

An Analysis of Restraints on Effective Demand for Loans in Rural China

¹Wenjie Ma, ²Minxin He, ³Xinyu Zhong, ⁴Shengsong Huang

^{1,3} School of Finance, Shanghai University of Finance and Economics, China

^{2,4} School of International Business Administration, Shanghai University of Finance and Economics, China

Abstract—

China's overall economic growth is, to a great extent, hindered by the lack of economic growth in rural areas. Based on data from the Thousand-Village Survey (2015) of 31 provinces conducted by Shanghai University of Finance and Economics, we conduct this empirical study to analyze the current state of rural financial services and the factors influencing effective demand for loans in rural China. Looking at the demand side, in 2014, only 13.91% farmers had loans, and only 15.53% of them made financial institutions their first choice when they needed loans. Clearly, there is still much to do with regard to inclusive finance. From the perspective of the supply side, only 43.86% of dispersed loans can be categorized as productive loans, further reflecting that the financial services industry does not provide strong support for rural economic growth. Further study shows that the main factors influencing effective demand for productive loans are the population age structure and the rate at which migrant workers return home. Therefore, the "Second-Child" policy and policies that encourage migrant workers to go back home to start businesses are of vital importance in order to raise effective financial demand in rural China.

Keywords— rural finance; effective financial demand; productive loans; aging; migrant workers

I. INTRODUCTION

Since the Reform and Opening-Up, China's economy has taken off. However, the increasing gap between urban and rural income hinders further economic development. To improve the current rural financial situation and solve the "Sannong Problem" (a problem concerning agriculture, rural areas and farmers) in China, it is of vital importance to stimulate the demand for productive loans – thereby promoting rural economic growth, improving industrial structure, and increasing farmers' income. However, problems related to financing difficulties and high financing expenses abound; farmers thus still feel that it is difficult to borrow. As a result, they have less incentive to apply for loans and only go to financial institutions to deposit money.

The problem with rural finance should be analyzed from both the supply and demand sides. From the supply side, the question hinges upon the effective supply of financial institutions — whether they have sufficient incentive and capacity to supply; from the demand side, it depends upon whether farmers have effective demand, their willingness to borrow, and their repayment ability. Many previous studies have focused on analyzing how to encourage financial institutions to enter the rural market through preferential policies. However, do farmers really need loans? Can they successfully apply for loans when they need them? When they are in need of money, who are they turning to? For what reasons are they borrowing? These are important questions that need to be answered comprehensively in order to fully understand the current state of financial services in rural areas. This paper will discuss how to improve rural financial services from both the supply and demand sides in order to better support the development of the rural economy in China.

According to previous studies about rural financial supply, the four big state-owned commercial banks are gradually exiting the rural market because of the "profitability, liquidity and safety" principle of commercial banks and the "high risk, decentralization, volatility and long term" characteristics of agricultural production (Sui 108-109). Some commercial banks are reducing their branch count, and their interest rates are usually volatile, which makes the rural market a place with "more deposits and less loans," or even "deposits without loans." Meanwhile, non-official financial institutions have been subject to strict regulatory treatment. In addition, the proportion of rural loans in official financial institutions' total loan portfolio is decreasing, and farmers have increasingly turned to private lending to meet their loan needs (Yu 43-45). Regarding the issue of economic resource distribution, the government has an obvious non-agricultural tendency, and the resulting mismatch of factors can also be an obstacle to the improvement of the dual-structure in the rural economy (Wang & Bai 31).

In studying rural financial demands, many economists take into consideration farmers' property, individual characteristics and family characteristics. Because Chinese farmers have a tendency to avoid debts and a "soil-based lifestyle," they generally lack financial awareness, or never had awareness at all prior to being interviewed by the researchers (Wang 89-98). In general, more nonproductive loans are dispersed than productive loans (Ye 31-43). Rural loan demand is not only low, but also mainly concentrated in health, education and other aspects of day-to-day living. The demand for productive loans is weak, though productive loans are the main driving force for rural economic growth.

Existing research focuses more on the supply side; on the demand side, they look mainly at farmers' individual characteristics. Rural China suffers from a serious population aging problem, with a high labor outflow rate for young people and a low rate of migrant workers returning home. What impact is this having on the development of rural finance? This question has not been sufficiently answered by current studies. This paper will discuss the key factors influencing rural financial demand from the perspectives of the rural population structure and the rate at which migrant workers return home.

