

# How does the Policy Leverage the "Resident Leverage Ratio"?

-- Empirical Evidence based on Provincial Panel Data in the Past Decade

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**Abstract:** Under the background that the international economy is in great recession and the new development pattern of domestic and international double circulation has gradually become a consensus macro-economy new normal, this paper investigates 31 provinces and cities' policies and residents' leverage ratio in recent ten years, and analyzes the direction and extent of industrial policy, fiscal policy and monetary policy on residents' leverage ratio by using stata, matlab and other software. The quantitative indicators of panel data are used to simulate dynamic and static models, respectively, to solve the problems of internal lag and endogenous variables, and to some extent reflect the impact of household leverage ratio on the domestic double-cycle situation. Finally, it is concluded that the completion of real estate development investment and the sales area of residential commercial housing are the main indicators that affect household leverage ratio. The added value of financial industry, land policy and per capita income of residents have a certain positive impact on the leverage ratio. Population age structure, interest rates and other factors have a weak impact on the leverage ratio. At the end of the article, the author puts forward some policy suggestions, such as correctly guiding the supply and demand relationship in the real estate market, improving the land fiscal policy, and reasonably regulating the monetary structure, which has certain reference significance for the research on the double-cycle development pattern at home and abroad.

**Keywords:** Household leverage ratio, Industrial policy, Fiscal policy, Monetary policy, Empirical research.

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## 1. Introduction

Under the new macro-economic normal, China's economy is in a critical period of optimization and transformation. In this regard, domestic research and solutions are mainly carried out from three aspects: growth impetus, development mode and economic structure, in order to seek further economic development. In the combination of theoretical exploration and concrete practice, the idea of accelerating the formation of a new development pattern with domestic big circulation as the main body and domestic and international double circulation promoting each other has gradually become the consensus of people on economic development strategies.

As we all know, consumption is the driving force of a country's economy. Promoting the improvement of consumption level plays an indispensable role in the current development strategy of constructing a new development pattern. As a scientific ratio between residents and GDP, residents' leverage ratio can be used as a visual indicator to reflect residents' solvency and consumption potential to a certain extent. Combining this formula with the academic point of view, higher leverage ratio even has certain crowding-out effect on consumption, which is not conducive to the construction of the new development pattern of double circulation in China. Therefore, it is of great significance to study the regulation mechanism of residents' leverage ratio for China to construct a new development pattern of double circulation at home and abroad.

Industrial policy, fiscal policy and monetary policy, as the

most important means to adjust the three types of national economy, to a large extent affect the changes in the residents' leverage ratio. Under the background of building a new development pattern of double circulation in our country, it is of great significance to analyze the direction and degree of regulation of the three policies on the residents' leverage ratio and put forward policy suggestions for the realistic economic development.

Based on the panel data of 31 provinces and cities in China from 2009 to 2019, this paper makes a comprehensive analysis of household leverage ratio and interest rate policy, fiscal policy and industrial policy. From this, we can see that: in terms of monetary policy, interest rate has almost no direct impact on the change of residents' leverage ratio; In terms of fiscal policy, fiscal policy has a certain positive impact on residents' leverage ratio; In terms of industrial policies, the leverage ratio of residents has been adversely affected by policies such as increasing investment in real estate development and curbing sales of residential commercial housing with the property of real estate speculation. At the end of the paper, based on the results of the previous empirical research, four policy recommendations are put forward to effectively regulate the residents' leverage ratio from three policy perspectives.

The second part of this paper gives an overall overview and quantitative analysis of the current situation of China's residents' leverage ratio, the third part is a literature review, the fourth part is an empirical study, and the fifth part is conclusions and policy recommendations.

## 2. Literature Review

### 2.1. Household Household Debt Micro-Theoretical Basis

Household household debt is a micro-performance of household leverage ratio. Therefore, by analyzing the microeconomic basis of household household debt in advance, it is of great significance to examine the factors that play a regulatory role in household leverage ratio. This theoretical basis is mainly based on the following two theories.

Modigliani's life cycle theory in 1963 believed that the consumption of consumers at a certain point in time does not depend on the current income, but depends on the expectation of lifetime income. Subsequently, Tobin, (1971) first proposed the concept of liquidity constraint, which means that consumers are restricted when they borrow from financial institutions or informal financial institutions. As the foundation of microeconomics, these two theories are of great significance to analyze the regulation of household leverage ratio and find out the influencing factors.

