Analysis of the impact of household debt on the consumption of rural residents in central China
——Survey data from Qian County

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Abstract. Since the reform and opening up, the consumption concept of rural residents with rapid economic development in China is gradually changing, and the consumption concepts such as early consumption and debt consumption are gradually recognized by the public. People can get rid of the impact of current income constraints and meet consumer demand through debt. This paper mainly studies the impact of household debt on consumer spending. This study obtains data information through questionnaire survey. Using multiple linear regression model, it is concluded that household debt has a significant positive impact on consumption expenditure, indicating that household choice debt can significantly improve household consumption level. However, this survey found that debt sampling accounted for only 35%, so rural residents should change their consumption concepts and improve their financial literacy.

Keywords: Household Debt; Rural Residents ' consumption; central China

1 Introduction

With the development of the Internet, a variety of lending software is emerging, coupled with the change in people's consumption concepts, debt consumption can get rid of the current income constraints, and is gradually accepted. China's long history, deep agricultural roots, a large group of farmers, its consumption capacity in China's overall consumption pattern occupies a pivotal position[1]. As the core force in the consumption army, the consumption level of farmers is not only related to their own well-being, but also an important factor affecting the country's economic development[2]. As of the end of 2022, Qianxian County has a total of 15 towns and 173 administrative villages, with a total administrative area of 1,002 square kilometres, a household population of 579,692, and a per capita disposable income of 15,429 yuan for rural residents. Yangyu Town belongs to Qian County, Shaanxi Province, and ranks fourth in terms of its administrative area of 7,274 hectares and fifth in terms of its household population of 33,567, of which Yangyu Village is an administrative village under the jurisdiction of Yangyu Town, Qian County, Xianyang City, Shaanxi Province, with a total household

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population of 3,300 and a per capita income of 15,860 yuan. This paper selects Yangyu Village as the survey area to understand the impact of rural household indebtedness on consumption at the micro level, and to study the relationship between indebtedness and residents' consumption expenditures, which will help to improve the level of consumption and living standards of residents' households, and better satisfy the growing need for a better life of the current residents[3].

2 Survey on Household Indebtedness and Consumption of Yangyu Village Residents

2.1 Data Sources

In order to understand the impact of household indebtedness on rural residents' consumption, this paper selects Yangyu Village as the research area. There are 11 groups in Yangyu village, with a total number of 960 households, and the research was conducted by distributing questionnaires to farmers to obtain data on household indebtedness and consumption of rural residents, and a total of 5 groups and 300 households were surveyed in this survey.

2.2 Survey Results and Analysis of Household Indebtedness of Rural Residents

The problem of indebtedness of rural households is now also a cause for concern. The sample survey showed that 105 households, or 35% of the total sample, were in debt. In order to gain a deeper understanding of this phenomenon, two aspects were analyzed: the sources of indebtedness and the structure of indebtedness.

With regard to the sources of indebtedness, 61% of the households in the sample survey chose to borrow from relatives and friends, while only 39% chose to borrow from banks and other financial institutions. The results show that rural residents prefer to borrow from friends and relatives.

From the perspective of the liability structure, operating liabilities and consumer liabilities form the two core components[4]. Among them, consumer liabilities cover diversified components, such as housing loans, education expenses, vehicle purchase loans, medical expenses and credit card arrears[5]. According to the sample survey, the average total household debt is $57,904.76. Among them, the average value of operating liabilities is 7209.52 yuan, and the average value of consumer liabilities is 50695.24 yuan, with consumer liabilities taking up more than 4/5 of the total liabilities. There are 25 samples of consumer liabilities with housing liabilities, accounting for 24% of the total, and the average amount of housing liabilities in the sample of liabilities is RMB 35,051.55. The reasons for the increasing housing liabilities mainly include the frequent housing policies and the Chinese people's affection for the house, i.e., no house, no home, see Table 1.

Table 1. Structure of household indebtedness

Name	Options	Sample size (number)	Proportion (%)
Total household indebtedness	Less than 20,000	33	32.38
	20-60K	46	42.86
	Above 60k	26	24.76
Operating liabilities	Below 5k	52	50
	5K-10K	41	39
	Above 10k	12	11
Consumer liabilities	Below 20k	37	35
	20-50k	43	41
	Above 50k	25	24
Housing indebtedness	Below 80k	5	20
	80,000-100,000	10	40
	Above 100,000	10	40

Source of data: collated from questionnaires

3 Econometric Modelling

This paper chooses a multiple linear regression model for empirical analysis, in which the explanatory variable is consumption expenditure, focusing on the study of household consumption expenditure, which can be subdivided into three major categories according to the nature of consumption: subsistence, development and enjoyment consumption expenditure. The explanatory variable is household indebtedness, exploring whether debt has an impact on household consumption expenditure for empirical analysis. The theoretical basis for the choice of variables and the logical relationship between the variables are explained below:

Age of household head. The ratio of children to population has a significant positive effect on household consumption expenditure and consumption rate, while the ratio of elderly population significantly suppresses household consumption expenditure and consumption rate. This finding still holds after instrumental variables and robustness tests. Therefore, the variable age of the household head is introduced into the model.

