Household Debt, Leverage Ratio and Consumption Expenditure: A Macro Evidence from China

Wei Zhang[1)]
Haifeng Li[2)]

Abstract This paper empirically examines the impacts of household debt and leverage ratio, measured by the ratio of aggregate household debt to GDP, on consumption using provincial-level macro-data in China. Results show that household indebtedness has a positive and significant effect on consumption expenditure and this remains true for both household debt and leverage ratio, as well as long-term and short-term debts and leverage ratios, and the encouraging effects are heterogeneous across regions. When the debt-to-GDP ratio is below 100%, the consumption experiences faster growth than that when the debt-to-GDP ratio exceeds 100%. In addition, residents' saving, per capita disposal income and the public expenditure on education, social security, as well as medical and health services are found to have significant positive effects on consumption, while CPI and child dependency ratio have depressive effects.

Keywords: Households; Consumption; Household Debt; Household Leverage Ratio

1. Introduction

Around the world, a distinct development in household balance sheets since the turn of the 21 century was the build-up of household debt. The statistics of the Bank for International Settlements (BIS) show that the household debt-to-GDP ratio in the advanced economies grouping in BIS statistics—Australia, Canada, Denmark, the Euro Area, Japan, New Zealand, Norway, Sweden,

1) School of Economics, Beijing Technology and Business University, China
2) Economic Faculty and Graduate School of East Asian Studies, Yamaguchi University, Japan

Switzerland, the United Kingdom and the United States—increased from 63.6% in 2000 to an all-time record level of 83.9% in 2009. The household debt of some of economies exceeded 100% of GDP, such as 113% in Australia, 137.9% in Denmark, 117.4% in Ireland, 119.6% in Netherlands and 106.2% in Switzerland. It was between 100% and 90% of GDP in Canada, New Zealand, Portugal, the UK, and the United States. Many of the major advanced economies had higher debt-to-GDP ratios in 2009 than in 2000. The case of Japan is one notable exception, where the household debt-to-GDP ratio has decreased from 71% to 63.6%, partly due to the fact that in the decade-long economic slump, Japanese households have a much smaller exposure to home mortgage and consumer credit than their counterparts in other industrialized countries (Nakagawa and Yasui, 2009). The following years have indeed seen slight decline or sluggish growth in average household debt level among Euro area, G20 (aggregate), advanced economies and all 43 BIS reporting economies. Nonetheless, the average household leverage ratio for China and other 20 emerging economies in BIS statistics is rather different from those of other economies groups: From 2008 onward, it has been on a noted upward trend with a rise from 19.7% in 2008 to 43.1% in 2019 (Fig.1). It was particularly rapid in China, with the growth rate averaging 10.8% in the period 2008-2019.

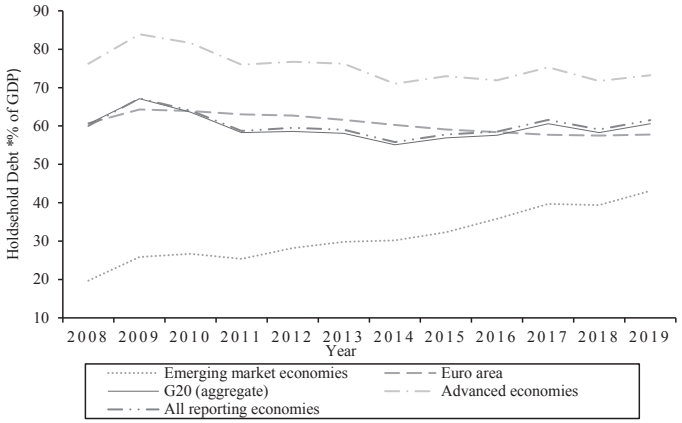

Fig.1. Household Debt-to-GDP Ratios in Economies Groups.

Data Source: BIS total credit statistics.