### 2.2. The Impact of Monetary Policy on The Leverage Ratio of Residents

The continued rise in house prices has led to a shift to normalisation of loans for home purchases (Sinai and Souleles, 2005). At the same time, it also brings a large number of residents' investment demand. On the one hand, the investment channels of Chinese residents are restricted by the lack of domestic market development. Real estate has become an important means for residents to allocate assets (Li Yang et al., 2015). On the other hand, the continuous appreciation of real estate in our country has led to a very high psychological expectation of the residents for the increase in assets acquired by virtue of real estate. Many people choose to borrow or even over-borrow to realize the investment of buying a house.

Considering that the medium and long term loan interest rate (over 5 years) is the core indicator of the loan. Therefore, in the subsequent analysis, the author also regards it as an indicator of the impact of monetary policy on the leverage ratio of residents.

### 2.3. The Impact of Industrial Policies on The Leverage Ratio of Residents

Based on the life cycle-lasting income hypothesis, there are two main channels to analyze the effect of changes in real estate industry-related data on changes in household debt. One is the channel of mortgage effect (Bernard et al, 1996), which holds that the price of the house property held by the family, i.e. the value of the house property as collateral, will increase, and the family's borrowing ability will also increase. The second is the wealth effect channel. The theory holds that households expect wealth to rise with the rise of house prices. The increase in wealth will lead to an increase in household consumption, which will eventually expand credit demand (Oikarinen, 2009).

According to the results of the data analysis in the second paragraph of the article, the housing mortgage loan is the most important component of the residents' debt, so the relevant data of the real estate industry have the greatest impact on the residents' leverage ratio. Based on the actual situation of our country, the paper takes the sales area of residential commercial housing and the investment completed in real

estate development as the only two indicators to study the relationship between industrial policies and residents' leverage ratio, which can better reflect the impact of industrial policies.

### 2.4. The Impact of Fiscal Policy on The Leverage Ratio of Residents

The fiscal policy stimulates national aggregate demand through taxation and other means. (Finance, Li Gong) Considering the actual situation of China's residents' debts, the most important component of the residents' debts is the housing mortgage loan, so the article adopts the proportion of the state-owned land use right transfer fund in the public finance income to reflect the impact rate of the financial policy on the residents.

## 3. Empirical Analysis on the Impact of Residents' Leverage Ratio

In the process of studying the existing literature on the leverage ratio of residents, we found that most of the literature is mainly based on the time series data of the whole country, with fixed indicators as the analysis object. Based on this, this paper takes the analysis of policy impact as the goal, uses the household sector loans of 31 provinces (municipalities directly under the central government) and the nominal GDP of 31 provinces (municipalities directly under the central government) to calculate the household leverage ratio of each province. From the perspective of national policy, this paper uses panel data model to conduct an empirical study on the impact of the main incentives of real estate policy and other relevant control variables on the household leverage ratio.

### 3.1. Panel Data Model Settings

The main influencing factors of household leverage ratio are household sector loans and the nominal GDP of each province. Observation of the available data shows that the increase in household leverage ratio is due to the significant increase in household sector loans, while nominal GDP generally increases year by year. From the perspective of national policies, the increase in loans from the household sector indicates the rapid increase in house prices. The mitigation effect of China's current real estate policy on the increase in house prices remains to be investigated. Therefore, based on the direct or indirect impact of real estate policy, monetary policy and fiscal policy on the leverage ratio of residents, this paper selects several important measurement indicators, such as investment completion in real estate development (IDD) and interest rate (R). In addition, as the development of the real estate industry cannot be separated from the economic development and the support of the financial industry, considering the completeness of the model construction, this paper introduces other control variables and constructs the following regression model:

$$HL_{it} = a_{it} + \beta_{it}x_{it} + \varphi_{it}y_{it} + \varepsilon_{it}$$

Among them, representing the resident leverage ratio, is the explanatory variable of the equation;  $I_s$  is a constant term; Impact indicators representing key policy factors (here real estate factors); Indirect factors other than real estate factors, such as financial development factors and demographic factors; Are independent variable coefficients; It is a random interference term and satisfies the assumptions of independence, mean value of 0 and variance of  $HL_{it}a_{it}x_{it}y_{it}\beta_{it}, \varphi_{it}x_{it}, y_{it}\varepsilon_{it}\sigma^2$

### 3.2. Variable Selection and Data Sources

Interpreted variable:

This paper studies the operation mechanism of the resident leverage ratio under the premise of building a domestic double-cycle and new development pattern, and explores how the policy "leverages" the resident leverage ratio from the perspective of national policies. Due to the partial lack of data, we use the ratio of household sector debt to nominal GDP of each province to approximate the household leverage ratio.