Based on data from the Thousand-Village Survey (2015) of 31 provinces conducted by Shanghai University of Finance and Economics (covering 316 provinces, including 764 villages and 15551 households), the researchers analyzed the present situation of financial support of the rural economy. The researchers then conducted an empirical analysis of the rural population structure and the rate at which migrant workers return home. It was found that few loans were being dispersed in rural areas, and most of the loans that were dispersed were nonproductive loans, including medical, student and mortgage loans. The rate at which migrant workers return home is a vital factor affecting demand for productive loans, while the population structure has more of an impact on nonproductive loans. This study provides some valuable conclusions, which can help the government formulate an effective rural economic development plan. In addition, it confirms the necessity and timeliness of the "Second-child" policy and urbanization project.

This paper is divided into four parts: The first part describes the data source. The second part analyzes farmers' current ability to obtain loans in rural China. The third part discusses factors influencing the demand for loans. The fourth part gives conclusions and suggestions.

II. DATA SOURCE

The data is derived from the Thousand-Village Survey (2015) conducted by Shanghai University of Finance and Economics. The survey covers 31 provinces, including 764 villages, and 15,551 interviewed farmers. The questionnaires consist of 15,551 individual household questionnaires, 766 village questionnaires, 32 county questionnaires and 60 financial institution questionnaires. The large sample population solidifies the reliability of the data.

This paper focuses on analyzing farmers' ability to obtain loans and the factors that affect the effective demand for loans. The data used in this paper mainly comes from the "traditional financial services" section of the individual household questionnaires and the "population structure" and "labor transferring" sections of the village questionnaires.

III. CURRENT LOAN SITUATION IN RURAL CHINA

A. Farmers' Experiences with Loans

For the purpose of promoting rural finance, the government has introduced a series of policies to protect farmers' borrowing and lending rights and to encourage rural microfinance. However, the picture the data paints of the current loan situation in rural China is bleak. Among the 15,521 farmers interviewed, 13,362 of them – 86.09% of the sample population – had no loan experience in 2014 (see Table 1). Moreover, among the 2,159 farmers who did have a borrowing experience in 2014, only 888 of them borrowed from financial institutions (41.13%), while 1,271 borrowed from non-financial institutions (58.87%). Among the 13,362 farmers with no loan experience in 2014, just 11.40% of them said they would prefer taking loans from financial institutions, while 88.60% preferred loans from non-financial institutions. Clearly, financial institutions are not farmers' first choice when it comes to loans. According to Table 2, farmers' preferred source of financing is still borrowing from relatives and friends (73.62%).

Table I Farmers' Preferred Loan Type

		Non-financial institution loans	Financial institution loans	Total
Had no loan in 2014	Number	11839	1523	13362
	Column percentage (%)	90.31	63.17	86.09
	Row percentage (%)	88.60	11.40	100.00
Had a loan in 2014	Number	1271	888	2159
	Column percentage (%)	9.69	36.83	13.91
	Row percentage (%)	58.87	41.13	100.00
Total	Number	13110	2411	15521
	Column percentage (%)	100.00	100.00	100.00
	Row percentage (%)	84.47	15.53	100.00
chi2		1252.3		
P value		0.00		

Table III Farmers' Financing Channels

Financing Channels	Number	Percentage (%)	Accumulative percentage (%)
Relatives and friends	11336	73.62	73.62
Financial institutions	2411	15.66	89.28
No demand for loans	1487	9.66	98.93
Private finance	59	0.38	99.32
Internet finance	10	0.06	99.38
No channels	95	0.62	100.00
Total	15398	100.00	

This phenomenon should be taken very seriously, as financial institutions are expected to play an important role in the process of promoting inclusive finance. In fact, despite proclaimed policy support for farmers and the improvement of the rural financial system, the services that financial institutions provide have not yet encouraged farmers' loan demand. When choosing between loans provided by financial and nonfinancial institutions, the majority of them still prefer non-financial institutions.

This shows that current financial support of the rural economy is very much insufficient. The fact that financial institutions are not providing convenient services that meet actual needs might be the reason for low loan demand. In addition, some financial institutions have high requirements for applying for loans, thereby excluding many farmers from their target clientele.

B. Rural Loan Distribution

Although the proportion of loans dispersed in rural areas is not large, the collective borrowing data can still help us further analyze farmers' borrowing tendencies and reasons for borrowing. On the basis of the original questionnaires, we divide the loans into three categories: medical and student loans, productive loans, and mortgage and car loans. As can be seen in Fig. 1, the proportion of productive loans is only 43.86%, with mortgage and car loans accounting for 38.6%, and medical and student loans accounting for 17.45%.