After 2008, in order to revitalize the economy in the aftershock of the global financial crisis (GFC), China has placed great emphasis on deepening supply-side reforms and initiating economic internal circulation to boost domestic consumption. The data from the National Bureau of Statistics of China show that over the period from 2008 to 2019, China's total final consumption expenditure has risen from 15.89 trillion CNY to 55.15 trillion CNY, and since 2014 consumption has become the first driving force of China's economic growth, with the contribution to GDP growth rising from 51.2 % in 2014 to 65.9 % in 2018 and 57.8 % in 2019. As the main component of China's total expenditure, household consumption expenditure has grown solidly from 11.27 trillion CNY to 38.59 trillion CNY at a rapid pace over the same period, averaging around 11.84 % a year. The growth in household consumption has been accompanied by a marked increase in household debt and household leverage. According to data from the National Bureau of Statistics, the outstanding household loans jumped from 5.7 trillion CNY in 2008 to an all-time high of 55.2 trillion CNY

in Dec 2019, accounting for 36.1 % of bank loans issued, with a remarkable growth rate, averaging more than 22.9 % per annum, 12.1 percentage points higher than that of households' disposable income and GDP. This pushed the household leverage, measured by the ratio of household sector's debt relative to GDP, up to 55.2 % at the end of 2019 from 17.9 % in 2008. Although by the standards of advanced economies, such a leverage ratio is not very high: It is still behind 74.5 % of the U.S. and 84 % of UK, let alone some of the most heavily indebted advanced economies that have household debt-to-GDP ratio exceeding 100%. Nonetheless, it is comparable to the Japanese level of 61.1 % and the French level of 61.7 %, and above the levels recorded in some advanced economies and most of emerging economies, such as Germany's 54.2 % and South Africa's 41.2 % (Fig.2)

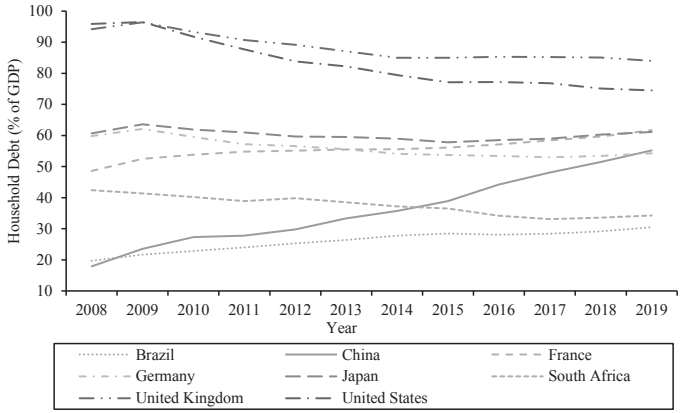

Fig.2. Household Debt-to-GDP Ratios in Selected Countries.

Data Source: BIS total credit statistics.

These developments in household debt and leverage ratio have caused an increasing concern among economic analysts and policy makers about the impact of consumer over-indebtedness on household consumption and macro-

economy. The inspiration of this paper is motivated by the previous mixed findings that did not reach consensus regarding the relationships between household debt and leverage and consumption. Since we have interpreted individual-level consumption behavior from micro-level debt and leverage perspectives using China's household-level survey data in another paper, in this paper, we use the macro-level data or aggregate-level data to establish the links between household debt and leverage ratio measured as the proportion of the aggregate household debt to GDP, and household spending, conditional on a range of household-related demographics or economic characteristics that might affect household consumption, such as child dependency ratio, the per capita disposable income and CPI.

The contributions of this paper are three-fold: First, we examine the implications of household debt and leverage in Chinese setting. China experienced rapid household debt and household leverage increase and large consumption changes during the last decade. This makes China an excellent case for investigating the role of indebtedness in affecting household consumption. The lion's share of aggregate consumption in Chinese economy makes the macroeconomic implications of the rising household debt and leverage for consumption of primary importance. But previous work seldom looks at this issue for China. From the analysis of the Chinese experience, we may gain useful insights into the problems of the rising household debt and leverage that are encountered by a number of advanced and emerging economies. Second, we not only investigate the effects of total debt and total leverage ratio, but also look into the effects of their components, i.e., long-term debt and short-term debt, as well as the corresponding leverage ratios, and distinguish the impacts by considering geographic region disparities. Third and finally, we go further to examine whether there is a threshold debt-to-GDP ratio.

