

Resident Assets, Wealth Effect and Consumption

Yu Pan^{1, a, *}, Huimin Xing¹

¹School of Finance, Zhejiang University of Finance & Economics, Hangzhou 310018, China

^apanyu121@zufe.edu.cn

* corresponding author

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Abstract: China's economy is developing rapidly, and the consumption structure is being transformed and upgraded. The wealth effect of family assets has brought more and more attention. However, the previous studies did not reach to a consistent conclusion. This paper selects the data of 2012 China Household Finance Survey (CHFS), and makes an empirical study on the wealth effect of housing assets and financial assets of Chinese residents based on the LC-PIH model, further discussing the difference of wealth effect of different groups. The analysis shows that household housing assets and financial assets are positively related to the impact of consumption, and the factors such as household age, income and region have different effects on asset wealth. This paper makes up for the lack of sample size caused by the use of macro data when researching household finance. And this paper is an extended application of CHFS database.

1. Introduction

The wealth of Chinese households has been growing in recent years. The increase in residents' wealth can drive domestic consumption. However, the growth of residents' wealth and consumption in China is not synchronized. According to statistics from the National Bureau of Statistics, from 1985 to 2019, the per capita disposable income of urban residents rose from 739 yuan to 42,359 yuan. However, the ratio of per capita consumption expenditure to disposable income decreased from 0.8 to 0.66. A family's asset changes will affect its wealth, and the amount of wealth will also have a certain impact on its consumption expenditure. The 19th National Congress of the Communist Party of China mentioned that it is necessary to broaden the income channels of residents' labour income and property income, and improve the consumption promotion system to enhance the basic role of consumption in economic development. China is the largest developing country in the world, and is in a period of important strategic opportunities. The consumption and industrial structure have entered a critical stage of transforming and upgrading, meanwhile China has huge consumer demand and investment demand.

Scholars' research on the effect of asset wealth mainly focuses on housing and financial assets. Modigliani (1971) first explored the relationship between asset wealth and consumption[1]. Campbell (2007) and Favilukis et al. (2017) believe that the increase in housing wealth will enable consumers to obtain consumer credit, which will make family financing more convenient, and thus ease household credit constraints[2,3]. Anita et al. (2016) found that the wealth effect of housing in the short term is very significant, while the changes in the stock market have less impact on household consumption[4]. The research of Poterba (2000) and Jansen (2003) also support this conclusion[5,6]. However, some scholars have found that the wealth effect of financial assets has a significant impact on household consumption. For example, Nikola and Marion (2007) found that changes in the stock market price have a significant impact on consumption in the long run[7]. Amina et al. (2014), through empirical research, found that there is a wealth effect in the stock market, and it is more significant in developed countries[8].

It can be found that scholars pay more attention to the study of wealth and income. However, they ignored the impact of asset wealth effects on household consumption. At the same time, studies on the wealth effects of housing and financial assets have not reached a consistent conclusion.

Therefore, this paper focus on the study of asset wealth effects around the impact of household assets on consumption. The result shows that household housing assets and financial assets are positively related to the impact of consumption, and the factors such as household age, income and region have different effects on asset wealth. The research in this paper not only makes up for the shortcomings of the lack of samples in the research of household finance, but also is an in-depth study and extended application of CHFS data.

2. Data and Methodology

This chapter is divided into two parts. The first part is the selection of samples; and the second part including the description of the research variables and the model design used in the analysis.

2.1 Sample Data

The data in this paper is derived from the 2012 China Household Finance Survey Data (CHFS), which was obtained from a survey conducted by Southwestern University of Finance and Economics. This paper randomly selected 8000 household data from 25 provinces, covering 94.5% of the total population in the survey, which can be regarded as a representative sample. The questionnaire contains basic information, income and expenditure, assets and liabilities of the interviewed households. On the basis of eliminating outliers and unsound data, this paper draws on the method of Bostic et al. (2015), retains the data of household heads between 18-65 years old[9], and finally contains 6683 valid samples.

Resident's financial assets can be divided into risk-free assets and risk assets by risk level. Risk-free assets include cash, deposits and government bonds; risk assets include stocks, funds, financial derivatives (warrants, index futures, commodity futures, etc.). Other assets in the non-housing assets part include fixed assets, which refer to houses, buildings, machinery, machinery, and transportation vehicles that have more than one year of use. And other equipment, appliances, tools, etc. that related to production and operation.

Total household expenditures include consumer expenditures, transfer expenditures, welfare expenditures, and housing purchase expenditures. This article mainly uses consumer spending data as a representative of household consumption. The consumption of residents can be further divided into non-durable goods consumption and durable goods consumption. The consumption of non-durable goods such as food, daily necessities, transportation expenses, medical treatment and education accounts for a relatively large proportion. Durable goods such as cars and refrigerators account for a small portion of expenditure.

