



Family Debt and High-Quality Economic Development

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Abstract. The central government has pointed out *that* China's economic growth is shifting from a high-speed growth to a high-quality development stage. In the past, China's household sector had low participation per capita in the credit market and the housing market bubble boosted housing credit. However, the change in family debt has expanded China's total economy. In order to explore the impact of broadening household credit scale (especially housing credit) on high-quality economic development, this paper introduces the total factory-productivity model. Based on the new development concept (coordination, innovation, green, openness and sharing), a high-quality development indicator measurement system was constructed, and the household debt scale was linked with the aggregate data in THE CHFS database to explore the impact of regional heterogeneity.

Keywords: family debt · high quality · New Development Concept · index system

1 Introduction

In October 2017, the 19th National Congress of the Communist Party of China (CPC) officially proposed the transition of China's economy from rapid economic growth to a stage of high-quality development, demonstrating that China's development follows economic laws. The specific reasons can be analyzed from two perspectives:

First of all, many countries, including the United States, Germany, France, Britain, Japan and other countries, which are developed countries, have gone through a process from economic development to environmental management. Achieving rapid economic growth is an absolute principle for all countries, albeit at a heavy price. Industrialization is the accelerator of urbanization and the economy. While promoting the economic prosperity of developed countries, it also causes urgent problems such as environmental pollution, traffic congestion, widening gap between rich and poor, structural imbalance (Yu Zhongfu et al., 2001 [1]; Jia Yi, 2004 [2]) and so on. After the concept of sustainable development was put forward in 1987, the development speed began to slow down and gradually pay attention to comprehensive economic development and technical level improvement. China realized the importance of environmental governance early and has enough economic strength to pursue a higher quality of life. Given the early days of reform and opening up, China's desperate pursuit of economic growth can only shorten

the process of development to governance, but it is hard to leapfrog it. Therefore, with a relatively high economic aggregate, China has been able to move into a stage of economic development that pursues higher quality.

For China, in the early stage of reform and opening up, low-cost labor force, land, resources and other production factors attracted developed countries to transfer manufacturing enterprises to China, driving the rapid growth of China's economy. However, with the constraints of China's resources and environment carrying capacity, the rise of labor costs and other factors (Chen Shiyi and Chen Dengke, 2018 [3], Liu Yanni, 2014 [4]), the original low-efficiency model is not suitable for China's economic development. The balance among more household income growth, higher quality of consumer demand and total expansion of production mode prompt China to promote high-quality economic development. In today's economic context, promoting high-quality development in China is of great significance to maintaining sustained and sound economic and social development as well as determining the future development strategy and policy adjustment.

Another key issue for China's economy is household debt. The change in China's household debt is roughly divided into two stages. In the first stage, after introducing consumer demand policies, household debt grew rapidly, increasing by at least 300 times from 1997 to 2010. At this stage, housing loans account for a large proportion. The reasons are as follows: first, more money was spent on the household property market to avoid risk; Second, banks recruited secondary credit customers to apply for secondary housing loans; Third, it was influenced by Chinese traditional family concept; Fourth, it received the guidance of speculation in the context of high housing prices. In the second stage, the structure of household debt changes and the proportion of housing loans starts to decline. In recent years, the government and relevant departments actively publicized theoretical financial knowledge and spread financial ideas, so that the national financial literacy has been improved to a certain extent. Combined with the guidance of the purchase restriction policy and the concept of "no speculation on housing", the household sector began to pay attention to the use of other loans, especially the emergence and development of financial product investment and credit. With the development of the modern economy, the advanced industrial index is constantly rising, and the importance of the financial market in economic development is gradually increasing. In improving the level of high-quality economic development, the size and composition of household debt also play an important role that cannot be ignored.¹

Therefore, based on the 2017 China Household Finance Survey (CHFS) and the data of provinces, autonomous regions and municipalities, this paper establishes the relationship between the size and composition of household debt and the level of high-quality economic development and studies the correlation at the regional level. Are the change of household debt scale and proportion an important factor affecting the quality of economic development? How do changes in household debt affect different aspects of high-quality economic development? Are there differences in different regions? The above problems will become the important content of this paper's theoretical and empirical research.