Our results show that household indebtedness has a positive and significant effect on consumption expenditure and this remains true for both household debt and leverage ratio, as well as long-term and short-term debts and leverage ratios, and the encouraging effects are heterogeneous across regions. In addition, when the debt-to-GDP ratio below 100%, the consumption experiences faster growth than that when the debt-to-GDP ratio exceeds 100%. But in both cases, leverage ratio has a positive and statistically significant signs. The results also mirror the fact that residents' saving, per capita disposal income and the public expenditures on education, social security, as well as medical and health services are significant factors affecting consumption and their influences are positive. In contrast, CPI and child dependency ratio exert depressive pressure on consumption.

The rest of this paper is organized as follows. We first discuss related studies and then describe the empirical approach and data, and next discuss the estimation results. We finally end with some concluding remarks.

2. Literature Review

As important components of household balance sheets, household income and wealth, as well as household debt, are related to stable household finances (Emmons & Noeth, 2012). A common perception among academics and policymakers is that household consumption spending is crucial for economic growth. Although household debt affects household's ability to smooth out consumption, it is not typically regarded as an independent determinant of consumption in traditional economic analysis frameworks (Stiglitz, 2017). Yet after the 2008 GFC, an increasing attention has been paid to the potential consequences and possible implications of household debt and household leverage for consumer spending and macro-economy (Dynan, 2012). But the literature to date presents mixed evidence.

The importance of debt in household sector for explaining aggregate demand and macroeconomic stability has been emphasized by Fisher (1933) and Mishkin (1976, 1977 and 1978). King (1994) proposes that household indebtedness can lead to an unstable real economy by depressing aggregate consumption. In contrast, Bacchetta and Gerlach (1997) and Ludvigson (1999) find that the rise in household debt promotes the growth of nondurable goods and services expenditures.

Recently, some economist have argued that the rapid growth in pre-crisis household leverage has played a role in suppressing aggregate consumption and thus propagating the Great Recession. Mian et al. (2017) utilize a panel dataset of 30 advanced economies from 1960 to 2012 to show that the increase in household debt-to-GDP ratio in the pre Great Recession period systematically predicts subsequent lower growth and rise in unemployment across countries. Similar conclusions have been drawn by Jordà et al. (2016) who investigate household leverage in 17 advanced economies over a span of 140 years and indicate that there is large-scale systematic evidence that the high household debt-to-asset is associated with the buildup of financial fragility and the ensuing recessions. Cecchetti et al. (2011) study data on debt levels from 18 OECD countries for the period 1980 to 2010 and show that when the level of household indebtedness rises beyond a certain level—a threshold of around 84% of GDP—household debt become bad for economic growth. Using larger samples of 54 economies and 80 economies respectively, Lombardi et al. (2017) and the IMF's Fall 2017 Global Financial Stability Report (IMF, 2017) find similar threshold effect: they confirm the role of household debt-to-GDP ratio beyond a certain level in explaining the subsequent drop in consumption and GDP in the long-run, although within a certain limit, household debt boosts consumption and GDP growth in the short run.

While the negative impact of leverage on consumption is well-documented,

a number of studies have laid out different findings. Cooper (2012) uses PSID's aggregate data and household level data from 1999 to 2009 to analyze the impact of household debt repayment on consumer spending during and after the Great Recession and he finds little evidence that leverage affected household consumption. Focusing on the household sector's leveraging and deleveraging cycle and using macroeconomic aggregates and microeconomic data from the Survey of Consumer Finances, Justiniano et al. (2015) present evidence that aggregate macroeconomic consequences of the leveraging cycle are relatively minor.

The inspiration of this paper is motivated by the previous studies. We use provincial-level aggregate data in China to investigate the effects of household debt and leverage ratio, defined as households sector's debt to GDP, on household consumption. Given the importance of consumption for economic growth, we believe that the insights from this research will be useful for academia, policy makers and businesses.