Marital Status. Married residents participate in cultural consumption behaviour less frequently than unmarried residents. However, another study shows the inhibitory effect of unmarried demographics on household consumption. Therefore, the variable of marital status is introduced into the model.

Health status. In the same context, health status varies inversely with household consumption expenditure. Therefore, the health status variable is introduced into the model.

Household size. The larger the household size, the lower the per capita consumption and it was found that small size households increase the total consumption demand, hence the variable of household size was introduced into the model.

Years of education. The higher the level of education of the residents, the higher their knowledge and personal skills will be, and their income opportunities will increase. When residents' knowledge and skills are transformed into real economic income, residents generally seek a higher quality of life, and their enjoyment and developmental consumption expenditures will also increase. Therefore, the education variable is introduced into the model.

Annual household income. Rural residents' income is the most important factor affecting residents' consumption level. Income is the main factor affecting consumption. Therefore, the total annual household income variable is introduced into the model.

Total household assets. Savings, investment, housing and insurance assets owned by rural residents can play a positive role in consumption. However, another study found that an increase in the value of total household assets can contribute to an increase in the level of residents' consumption and, to some extent, to the upgrading of the consumption structure. Therefore, the total household assets variable is introduced into the model.

In order to weaken the differences of the data in the model, the continuous variables of household consumption expenditure, household liabilities, annual income and total assets in the model are logarithmically treated to study the impact of household liabilities on household consumption expenditure, and the model construction is shown in formula (1):

$$\text{Consumption}=\partial_0 + \partial_1 \text{isdebt}+\partial_2 \text{X}+\varepsilon \tag{1}$$

4 Empirical Analysis of the Impact of Household Indebtedness on Rural Residents' Consumption

In exploring the impact of household indebtedness on consumption levels, we used a stepwise approach to introduce variables to analyse the stability of the regression results. First, we introduced a separate dummy variable for household indebtedness to observe its direct impact on household consumption expenditure. Then, in the second column of the model, we added a personal characteristics variable to analyse the impact of the personal situation of the household head on consumption. Finally, in the third column of the model, we incorporate all control variables, including household characteristics variables, to obtain a more comprehensive analysis.

In addition, the impact of household characteristics variables on consumption should not be ignored. The increase in household size, the rise in annual household income and the accumulation of total household assets all have a positive effect on household consumption. Specifically, for every 1 percentage point increase in household size, household consumption expenditure will increase by about 0.029 percentage points; for every 1 percentage point increase in annual household income, household consumption expenditure will increase by about 0.097 percentage points, which is in line with Keynes's theory of absolute income; and for every 1 percentage point increase in total household assets, household consumption expenditure will increase by 0.173 percentage points, which further highlights the role of household asset play an important role in enhancing households' willingness and ability to consume, see Table 2.

Table 2. Table of regression results on the impact of household indebtedness on consumption expenditure

	Explained variable: household consumption expenditure		
variable	(1)	(2)	(3)
Debt or not	0.181**	0.136**	0.080**
	(14.781)	(12.395)	(7.972)
Age		0.000	-0.001
		(0.337)	(-1.114)
Marital status		0.075**	0.060**
		(4.665)	(4.485)
Health status		0.009	0.006
		(0.804)	(0.706)
Years of education		0.015**	0.011**
		(9.296)	(7.964)
Number of family members			0.029**
			(7.228)
Annual Income			0.097**
			(2.932)
Total Assets			0.173**
			(5.017)
Constant	4.609**	4.400**	3.085**
	(635.479)	(170.634)	(21.479)
observed value N	300	300	300
R-squared	0.423	0.613	0.747
F_test	0	0	0
r2_a	0.421	0.606	0.740
F	218.477	93.112	107.486

Note:** indicates that the p-value is less than 5 per cent, and the opposite is true without **. t-values and regression coefficients are indicated inside and outside parentheses, respectively. Household consumption expenditure, annual household income and total household assets are logarithmically placed into a multiple linear regression model.

5 Conclusions

At the level of empirical analysis, we delved into the impact of household indebtedness on household consumption. The results of the study show that the regression coefficients of household indebtedness and household consumption are positive and within the 5 per cent level of significance, in addition to factors such as marital status, the number of people in the household, educational background, annual income and total assets. This indicates that household indebtedness can significantly affect household consumption and promote the growth of consumption expenditure and the upgrading of consumption structure.

Based on the above findings, we make the following recommendations.

Deepen the pace of innovation in the field of consumer finance and enhance the optimal allocation and efficient use of financial resources, so as to provide the general public with a more convenient and efficient financial service experience[6].

Diversified ways to enhance farmers' income. The income level of farmers is directly related to their willingness and ability to consume. Therefore, the government should actively implement measures to create more diversified ways for farmers to increase their income, so as to enhance the disposable income of rural residents. In addition, it is necessary to further improve the social security system, so as to enhance the consumption confidence and risk resistance of rural residents[7].

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