Key explanatory variables:

1. Completion of investment in real estate development. That is, the sum of all the expenses incurred by real estate development enterprises (units) in building and developing houses within a certain period of time. This indicator can accurately reflect the current situation of real estate development in China and the constraint of real estate policy on real estate investment.

2. Sales area of residential commercial housing. Also known as housing construction area, similarly, from the perspective of real estate policy, this indicator can accurately reflect the market denomination of our current real estate industry and the implicit impact of real estate policy on the market.

3. medium and long-term (more than five years) loan interest rates. From the perspective of monetary policy, interest rate is the most important regulatory tool of monetary policy. It affects the national GDP and financial borrowing by influencing the speculative motives of residents.

4. Financial policy-related variables (FPR). From the perspective of macroeconomics, fiscal policy is an important means to achieve fiscal and economic stability in China. Its contents include income policy instruments and expenditure policy instruments, which have an important impact on China's per capita GDP and residents' storage. Combined with the requirements of policy quantitative indicators, the ratio of the state-owned land use right transfer fee to the national

public finance income can well reflect the current land policy situation and its policy effect in China, and also reflect the impact of financial policies on the leverage ratio of residents in some aspects.

Key control variables:

1. Financial development. The liquidity of financial credit is restricted by the basic functions of financial instruments, the operating characteristics of financial markets, and the size and growth range of financial output value. The liquidity and availability of credit are one of the important factors that affect the borrowing of residents. With the development of financial industry, China's residents' debts will increase. We measure the level of financial development by the ratio of financial sector added value to nominal GDP.

2. Income levels. The living standard, investable ability and debt ability of residents in a region are affected by the income level in the region. The higher the income, the stronger the debt tendency and debt ability will be, which will directly affect the current area of loans from residents. The higher the level of economic development in a region, the higher the GDP, the higher the income of the region, but the strong liquidity of loans, resulting in changes in the leverage ratio of residents. Therefore, we measure the income level of residents with the GDP per capita of 31 provinces.

3. Age structure of the population. The age structure of the population has a direct impact on the debt capacity and level of the residential sector. At the same time, the greater the proportion of juvenile population, indicating that the development potential of the region is higher at the same level, which indirectly affects the economic and financial development of the region. The proportion of elderly population affects the labor structure and level of the region, and also has certain impact on the economic development of the region.

Specific sources of data and calculation method are shown in the following table:

**Table 1.** Calculation of Variable Data and Data Sources

Select variable	Calculation (measurement) method	data source
<b>Interpreted variable</b>		
Resident leverage ratio: HL	Use of residential sector loans/nominal GDP As an approximate indicator of household leverage ratio	National Statistical Yearbook; People's Bank of China
<b>Key explanatory variables</b>		
Completed investment in real estate development: IDD	The sum of the relevant expenses for the construction of houses and the development of real estate in the area over a period of time, The unit is ten thousand yuan	National Statistical Yearbook
Sales area of residential commercial housing: SRH	Commercial housing sales area, unit is ten thousand square meters	National Statistical Yearbook
Interest rate: r	China's medium and long-term loan interest rates (more than five years), due to the national unity of interest rates, the national data instead of the provincial data	People's Bank of China
Fiscal policy variable: FPR	The ratio of state-owned land use right transfer fee to public finance income is replaced by national data instead of provincial data to fill in the missing data.	Wind database
<b>Control variable</b>		
Financial development: FD	Financial industry added value as a percentage of nominal GDP in%	National Statistical Yearbook
Income level: PGDP	Per capita GDP of each region, in yuan	National Statistical Yearbook
Population age structure: ACP	Dependency ratio of juvenile population: juvenile population aged 0-15/working age population, unit: Dependency ratio of elderly population: population over 65 years old/population of working age, unit is%	National Statistical Yearbook

### 3.3. Descriptive Statistical Analysis of Data

The data used in this paper are panel data covering 8 relevant variables and indicators of 31 provinces from 2009 to 2019. Firstly, pretreatment is adopted to eliminate the influence of different interval differences of data, i.e.

logarithmic processing is carried out on some abnormal data. Secondly, descriptive statistical analysis of relevant variables is carried out on panel data containing 341 samples by using STATA15 software. The obtained results are sorted as follows:

