

**A Study on Microfinance in China**  
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**Abstract**

This study investigates the relationship between microfinance programs' presence and farmers' welfare and the factors influencing financial demand of rural households. Empirical analysis has been conducted to investigate the detailed impacts that microfinance programs imposed on rural households based on the data collected through surveys. This study provides evidence that support the hypothesis that microfinance leads to increase in borrowers' household income.

**I. Introduction**

Microfinance is one of those small ideas that turn out to have profound implications. The idea of microfinance has inspired microfinance movements and challenged decades of thoughts: The poor households can benefit from the access to a broader set of financial service, and institutions can profit while serving poor customers. The rationale behind microfinance is simple: "giving them a hand up, not a handout". Rather than giving donations to poor households, microfinance programs distribute micro-loans to generate personal entrepreneurial activities.

Although China's record of economic growth has been extraordinarily remarkable since 1980, the wealth gap between urban areas and rural areas is still huge. With the Gini coefficient as high as 0.45, an estimated 26% of the population in China's rural areas now live on less than \$1.25 a day (PovcalNet, 2010). Due to the historical policy (1949-1990) of priority for urban development, most financial institutions in China's rural areas were for one exclusive function: collecting savings. Hundreds of billions of RMB was absorbed from rural Chinese areas, and then were used for city development. Given the inability of most formal credit sectors to serve the rural population, microfinance programs have emerged as a potential solution for bridging the gap between the supply and demand for rural finance since the early 1990s. Microfinance programs in China now have profoundly impacted the development of rural society and have developed into seven main forms including 1) nongovernmental organizations programs, 2) the government-supported poverty alleviation programs, 3) rural credit cooperatives programs, 4) social microfinance programs led by People's Bank of China to support the layoffs in urban areas, 5) subsidized loans programs by commercial banks, 6) programs by private microloan companies started in late 2005, 7) programs by village and township banks started in late 2008.

This study is designed to investigate the relationship between microfinance programs' presence and farmers' welfare and the factors influencing financial demand of rural households. Empirical analysis has been conducted to investigate the detailed impacts that microfinance programs imposed on rural households based on the data collected through surveys. This paper is aimed to understand the microfinance puzzles in China, including:

1. To clarify the relationship between rural households' welfare and microfinance programs
2. To determine the factors that affect rural households' financial need which is reflected as the possibility of borrowing from a microfinance institution

## **II. Literature Review**

In microfinance today, the split continues between those in the poverty theory camp and those in the sustainability theory camp. The poverty camp scholars argue for subsidized credit paradigms. But the sustainability camp scholars argue for rural financial system paradigms. Imperfect market paradigms could be viewed as the extension of the rural financial system paradigm with the consideration of the imperfect market reality in developing countries.

Scholars in the poverty camp dominated the microfinance academia before the 1980s. The underlying assumption was that: poor households in rural areas don't have the ability to hold enough savings, thus making production confront with the problem of lacking capital. Due to the high risk, low return, and uncertainty of agriculture production, the commercial financial institutions may choose to stay away. Thus, the poverty camp believes that it is essential to have subsidized capital to power the production in rural areas.

Scholars in the sustainability camp hold the opposite views; the rural finance system paradigm has gradually replaced the subsidized credit paradigm since the 1980s. They argue that the microfinance programs should be free of the heavy subsidies that brought down large state banks. Institutional self-sufficiency is the priority of sustainability camp, and they target the economically active poor as their clients, rather than the extremely poor.

Even with the popularity of the rural finance system paradigm, the microfinance movement continues to be driven by hundreds of millions of dollars of subsidies worldwide. The hope for many is that microfinance programs will use the subsidies in their early start-up phases, and as scale economies and experience drive costs down, the program will eventually operate without subsidies. To do this, the sustainability camp argues that programs must mobilize capital by taking saving deposits or by issuing bonds or institutions must become profitable enough to obtain funds from commercial sources.

Imperfect market paradigm has emerged since the 1990s when supports from social and non-market factors were noticed to be essential to foster an efficient financial market. The framework of the paradigm is that the financial market in developing countries is not perfectly competitive because of information asymmetry, especially true with the financial institutions. A healthy financial market does not develop exclusively based on market mechanisms. Factors such as appropriate government intervention and borrowers institutions are indispensable.