Concerning Sun Hao et al. (2020) [5], a high-quality economic growth index system is constructed to measure the comprehensive indicators of high-quality economic development of provinces, autonomous regions, and municipalities; in addition, based

on the new development concept of coordination, innovation, green, open and sharing, this paper analyzes the level of high-quality economic development from five levels. According to the sub-index data of high-quality economic development of provinces, autonomous regions and municipalities directly under the Central Government, the comprehensive index of high-quality economic development is compiled according to the principle of indicators at various levels, which can be used to measure the level of high-quality economic development and analyze the scale of household debt and its impact on high-quality economic development.

2 Indicators for High-Quality Economic Development

According to the measurement index system of high-quality economic development constructed by Sun Hao et al. (2020), this paper analyzes the impact of household debt scale and structural change on the quality of economic growth from five aspects: coordinated development, innovative development, green development, open development and shared development. In the index system of high-quality economic development, innovation and development level is indicated by R & D investment intensity (research_in); coordinating development level is measured by demand (demand_structure), urban and rural (country_city_structure), industrial (industry_structure), and government debt burden (debt_taken); green development is represented by energy consumption per GDP (spend_energy), unit output (waste_water) and unit output (waste_gas); openness development is measured by the foreign trade dependence (open_index), the proportion of foreign investment (foreign_rate), and the degree of marketization (market_index); shared development is expressed by workers' income (city_salary), household income growth elasticity (income_ele), urban and rural consumption gap (city_country_consume) and the proportion of livelihood financial expenditure. Among them, financial expenditure for people's livelihood includes local financial expenditure on education (edu_spend), medical and health care expenditure (employ_spend), housing security expenditure (house_spend), social security and employment expenditure (hospital_spend) in the proportion of local fiscal budget expenditure. The relevant data for the above indicators are from the 2017 Statistical yearbooks of Chinese provinces, autonomous regions and municipalities and the CSMAR database.

To explore the impact of the scale of household debt, we use China Household Finance Survey (CHFS) for household sector credit data of 2017 as a measure of household debt, including housing credit (house_lend), automobile credit (car_lend), medical credit (hospital_lend), daily consumer credit (consume_lend), education credit (education_lend), marriage credit (wedding_lend), financial products investment credit (financial_lend), and other credit (other_lend). From the provinces, autonomous regions and municipalities directly under the Central Government, the total credit (lend_amount) and the credit indicators are calculated as statistical standards, also the core independent variables of this paper. The underlying model studied in this paper is:

$$Quality_{i,t} = \beta_1 lend_{i,t} + \beta_2 X_{i,t} + \varepsilon_{i,t}$$

Among them, $Quality_{i,t}$ indicates the high-quality economic development index, which contains the above five levels of measurement indicators; $lend_{i,t}$ represents the

household sector total credit and various credit indicators, and the logarithmic value is taken for each indicator, which can be used to measure the scale and composition of family debt; $X_{i,t}$ represents the control variable. According to the influencing factors of the economic development level, in this paper, permanent resident population (often_per), local government fiscal deficit (chizi), total investment of foreign-invested enterprises (foreign_cor), regional per capita GDP (gdp), and total investment in industrial pollution control (pollution_treat) are selected as the control variables to measure the regional economic development level. The above control variables are from the 2017 statistical Yearbook of all provinces, autonomous regions and municipalities in 2017; $\varepsilon_{i,t}$ indicates error items.

3 Regional Difference

3.1 Comprehensive Index Measure

In accordance with the comprehensive development principles of innovation, coordination, green, openness and sharing, this paper calculates each province's high-quality economic development level in 2017 by assuming the same proportion and equal weight of measures at five levels based on 2017. The specific measurement results are shown in Table 1.