3. Empirical Approach and Data

We employ a panel data model to identify the response of household consumption to household debt and household leverage ratio. We specify two models. We first identify the impacts of debt on households' consumption and subsequently estimate the response of the consumption to the household leverage ratio. In our discussion of each model, we distinguish the impacts by considering long-short term disparities, and geographic region disparities.

The specification adopted is:

$$\ln C_{it} = cons_t + \beta_1 \ln Debt_{it} + \beta_2 \ln S_{it} + \beta_3 \ln DI_{it} + \beta_4 CPI_{it} + \beta_5 Child_{it} + \beta_6 Public_{it} + \varepsilon_{it} \quad (1)$$

$$\ln C_{it} = cons_t + \beta_1 Lev_{it} + \beta_2 \ln S_{it} + \beta_3 \ln DI_{it} + \beta_4 CPI_{it} + \beta_5 Child_{it} + \beta_6 Public_{it} + \varepsilon_{it} \quad (2)$$

where i indexes province (municipality and autonomous region) and t indexes time. C_{it} denotes the aggregate household final consumption expenditure in

province (municipality and autonomous region) i at year t. $Debt_{it}$ is the debt of the household sector and it is composed of long-term debt, $L\text{–}debt_{it}$, and short-term debt, $S\text{–}debt_{it}$. Lev_{it} is the leverage ratio and those are corresponding to $L\text{–}debt_{it}$ and $S\text{–}debt_{it}$ are $L\text{–}Lev_{it}$ and $S\text{–}Lev_{it}$ respectively. $\ln S_{it}$ and $\ln DI_{it}$ denote the residents' saving and per capita disposal income respectively. CPI_{it} is the consumer price index, $Child_{it}$ is child dependency ratio and $Public_{it}$ is the ratio of the sum of the local public expenditures on education, social security, as well as medical and health services to local general public budget expenditure. $\beta_j (j=12.....6)$ are the parameter vectors, and ε_{it} is a stochastic perturbation term. The variances of household final consumption expenditure, the residents' saving and per capita disposal income are operationalized in logarithmic form to correct for possible skewness in the distributions.

The key dependent variable is the aggregate household final consumption expenditure. The core independent variable is the household sector's debt and leverage ratio which is measured by the ratio of household sector's debt to GDP.

Other independent variables include the residents' saving and per capita disposal income. This paper also controls some factors that may influence subsequent consumption changes, such as CPI, the child dependency ratio and ratio of public expenditures on education, social security, as well as medical and health services.

The panel dataset for this analysis comes from China Statistical Yearbook and China Financial Yearbook. We restrict data to years of 2003-2016. The samples are provinces (municipalities and autonomous regions) except Hebei Province in mainland China. Hebei Province is excluded due to the data integrity issues.

The mean and standard deviations of the key variables in our analysis are reported in Table 1.

Table 1. Descriptive Statistics

Variables	Observations	Mean	S.D.	Min	Max
ln*C*	420	8.3329	1.0755	5.0104	10.6185
ln*Debt*	420	9.0369	1.1883	5.0015	11.5280
ln*L–debt*	420	8.4929	1.2129	4.2580	11.1442
ln*S–debt*	420	8.0844	1.2401	4.0726	10.6030
Lev	420	1.0783	.3692	.4985	2.6477
L–Lev	420	.6558	.3018	.0688	2.1383
S–Lev	420	.4225	.1593	.0918	1.0614
ln*S*	420	9.4479	1.2183	5.1052	13.2971
ln*DI*	420	9.324924	.5429	8.3106	10.9024
CPI	420	102.7745	1.9069	97.9	110.1
Child	420	23.8836	7.3909	8.61	44.65
Public	420	.3289	.06	.1507	.5313

4. Empirical Results and Analysis

4.1 Household debt and consumption

After implementing Hausman test, we use the fixed effects panel data model to identify the impacts of household debt on household consumption. In the regression, we decompose the total debt into long-term debt and short-term debt and then we distinguish the impacts considering the region disparities.

Table 2 reports the results for total debt as well as the long-term debt and short-term debt.

Table 2 Impact of Household Debt on Consumption.