**Table 2.** Descriptive Statistical Analysis of 8 Indicators in 31 Economies

variable name	unit	Number of observations	average/mean value	maximum	minimum value	standard deviation
<b>Interpreted variable</b>						
HL	%	34 one	33.46	80.1	15	13.31
<b>Key explanatory variables</b>						
Ln (IDD)	\	34 one	7.49	9.67	1.64	1.21
Ln (SRH)	\	34 one	7.81	9.51	2.85	1.13
r	%	34 one	5.76	6.8	4.9	0.75 jin
FPR	%	34 one	0.55 jin	0.72 jin	0.37 jin	0.10 jin
<b>Control variable</b>						
Ln (FD)	%	34 one	6.75	9.09	3.12	1.13
Ln (PGDP)	Yuan Dynasty (1206-1368)	34 one	10.63	11.99	9.29	0.49 jin
ACP	%	34 one	36.41	51.12	19.27	6.66
state	\	34 one	16	one	31	8.95
year	\	34 one	20 14	20 09	20 19	3.16

### 3.4. Empirical Regression Model

#### 1. Static regression model

The general static panel data model means that the lag term of the explained variable is not considered in the explained variable, but the influence of the lag term is explained by a separate dynamic model. The model considered at this time is the original model:

$$HL_{it} = a_{it} + \beta_{it}x_{it} + \varphi_{it}y_{it} + \varepsilon_{it}$$

In this paper, the model is subjected to four static regressions. Firstly, to ensure the robustness of the model, the panel data is tested for ADF stationarity (unit root) using LLC test syntax, and then the model used is determined using Hausman test. The results of Hausman test are shown in Table 3, and the display card square value in Table 3 is 39.12, which is far greater than the chi-square value of the model at a significant level, i.e. the original model species has fixed effect, and the fixed effect model should be used.

**Table 3.** Hausman test results

variable	(b)fe	(B)re	(b-B)difference	sqrt(diag(V b-V B))S.E.
Ln (IDD)	2.52	1.27	1.25	0.0000 jin
Ln(SRH)	1.23	3.72	-2.49	1.2392
r	-0.044	-0.09	0.046 jin	0.0447 jin
FPR	0.21 jin	1.22	-1.01	0.2119 jin
Ln(FD)	-0.42	-0.29	-0.13	0.0042 jin
Ln(PGDP)	-1.26	-4.93	3.67	1.2623
ACP	-0.009	-0.073	0.064 jin	0.0092 jin
chi2(7) = (b-B)[(V_b-V_B)^(-1)](b-B)= 39.12 Prob>chi2 = 0.0000				

The above test results indicate that the fixed effect model should be used to reflect the individual differences of the main explanatory variables among individuals. Now, the

descriptions of Regression 1 to Regression 4 are shown in Table 4:

**Table 4.** Regression Model

Return	Model name	Return purpose
Regression 1	fixed effects model	Reflect the individual differences of the main explanatory variables.
Regression 2	Ordinary Least Squares Model (OLS)	Excluding the correlation between the two main explanatory variables and avoiding the complexity of panel data correlation analysis, the IDD is separated into SRH.
Regression 3	Ordinary Least Squares Model (OLS)	
Regression 4	Weighted Least Squares Estimation Model (WLS)	Avoiding heteroscedasticity of error terms between regression equations.

#### 2. Dynamic regression model

According to the low unity of the regression coefficients of

the variables such as PGDP and FD in Table 4, the endogenous problem of the model and the influence of the

lagging dependent variable are still not solved. At this time, we use the lagging phase I of the endogenous variable as the variable for regression, and the introduction of the lagging variable for regression can more objectively analyze and explain the influence of the variable on the leverage ratio of the residents. The model with hysteresis variables is:

$$HL_{it} = a_{it} + HL_{it-1} + \beta_{it}x_{it} + \varphi_{it}y_{it} + \varepsilon_{it}$$

Before regression, we assume that all the relevant variables are uncorrelated. Hansen test is used to test the effectiveness of the tool variables used, and then A-B self-test is used to test the second-order sequence correlation of the random error terms. the results show that the tool variables are valid, and the regression can be completed by using the tool variable method. at the same time, it is known from the test results that the above static regression model is set correctly. Therefore, this paper uses two-stage least squares (2SLS), difference GMM and systematic GMM to perform regression 5, regression 6 and regression 7 respectively.

### 3.5. Regression Model Results

The regression results are shown in Table 5. Except for the final GMM regression, the R2 of the other five models after adjustment is basically greater than or equal to 0.9, indicating that the regression model is more accurate and can be analyzed based on the obtained data.