Productive consumption is closely related to rural investment and is an important metric of rural development. Increasing productive investment and stimulating productive consumption are key factors in driving rural economic and financial development. However, as is shown in Fig. 1, most of the dispersed loans are instead used for day-to-day living purposes (medicine, houses, education, etc.), as the proportion of productive loans is less than 50%. To realize the goal of "People's finance," we must pay more attention to improving productive consumption and stimulating effective demand for productive loans.

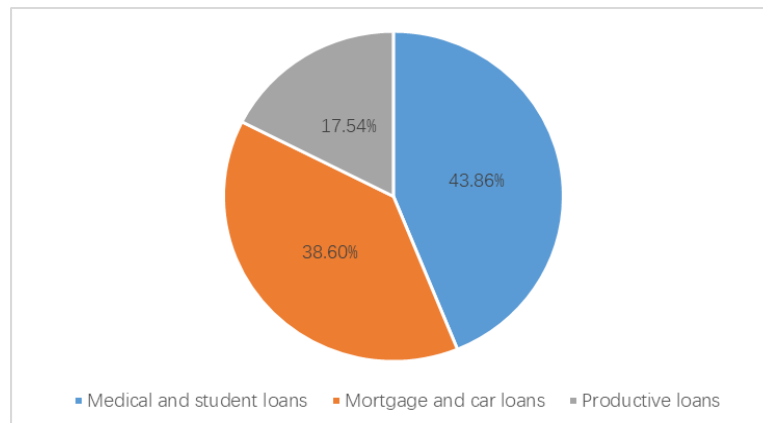


Fig. 1 Farmers' loan usage

IV. EMPIRICAL ANALYSIS OF THE FACTORS RESTRAINING LOAN DEMAND

Fig. 1 shows the distribution of loan usage in rural areas. This section will further analyze the factors that affect the demand for each loan type, focusing on the rural population structure and the rate at which migrant workers return home.

A. Assumptions

The population aging problem in rural China is very serious, especially in the central and western regions. Labor outflow is substantial for young workers; among the remaining resident population (excluding migrant workers), the elderly (over 60) account for 23.66%, while children, primary and secondary school students account for 13.99% (see Fig. 2). In other words, 45.68% of the population is outside the labor force. Moreover, children aged 0-6 make up only 8.63% of the population, further aggravating the aging problem. This key feature of the rural population structure is likely to have a significant negative impact on loan demand in rural areas. Therefore, we propose the first assumption.

Assumption 1: The proportion of elderly people is negatively correlated with demand for loans.

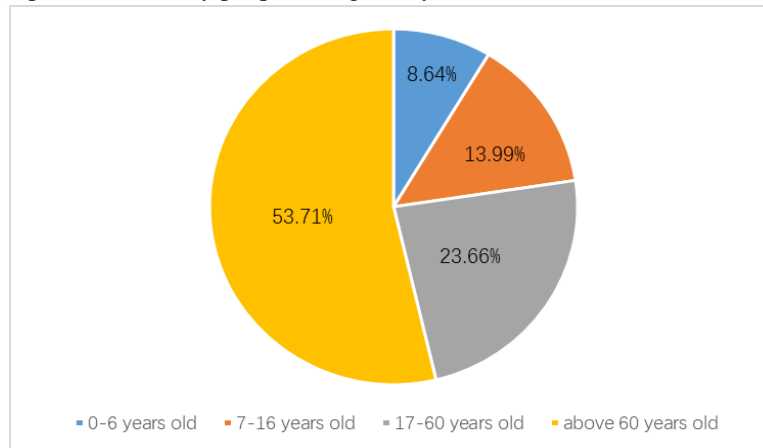


Fig. 2 Age structure of permanent residents in rural areas

The rate at which migrant worker return home (hereby referred to as home return rate) is another important factor affecting the population structure. Fig. 3 displays the distribution of home return rates. The overall home return rate is very low; 50.02% of villages have a home return rate below 10%, and the variance among different regions is huge. When migrant workers return home, they bring back the productive skills and advanced ideas they learned in more developed areas, thus increasing the demand for productive loans in their home areas. Therefore, we propose the second assumption.

Assumption 2: The home return rate of migrant workers is positively related to the demand for productive loans in rural areas.