Dependent Variable: Final Consumption Expenditure			
	1	2	3
ln*Debt*	.2976***		
	(.0225)		
ln*L–debt*		.2148***	
		(.0190)	
ln*S–debt*			.1710***
			(.0225)
ln*S*	.0335***	.0401***	.0598***
	(.0120)	(.0125)	(.0133)
ln*DI*	.6887***	.7602***	.8620***
	(.0337)	(.0328)	(.0331)
CPI	.0092***	.0075***	.0071***
	(.0023)	(.0024)	(.0026)
Child	-.0036***	-.0024	-.0083***
	(.0014)	(.0015)	(.0016)
Public	.2557***	.1663	.2790*
	(.0120)	(.1330)	(.1433)
_cons	-2.0388***	-1.7285***	-2.2728***
	(.2906)	(.3083)	(.3259)
N	420	420	420

* p < 0.1; ** p < 0.05; *** p <0.01

Note. Numbers in parentheses are standard errors.

We can see from Table 2 that household debt has a positive and significant effect on consumption expenditure and it also remains true for both long-term debt and short-term debt. The positive effect can be explained by the fact that China is experiencing robust consumer spending driven by lifestyle changes. Chinese people have become much better off relative to previous years. In recent years, government policies to promote spending have activated the willingness and ability to buy and enabled an increasing number of residents to obtain access to high-quality products. To improve their living standards, households may tend to borrow and increase their purchasing power, and make up for the difference in the desired consumption and current standards of living through borrowing. This tendency is in line with the life cycle income

hypothesis of aggregate consumption behavior (Modigliani & Brumberg, 1954).

Residents' per capita disposal income shows positive signs for the coefficients and this result is in line with the findings of previous studies. The results also show that residents' saving has a positive and significant effect on consumption expenditure. This result contradicts with the life-cycle hypothesis of consumption (Modigliani & Brumberg, 1954) and saving (Ando & Modigliani, 1963), which reveals that an individual's decision-making regarding consumption choice weighs consumption in different periods, taking into account income and the life cycle. To smooth consumption over time, people must cut consumption and accumulate savings during one period to fund consumption during other periods (Modigliani & Brumberg, 1954). A possible interpretation for our result is that an increase in saving indicates a higher degree of financial flexibility and more cash flow for the household. This should have made the household be more resistant to income shocks, and thereby the household would be more optimistic, and the impulse to purchase is stronger.

The estimated results indicate that coefficients for CPI are all statistically positive and significant, which suggests that the rise in CPI will increase households' consumption. This result can be explained as that the rise in prices is linked with the increase in both people's incomes and demand, which will lead to a high consumption level.

The relationship between child dependency ratio and the level of household consumption is significantly negative. The negative relationship can be explained by the fact that parents spend much money in raising a child at least before his/her adult age, including child-care, education and housing, food, transportation and health care. This will lead consumers to accumulate precautionary savings for the future expenses.

We also find that the public expenditures on education, social security, as well as medical and health services have a significant and positive relationship

with consumption. These public expenditures play an important role in people's economic well-being and have meaningful positive effects on household consumption, because they are providing support for people by narrowing their expectations of future uncertainty and helping cover unexpected expenses in times of economic hardship, thus promoting consumption since they make consumers less likely to need to accumulate precautionary savings for emergencies, unexpected expenses, and other contingencies (Leland, 1968).

We next divide the provinces (municipalities and autonomous regions) into three groups in terms of geographic location: the East region, the Middle and North east region and the West region. East region includes 9 provinces (municipalities) and they are Beijing, Tianjin, Shandong, Jiangsu, Zhejiang, Shanghai, Fujian, Guandong and Hainan. The provinces in Middle and Northeast region are Heilongjiang, Jilin, Liaoning, Shanxi, Henan, Anhui, Jiangxi, Hubei and Hunan. The west region consists of Inner Mongolia, Gansu, Shannxi, Ningxia, Sichuan, Guizhou, Yunnan, Guangxi, Xinjiang, Qinghai, Tibet and Chongqing.