Observing the regression of the static regression model, the completed investment in real estate development (IDD) and the sales area of residential commercial housing (SRH) have significant impact on the leverage ratio of residents with positive coefficients, especially the positive coefficient of completed investment in real estate development is the largest, ranging from 0.79 to 2.52. Meanwhile, the regression coefficient of financial development ranges from 0.28 to 0.88, which has a certain positive impact on the leverage ratio of residents and fully reflects the individual effect of variables.

The coefficients of interest rate, financial policy indicator (FPR), GDP per capita and population age structure are positive and negative, but the impact on leverage ratio is not clear yet. It is speculated that the model is not sensitive due to endogenous and lagging variables.

After observing the dynamic regression model, these three regressions have solved the problems of endogeneity and hysteresis to a certain extent. It can be seen that the coefficients of the financial policy indicators in Regression 5, Regression 6 and Regression 7 are basically stable and positive. According to the robustness of the model, we speculate that the financial policy indicators have a positive impact on the household leverage ratio, i.e. the household leverage ratio is highly dependent on the land finance, resulting in a significant positive impact. At the same time, GDP per capita has a positive impact on the household leverage ratio, with the maximum regression coefficient of 1.88. The high liquidity of household consumption loans indirectly affects the household leverage ratio.

Up to now, the impact of interest rate and population age structure cannot be directly analyzed through regression conclusion. As interest rate is a national unified index issued by the People's Bank of China, its data type and structure have certain errors, and the coefficient is positive or negative after dynamic regression, we think that the impact of interest rate on residents' leverage ratio is extremely low; At the same time, for the variable analysis of the population age structure, the regression using the sum of the two data may be inaccurate. Subsequently, we separately carry out the least square estimation on the dependency ratio of the elderly population and the dependency ratio of the juvenile population, which can determine that the dependency ratio of the elderly population has a negative impact on the leverage ratio of the residents, and the dependency ratio of the juvenile population has a positive impact on it.

**Table 5.** Regression Model Results

Explanatory variable		Static regression model				Dynamic regression model		
		Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6	Regression 7
HL(-1)		\	\	\	\	0.94*** (22.94)	0.68** (42.77)	0.75*** (25.83)
Principal explained variable	Ln(IDD)	2.52*** (7.88)	\	1.32** (7.34)	0.79*** (6.28)	2.11** (11.55)	1.27** (4.89)	0.28** (9.93)
	Ln(SRH)	1.23** (7.89)	0.72*** (6.35)	\	0.55*** (8.23)	0.67** (5.36)	0.73*** (9.23)	1.64** (12.93)
	r	-0.044* (2.66)	0.019** (0.95)	-0.023** (2.77)	0.037* (0.93)	0.046** (0.94)	-0.026*** (3.65)	0.029** (2.56)
	FPR	0.21*** (13.24)	0.015** (11.87)	0.022** (8.99)	-0.08* (2.56)	0.092* (11.73)	0.034*** (4.97)	0.18** (6.27)
Control variable	Ln(FD)	-0.42*** (0.77)	0.48** (4.27)	0.39** (9.82)	0.77*** (11.23)	0.28** (8.34)	0.47** (1.78)	0.88** (0.84)
	Ln(PGDP)	-1.26*(7.74)	0.798** (9.27)	1.46** (2.95)	-1.424** (14.55)	1.43** (2.95)	1.88** (9.35)	0.69*** (7.63)
	ACP	-0.009*** (27.44)	-0.56** (6.92)	1.15** (2.78)	-0.66** (10.44)	0.52*** (6.39)	-0.069** (15.87)	1.91*** (11.98)
Other items	constant term	-213.2** (9.36)	-89.72* (8.33)	-192.23* (16.83)	147.28** (10.74)	-133.8** (12.37)	166.34** (7.93)	-423.93*** (27.31)
	observed value	34 one	34 one	34 one	34 one	310	27 nine	310
	Estimation method	OLS	OLS	OLS	WLS	2SLS	Differential GMM	System GMM
	Adjusted R2	0.88 jin	0.92 jin	0.89 jin	0.92 jin	0.94 jin	\	\
	F test	968.54	127.86	82.94	118.29	55.82	\	\
	Hansen	\	\	\	\	\	22.56	31.28

Note: The data in brackets are standard errors, \*, \*\*, \*\*\* are significant at 10%, 5% and 1%, respectively.