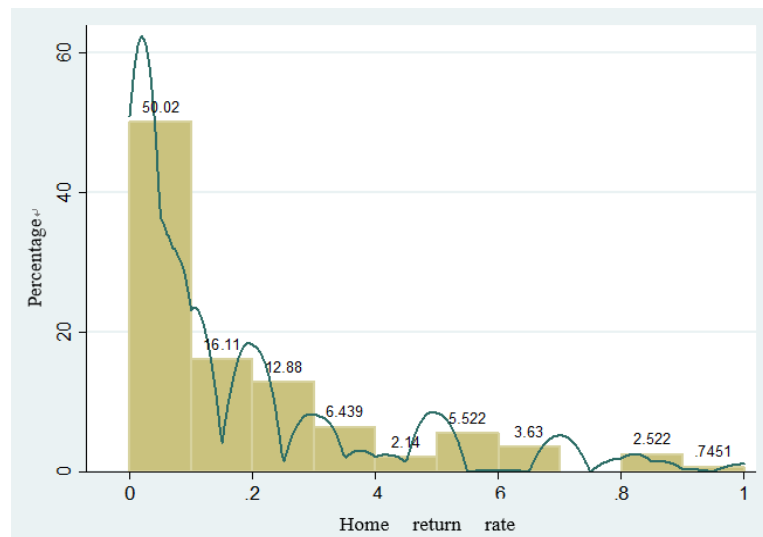


Fig. 3 Home return rate distribution

B. Empirical Analysis

Explained variable

Loan type: this variable is divided into 4 categories: no loans, productive loans, mortgage and car loans, medical and student loans. Each type is scored 0, 1, 2, and 3 respectively.

Explanatory variables

Percentage of elderly people and children: (Number of children + number of people aged 60 and above) / Total resident population.

Home return rate: the percentage of migrant workers returning to their home villages in 2014.

Control variables

In order to more accurately depict the relationships between population structure, productive skills and demand for loans, we refer to the existing literature to control other variables that may affect financial needs. These control variables include: percentage of non-farmers, population growth rate, percentage of workers in local counties, number of local companies, percentage of primary school and junior high students, whether the resident labor force is primarily engaged in non-agricultural industries, the industry contributing most to the local economy, education level, land circulation rate, credit card ownership, house/car ownership, annual income, income surplus, whether the family has Communist party members, loan interest rate (relative to the benchmark rate), percentage of non-performing loans dispersed by local financial institutions, average loan scale, percentage of agriculture-related loans, and dummy variables for developed areas. The specific definition of each variable is shown in Table 3.

Table III Variable Definitions

Variables	Definitions
Explained Variable	
Loan type	0 for no loan; 1 for productive loans; 2 for mortgage and car loans; 3 for medical and student loans.
Explanatory Variables	
Percentage of elderly people and children	(Number of children + number of people aged 60 and above) / total resident population
Home return rate	Percentage of migrant workers returning to their home villages in 2014
Control Variables	
Percentage of non-farmers	Number of non-farmers/ total population
Population growth rate	(number of births – number of deaths)/total population
Percentage of workers in local counties	Number of workers in local counties/total population
Number of local companies	Number of local companies
Percentage of primary school and junior high students	Number of primary school and junior high students/total population
Whether the resident labor force is primarily engaged in non-agricultural industries	1 for non-agriculture; 0 for agriculture
The industry contributing most to local economy	1 for non-agriculture; 0 for agriculture
Education level	1 for junior high and below; 2 for senior high; 3 for college
Land circulation rate	Circulating squares / total squares
Credit card ownership	1 for families with credit cards; 0 for families without credit cards
House/car ownership	1 for families with houses or cars; 0 for families without houses or cars
Income surplus	1 for income surplus; 0 for income deficit
Log of annual income	The natural logarithm of annual income
Whether the family have Communist party members	1 for families with Communist party members; 0 for families without Communist party members
Loan interest rate	Number of basis points over the benchmark rate
Percentage of non-performing loans dispersed by financial institutions	Percentage of non-performing loans dispersed by the two largest financial institutions in a village
Average loan scale	Average loan scale
Percentage of agriculture-related loans	Percentage of agriculture-related loans
Dummy variable for developed areas	1 for areas with GDP above the average sample GDP; 0 for areas with GDP below the average sample GDP

We use the multivariate Logit model to analyze the data. The results are shown in Table 4. In this model, the base scenario is set to be a loan status of 0 (no loans), that is, the data in the table show the parameters explaining the probabilities of choosing productive loans, mortgage and car loans, and medical and student loans relative to choosing no loans at all.