Table 1. Descriptive Statistical Analysis of Assets and Consumption Indicators

Metric Name		Mean	S.D.	Min	Max
Housing Assets		417374.88	817875.14	0	11100000
Non-housing Assets	Financial Assets				
	Risk Assets	22710.12	116228.33	0	6000000
	Risk-free Assets	30800.88	102160.84	0	3153000
Other Assets		78763.37	258371.59	0	8637600
Labour Income		12686.18	24538.04	0	260000
Household Income		46220.99	50801.53	780	375623
Consumption	Durable Goods Consumption	10798.67	23153.48	0	563637
	Non-durable Goods Consumption	832.50	3679.27	0	136364

According to CHPS2012 data, the average total assets of Chinese households are 756346.13 yuan, but there are still 72.77% of households whose total assets are below the average. The more family wealth, the more diversified the asset portfolio. In general, housing assets accounted for the primary proportion of China's resident assets, as high as 70%. For financial assets, residents are more willing to hold risk-free assets such as cash, deposits, and government bonds. For risky assets (stocks, funds, financial derivatives, etc.), investments are only considered after holding relatively

high-rise housing and risk-free assets.

2.2 Methodology

This article first controls variables other than financial assets such as income, gender of the head of household, age, ethnicity, political outlook, and education. Then based on Hall's LC-PIH model (1978), consider the impact of wealth on consumption [10]. At the same time, due to heteroscedasticity and non-linearity among household consumption, income, assets, liabilities, etc., the original value is analysed after logarithm. Table 2 lists the explanation of the variables.

Table 2. Explanation of variables

Variable Type	Variable Name	Variable Symbol	Variable Description
Explained variable	Total Consumption	lnC	Logarithm of total consumption
	Durable Goods Consumption	Indu_C	Logarithm of durable goods consumption
	Non-durable Goods Consumption	lnnd_C	Logarithm of non-durable goods consumption
Explanatory variables	Income	lnY	Logarithm of income
		lnly	Logarithm of labor income (salary)
	Housing Assets	dum_house	Whether to own the house
		num_house	Number of houses
		house	The value of the house
	Non-housing Assets	lnwh	Logarithmic value of non-housing assets

To test the wealth effect of housing assets, choose the following three variables to build models: whether to own the house, the number of houses, and the value of the house.

$$\ln C = \alpha_0 + \alpha_1 \ln Y + \alpha_2 \ln ly + \alpha_3 \text{dum_house} + \alpha_4 \ln wh + \sum \alpha_{5i} Z_i + \varepsilon \quad (1)$$

$$\ln C = \alpha_0 + \alpha_1 \ln Y + \alpha_2 \ln ly + \alpha_3 \text{num_house} + \alpha_4 \ln wh + \sum \alpha_{5i} Z_i + \varepsilon \quad (2)$$

$$\ln C = \alpha_0 + \alpha_1 \ln Y + \alpha_2 \ln ly + \alpha_3 \text{house} + \alpha_4 \ln wh + \sum \alpha_{5i} Z_i + \varepsilon \quad (3)$$

Where the family's annual consumption is C , income is Y , and labour income is ly . Whether to own the house is represented by dum_house , the ownership is represented by 1, and none is 0. The number of houses is represented by num_house . The value of housing is represented by house , wh is non-housing wealth, and Z_i represents the control variables such as gender, age, ethnicity, political outlook, and educational background of the head of household.

To test the wealth effect of non-housing assets, it is divided into financial assets lnfa and other assets lnnfa , see model (4); financial assets are further divided into risk-free assets lnrisk-free and risk assets lnrisk , see model (5).

$$\ln C = \alpha_0 + \alpha_1 \ln Y + \alpha_2 \ln ly + \alpha_3 \text{house} + \alpha_4 \text{lnfa} + \alpha_5 \text{lnnfa} + \sum \alpha_{6i} Z_i + \varepsilon \quad (4)$$

$$\ln C = \alpha_0 + \alpha_1 \ln Y + \alpha_2 \ln ly + \alpha_3 \text{house} + \alpha_4 \text{lnriskless} + \alpha_5 \text{lnrisk} + \alpha_6 \text{lnnfa} + \sum \alpha_{7i} Z_i + \varepsilon \quad (5)$$

3. Empirical Analysis

3.1 Housing Asset Wealth Effect

This article first examines the wealth effect of housing assets, using household consumption indicators as the explained variables, mainly considering three items: total household consumption, durable goods consumption, and non-durable goods consumption. Use housing indicators, income, and non-housing assets as explanatory quantities. At the same time, it controls household

demographic variables such as gender, age, ethnicity, political outlook, and educational background of the head of household. The regression results of the above three consumption indicators are shown as (1)-(3) in Table 3.