Table 1. HIGH-QUALITY ECONOMIC DEVELOPMENT INDEX of ALL REGIONS

Province	Quality
a folk art form popular in Shandong	5.853615
Tianjin Municipality	5.700594
Jiangsu Province	5.481927
Guangdong Province	5.295143
Zhejiang Province	5.224925
Shanghai Municipality	4.419243
Anhui Province	4.331031
Liaoning Province	4.121436
Hunan Province	3.974393
Fujian Province	3.811733
the Ningxia Hui Autonomous Region	3.797812
Chongqing City	3.771498
Hebei Province	3.700578
Hubei province	3.672099
Henan Province	3.321754
Shanxi International Gong and Drum Festival	3.301144

(continued)

Table 1. (continued)

Province	Quality
the Nei Monggol Autonomous Region	3.269046
Beijing Municipality	3.181918
Shaanxi Province	3.113364
Gansu Province	3.048033
Heilongjiang Province	2.914329
Jilin Province	2.844653
Sichuan Province	2.585807
Guizhou Province	2.245899
the Xinjiang Uygur Autonomous Region	2.229097
the Guangxi Zhuang Autonomous Region	2.193958
Yunnan Province	1.967341
Qinghai Province	1.878323
Hainan Province	1.597892

According to the results of Table 1, Shandong, Tianjin, Jiangsu, Guangdong, Zhejiang, Zhejiang, Anhui, Anhui, Liaoning, Hunan, Fujian are the first gradient; The Ningxia, Chongqing, Hebei, Hubei, Shanxi, Beijing, Guizhou, Xinjiang Uygur Autonomous Region, Guangxi Zhuang Autonomous Region, Yunnan, Qinghai Province, Hainan Province are the third gradient. Beijing's fall into the second gradient may be due to the lower level of coordinated and green development during 2017, mainly based on the lower quality of life of migrant workers in the north and the severe smog.²

3.2 The Impact of Household Debt Composition Changes on Comprehensive Indicators of High-Quality Economic Development

Table 2 shows the impact of household debt changes on the high quality of economic development. Since the size and proportion of different credit levels have different degrees of change, the impact is impossible to separate. Therefore, the scale and proportion of various credit indicators and cross-terms are discussed as the core independent variables. Based on the regression results (1), the cross-term coefficient of the housing credit scale and housing credit ratio is significantly negative (-1.526). The intersection item of housing credit scale and the square item of housing credit ratio is significantly positive (1.993). According to Fig. 1, the share of housing credit in the household sector has declined, but the volume of housing credit has increased. Therefore, the impact of housing credit scale and housing credit proportion on the comprehensive index of high-quality economic development is positive. The square term of housing credit scale and housing credit ratio harms the comprehensive index of high-quality economic development, since the latter has a higher coefficient than the former. The decline of the

Table 2. IMPACT of CHANGES IN THE COMPOSITION of HOUSEHOLD DEBT ON THE COMPREHENSIVE INDICATORS of HIGH-QUALITY ECONOMIC DEVELOPMENT

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	quality	quality	quality	quality	quality	quality	quality
Inhouse_lend_house_rate	-1.526*** (0.5278)						
Inhouse_lend_house_rate2	1.993*** (0.6694)						
Incar_lend_car_rate		-7.472** (3.4728)					
Incar_lend_car_rate2		47.63 (34.4862)					
Inhospital_lend_hospital_rate			-9.441* (5.1473)				
Inhospital_lend_hospital_rate2			90.19 (54.4752)				
Infinancial_lend_financial_rate				-0.0199 (4.5476)			
Infinancial_lend2_financial_rate				-1.956** (0.8661)			
Infinancial_lend_financial_rate2				24.53* (12.6192)			
Inconsume_lend_consume_rate					7.359* (3.7156)		
Inconsume_lend_consume_rate2					-15.04* (8.6243)		
Inwedding_lend_wedding_rate						1.566 (5.1758)	
Inwedding_lend2_wedding_rate						-2.934** (1.1240)	
Inwedding_lend_wedding_rate2						33.79 (32.2276)	
Inother_lend_other_rate							-11.15** (5.2802)
Inother_lend2_other_rate							2.822 (1.7356)

(continued)

Table 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	quality	quality	quality	quality	quality	quality	quality
lnother_lend_other_rate2							-1.725 (11.7634)
_cons	3.270*** (0.3675)	3.294*** (0.2056)	3.152*** (0.2287)	3.169*** (0.2321)	3.123*** (0.1983)	3.279*** (0.2204)	3.432*** (0.4862)
N	60	60	60	44	58	55	30
r2	0.155	0.0555	0.0519	0.0912	0.0408	0.0365	0.172

Standard errors in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01

proportion of housing credit may reduce the level of high-quality economic development to some extent in the initial stage, but with the decline of the proportion of housing credit, the former has a greater impact than the latter, and will eventually drive the improvement of the high-quality economic development index.