To compare the impact of economic development level on effective demand for loans, we divided the sample into two sub-samples according to per capita GDP. If the per capita GDP of an area is higher than the median per capita GDP of the sample, we call it a developed area; otherwise, we call it an underdeveloped area. There are thus four data sets: the whole sample, the developed areas, the underdeveloped areas, and the whole sample using dummy variables to compare the differences among areas.

First, we analyzed the factors affecting productive demand for loans. The home return rate and the percentage of areas for which the primary industry is non-agricultural are positively correlated with effective demand for loans. Moreover, the home return rate has a greater influence in underdeveloped areas. However, the variables related to financial institution support (interest rate over the benchmark rate, proportion of agriculture-related loans) do not significantly affect effective demand. This indicates that it is not the support of financial institutions, but rather the proportion of skilled farmers and investment opportunities that play the critical role in influencing productive demand for loans in rural China.

Next, we analyzed the factors that affect demand for mortgage and car loans. The results shown in Table 4 indicate that the higher the proportion of elderly people and children, the lower the probability is of choosing mortgage and car loans. The aging and negative growth rate of the population significantly reduce the need for mortgage and car loans.

Furthermore, there is a significant negative correlation between proportion of medical and student loans and the proportion of workers in local counties. When there is an income surplus, or if the family members own a house or car, the demand for medical and student loans significantly shrinks as well.

Overall demand for loans is also greater in villages where the primary industry in which the resident labor force is employed is non-agricultural than in villages where the primary industry is agriculture. Moreover, the higher the family's education level, the stronger the family's demand for loans. This shows that loan needs are closely related to farmers' education levels and overall affluence. The higher the parents' education level and the more stable their income, the greater the probability is of choosing a medical/student loan.

The proportion of agriculture-related loans can also be seen in Table 4. In developed areas, this type of loan is positively correlated with other kinds of loans, including productive loans, mortgage and car loans and medical and student loans. However, in less developed areas, this relationship is not statistically significant. In terms of non-performing loans dispersed by financial institutions, productive loans have a significant positive relationship with non-performing assets in less developed areas. This relationship is not obvious in developed regions. Furthermore, mortgage and car loans have a significant negative relationship with non-performing assets in less developed areas and a positive relationship in more developed areas. The results are similar for medical and student loans. These results show that although overall official support for rural development is generally weaker in less developed areas, these areas are actually in even more urgent need of governmental financial support.

In summary, the home return rate of migrant workers is the key factor influencing the demand for productive loans; the population structure also plays an important role in affecting the demand for mortgage, car, medical and student loans. The home return rate of migrant workers can be regarded as a proxy variable for the proportion of people with productive experience and skills. In formulating a development plan to support the rural economy, the government must consider age and productivity dynamics, focusing more on increasing the working-age population and encouraging migrant workers to return home in order to stimulate local economic growth.

Table IIIV Multivariate Logit Model Analysis Results

	The whole Sample	Underdeveloped areas	Developed Areas	The sample whole (with area comparisons)
Productive Loans				
Percentage of non-farmers	-1.6841* (0.9663)	-2.3578* (1.4333)	-1.0082 (1.3652)	-1.5683 (0.9834)
Percentage of elderly people and children	-0.3174 (0.5933)	-0.0729 (1.0195)	-0.4962 (0.8832)	-0.2992 (0.5848)
Population growth rate	5.8656 (31.7990)	86.5473 (73.6755)	-80.4189 (61.1645)	1.1287 (36.6780)
Percentage of workers in local counties	-0.4975 (0.9795)	-1.7386 (1.2227)	2.9728*** (1.0417)	-2.2007* (1.2119)
Home return rate	2.1388*** (0.7323)	3.5905*** (1.2903)	1.3598*** (0.4420)	3.9420*** (1.2199)
Number of local companies	0.0015 (0.0066)	-0.0021 (0.0113)	-0.0584 (0.0521)	0.0112 (0.0089)
Percentage of primary school and junior high students	-5.0152 (4.4874)	-4.7681* (2.7838)	-23.9522*** (6.2172)	-10.2765*** (3.3201)
Whether the resident labor force is primarily engaged in non-agricultural industries	-0.5995 (0.7082)	-0.9067 (1.0725)	-3.9637** (1.9448)	-0.7548 (1.3690)
The industry contributing most to the local economy	1.1344** (0.5402)	1.8163** (0.7063)	4.9153*** (1.6431)	1.2527* (0.6849)
Education level	0.2299 (0.2319)	0.2312 (0.3536)	0.3173 (0.3762)	0.2172 (0.2389)
Land circulation rate	0.4050 (0.7493)	1.1809 (1.0063)	-2.0215 (2.4163)	0.3281 (0.8303)
Credit card ownership	0.8676** (0.4163)	0.9266* (0.5077)	0.7254 (0.6239)	0.8531** (0.4014)
House/car ownership	0.0821 (0.5123)	0.0013 (0.6043)	0.1134 (0.9639)	0.1116 (0.5083)
Income surplus	0.2198	-0.0251	0.6811	0.2418

