Research into the Effects of Social Network on Household Debt Defaults

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Abstract: Based on the data from the Rural Urban Migration in China 2009, this paper explores the effects of social networks on household debt defaults. Furthermore, we use immigrants' communication expenses and the ranking of their brothers and sisters to deal with the possible endogenous bias and draw some conclusions after robustness tests. Our analysis suggests that the effects of social networks belong to immigrants on household debt defaults are significant and positive. In addition, our study helps to understand the mechanism of social networks to rural household debt defaults, provides valuable policy recommendations to reduce household debt default rates.

1 FIRST SECTION

1.1 Introduction

With series governmental policies to stimulate consumption demand, increased competition in banking area and a variation in consuming attitude among citizens, the scale of household debt has drastically enlarged in our country these years (Xinhua Guo, Bin Chen, Zhaihua Wu, 2015). Up to 2012, our country's consumer credit remaining sum has risen to 10.27 trillion RMB, taking 20.1 percent of the GDP. Inevitably, the rise in household debt leads to the growth in debt defaults, which has a negative influence on social economy (Oleg Lugovoy, 2002). Debt defaults represent the difficulty in financial liquidity, besides they raise the level of risk premium and then the cost of funds. Most of all, defaults also result in a decrease in consumption and savings, which will affect macroeconomic operation.(Selcuk Caner, Manouchehr Mokhtari, 2000) Nevertheless, now on the condition of "new normal", consumption is the main impetus on Chinese economy and there is no doubt household debt defaults influence strongly on consumption. Several scholars have blamed the U.S. sub-prime crisis in 2007 for the exceeding inflation of household debt.(McKinsey Global Insititute, 2012) .Beyond doubt, reducing household debt

defaults rates has a practical significance for transforming and upgrading the country's economy, and prevents the country from financial risks. Then, what are factors that affect the household debt defaults? The answer is complex, especially for rural families. Under the recent condition of financial ystem in China, it is impractical for them to borrow money and take loans through the existed formal financial channels.

However, through such informal financial channels, social networks provide rural families with the required funds.(Kaitong Tan, 2012) Social network is a significant concept in economic sociology, it is an integral composition formed by individual interactions and a stereoscopic network nor a flat one.

According to the discussion above, based on the trust in social networks and through informal financial channels, rural families can obtain loans and reduce debt defaults. However, what is the specific connection between the family debt defaults and social networks? To answer this question, this article will investigate the behavior of debt defaults in rural families from the perspective of social networks.

1.2 Literature Review

Family debt is a financing activity between the family and formal financial institutes or other

economic agents. In recent years, to find out the influenced factors of household debt defaults, a large number of overseas researchers have made mass research and analysis. Based on the factors of demography, consumers with high education had little possibility to default.(Joanna Stavins, 2000)

In contrast, the national research about household debt defaults are scare. Professor Xinhua Dun has pointed out unemployment, triggering events and change of income and solvency were vital factors incurring family debet faults.(Xinhua Guo, 2006)

Social network is a combined social relation made up by individual relatives, schoolmates, friends, neighbors and colleagues. Pierre Bourdieu has indicated social network was actually a kind of social capacity, which came from the economic capital. Through social network, individuals received support from cooperative funds(Pierre Bourdieu, 1986). Professor JingJing Shan has further pointed out the process of urbanization was also the process of transformation in social network. Based on the primitive relationship form region and blood, migrant workers establish new social network, which is a vital resource helping them obtain social support(Jingjing Shan, 2007). Compared with the prior migrant workers, there is an obvious decrease in dependency and focus on rural social network, new migrant workers however show a characteristic of urbanize(Xin Qi, 2007) and phenomenon of cohesive subgroups(Yike Ren, 2008).

According to the analysis above, based on the development in several decades, the research about household debt defaults are sophisticated in such aboard countries. However, on account of limited time for consumption credit, the national research is still at the primary stage, we lack the research about the connection between social networks and household debt defaults. To fill this existed vacancy in national research part, we choose the new migrant workers as our target group and write this article about the effects of social networks on household debt defaults.

2 RESEARCH DESIGNE

2.1 Study Sample and Data Sources

Our data comes from the investigation of Rural Urban Migration in China, RUMIC in 2009. This project is initiated by researchers from Beijing Normal University, Australian National University and the University of Queensland and supported by IZA and NBS. The survey samples of the project

include 5 thousand samples form urban families, 10 thousand samples from rural-urban migrations and involved 9 provinces and 15 cities. The contents of the questionnaires comprise basic case of family members, income and expenditures of the families and the condition of their education, employment and social relationships. According to the purpose of the research, we have choose 10 thousand samples of rural-urban migrations from RUMIC in 2009, deleted abnormal samples and samples lake of relative variables, finally we gained the samples used to positive analysis in this article.