To sum up, the knowledge about the achievements of microfinance is limited but expanding. At one end of the spectrum are studies remarking that microfinance has positive impact on rural households' financial status. At the other end of the spectrum are studies pointing out negative impacts that microfinance could impose on rural families. In the middle are works that identify beneficial impacts but argue that microfinance is not helping the poorest households in rural areas.

### **III. Empirical Analysis of Microfinance in Malinggang Village, China**

#### **III.1 Methodology and Data**

Behind all microfinance programs is the assumption that intervention (mainly loan service) will change human behaviors in ways that lead to the achievement of desired outcomes. In this section, the paper focuses on assessing the difference in the values of key variables between different groups of households. Appropriate comparison between the experimental group and the control group needs to be made because “simple comparisons appear to be driven entirely by selection biases” (Morduch, 1998).

Selection bias may occur mainly because the experimental group systematically possesses an "invisible" attribute that the control group lacks, identified as entrepreneurial drive and ability (David Hulme, 2009). This problem could be tackled by using program-accepted clients-to-be as the control group, and thus the main difference in performance between the two groups could be attributed to the impact of microfinance program.

A randomized survey of 200 households was conducted in May 2010 in Malinggang Village, Heze County, Shandong Province, China. The survey was designed to assess microfinance program outcome and to collect households' financial status and characteristics information. The study compared the group of households who received loans in past two years (experimental group) with the group of community controls who are eligible to participate in the microloan program but had not received loans in the past two years and were not seeking a loan (control group). A total of 101 valid survey samples have been collected. Income was assessed by two indicators, annual household income and per capita annual household income. The survey used questionnaire-based interviews. The questionnaire was approved by IRB at Truman State University. Data analysis was performed using SPSS 17. Income and asset values were reported in RMB which has a currency exchange rate of 6.8RMB to 1 Dollar.

The primary data for the research has been collected through the survey conducted in Malinggang Village. Five loan managers working in Malinggang RCC were also interviewed. The interview questions ranged from first-hand working experience to thoughts on risk control. Some of their thoughts are quoted in the paper. The secondary data mainly comes from the year book of China Finance, Shandong Statistical Year Book, and from a survey conducted by Tsinghua University in 2007.

Shandong Province is located on the eastern edge of the North China Plain. It is one of the most populous provinces in China. Heze County belongs to the southwest part of Shandong Province with a population of 8.86 million, 7.13 million of which live on agricultural production. In 2008, income per capita for farmers in Heze County is 4584 RMB, 5% lower than the provincial average 4824RMB (Shandong Statistical Year Book). Malinggang Village is in the southern part of Heze County with a total population of 150,000. Malinggang Rural Credit Cooperatives (RCCs) is the major microfinance institution that operates in Malinggang Village. In the 2009 fiscal year, Malinggang RCC had 67 million RMB in disbursed loans and 3980 active clients. The average outstanding loan size is 16800 RMB. Malinggang Village was selected to participate in the survey because it is a typical North China agricultural village with a

relatively lower income per capita and the RCCs branch here is relatively mature with a significant amount of clients.

### III.2. Summary of Households' Characteristics and Their Financial Behavior

According to the results of the 101 valid survey samples, Table 1 summarizes the households' characteristics as follows:

Table 1. Household Characteristics

Households' Characteristics	Mean	Std. Dev
Age of Head of Household	41.8	5.8
Years of Education	7.8	2.4
Number of Household Members	4.33	0.63
Number of Migrant Workers in Household	1.07	0.68
Number of Agricultural Workers in Household	2.07	0.91
Number of Relatives Working in Gov	0.69	0.9
Size of Farmland Owned /Mou	5.01	1.23
Size of Farmhouse/rooms	4.23	1.18
Value of Livestock/RMB	1029	1268
Value of Agricultural Equipment/RMB	2489	2615
Savings/ RMB	12840	13605
Value of Durable Assets/ RMB	6115	5766

Among 101 samples, 14.7% households have had micro-loans from formal microfinance institution in the past two years. 1.9% households have had micro-loans from Non-governmental Organizations and, 20.7% households have borrowed from friends and relatives (informal finance sector). The average loan size is 29866 RMB from MFIs, 1050 RMB from NGOs and 10502 RMB from informal finance.

Formal MFIs are the main players in this area, while non-governmental organization programs have a very limited influence. Informal finance plays an important role, but the relatively small average loan amount makes it less influential than the RCCs and VTBs. It is noticeable that 62.37% of rural households are without any loans. This ratio is partly associated with the Chinese traditional borrowing attitude that most people intuitively choose to save rather than to borrow to accumulate capital, and this attitude is evidenced by the national saving rate of 40% (China Statistical Yearbook).