Table 3. Housing Asset Wealth Effect

	(1)			(2)			(3)		
	lnC	Indu_C	lnnd_C	lnC	Indu_C	lnnd_C	lnC	Indu_C	lnnd_C
dum_house	0.109 (1.33)	0.435*** (3.06)	0.067 (0.79)						
num_house				0.070* (1.80)	0.115* (1.70)	0.054 (1.36)			
house							0.024*** (3.99)	0.038*** (3.57)	0.021*** (3.38)
lnwh	0.278*** (19.93)	0.250*** (10.34)	0.269*** (18.72)	0.276*** (19.55)	0.251*** (10.27)	0.267*** (18.37)	0.269*** (18.96)	0.240*** (9.78)	0.260*** (17.83)
lnY	0.282*** (11.56)	0.201*** (4.76)	0.269*** (10.71)	0.279*** (11.38)	0.199*** (4.69)	0.266*** (10.56)	0.273*** (11.15)	0.190*** (4.49)	0.261*** (10.35)
pop	0.141*** (8.45)	-0.033 (-1.14)	0.154*** (8.96)	0.140*** (8.38)	-0.031 (-1.07)	0.153*** (8.89)	0.138*** (8.27)	-0.034 (-1.18)	0.150*** (8.78)
gender	-0.167*** (-3.26)	0.102 (1.16)	-0.203*** (-3.86)	-0.166*** (-3.25)	0.108 (1.22)	-0.203*** (-3.85)	-0.163*** (-3.20)	0.112 (1.26)	-0.200*** (-3.82)
ethnic	0.0748 (0.96)	-0.440*** (-3.25)	0.102 (1.27)	0.0771 (0.99)	-0.435*** (-3.21)	0.104 (1.29)	0.0720 (0.92)	-0.443*** (-3.28)	0.0997 (1.24)
edu	0.058*** (7.81)	0.001 (0.10)	0.060*** (7.90)	0.058*** (7.78)	-0.001 (-0.04)	0.060*** (7.89)	0.058*** (7.83)	-0.000 (-0.01)	0.060*** (7.93)
marital	0.144* (1.90)	0.157 (1.19)	0.152* (1.95)	0.148* (1.95)	0.177 (1.35)	0.154* (1.98)	0.131* (1.74)	0.152 (1.16)	0.140* (1.79)
party	0.007 (0.10)	-0.058 (-0.50)	0.0406 (0.59)	0.007 (0.10)	-0.059 (-0.50)	0.041 (0.59)	0.009 (0.13)	-0.055 (-0.48)	0.042 (0.61)
local	-0.378*** (-4.57)	-0.204 (-1.42)	-0.350*** (-4.10)	-0.375*** (-4.55)	-0.163 (-1.14)	-0.349*** (-4.12)	-0.401*** (-4.86)	-0.202 (-1.42)	-0.373*** (-4.39)
age	0.116*** (7.15)	-0.011 (-0.39)	0.119*** (7.14)	0.117*** (7.22)	-0.006 (-0.21)	0.119*** (7.18)	0.114*** (7.09)	-0.010 (-0.33)	0.117*** (7.07)
age2	-0.002*** (-9.19)	-0.000 (-0.12)	-0.002*** (-9.20)	-0.002*** (-9.26)	-0.000 (-0.27)	-0.002*** (-9.24)	-0.002*** (-9.16)	-0.000 (-0.19)	-0.002*** (-9.16)
hukou	-0.303*** (-5.71)	0.277*** (3.03)	-0.342*** (-6.27)	-0.299*** (-5.66)	0.294*** (3.21)	-0.340*** (-6.24)	-0.287*** (-5.43)	0.312*** (3.41)	-0.329*** (-6.05)
_cons	0.005 (0.01)	-2.611*** (-3.55)	0.025 (0.06)	0.066 (0.15)	-2.507*** (-3.40)	0.072 (0.16)	0.111 (0.26)	-2.442*** (-3.32)	0.117 (0.27)
N	6683	6683	6683	6683	6683	6683	6683	6683	6683

Note: ***, **, * Means significant at 0.01, 0.05, 0.1 confidence level; t-Statistics are in the brackets.