	(0.3959)	(0.4721)	(0.7112)	(0.4044)
Log of annual income	0.0453	0.2713	-0.2671	0.0543
	(0.2545)	(0.3351)	(0.4205)	(0.2594)
Whether the family has Communist party members	0.4868	0.3916	0.5687	0.4856
	(0.4704)	(0.7870)	(0.5788)	(0.4802)
Loan interest rate	-0.1836	-0.7096	2.4340	-1.9260
	(1.2430)	(2.4712)	(1.7423)	(2.9007)
Percentage of non-performing loans dispersed by financial institutions	6.3863***	8.9442***	-17.0604	5.2110**
	(2.4623)	(2.9545)	(16.2281)	(2.6205)
Average loan scale	-0.0639	-0.0175	-0.3845***	-0.0257
	(0.0485)	(0.0220)	(0.1483)	(0.0279)
Percentage of agriculture-related loans	0.0355	1.7862	4.8606**	-0.3779
	(0.9026)	(2.7775)	(2.2717)	(3.0163)
The primary industry the resident labor force engaged in * Dummy variable				-1.0022
				(1.7199)
The industry contributing most to the local economy * Dummy variable				0.6328
				(1.1674)
Land circulation rate * Dummy variable				-1.5237
				(2.0031)
Loan interest rate * Dummy variable				3.9189
				(3.1969)
Home return rate * Dummy variable				-2.6207*
				(1.3958)
Percentage of workers in local counties * Dummy variable				3.1704**
				(1.4884)
Average loan scale * Dummy variable				-0.1736**
				(0.0790)
Percentage of agriculture-related loans * Dummy variable				0.8281
				(3.4340)
Dummy variable				-1.9580
				(3.3499)
Constant	-6.1472*	-11.0118**	-5.6792	-4.5650
	(3.2442)	(5.3424)	(5.2132)	(4.2176)
Mortgage and Car Loans				
Percentage of non-farmers	0.2284	-4.4554*	3.3850	0.2545
	(0.2574)	(2.3419)	(3.0612)	(0.2367)
Percentage of elderly people and children	-3.5456***	-5.7674**	-4.2433***	-3.4823**
	(1.3419)	(2.5201)	(1.6429)	(1.3911)
Population growth rate	-22.0676	35.0492	-3327.8590***	-53.3631
	(48.9054)	(72.0033)	(284.1882)	(56.0652)
Percentage of workers in local counties	1.3502**	-0.1884	-21.8799***	-0.1047
	(0.6162)	(1.1635)	(2.9040)	(1.0221)
Home return rate	-1.8291	0.7382	16.6143***	0.3741
	(1.2411)	(1.4979)	(2.6581)	(1.9062)
Number of local companies	-0.2649*	-0.0974*	-49.2785***	-0.1581
	(0.1476)	(0.0514)	(3.3312)	(0.0984)
Percentage of primary school and junior high students	0.5088	-4.6842	-67.5770***	-1.9255
	(3.1911)	(4.5317)	(8.7895)	(3.0791)
The primary industry the resident labor force is engaged in	-14.5405***	-14.9735***	-196.1903***	-22.9544***
	(0.8182)	(2.1142)	(14.4373)	(3.3886)
The industry contributing most to	0.8844	0.9522	88.8116***	1.1908

