.2261905
1998	2.25	0	0	2	0	1	1	6.25	0.297619
1999	2.25	0	1	2	0	1	1	7.25	0.3452381
2000	2.25	0	1	2	0	1	1	7.25	0.3452381
2001	2.25	0	1	2	0	1	1	7.25	0.3452381
2002	2.25	1	1	2	0	1	1	8.25	0.3928571
2003	2.25	1	1	2	0	1	1	8.25	0.3928571
2004	2.25	2	1	2	0	1	2	10.25	0.4880952
2005	2.25	2	1	2	0	1	2	10.25	0.4880952

Data source: IMF financial reform database

3. The typical facts of China's financial repression and its influence on China's OFDI

3.1 The typical facts of financial repression in China

In fact, until 1980s the financial sector was one of the sectors where state intervention was most visible both in developing and developed countries (Abiad, etc.,2008). In many countries, the government owned or controlled the banks. There were bank interest rate ceilings or other forms of regulation. Even the credit allocation was constrained and regulated. Implicit or explicit taxation also weighted on the volume of financial intermediation. And there is restriction on foreign capital inflows, which limited competition. After financial repression in many countries, many countries have liberalized and deregulated the financial sector.

China's financial development has also experienced a similar development process as other countries in the world. Li (2015) noted that although the government has taken some measures about interest rate marketization in recent years. In 2015 the government lowered the interest rate and improved the bank deposit ceiling, but he believes that the China interest rate marketization is not complete, not even completed. The following is a review of China's recent financial repression.

Interest rate controls. As for the interest rate, it is not always decided by the supply and demand of funds in the market but by the government. There isn't interest rate mechanism in our country, so the interest rate regulation is still done through administrative means. In addition to government controls on interest rates, the government sets up a lot of restrictions on the behavior of enterprises and financial institutions so as to control credit allocation. The government will monitor the credit direction, state-owned enterprises and some government preference industries will get loans. As for the reserve limitation, as the adjustment tool of total credit, the legal reserve requirement rate of China has already reached 20%, and the excess deposit reserve rate has reached 3%. Higher reserve ratio limits the bank's funds to enter the market, which reduces the bank's earnings. And because this part of the funds can't enter the market, it can't reflect the actual level of interest rates in the market.

Entry barriers. Generally speaking, there is banking industry barriers to entry. The government implemented strict controls on the banking industry, and foreign banks and private capital into the banking sector are strictly controlled. According to the relevant data from Chinese financial Yearbook, China's four state-owned commercial banks accounted for more than 70% market share, and the market share of other properties of the banking is less than half of the four major state-owned commercial banks. The state-owned banks in our country occupy a high proportion in the banking industry.

Capital account restrictions and capital market regulation. Most countries except the United States and Britain will not fully implement the capital account until 1980s. The opening of the capital account requires a country to give up the fixed exchange rate and prudent management to take excessive capital flows; so far, our country did not achieve

liberalization of capital projects. Perhaps that is because China's monetary authorities are cautious about the controllability of risk.

The efficiency of financial supervision. There has always been a prominent phenomenon in China's market segmentation. The supervision is involved in different departments which are not related to each other, and even the supervision regulations between departments are in conflict.

Up to now, financing is still dominated by the banking system in China due to financial repression. Under the lowering interest rate policy of the government and the high interest rate policy of the banks, there exists serious imbalance in the industrial structure and financial structure in China.

3.2 The influence of financial repression on China's foreign direct investment

Enterprises need to invest a large amount of fixed costs before conducting direct investment abroad. In order to determine the profitable target market and its characteristics, enterprises need to do market research. To meet foreign customer needs and requirements, the products may have to be redesigned, channels of distribution channels and services are required to be established (Roberts and Tybout, 1997). In addition, it is more important for an enterprise to build or purchase production facilities, which need to invest a large amount of fixed costs. So investing abroad means the OFDI is more easily influenced by financial development of a country.