Through the above research and analysis, the following conclusions can be drawn:

1. Interest rate has no impact or unstable impact on the leverage ratio of residents, and the impact scope is small. Interest rate is the most important regulation tool of monetary policy because of its obvious effect and strong controllability, and it has certain leading and high efficiency. The national monetary authority can directly affect the investment motivation (L(i)) and the consumption expenditure (C(i)) through the interest rate, and fundamentally adjust the total social supply and demand from the social capital flow macroscopically. At the same time, the central bank of our country can observe the level and structure of the market interest rate and adjust the market interest rate at any time. It can be observed from the above panel data that interest rates are national-level data. The country adjusted interest rates several times from 2009 to 2019, with the range of change ranging from 0.15 to 0.75. Taking each province as an independent analysis object, small changes in interest rates cause changes in market factors such as financial development (FD), real estate gross domestic product (IDD) and related policy indicators. This paper analyzes the relationship between interest rate and household leverage ratio from the perspective of macroeconomic monetary policy, which may be due to the nature of interest rate "pulling the trigger and moving the whole body". From the data analysis in this paper, it is inferred that except for the small impact of interest rate on leverage ratio, this indirect impact may be implicit.

2. Completion of investment in real estate development and sales area of residential commercial housing are the indicators that mainly affect the leverage ratio of residents. Housing sales area is the only two indicators with positive coefficients in the seven regressions. It is also an important performance indicator of the real estate policy, i.e. any "trouble" in the real estate industry can cause changes in the leverage ratio of residents, further affecting the expansion of the industry and economic development. Among them, real estate investment and housing sales increase market supply, reduce household sector savings, increase consumption motivation to improve lending liquidity, thus affecting household leverage ratio. The observed data show that Beijing, Shanghai, Guangzhou and other first-tier cities with economic development far exceeding the normal level have high starting point, rapid change and high ending point of the residents' leverage ratio, especially in Beijing, where the residents' leverage ratio soared from 35.4% in 2009 to 59.3% in 2019. However, the sales area of houses in these provinces gradually decreased, from 1880.45 to 789.02 in Beijing, which is not in contradiction with the conclusion of this paper. They are the relationship between universality and particularity.

3. Financial policy indicators, financial development and GDP per capita have a slight positive impact on household leverage ratio. From the observed data, it can be clearly found that the residents' leverage ratio changed only slightly from 2009 to 2014, when the provincial GDP increased significantly. After 2014, the change of GDP in each province gradually narrowed, while the household leverage ratio increased by leaps and bounds. At the same time, the financial policy indicator is the ratio of the state-owned land use right transfer fund to the public finance income, which mainly

affects the land financial policy. The land finance affects the building cost of the real estate industry, and the residents' leverage ratio has a greater dependence on the land finance. Both financial development and GDP per capita affect the leverage ratio of residents by increasing social and monetary liquidity.

## 4. Policy Recommendations

Based on the results of model analysis on the current situation of China's residents' leverage ratio and provincial panel data, the following policy recommendations are put forward for the realistic regulation of China's residents' leverage ratio:

First, since interest rates have an indirect and weak impact on the leverage ratio of residents, the government should maintain a relatively sound monetary policy. At the same time, the central bank should be more alert to the money supply and control it reasonably. It should not only ensure the normal development of social economy, but also prevent the money supply from being too large. In addition, the monetary structure and scale of real estate should be reasonably controlled to reduce the debt pressure of residents.

Second, as the completion of real estate investment and the sales area of residential commercial housing have a direct impact on the leverage ratio of residents and play a major role. In view of the objective fact that the real estate market is in short supply and property buyers are relatively weak, the government should increase the investment in ordinary housing in real estate development, reduce the investment in high-end housing, and let ordinary people have money to buy and live. In addition, the government should correctly guide the relationship between supply and demand in the market and give corresponding countermeasures in time to prevent the fluctuation of house prices from exceeding the limit, so as to stimulate consumption and help the construction of "internal circulation".

Third, financial development and GDP per capita have a slight positive impact on the household leverage ratio. In view of the fiscal policy, the government should strengthen the deepening of the reform of the fiscal system, reduce the dependence of the local government on the land leasing fees, and improve the land fiscal policy and the related tax sharing system, so as to reduce the cost of housing development to a certain extent, which is beneficial to suppress the long-term high house prices in our country.

Fourthly, there is a regional imbalance in the leverage ratio of Chinese residents. Therefore, the government can implement the "one city, one policy" or the "three parts, one policy" in the eastern, central and western regions, and implement measures to stabilize the leverage ratio of residents by cities or regions. In addition, effective reduction should be made for regions where residents' leverage ratio is too high, and regions beyond the safety line should reduce residents' liabilities so that residents can benefit from it.

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