Is Government Provision Necessary for Rural Credit Gap? Evidence from China

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Abstract. The shortage of rural credit supply is a global practical problem, and also a concern of the world academia. The purpose of this study is to find evidence of the role of government provision in solving rural credit gap, and provide inspiration for countries to solve the shortage of rural credit supply. In the process, this study uses Goldsmith's financial development theory as the theoretical guidance, and conducts an empirical analysis of the relationship between the financial interrelations ratio (FIR) and government provision in rural China from 2004 to 2019. The findings show that the rural credit gap with market development is not necessarily a credit market failure, and the government provision is not necessarily effective. Because the government provision is costly, wasteful, and less efficient than government intervention on stimulating demand.

1. Introduction

The insufficient supply of rural credit is an important problem that hinders rural development, and is considered as a "credit exclusion" of the financial market system to rural colonies. With the concept of "Inclusive Financial System" put forward by the United Nations in 2005, the government began to be considered as the main body of the inclusive financial system, bearing the responsibility of solving the "market failure" of "credit exclusion", and giving provision for rural credit gap. However, sceptics believe that government provision is an "anti-market behaviour" for the development of rural credit. It is not to solve "market failure", but to change the equilibrium state of the market by increasing risks. Therefore, is government provision the solution to the rural credit gap? This problem still puzzles scholars all over the world.

In order to solve the above problems, this study starts from the relationship between credit supply and demand, and analyses the necessity of government provision to fill the rural credit gap. The study is divided into four parts: the first part arranges the relevant theoretical logic, the second part uses China's evidence for empirical research, the third part is about the discussion of empirical analysis, and the fourth part is implications.

2. Theoretical Perspectives

To prove the necessity of government provision, we should first know whether there is a gap between the supply and demand (S&D) of rural credit. At present, there are two main ways to analyse the relationship between credit S&D. One is to take economic development as the demander of financial services, and judge the status of credit S&D relationship through adequacy of money from the perspective of financial structure. The other is to take the deposit business as the funding source and repayment of the loan business, and use the loan to deposit ratio to judge the local credit S&D relationship. In view of the fact that economic development is more representative of real financial demand, this study believes that the first analysis method can better reflect the real situation of credit S&D.

As for how to measure the adequacy of funds, Goldsmith (1969) believes that the "Financial Inter-relations Ratio (FIR)" can be used. FIR is the main way to measure the level of the financial capacity (FC), which shows the strength of financial support in economic development. According to the endogenous effect of investment on the economic volume and growth, the FC has a highly correlated positive relationship with its economic development. In Goldsmith's theory, FC is measured by the amount of social currency, so we can consider that FC measures the level of credit and FIR measures the credit adequacy.

Generally speaking, if a region's economic activities are carried out by barter, that is, when the real economy does not need monetary as the medium, the ratio of FC to economic volume is 0; When the economic activities are realized by the exchange of physical goods and currency, without the effect of credit, the changes in the real economy are theoretically reflected as the corresponding scale of monetary and FC, that is, the ratio of FC to economic volume is 1; And if the economic activities are not only exchanged in currency,

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but financial institutions also provide credit to play the role of financial leverage, the currency creation process brought by such credit will promote the FC to exceed gross domestic product (GDP), making the ratio of FC to total economic volume exceed 1. That is to say, if other condition remains unchanged, the higher the FIR, the higher the degree of the region's financial development. Therefore, FIR can reflect the financial supply adequacy of a region, which can be expressed as:

$$FIR = FC / GDP \quad (1)$$

According to the comparative analysis method, we can take the national FIR as the anchor standard, that is, assume that the national financial development is at a reasonable level. In this way, we can judge whether the rural financial development level is reasonable from the comparison of rural FIR and national FIR, and then judge whether there is a gap between the S&D of rural credit.

In comparison, if the rural FIR is lower than the national FIR, it means that the rural credit resources are in short supply, and there is a gap in its credit supply; When the rural FIR is equal to or higher than the national FIR, it means that the rural credit S&D relationship is in a state of balance or oversupply, and there is a credit supply glut but not gap.

3. Empirical Analysis

This study takes China's evidence as the object for empirical analysis, because China evidence is representative in two reasons.