Financial repression, especially the suppression of financial policies in developing countries, distorts the cost of capital and the allocation of funds, resulting in an imbalance in the economic structure and current account surpluses. The technical level of the developing countries is relatively backward together with the underdeveloped financial system; and enterprises with a net savings will not invest in domestic market. However, through foreign direct investment, such enterprises can obtain suitable technology or cheap production factors to promote domestic production (Wang, 2013). Kasuga (2000) argues that, compared with developing countries, developed countries have improved financial markets, thus attracting more foreign investors to invest in their own countries.

Based on the previous research and Chinese financial repression and foreign direct investment, we think that Chinese financial repression policy makes the export sector develop which makes China's current account surplus and results in the accumulation of a large number of foreign exchange reserves. On the other hand, because of the government policy of financial restraint, low interest rates and financial constraints makes consumer low, and domestic investment is low, which promote foreign direct investment.

4. An empirical analysis of the impact of financial repression on China's OFDI

4.1 Estimation methods and data sources

The quantitative indicators of financial repression data are derived from the IMF Database. Population dependency ratio, import and export trade data are from China Statistical yearbook.

We test firstly whether there is a unit root of China's OFDI and financial repression. Before performing unit root testing, we check the time trends of several variables.

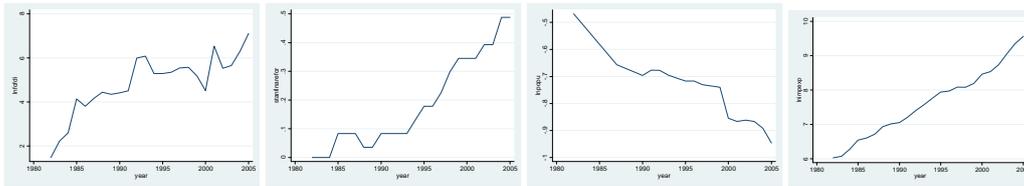


Figure 2: Time trends of OFDI, Financial repression, population ratio and Imp&Exp

From Figure 2, the four variables have constant terms and obvious time trends. If the time series has a unit root which may bring some problems. Perhaps the regression coefficient is not asymptotically normal distribution, T test doesn't work and the value of regression coefficient is partial to 0, which make regression possible spurious regression or pseudo correlation. Therefore, we first examine whether a variable has a unit root.

Table 2 ADF unit root test results of all variables

variables	Difference times	Test form (C, T, L)	ADF test statistic	1% critical value	5% critical value	10% critical value	conclusion
lnofdi	0	C, T, 1	-2.979	-4.380	-3.600	-3.240	unstable
lnofdi1	1	C, N, 0	-5.963	-3.750	-3.000	-2.630	stable
instanfina	0	C, T, 1	-1.341	-4.380	-3.600	-3.240	unstable
instanfina1	1	C, N, 0	-4.784	-3.750	-3.000	-2.630	stable
lnpopu	0	C, T, 1	-2.017	-4.380	-3.600	-3.240	unstable
lnpopu1	1	C, N, 0	-3.451	-3.750	-3.000	-2.630	stable
lnimpexp	0	C, T, 1	-1.613	-4.380	-3.600	-3.240	unstable
lnimpexp1	1	C, N, 0	-3.802	-3.750	-3.000	-2.630	stable

Note: (C, T, L) C stands for constant, T stands for time trend, L stands for lag order, lag order is determined by AIC criterion, and lag term can make residual term white noise. Generally, after differential processing, there is no time trend for the sequence.

Table 2 lists the results of unit root test of the variables. The original sequence of test variables is unstable, after the first difference the variables are stable. So we determine the time series variables for I (1) order and can do the Johansen test.

4.2 Empirical results

Based on the previous analysis, the original sequence of each variable is the same order, and then there may be a long-term equilibrium relationship among variables. The Johansen co-integration is used to test the relevant variables. The results are shown in table 3.