It can be seen from Table 3 that the coefficient of the variable *dum_house* on the three consumption indicators is positive. The consumption level of households with housing is higher than that of households without own housing, and it is significant at 1%, because housing is part of the consumption of durable goods. Whether or not own a house has little effect on total household consumption and non-durable goods consumption. The coefficients of the variables *num_house* and *house* are also positive. *Num_house* has a significant effect on the total household consumption and durable goods consumption at the level of 10%, but has little effect on the consumption of non-durable goods. The coefficient index of house is significant at the level of 1%, and shows that the higher the value of housing, the higher the total household consumption, durable goods consumption, and non-durable goods consumption. It is mainly influenced by the concept that housing is a symbol of a stable life, so housing accounts for a large proportion of household consumption expenditure in China.

Non-housing assets also have an important impact on consumption. Household fixed assets

account for a part of residents' consumption. For example, housing construction often requires a large amount of investment. The investment in tools and equipment required for production and operation of residents and regular maintenance also require a high amount of capital. Therefore, the regression result of non-housing assets to consumption is significantly positive.

The income level of residents also affects their consumption level. The increase in income will increase the disposable income of residents, and families have the ability to improve the quality of life and increase consumption expenditure. Therefore, the income in the table has a significant impact on the three consumption indicators, and the coefficient levels are similar.

In addition, every family member needs to consume in their daily life. The more members there are, the larger the family's daily consumption expenditure, especially the non-durable consumption. Education also has a significant positive effect on total consumption and non-durable goods consumption. The price level in rural areas is lower than that in urban areas, so the level of household consumption is lower than that of non-rural households.

At the same time, by analyzing the data in Table 3, we can find that the positive impact of non-housing assets on consumption is greater than that of housing assets, and all three consumption indicators are significant at 1%. Considering that non-housing assets include financial assets and other assets, the impact on consumption may be significantly different due to the wealth effect of different assets. Therefore, non-housing assets are further subdivided and tested.

3.2 Non-housing Asset Wealth Effect

In order to test the wealth effect of different assets in non-housing assets, it is subdivided as follows: non-housing assets are divided into financial assets and other financial assets, show in the regression result (4). Financial assets are divided into risk-free assets and risk assets, show in the regression result (5). This paper further subdivides financial assets into cash, deposits, and stocks for inspection, show in the regression result (6).

Table 4. Non-housing Asset Wealth Effect

	(4)			(5)			(6)		
	lnC	Indu_C	Innd_C	lnC	Indu_C	Innd_C	lnC	Indu_C	Innd_C
lnfa	0.123*** (13.03)	0.081*** (4.91)	0.125*** (12.90)						
lnrisk-free				0.032*** (6.45)	0.034*** (3.92)	0.033*** (6.51)			
deposit							0.035*** (7.07)	0.034*** (4.01)	0.036*** (7.13)
cash							0.100*** (8.78)	0.014 (0.71)	0.101*** (8.63)
lnrisk				0.099*** (9.74)	0.058*** (3.28)	0.099*** (9.49)			
stock							0.018** (2.33)	0.061*** (4.56)	0.018** (2.22)
lnnfa	0.175*** (13.65)	0.183*** (8.23)	0.163*** (12.41)	0.172*** (13.39)	0.178*** (7.94)	0.161*** (12.17)	0.169*** (13.02)	0.167*** (7.39)	0.159*** (11.91)
lnY	0.262*** (10.75)	0.197*** (4.65)	0.246*** (9.84)	0.259*** (10.63)	0.188*** (4.44)	0.244*** (9.74)	0.260*** (10.66)	0.177*** (4.17)	0.246*** (9.82)
pop	0.149*** (9.04)	-0.027 (-0.95)	0.163*** (9.56)	0.149*** (9.04)	-0.026 (-0.90)	0.163*** (9.56)	0.144*** (8.68)	-0.030 (-1.04)	0.157*** (9.24)
gender	-0.183*** (-3.61)	0.091 (1.03)	-0.220*** (-4.22)	-0.179*** (-3.52)	0.095 (1.08)	-0.215*** (-4.12)	-0.176*** (-3.48)	0.116 (1.31)	-0.213*** (-4.09)
ethnic	0.049 (0.62)	-0.446*** (-3.29)	0.075 (0.93)	0.065 (0.84)	-0.434*** (-3.21)	0.092 (1.14)	0.067 (0.87)	-0.430*** (-3.19)	0.094 (1.18)
edu	0.061*** (8.36)	0.005 (0.42)	0.063*** (8.44)	0.060*** (8.29)	0.004 (0.31)	0.063*** (8.38)	0.062*** (8.51)	0.003 (0.20)	0.064*** (8.58)