- China is the second largest economy and the largest developing country in the world today.
- From 2015 to 2020, China has effectively solved the problems of rural account exclusion and social security exclusion through government provision, which also made a comprehensive victory in the fight against poverty.

As for data sources, we collected the official statistics from China Statistical Yearbook, China Rural Statistical Yearbook and Almanac of China's Finance and Banking from 2004 to 2019. Among them, the national GDP data uses the GDP data in the China Statistical Yearbook directly, the FC data of national and rural comes from the sum of deposit and loan data in the Almanac of China's Finance and Banking, and the rural GDP data comes from the sum of consumption, investment and government payment data in the China Rural Statistical Yearbook. The main considerations for selecting data from 2004 to 2019 are as follows:

- China's financial system has begun to enter the process of marketization since 2004.
- Since 2020, China has experienced the impact of the COVID-19, which has a great impact on the economic and financial circles.

3.1. Rural Credit Adequacy and Gap in China

After data collecting and organizing, we get the national FIR, rural FIR, and rural credit gap in China, as shown in Table 1.

From the data in the Table 1, with the deepening of China's financial marketization, the FIR of both nation and rural areas in China showed an overall upward trend from 2004 to 2019. Although the rural FIR was sometimes higher than the national FIR, there was still a credit supply gap in rural areas for most of the time.

Table 1. Gap of Rural Credit in China.

Year	National FIR	Rural FIR	Gap
2004	2.54	2.20	13.48%
2005	2.50	2.29	8.27%
2006	2.56	2.25	12.32%
2007	2.46	2.33	5.40%
2008	2.42	2.36	2.39%
2009	2.91	2.58	11.11%
2010	2.94	3.02	-2.77%
2011	2.89	2.94	-1.50%
2012	3.02	2.85	5.77%
2013	3.14	3.21	-2.45%
2014	3.26	3.03	6.98%
2015	3.47	3.04	12.50%
2016	3.56	3.20	10.08%
2017	3.52	3.30	6.16%
2018	3.56	3.24	8.89%
2019	3.57	3.31	7.33%

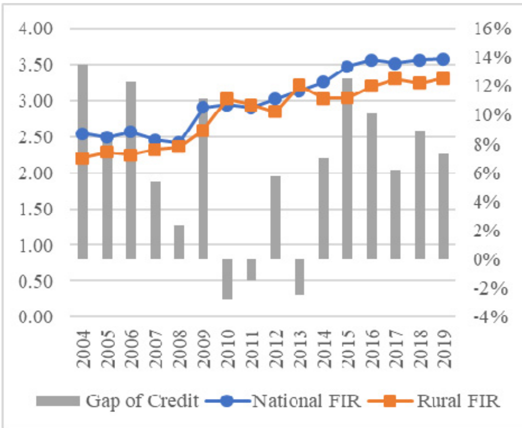

Fig. 1. FIR and Gap of Credit in China

Fig. 1 shows the trend of the national FIR, rural FIR and rural credit supply gap in China. In 2008 and 2012, when government provision activities took place, rural FIR rose rapidly in the following year and exceeded national FIR, but then fell back to the normal track.

3.2. Rural Loan Adequacy and Gap in China

If we only focus on the loan items in FC statistics, we can get the FIR of loans through the calculation method of FIR, so as to get the rural loan adequacy and gap, as shown in Table 2.

Table 2. Gap of Rural Loan in China.

Year	National FIR of Loans	Rural FIR of Loans	Gap
2004	1.10	1.02	7.63%
2005	1.02	1.08	-5.60%
2006	1.10	0.97	13.62%
2007	1.07	1.02	4.27%
2008	1.03	0.98	4.54%
2009	1.26	1.07	17.90%
2010	1.28	1.34	-4.45%
2011	1.24	1.29	-3.97%
2012	1.30	1.29	0.93%
2013	1.35	1.42	-4.53%
2014	1.42	1.34	6.03%
2015	1.53	1.38	11.41%
2016	1.57	1.50	4.78%
2017	1.56	1.60	-2.66%
2018	1.61	1.63	-1.00%
2019	1.65	1.68	-1.90%

From the data in Table 2, China's national and rural FIR of loans also showed an overall upward trend from 2004 to 2019. Compared with the credit FIR, there is much more time that the rural FIR of loans higher than the national FIR of loans, and the time of loan gap is relatively shorter.