the local economy	(0.7754)	(0.7855)	(9.5663)	(0.8274)
Education level	-0.0365	-0.3026	0.4984*	-0.0850
	(0.3909)	(0.6169)	(0.2831)	(0.4087)
Land circulation rate	0.2880	1.4268	-116.9239***	0.9487
	(1.0869)	(1.5136)	(11.6226)	(1.4323)
Credit card ownership	0.7559	1.0455	1.2547	0.7980
	(0.5703)	(1.1461)	(1.0837)	(0.5743)
House/car ownership	-0.3195	-1.0475*	-1.5198	-0.5107
	(0.7651)	(0.5979)	(1.3275)	(0.7737)
Income surplus	-0.8444	-2.2062*	0.0355	-0.8851
	(0.7132)	(1.3102)	(0.9512)	(0.7524)
Log of annual income	-0.4892	-0.7193**	-0.2110	-0.4442
	(0.3436)	(0.3347)	(0.4300)	(0.3334)
Whether the family has Communist party members	0.9204	1.6565**	0.7418	0.8799
	(0.6127)	(0.8323)	(1.2474)	(0.6868)
Loan interest rate	-0.4644	2.1093	3.7118	0.7860
	(1.5263)	(2.5410)	(4.7750)	(2.6884)
Percentage of non-performing loans dispersed by financial institutions	-2.8780	-15.7010***	575.6289***	-6.9173
	(3.7066)	(4.3088)	(50.0870)	(5.1561)
Average loan scale	0.0095	0.0166	6.1430***	0.0149
	(0.0090)	(0.0135)	(0.4968)	(0.0143)
Percentage of agriculture-related loans	-0.8376	0.1748	20.2835***	-0.5558
	(1.2942)	(4.1058)	(4.0467)	(3.5454)
Whether the resident labor force is primarily engaged in non-agricultural industries * Dummy variable				-1.1478
				(3.7218)
The industry contributing most to the local economy * Dummy variable				-24.4096***
				(1.7698)
Land circulation rate * Dummy variable				-2.0090
				(2.5615)
Loan interest rate * Dummy variable				-4.7709
				(4.1526)
Home return rate * Dummy variable				-7.6189**
				(3.2761)
Percentage of workers in local counties * Dummy variable				0.9758
				(1.7624)
Average loan scale * Dummy variable				0.2627**
				(0.1083)
Percentage of agriculture-related loans * Dummy variable				0.9352
				(4.2154)
Dummy variable				-0.0405
				(3.6393)
Constant	1.5157	3.3070	-74.1009***	0.5965
	(3.5061)	(5.0710)	(7.7616)	(4.8779)
Medical and Student Loans				
Percentage of non-farmers	-1.1749	0.3606	-134.3704***	-0.9348
	(1.6029)	(1.0531)	(6.3867)	(1.7205)
Percentage of elderly people and children	0.3867	1.1604	-0.8632	0.3889
	(1.5889)	(1.1518)	(2.0170)	(1.3892)
Population growth rate	-22.4101	23.6047	530.9756***	16.2896
	(40.3288)	(41.3454)	(90.6110)	(40.8395)

Percentage of workers in local counties	-1.6821 [*] (1.0177)	0.2892 (1.1329)	-12.9985 ^{***} (3.6229)	0.2936 (1.2119)
Home return rate	-2.5191 (2.2428)	-0.1710 (3.8053)	2.6968 (3.0604)	-0.0917 (3.7144)
Number of local companies	-0.0059 (0.0173)	-0.0032 (0.0119)	-11.9005 ^{***} (1.8903)	-0.0056 (0.0115)
Percentage of primary school and junior high students	-2.4540 (3.2623)	-10.5791 (7.0132)	29.1435 ^{**} (13.4967)	-11.6061 [*] (7.0239)
Whether the resident labor force is primarily engaged in non-agricultural industries	3.9080 ^{**} (1.6708)	2.3735 ^{**} (0.9744)	30.6222 ^{***} (2.4185)	2.5512 ^{**} (0.9116)
The industry contributing most to the local economy	-3.3197 (2.4000)	-1.5015 (1.5375)	-12.8916 ^{***} (4.0753)	-1.7377 (1.6636)
Education level	1.6062 ^{**} (0.7336)	1.3784 ^{**} (0.6123)	17.3959 ^{***} (1.6352)	1.7018 ^{**} (0.7610)
Land circulation rate	1.4760 (1.1727)	0.0469 (0.6744)	90.1746 ^{***} (5.7881)	-0.0577 (0.7391)
Credit card ownership	0.1162 (1.1163)	0.8522 (1.0904)	-11.8645 ^{***} (0.9442)	0.2381 (1.1510)
House/car ownership	-13.7740 ^{***} (0.3955)	-15.2479 ^{***} (0.6689)	-28.8242 ^{***} (0.7456)	-22.3421 ^{***} (0.4809)
Income surplus	-1.8301 ^{**} (0.7778)	-1.4630 [*] (0.7923)	-30.5497 ^{***} (0.8061)	-1.9910 ^{***} (0.7708)
Log of annual income	0.3592 (0.4169)	0.5864 (0.4601)	0.7363 (1.5816)	0.5061 (0.4441)
Whether the family has Communist party members	-0.7024 (0.9082)	-15.7055 ^{***} (0.6861)	-0.1437 (1.2797)	-1.1008 (0.8110)
Loan interest rate	5.4932 [*] (3.2536)	2.0129 (2.3513)	46.8626 ^{***} (3.8266)	2.9293 (2.7291)
Percentage of non-performing loans dispersed by financial institutions	-20.3685 ^{***} (5.9766)	-26.8933 ^{***} (7.8958)	85.2597 ^{***} (27.4595)	-28.7460 ^{***} (9.4768)
Average loan scale	-0.3549 ^{**} (0.1391)	-0.4799 ^{***} (0.1285)	-2.5522 ^{***} (0.4914)	-0.4724 ^{***} (0.1535)
Percentage of agriculture-related loans	6.7497 ^{**} (2.6852)	-2.3739 (4.4600)	5.1439 (.)	-1.8503 (4.8402)
Whether the resident labor force is primarily engaged in non-agricultural industries * Dummy variable				245.0538 ^{***} (31.6366)
The industry contributing most to the local economy * Dummy variable				-188.5068 ^{***} (28.6677)
Land circulation rate * Dummy variable				183.1140 ^{***} (16.9080)
Loan interest rate * Dummy variable				102.0492 ^{***} (19.0848)
Home return rate * Dummy variable				81.9094 ^{***} (12.0579)
Percentage of workers in local counties * Dummy variable				-215.9949 ^{***} (33.4709)
Average loan scale * Dummy variable				-17.4836 ^{***} (1.5844)
Percentage of agriculture-related				453.6459