Table 3 Impact of Household Debt on Consumption of Households in Different Regions

Dependent Variable: Final Consumption Expenditure			
	East region	Middle and Northeast region	West region
ln*Debt*	.2271***	.2293***	.1274**
	(.0604)	(.0393)	(.0549)
ln*S*	.0358*	.0059	.2461***
	(.0195)	(.0133)	(.0758)
ln*DI*	.7568***	.7545***	.7114***
	(.0779)	(.0566)	(.0707)
CPI	.0125***	.0048	.0078**
	(.0048)	(.0034)	(.0034)
Child	-.0075**	-.0048*	.0029***
	(.0032)	(.0022)	(.0023)
Public	.4298	.1387	.2124
	(.2907)	(.1842)	(.1799)
_cons	-2.3221***	-.9404*	-2.9373***
	(.5549)	(.4321)	(.4929)
N	126	126	168

* p < 0.1; ** p < 0.05; *** p <0.01
Note. Numbers in parentheses are standard errors.

The estimated results indicate that coefficients for debt are all statistically positive and significant and the consumption expenditures of households in different regions are responded to debt differently. A one percent increase in debt is associated with 0.2823 % consumption increase in East region, but the consumptions of Middle and Northeast region and West region increase 0.1829 % and 0.1274 % respectively with the same rate of debt rise, which means that the positive effect of debt is more concentrated in regions with higher economic development levels. A possible interpretation for this result is that the households in relatively underdeveloped regions tend to have low income and less wealth, in comparison with households having comparatively higher income and more wealth in developed regions, and thus they tend to consume less because they are more liquidity-constrained and borrowing-limited.

For other variables, the estimation results are consistent with those in Table 2, except that the impacts of ln*S*, *CPI* and *Public* in Middle and Northeast region, and that of *Public* in West region turn to be insignificant.

4.2 Household Leverage Ratio and Consumption

The fixed effects panel data model is employed to examine the links between household leverage ratio and consumption. In the regression, we decompose the leverage ratio into long-term leverage ratio and short-term leverage ratio and then we distinguish the impacts considering the region disparities.

Table 4 reports the results for total leverage ratio as well as the long-term leverage ratio and short-term leverage ratio.

Table 4 Impact of Household Leverage Ratio on Consumption.

Dependent Variable: Final Consumption Expenditure			
	1	2	3
Lev	.1547***		
	(.0290)		
L–Lev		.2941***	
		(.0368)	
S–Lev			-.0590
			(.0612)
ln*S*	.0602***	.0484***	.0717***
	(.0138)	(.0134)	(.0141)
ln*DI*	1.0192***	1.0008***	1.0430***
	(.0242)	(.0235)	(.0247)
CPI	.0082***	.0088***	.0037
	(.0027)	(.0026)	(.0028)
Child	-.0073***	-.0054***	-.0062***
	(.0016)	(.0016)	(.0018)
Public	.2714***	.2540*	.1922
	(.1486)	(.1422)	(.1540)
_cons	-2.6684***	-2.5049***	-2.3409***
	(.3400)	(.3233)	(.3578)
N	420	420	420

* p < 0.1; ** p < 0.05; *** p <0.01

Note. Numbers in parentheses are standard errors.

Total household leverage ratio and long-term leverage ratio have positive and significant effects on consumption expenditure. The coefficient for short-term leverage is negative, but insignificant. This finding is line with that of Cooper (2012) and Justiniano et al. (2015). Several studies using micro data also document that higher leverage ratio does not indicate higher sensitivity of consumption to a change in income (Johnson & Li, 2007), or household leverage can increase total household consumption expenditures (Zhang & Guo, 2020). The fact that household leverage ratio strengthens consumption largely reflects a growing tendency of households to borrow to finance consumption. In terms of the significances of the estimated coefficients of the other variables, the results are analogues to those of debt.