It can be seen from the development trend chart in Fig. 2 that China's national and rural FIR of loans has entered a higher and faster new upward trend since 2008. After the two government provision activities in 2008 and 2012, the rural FIR of loans exceeded the national FIR of loans in the following year, although the two anti-exceeding measures were temporary. However, as the China's government began to increase the supply of rural credit in 2015, the growth rate of rural FIR of loans was significantly higher than the national level, and it was stable above the national FIR of loans after the year 2018.

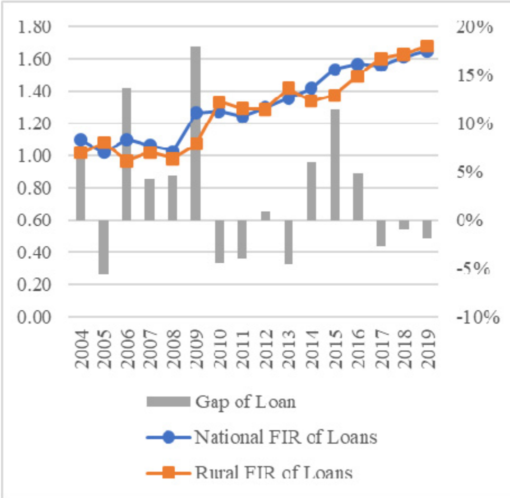

Fig. 2. FIR and Gap of Loan in China.

4. Discussion

According to the empirical results from China's evidence, this study found some rules below.

4.1. Rural Credit Gap under the Role of Market

If the existence of credit supply gap is a "market failure" problem, there is indeed a market failure problem in rural China. However, China's credit gap is not serious because:

- On the one hand, from the perspective of credit demand, most of China's rural industries are non-scale and non-mechanized household agriculture. These industries rely mainly on the investment of labours rather than capital. The demand for credit is much smaller than that of industry and manufacturing. However, the mean of rural credit gap in China from 2004 and 2019 was less than 10%, which may not be a "real gap".
- On the other hand, from the perspective of credit structure, most of the credit gap in rural China does not come from loans, but from deposits. From Table 1 and Table 2, the loan gap is much smaller than the credit gap. The loan gap will continue to expand because of the deposit gap, so the credit gap in rural China may not be a "market failure" problem, but a purely "economic development" problem.

4.2. The Role of Short-term Government Provision

From the China's evidence, the short-term government provision can indeed make the rural FIR increase rapidly, but this increase is only a flash in the pan. The market will reduce the temporarily increased FIR to a reasonable level through the "invisible hand" effect. Therefore, if the gap is the general equilibrium of the market, the government's short-term provision is not an effective solution to the rural credit gap.

4.3. The Role of Long-term Government Provision

The "rural revitalization" strategy launched by China in 2015 is a long-term national strategy. The government has started to promote the allocation of financial resources to rural areas. From the evidence, this long-term provision has driven the steady growth of rural FIR and can completely solve the rural loans gap. However, the result of this government provision activity is that the rural FIR exceeds the national level, resulting in a surplus of supply. This oversupply also indicates that the efficiency of credit will be very low in rural China.

5. Implication

The findings of this study support the existence of credit gap in rural areas, and provide evidence that government provision can indeed solve the problem of rural credit gap. However, government provision is not necessary because it may bring some more new problems.

First of all, the government provision may cause a kind of government failure. The reason for government provision is the existence of market failure. If there is no serious gap or "real gap" in rural credit, it means that there is no market failure, and this credit gap is only a reasonable market equilibrium. In this case, the government provision is equivalent to the opposite of the market rule, and cannot make a fundamental change of credit gap but more costs and risk.

Secondly, government provision can’t give enough expectation to the market members. Even if government provision can significantly change the credit supply situation, it is not a real balanced result for credit market. Such activities will not change expectations and form a new effective rule and system in market. Ultimately, the market reaction will turn these government’s activities into temporary fluctuations and make government provision a useless waste.

Finally, the efficiency of government provision is not as good as government intervention on credit demand. The role of government provision is still depending on the coordination of credit demand. Credit is a subsidiary part of the economy. Although it can drive economic development, a better credit supply rise depends on the support of economy and its credit demand growth. So, government intervention to promote economic development, which will drive the supply of credit market by stimulating demand, will get a lower cost and better result than the government provision.

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