As for the way rural households used the microloans, Table 2 summarizes households usage of microloans.

Table 2. Households Usage of Microloans

1-Agriculture Production Investment or Entrepreneur Activity Investment	31.58%
2-Building House or House Repair	28.95%
3-Healthcare	18.42%
4-Education	10.53%
5-other consumption	5.26%
No Response	5.26%

#### IV. Hypothesis

As mentioned in the introduction, one aim of the study, through the empirical analysis, is to assess the impact of microfinance by clarifying the relationship between rural households' welfare and microfinance program' presence. What are the factors that affect rural households' financial need? In order to do so, several hypotheses have been made and models will be built to test the following hypotheses:

- I. Micro-loans distributed by MFIs lead to increase in borrowers' household income.
- II. The amount of a microfinance loan has a positive relationship with the household income.
- III. Among all factors that influence farmers' financial need, years of education, number of relatives working in the government, and all assets-related variables may have a positive relationship with the possibility for households to get micro-loans from microfinance institutions.

The experimental group consists of households who received micro-loans from MFIs in the past two years. The control group consists of households who are eligible to participate in the microloan programs but haven't sought loans in the past two years. Microfinance institutions such as RCCs have distributed a large number of loan-certificates that grant micro credit lines to the qualified households since 2005. The control group households mainly consist of qualified clients-to-be. The differences of household income between the two groups are summarized in Table 3.

Table 3. Comparison of Income Growth

	Household Income 2009 (RMB)	Income Increase Rate %	Non Agriculture Income (RMB)
Experimental Group (15)	22846	13.92%	6733
Control Group (24)	16437	3.02%	8062

The average 2009 household income of the experimental group is 6409 RMB greater than that of the control group; however the nonagricultural income of the experimental group is 1329 RMB less than that of the control group. This interesting comparison may attribute to the different household labor structure. In experimental group, an average household has 0.8 migrant

workers working in urban area whereas the number is 1.37 for control group, thus leading to a higher non-agriculture income for control group household.

For hypothesis I, the focus is the impact of the loans, which is measured by the income increase rate. The average income increase rate of experimental group is 13.92% with a standard deviation of 0.26 and the average income increase rate of control group is 3.02% with a standard deviation of 0.06. Based on the information, a T-test with null hypothesis is conducted to determine whether the difference of the two groups is statistically significant.

Ho: There is no statistically significant difference between the average income increasing rate of the experimental group and that of the control group.

H1: The average income increasing rate of the experimental group is significantly greater than that of the control group.

The test statistic is  $2.07 > 1.67$ , there is sufficient evidence to reject the Ho hypothesis and conclude that the average income increase rate of the experimental group is significantly greater than that of the control group. Thus hypothesis H1 of this section is supported by the evidence of the micro-study.

We reached the conclusion from the comparison that the experimental group experienced a higher income increase rate than the control group, but questions were raised when we look at each individual household within the experimental group closely: why were some households experiencing a greater income increase rate than others?

For hypothesis II, multiple regressions are used to test the relationship between household income per capita and the amount of the micro-loan. Independent variables such as years of education, number of relatives working in government and consumption & productive assets values are also included in the model.

Table 4. Dependent Variable: Income Per Capita

Model	Unstandardized coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4724.211	2042.607		2.313	.054
X1-Years of Education Householder Received	-460.057	175.253	-.252	-2.625	.034
X2-Number of relatives working in Government	291.847	262.614	.091	1.111	.303
X3-Size of Farmland (Mu)	412.669	264.246	.129	1.562	.162
X4-Value of Agriculture Equipment(RMB)	.010	.174	.010	.055	.958
X5-Value of Durable Assets	.237	.044	.799	5.431	.001
X6-The Amount of Money Borrowed from RCC or VTB	.043	.013	.377	3.401	.011
X7-Number of Migrant Workers in Household	-2904.59	847.659	-.341	-3.427	.011

Regarding the choice of different variables inputs, highly correlated variables are avoided. The model thus could be translated into an equation:

$$Y = 4724 - 460x_1 + 291x_2 + 412x_3 + .01x_4 + .24x_5 + .04x_6 - 2904x_7$$

The coefficient of the amount of money borrowed from MFIs is 0.043 with p value 0.011, which suggests that the amount borrowed from microfinance institution is statistically significant to the household income level. For every RMB borrowed from MFIs, the income per capita of the household increased by about 4 cents. The evidence found supports hypothesis II.