It is worth mentioning that the proportion of housing credit decreases in areas with the high level of economic development, while it increases in areas with the low level of economic development. The latter’s influence on the development of the high-quality economy is positive at first and negative at a later stage. However, high level of economic development area is a major cause of lead China’s economic development, so housing credit the change of the scale and proportion of China’s economic development level of high quality has a positive effect, but in order to promote the development of the higher quality of China’s economy, the government should be in the low level of economic development in the region propaganda financial theory knowledge, in order to improve the financial literacy of the family.

For auto credit, medical credit, marriage credit, the cross coefficient of credit scale and credit ratio is negative, but the square cross is not obvious. Auto credit and marriage credit proportion decline, while medical credit proportion, auto credit, medical credited marriage credit scale rise. Therefore, changes in automobile credit and marriage credit positively impact the comprehensive index of high-quality development. In contrast, changes in medical credit hurt the comprehensive index of high-quality development. However, due to small changes in medical credit, there is no significant impact on the level of high-quality development.

According to the regression results (4), since China’s financial product investment credit is in the initial stage, its proportion and scale are relatively low, so it may show a trend of two-level of differentiation. For regions with a higher level of economic development, the increase in the proportion and scale of financial products investment and credit will promote the development of higher quality of economy, while for regions with a lower level of economic development, the proportion of financial products will decline, but because the proportion is very low, it has little impact on the macro economy.

According to the regression results (5), The cross term coefficient of daily consumer credit scale and proportion is significantly positive (7.359), and the square term coefficient is significantly negative (-15.04). The scale of daily credit in the region increases, but the proportion of daily credit decreases. Therefore, the former has a significant negative impact on the comprehensive index of high-quality development. In contrast, the latter has a significant positive impact on the comprehensive index of high-quality development. According to this coefficient, the latter's influence is the main influencing factor. Therefore, changes in the scale and proportion of daily consumer credit promote the development of higher quality of China's economy.

To sum up, with the improvement of China's financial market and the improvement of the household sector's financial awareness, the changes in its credit scale and composition will promote the economic development to a higher level of quality.

3.3 Regional Heterogeneity Impact³

DD8 is the intersection term of virtual variable and the scale and proportion of housing loans in the eastern region, and DD99 is the intersection term of virtual variable and the scale and proportion of housing loan in the western region. According to the regression results (1) and (2) in Table 3, the coefficient of DD8 is significantly positive (0.324) and DD99 is significantly negative (-0.584), so the positive effect of reduced housing credit ratio on high-quality economic growth from high to low is the western, central and eastern regions.⁴

Table 3. GEOGRAPHICAL LOCATION IMPACT

	(1)	(2)
	quality	quality
DD8	0.324** (0.1369)	
DD99		-0.584*** (0.1789)
lnhouse_lend_house_rate	-1.070* (0.5562)	-0.994* (0.5400)
lnhouse_lend_house_rate2	1.128 (0.7236)	1.379** (0.6741)
_cons	3.330*** (0.3559)	3.319*** (0.3551)
N	60	60
r2	0.245	0.270

Standard errors in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01

Table 4. EFFECT of REGIONAL HETEROGENEITY CHARACTERISTICS

	(1)	(2)	(3)	(4)
	quality	quality	quality	quality
DD1	0.396*** (0.0909)			
DD2		6.438*** (1.6127)		
DD22		-7.632*** (2.0480)		
DD3			0.174*** (0.0469)	
DD44				-6.385** (2.3857)
Inhouse_lend_house_rate	-1.410** (0.5289)	-45.36*** (11.0381)	-1.882*** (0.3677)	-1.023** (0.4989)
Inhouse_lend_house_rate2	1.415** (0.6232)	53.87*** (14.0905)	1.940*** (0.4940)	1.765** (0.6904)
_cons	3.458*** (0.3731)	3.496*** (0.3992)	3.877*** (0.2979)	3.283*** (0.3567)
N	60	60	59	60
r2	0.304	0.305	0.304	0.237

Standard errors in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01

Due to the high proportion of housing credit, this paper mainly discusses the impact of the declining trend of the proportion of housing credit in China's household sector on the level of high-quality economic development. In Table 4, DD1 indicates the intersection of the size and proportion of housing loans with the virtual variables of GDP per capita. DD2 indicates the intersection of the scale and proportion of housing loans and the regional industrial advanced index. DD22 indicates the intersection of the scale and proportion of housing loans and the industrial advanced index of each region. DD3 represents the intersection of housing loan scale and proportion and the regional comprehensive index of environmental regulation. DD44 indicates the cross term of each region's loan size and proportion⁵⁶.