2.2 Model Construction and Declaration of Variables

For researching the effects of social networks on family debt defaults, we consult relevant literature and build our regression model as follows:

$$M_i = \alpha_0 + \alpha_1 X_i + \beta Z_i + \varepsilon_i$$

In this model, the explanatory variable X_i refers to the ith migrant worker's proxy variable on social networks, the explained variable M_i refers to the ith migrant worker's family defaults condition. Besides, Z_i refers to the control variable of possible effect on family debt defaults, mainly including wage, number, gender, nation, health, risk take, happiness, job, trust and married (take the married as reference group). Moreover, this article set up five dummy variables: married1, married2, married3, married4, married5, represent first marriage, remarriage, cohabitation, divorce and death of spouse. The reason why we choose trust as a variable, is articles of sociology always allude trust to a vital part of social networks. α_0，α_1 and β stand for coefficient of parameters to be estimated, ε_i stand for error term of regression model.

The definition and explanation of the variables are as table 1.

Variables	Description	Explanation
W repayment	Proxy variable of household debt defaults.	debt defaults / Total income

repay01	The existence of debt defaults	No=0；Yes=1	Job	Employment statues	Unemployment=0；Employment=1
Wage	Labor income.	Average monthly incomes.	Risk take	Risk bearing	Scale of 0 to 10 based on the level of risk
Helpers	The number of people who offered helps to the migrate workers in the last year.	Include the helps of money, job, suggestion, and looking after baby etc.	Happiness	Sense of happiness	Very happy=1；Happy=2；Not happy=3；Unfortunate=4
Number	The number of brothers and sisters.		Trust	Trust	Scale of 1 to 4 based on the degree of trust.
Gender	Gender.	Female=0；Male=1			
Minzu	Nation.	Minority=0；Han=1			
Married if	Get married or not.	No=0；Yes=1			
Married1	First marriage	No=0；Yes=1			
Married2	Remarriage	No=0；Yes=1			
Married3	Cohabitation	No=0；Yes=1			
Married4	Divorce	No=0；Yes=1			
Married5	Death of spouse	No=0；Yes=1			
Health	Health statues	Very good=1 Good=2; Common=3; Bad=4;Very bad=5			

2.3 Descriptive Statistics

According to our research, 54.5 percent of interviewees are male, while females take up to 45.5 percent, 98.6 percent of interviewees are han, merely come from minority. Besides for the marriage status, only 9.8 percent of migrant workers have been married, most of them are still single. Their health status are generally poor and the medical cost are always high, which could result in a increase in household debt defaults. Take the inclination of risk bearing as concerned, the table shows their average inclination is neutral and the level is not high, which indicates their low participation rate in household financial marketing. Moreover, the average index of happiness statue is 3.112, this low happiness statue may result from the high economic pressure. At last, speaking to the employment status of the migrate workers, 89.7percent of them take upoccupation, but few is still unemployed.

3 EMPIRICAL ANALYSIS

3.1 Analysis of Regression Result

Firstly we employ Tobit to estimate the measured model, the regression result is as Table 2.

Variables	(1)	(2)	(3)	(4)	(5)
	Tobit	Tobit	Probit	Probit	Reg
helpers	0.573***	0.499***	0.022***	0.019***	0.078**
gender		5.281**		0.171*	0.829**
minzu		22.097		0.742	1.989*
marriedif		11.332***		0.431**	1.701**
married1		8.188***		0.255**	1.098*
married2		-4.321		-0.254	-0.037
married3		6.969		0.409	-1.091
married4		14.059*		0.479*	1.672
married5		10.925		0.324	1.210
number		1.604**		0.044	0.339***
health		-6.831***		-0.247***	-0.820***
risktake		0.440		0.015	0.067
job		6.794		-0.389**	-0.951
Happiness		-2.948*		-0.148**	-0.168
Trust		-3.65**		-0.145***	-0.38*
Wage		-0.31**		-0.009	-0.05**
Cons	-34.894***	-12.345	-1.222***	-0.090	4.210**
Pseudo R^2	0.004	0.034	0.010	0.072	0.033
N	1815	1664	1819	1667	1664

Table 3: Note: *, **, *** refer to reject null hypothesis under the significance level of 10%, 5% and 1%.

The result of regression at fist to second line showed ,whether we bring in control variables or not, the regression index of social network is positive under the significance level of 0.01. This indicates social networks have a positive impact on household debt defaults.Except for some explained variables of social networks, we make other regression analysis about the variables of individual feature and household economic. The regression result at the second line of the Tobit model indicates compared with male the situation of debt defaults is severer among female. However the regression index is not outstanding in the factor of nation, illustrating nation has no significant effect on household debt defaults. Besides the table shows increasing labor income adds household disposable income, meanwhile decrease the possibility of debt defaults. Moreover, the fifth line of the 3rd table the regression index of social networks is still positive.