We next search for changes in consumption with the consideration of household heterogeneity in term of geographic region location. Table 5 reports

Table 5 Impact of Household Debt on Consumption of Households in Different Regions

Dependent Variable: Final Consumption Expenditure			
	East region	Middle and Northeast region	West region
Lev	-.0111	.0336	.0032
	(.0717)	(.0514)	(.0395)
ln*S*	.0394*	.0051	.3933***
	(.0207)	(.0153)	(.0537)
ln*DI*	1.0209*	1.0459***	.6972***
	(.0403)	(.0294)	(.0788)
CPI	.0090*	.0023	.0068*
	(.0053)	(.0040)	(.0036)
Child	-.0129***	-.0051*	.0044*
	(.0031)	(.0025)	(.0023)
Public	.5708*	.0893	.1643
	(.3060)	(.2100)	(.1835)
_cons	-2.2616***	-1.2777*	-2.9487***
	(.5974)	(.5011)	(.5249)
N	126	126	168

* p < 0.1; ** p < 0.05; *** p <0.01

Note. Numbers in parentheses are standard errors.

the results.

The estimations suggest that the relationship between household leverage ratio and household consumption is insignificant and negative for households in East region, and insignificant and positive for households in other two regions. The possible reason for the negative relationship may be that the subsamples are relatively small. The estimated effects of ln*S*, ln*DI*, *CPI* are analogues to those of baselines regression. Overall, the public expenditures on education, social security, as well as medical and health services has a positive relationship with consumption, although only significantly in East region. The coefficients for child dependency ratio are significantly negative in both East region, and Middle and Northeast region, but is significantly positive in West region.
We go further to examined whether there is a threshold debt-to-GDP ratio. The results are displayed in Table 6.

Table 6 Results from the Threshold Regressions

Dependent Variable: Final Consumption		
Lev		1
	<1	.2471***
		(.0413)
	>1	.1913***
		(0311)
lnS		.0590***
		(.0137)
lnDI		1.0125***
		(.0240)
CPI		.0079***
		(.0027)
Child		-.0072***
		(.0017)
Public		.2775*
		(.1470)
_cons		-2.7308***
		(.3368)
N		420

* p < 0.1; ** p < 0.05; *** p <0.01

Note. Numbers in parentheses are standard errors.

We find that when the debt-to-GDP ratio is below 100%, the consumption experiences faster growth than that when the debt-to-GDP ratio exceeds 100%. But in both cases, leverage ratio has a positive and statistically significant signs. When we consider other variables, results are qualitatively very similar to the aforementioned results.

5. Concluding Remarks

By using provincial macro data in China, this paper examines the impacts of household debt and leverage ratio measured by the ratio of household sector's debt to GDP on consumption level. The findings show that household indebtedness has a positive and significant effect on consumption expenditure

and it remains true for both household debt and leverage ratio, and the encouraging effects of household debt and leverage on consumer spending are heterogeneous across regions. It should be noted that we have examined whether there is a threshold debt-to-GDP ratio above which consumption tends to slow down. We find that when the debt-to-GDP ratio is below 100%, the consumption experiences faster growth than that when the debt-to-GDP ratio exceeds 100%. But in both cases, leverage ratio has a positive and statistically significant signs.

The positive effects can be explained by the fact that China is experiencing robust consumer spending driven by lifestyle changes, and people tend to borrow to fill the gap between their desired consumption level and their insufficient current income, and thus to smooth current consumption or invest in high-return assets such as housing. These findings also mirror the fact that most of households in China still fall below their desired level of consumption. Income is a significant factor affecting consumption and its influence is positive. In addition, the public expenditures on education, social security, as well as medical and health services has positive and significant impacts.

The overall findings suggest that some evidence-based policies are needed to be more targeted to promote households' consumption. Currently, being in debt is not bad for households and economy because it influences consumption in a positive way. But the sharp increase in leverage ratio or liability-side vulnerability of households may cause households to cut back spending, as some studies have suggested. Macro-prudential monetary and financial policies should make attempt to prevent too much leverage to keep households' balance sheets sound and guarantees abundant liquidity. More importantly, effective measures should be taken to promote the steady growth of household income, including ensuring stable economic growth and employment, as well as reducing burdens of tax and fee. Moreover, in order to promote the growth

of consumption demand, accelerating the construction and perfection of the public expenditures on education, health, endowment and pension service system is also needed.

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