loans * Dummy variable				(.)
Dummy variable				-383.9411 ***
				(4.0319)
Constant	-16.9937 ***	-8.1202	-96.0213 ***	-8.3248
	(5.2710)	(8.6662)	(23.3161)	(9.1748)
Logarithmic likelihood function	-244.6241	-122.6556	-84.7315	-231.0161
P value	0.0000	.	.	.
Number of samples	3457	1866	1591	3457

Note: The numbers in parentheses represent the standard deviation. *, **, and *** represent significance levels of 10%, 5% and 1% respectively.

V. CONCLUSIONS AND RECOMMENDATIONS

Through the above analyses, this paper draws the following conclusions: (1) farmers' demand for loans is weak; they prefer to borrow from non-financial institutions. There are two possible reasons for this: first, the number of official financial institutions in rural areas is shrinking and remaining financial institutions are not convenient enough; second, the distribution of loan usage is uneven, with most loans going toward day-to-day living expenses. (2) The main factors influencing loan demand are the population aging rate and the home return rate of migrant workers. The home return rate is an important factor influencing the demand for productive loans, while the population age structure plays an important role in influencing the demand for mortgage, car, student and medical loans.

The key to enhancing rural economic development is to stimulate the effective demand for productive finance in rural areas. The proportion of the population aged 60+ and the home return rate play an important role in this, especially in the demand for productive loans. In light of this fact, as well as current government policies of allowing families to have a second child and supporting small and medium enterprises in rural areas, we propose the following suggestions.

A. Long-term strategy: stick to the "Second-Child" policy to change the population structure and stimulate productive demand for loans.

Since 2011, the Chinese government has implemented a series of birth control policies. With the propagation of the two-child policy, the fertility level has been gradually increasing. In the long term, this policy will improve the current imbalance in the rural population structure and increase the proportion of young people. This will in turn stimulate the demand for productive loans and commercial loans.

B. Short-term strategy: increase investment in rural industries and encourage migrant workers to go back home to start their businesses, in order to increase the productive demand for loans.

According to the survey data, many rural young people choose to leave their home villages for more advanced and higher-paying jobs, thus significantly reducing the effective demand for productive finance in their home villages. Therefore, the government should invest more in local industries. To be more specific, on the one hand, it is necessary to establish industries with local characteristics; on the other hand, the government needs to strengthen support for businesses and start-ups.

Different areas should start local businesses in line with their own unique environmental/resource advantages – i.e. business related to crop production, poultry and livestock breeding, agricultural product processing, or tourism development. This would not only inject a considerable number of jobs into the local economy, but also reduce the concern of labor outflow. Therefore, good local companies can attract outflowing labor back in and therefore increase the home return rate. The higher the home return rate is, the more people with higher education levels and richer experience will come back, contributing to the development of independent entrepreneurship and increasing the effective demand for productive finance.

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