	(4)			(5)			(6)		
	lnC	Indu_C	lnnd_C	lnC	Indu_C	lnnd_C	lnC	Indu_C	lnnd_C
martial	0.154** (2.05)	0.148 (1.13)	0.160** (2.08)	0.157** (2.10)	0.149 (1.14)	0.164** (2.12)	0.132* (1.76)	0.125 (0.96)	0.141* (1.82)
party	-0.030 (-0.46)	-0.092 (-0.79)	0.004 (0.06)	-0.035 (-0.52)	-0.096 (-0.83)	-0.001 (-0.01)	-0.038 (-0.58)	-0.103 (-0.89)	-0.004 (-0.06)
local	-0.394*** (-4.85)	-0.224 (-1.59)	-0.367*** (-4.40)	-0.390*** (-4.80)	-0.209 (-1.48)	-0.363*** (-4.35)	-0.426*** (-5.21)	-0.263* (-1.85)	-0.395*** (-4.69)
age18-30	0.520*** (5.69)	0.156 (0.98)	0.558*** (5.93)	0.523*** (5.72)	0.158 (1.00)	0.561*** (5.96)	0.556*** (6.04)	0.259 (1.62)	0.589*** (6.21)
age30-50	0.755*** (15.09)	0.120 (1.38)	0.793*** (15.40)	0.748*** (14.94)	0.118 (1.35)	0.786*** (15.25)	0.763*** (15.21)	0.146* (1.67)	0.799*** (15.49)
hukou	-0.258*** (-4.84)	0.314*** (3.39)	-0.295*** (-5.37)	-0.251*** (-4.70)	0.329*** (3.54)	-0.287*** (-5.24)	-0.254*** (-4.74)	0.369*** (3.96)	-0.292*** (-5.30)
_cons	1.657*** (6.53)	-2.739*** (-6.20)	1.669*** (6.39)	1.827*** (7.14)	-2.544*** (-5.72)	1.845*** (7.01)	1.706*** (6.61)	-2.355*** (-5.25)	1.721*** (6.48)
N	6683	6683	6683	6683	6683	6683	6683	6683	6683

Note: ***, **, * Means significant at 0.01, 0.05, 0.1 confidence level; t-Statistics are in the brackets.

According to the regression results (4), financial assets and other assets have a significant impact on consumption, both at a level of 1%. But the coefficient of other assets is higher than that of financial assets. Its coefficient is two times that of financial assets. In recent years, families have paid more and more attention to financial assets, such as stocks, bonds, funds, etc., so money continue to flow into the capital market. Overall, although the impact of financial assets on consumption is increasing, household consumption still focuses on other assets.

According to the regression results (5), the effects of risk-free assets and risk assets on the three consumption indicators are all significant at 1%. Among them, risk-free assets have similar effects on the three types of consumption indicators. However, its coefficient is less than the impact of risky assets, such as the regression coefficient for total consumption and non-durable goods consumption is one-third of risky assets. Therefore, the impact of risk assets on consumption is more prominent. Because the price of risky assets such as stocks is highly volatile, and a significant drop in the value of assets in a short period of time will cause residents to reduce consumer spending in order to maintain a certain balance of payments.

According to the regression results (6), after subdividing the financial assets, cash, deposits and stocks have a positive impact on the three types of consumption. Cash has the largest impact on total household consumption, which is more than 5 times the regression coefficient of stocks on total consumption. It can be explained that cash has strong liquidity and is relatively easy to convert into other forms of assets. Cash has an important contribution to total household consumption. Deposits have similar effects on three types of consumption. The impact of stocks on total consumption and consumption of non-durable goods is relatively small, but as the securities market continues to develop, more and more funds will flow into the capital market, and the impact on consumption will also change.

Conclusion

This paper mainly studies the asset selection of Chinese households and the influence of the wealth effect of household assets on household consumption. By introducing micro data and then comparing the wealth effect between various assets, this paper makes up for the lack of sample size caused by the use of macro data when researching household finance. And this paper is an in-depth study and extended application of CHFS data.

According to the empirical results, this article draws the following conclusions: (1) More than half of Chinese households have total assets below average level. Chinese households tend to hold cash, and they tend to invest in projects with little or no risk, such as real estate. (2) As wealth increases, the share of financial assets in total household assets will also increase. Chinese

households have different levels of wealth, and they have different choices of assets. Differences in family income levels and age can affect consumption. (3) Debt has a significant positive effect on the holding of housing assets. The level and structure of debt can affect the asset level and structure of households. Asset size and type can affect households' asset choice. (4) The effect of household real estate wealth on consumption is significant. Financial assets and other assets in non-housing assets have a significant positive effect on household consumption, but the impact of other assets is greater than financial assets.

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