Interestingly enough, it is noticeable that years of education has a negative relationship with household income level, which is against intuition and the hypothesis. During the interview with loan managers of RCCs, one of the managers pointed out the tendency that the less education the head of household has, the more risk he is willing to take to carry out his entrepreneurial plan. The higher the risk is, the higher the reward probably is. It might not be generally applicable, but in the experimental group of Malinggang Village, it turns out that the households whose heads have less education generally experience a higher per capita annual income. Thus the hypothesis II is partially supported by the evidence from the micro-study.

In order to get a more comprehensive look at microfinance, hypothesis III is brought up to deal with the possibility that households with certain characteristics will end up borrowing from microfinance institutions. A discriminant analysis model is deployed to pursue the potential factors. The dependent variable used to represent this situation is a variable that has either the value 1 if the household borrowed from MFIs in the past 2 years or the value 0 if the household did not borrow.

Let years of education, number of migrant workers and all assets-related factors be explanatory variables that are used to help predict which of the two categories each of the household in the samples should be classified. The explanatory variables are assumed to be approximately normally distributed. The results are follows:

Table 5 Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.784	22.370	12	.034

Wilks' lambda is used in an ANOVA (F) test of mean differences of groups in discriminant analysis. A Wilks' lambda of .784 suggests the two groups are not well separated, and a p-value of .034 signifies an important relationship between the variables.

As the classification results table shows, we correctly classified 80% of the subjects with the canonical coefficient. The number of relatives working in government, size of farmland, the amount of saving account and the value of durable assets are the factors that have a strong positive impact to the possibility of getting a loan for rural households, while the number of migrant workers working in cities and value of livestock are the factors that have a negative impact on such a possibility. Public servants usually hold a high social status in China, and having relatives working in government is often seen as an implicit guarantee to repay loans. In Malinggang Village, agricultural activity is the main source of income, so a certain size of farmland guarantees the rural households' repayment ability. Assets generate future income, and future income becomes future assets. The amount of savings and the value of durable assets reflect the rural household's ability to generate stable income. It is reasonable to assume that households with the above characteristics are more likely to get microloans than other households and thus hypothesis III is partially supported by evidence from the micro-study.

Table 6

Standardized Canonical Discriminant Function Coefficients	
Age of Householder	0.353
Years of Education Householder Received	-0.027
Number of Household Members	0.332
Number of Migrant Workers	-0.657
Number of Agriculture Workers in Household	-0.197
Number of relatives working in Government	0.265
Size of Farmland (Mu)	0.141
Value of Livestock (RMB)	-0.087
Value of Agriculture Equipment(RMB)	-0.187
Savings Account (RMB)	0.121
Size of Farmhouse (Number of Rooms)	0.04
Value of Durable Assets	0.854

It is true that the wages earned by migrant workers working in cities have contributed a lot to the overall household incomes; however this factor doesn't help much in the possibility of getting loans. An average migrant worker usually spends 10 months per year working in cities. It is difficult for loan managers to get a hold of him and collect repayment in a timely manner. Moreover, cultivation activity is often regarded as risky because of animal diseases, which is probably why the value of livestock, as an assets-related variable, imposed slightly negative influence to the possibility of getting microloans.

## V. Conclusion

From the empirical analysis of Malinggang Village, the evidence clearly shows that microfinance is a power tool to effectively increase rural household annual income especially when it is made available to the creditworthy economically-active poor. There is a statistically significant relationship between the amount borrowed from MFIs and the amount of household annual income, and thus, we are reasonably convinced that it is beneficial for most people to further promote microfinance in Chinese rural area.

However, it is sometimes forgotten that another word for credit is debt. Placing in debt on those who are too poor to use credit effectively helps neither borrowers nor lenders. As the test in the above section shows, the poorer households tend to use credit less effectively than the economically active poor household. And borrowers without opportunities to use credits may have no choice but to consume their loans, leading to humiliation and the diminishing of already low self-confidence. The poorest of the poor should not be the responsibility of the microfinance sector, but of the government agencies or donors who can provide them food, shelters, training, and other basic requirements to overcome desperate poverty.

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