Table 3 Johansen co-integration test results

Num. of CI	eigenvalue	trace statistic	Max Eigenvalue Stat.
0 vector	.	119.8900 (61.21)	69.3868 (35.68)
at least 1	0.91159	50.5023 (40.49)	27.6784 (28.83)
at least 2	0.46929	22.8249* (23.46)	18.8555 (21.47)

Note: * indicates the hypothesis of "0 co-integration rank" is rejected at the level of 1%, but the "co-integration rank 2" assumption is not rejected. The value in parentheses is critical value at level of 1%.

Table 3 shows that the number of co-integration ranks is 2 indicating that there are at least 2 long-term equilibrium relations among variables. The Johansen MLE method is used to estimate the results. And the estimation results are shown in table 4.

Table 4 MLE estimation results

variable	Estimation coef.	standard deviation	Statistic	P-value
Instanfina	-1.8895	0.3380	5.59	0.0000
Inimpexp	1.8901	0.4343	-4.35	0.0000
Inpopu	-4.4862	2.5684	1.75	0.0810
constant	16.1142	4.0247	4.03	0.0000

The elasticity coefficient of financial repression is -1.8895, the elasticity coefficient of import and export is 1.8901, and the elasticity coefficient of population dependency ratio is -4.4862, which are accordance with the expectation of economic theory. The coefficient of financial repression is negative, and the degree of financial repression in China is too high, which leads to China's foreign direct investment. China's financial repression policy results in the economic imbalance and external surplus. Low interest rates and credit constraints make savings exceed investment and the liquidity of the residents in our country is seriously insufficient. China's enterprises in the domestic investment opportunities are inadequate. As a result, China's foreign enterprises direct investment is inevitable.

In this paper, the Inimpexp measures China's opening to the outside world whose symbol is in line with expectations, which shows relationship between China's trade and OFDI is complementary. China's foreign trade promotes her OFDI, and this conclusion is accordance with Cai (2004), Xiang(2009). The Inpopu measures China's population dependency ratio. During 1982-2005, China's population structure did not promote foreign direct investment. That's because population dependency is relatively low. And China's labor supply is abundant

and the price of labor is relatively cheap. The cheap labor created favorable conditions for China's enterprises and economic development, so *lnpopu* does not constitute the motivation of China's foreign direct investment in this period.

As a comparison, we use OLS to regress the long-run equilibrium relation, and the regression results are shown in table 5.

Table 5 OLS estimation results

variable	Estimation coef.	standard deviation	Statistic	P-value
<i>lnstanfina</i>	-1.154903	.4666191	-2.48	0.028
<i>lnimpexp</i>	1.959741	.7166494	2.73	0.017
<i>lnpopu</i>	3.121315	5.003113	0.62	0.544
常数项	-9.847309	3.770839	-2.61	0.022

Table 5 shows the OLS coefficient estimator is close to the Johansen MLE estimator. Theoretically, the MLE estimation method is more efficient.

5. Conclusions and policy recommendations

From the perspective of financial repression, this paper empirically proves that China's financial repression policy can promote China's foreign direct investment. The policy of financial repression makes the allocation of resources to the export sector of the manufacturing sector, which has accumulated a large amount of trade surplus, but at the expense of China's economic imbalances and uneven development of the sectors. China has accumulated a large number of foreign exchange reserves which partially inflow into developed countries in the form of securities. As China's consumers have liquidity constraints, some of the capital outflow through other forms of foreign direct investment.

China's financial repression policy has basically completed the goal set by the country in a certain period, but with the increase in China's foreign exchange reserves and the imbalance of economic structure, we should gradually reform the financial repression. The government should gradually reduce the country's intervention in the financial market and improve the financial market environment, so that the market plays its role. The efficient financial markets will contribute to the allocation of resources to the higher efficiency of the enterprises and improve the productivity of the enterprises, which will indirectly correct the current sector development and the imbalance of economic structure. If the productivity of enterprises is improved, the enterprises with higher productivity will engage in foreign direct investment, the enterprises with high productivity will engage in foreign trade and the enterprises with lower productivity will be engaged in domestic trade or out of the market. After the financial reform, China will develop in a more healthy way.

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