3.2 Process of Endogenous Character

Estimating datum equation results in biased estimation of some key parameters, the main problem is social networks related to error terms. Household debt defaults, to some extent, effect social network. Migrant workers' social networks and household debt defaults probably have reverse causality, which lead to endogenous character. In order to amend the biased error of endogenous character, we use instrument variables: TELE and RANK. TELE refers to migrate workers' communication costs, RANK refers to their rank among peers in their family. This two instrument variables effect directly on social networks, however, have no influence on migrate workers' defaults. The reason why we choose TELE as instrument variables is communication costs are related to social relationships. Generally, communication costs reflect the frequency and time migrate workers connect with others. The lager the costs are, the more intimated connection is and the lager the scale of social network is. We choose RANK as the

second instrument variable, on account of migrate workers rank among peers in their family always reflect the number of their brothers and sisters. According to the diffusibility of social relationships, lager number of sisters and brothers means lager scale of social networks. However communication costs and the rank have no direct influence on household debt defaults.

Applying instrument variables, we utilize IV Tobit, IV2SLS, IVLIML and IVGMM to analyze data, the results are showed in the forth table. The table's first, third, fifth and seventh lines show, under the significance level of 10% and 1%, the variable coefficient of social network is positive. Besides excluded-exogeneity estimation of Wald rejects the null hypothesis about social network is one exogenous explaining variable, in another word, it's an endogenous explaining variable. Meanwhile we make a estimation about weak instrument variables . The second line of the 3rd table indicates, in the second stage of 2SLS, when using instrument variables TELE and RANK, robustness of weak instrument variables reject the null hypothesis, which means the problem of weak instrument variables dose not exist. The results from the forth and sixth line is also the same with the second line. In conclusion, the instrument variables of this article neither have problem of weak instrument variables nor endogenous character, besides employing TELE and RANK to estimate the effect of new migrate workers' social networks on household debt defaults is suitable and necessary.

Table 3: Test Result of Endogenous Character

Variables	(1) IV Tobit	(2) First Stage (2SLS)	(3) IV2SLS	(4) First Stage(LIML)	(5) IVLIML	(6) First Stage(GMM)	(7) IVGMM
Helper	5.567*		1.428***		1.431***		1.462***
Gender	0.587	0.788**	-0.257	0.788**	-0.260	0.788***	-0.287
minzu	19.826	0.695	1.410	0.695	1.409	0.695	1.402
Marrie dif	8.776***(4.405)	0.568 (0.479)	1.029 (0.934)	0.568 (0.479)	1.027 (0.936)	0.568 (0.620)	1.050 (1.236)
rank		0.239*		0.239*		0.239*	
Cons	-50.629 (31.212)	5.427*** (1.989)	-6.217 (5.619)	5.427*** (1.989)	-6.244 0.000	5.427*** (1.951)	-6.524 (5.037)
Pseudo R²	0.055	0.055	0.000	0.05	0.05	0.05	0.000
AR		14.34***		14.34***	6.65***	18.67***	
Wald test	4.37**		6.65***		151		9.72**
N	1515	1515	1515	1515		1515	1515

Note：① AR refers to the examination of robustness among weak instrument variables

②Wald test refers to the examination of exogenous exclusion.

4 CONCLUSION

This article employs data about Chinese village-city migrate workers in 2009 and makes a deeper research into the effect of social networks on household debt defaults.

Our conclusion is: social networks have a clearly positive influence on household debt defaults, besides the problem of endogenous character still exists. However the result of this article is

inconsistent with previous ones, the reasons for this coming from two aspects. First, the existence of "Liability Pyramid". Migrate workers always relieve their borrowing and finance demand through social networks, but on account of a decrease in excepted income, migrate workers may not able to pay back all their debt. If this happens, they will borrow money once again from the third-party, which can result a vicious circle and increase the rate of default. Second, lack of normalization in informal lending. Migrate workers' loans mainly come from informal channels, the larger scale of social networks is, the more various informal channels they in touch with. In case debt defaults are more widespread, because informal channels are built by relative relationships and lack of institutional limit. As the conclusion showing above, this article offers 3 suggestions as follows:

(1)Improve rural society security system. government should increase the investment in rural Old-Age security and New Rural Cooperative Medical System, guaranteeing living demands of remind peasants and reducing the costs of social security. In this way, government will help migrate workers reduce their economic and debt burden.

(2)Improve rural society credit system. As far as we are concerned, government should improve rural society credit system , build up credit evaluation system and information sharing system.By strengthening the link between loans and credit, government helps perfect rural financial credit environment and prevent migrate workers from defaults.

(3)Improve rural financial service system. Government should improve rural financial service system. On the one hand, strengthen the construction of hardware facilities,increase "Internet+agriculture" layout and set up internet-agriculture financial platform.

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