According to the regression results (1) - (3), coefficients of DD1, DD2, DD3 are significantly positive. The coefficient of DD22 is significantly negative. Economic development level, industrial advanced index and environmental regulation index will offset part of the housing credit proportion of economic development. Therefore, for the regions with advanced economic development levels, advanced industry and low comprehensive

index of environmental supervision, the decline of the housing credit ratio has a greater impact on high-quality development. According to the regression results (4), the coefficient of DD44 is significantly negative, indicating that for regions with a large income gap between the rich and the poor (with a high Theil index), the decline of housing credit ratio has a more obvious effect on the improvement of high-quality economic development level, because regions with lagging development have great growth potential. The improvement of financial quality of the household sector will have a greater impact on the improvement of high-quality economic development level.

4 Conclusion

Using empirical data, this paper discusses the impact of household debt ratio change on regional economic development. Firstly, we measure the comprehensive index of high-quality economic development of provinces, autonomous regions and municipalities in 2017. Secondly, since housing credit is the main factor of total household loans, this paper uses the housing credit ratio and comprehensive index of high-quality economic development to study the impact of housing credit ratio change on regional economic development level. Finally, this paper analyzes the impact of the housing credit ratio from the perspective of regional heterogeneity, including the industrial advanced economic development index, per capita regional GDP, Thil index, comprehensive environmental regulation index and geographical location characteristics. The empirical results of this paper are as follows:

Firstly, in general, cities with a high level of economic development also have a higher high-quality index of economic development. But Shandong province belongs to the first gradient, and Beijing belongs to the second gradient. It shows that in addition to the influence of economic development level (per capita GDP change) on the comprehensive economic quality index, other comprehensive factors, such as quality of life, real estate market conditions, household sector endowment, etc. should be considered to comprehensively analyze the comprehensive index of regional economic quality development.

Secondly, for areas with poor fundamentals of economic development, the decline in the proportion of household housing and credit sector will play a more significant role in improving the level of high-quality economic development. For example, for the provinces, autonomous regions and municipalities with lower industrial upgrading, urbanization rate, per capita GDP, environmental comprehensive improvement index and higher Thiel index, the composition and scale changes of housing credit in household sectors have a greater impact on the comprehensive index of high-quality economic development.

Finally, the change of housing credit ratio in different regions affects the change from high to low level of high-quality economic development in western, central and eastern regions.⁷

This paper puts forward the relevant policy implications according to the above conclusions. First, we need to adhere to the concept of “no housing speculation”, continue to implement the housing purchase and sales restriction policy, and stabilize the development of the real estate market. One reason for the excessive share of total housing credit

loans in the household sector is that some wealthy households with higher incomes use real estate as an investment, a haven, or even speculative real estate investors. Therefore, restricting the purchase of real estate is an important way to alleviate the excessive proportion of housing credit and improve high-quality economic development. Secondly, it is necessary to publicize the financial theoretical knowledge and improve the financial literacy of the family department. Influenced by traditional views, the Chinese household sector pays more attention to buying real estate, which has forced many families into mortgage slavery. The long loan repayment cycle has seriously damaged the consumption and investment level of the household sector, which is not conducive to high-quality economic development. Accordingly, the government should actively guide the family branch to break the shackle of traditional ideas and enhance financial management's consciousness. Thirdly, we will implement differentiated policies and emphasize the support and development of backward areas. For areas with a relatively good economic foundation and relatively perfect financial market, the decline of the housing credit ratio has little impact on high-quality economic development. Therefore, the government should put more energy into guiding backward regions to improve their financial concepts and achieve higher economic quality development.

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