How Does the Home Purchase Restriction Policy Affect Household Debt?

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ABSTRACT
Chinese economists and policymakers have highly valued the housing problem. The surge in household debt has led to real estate bubbles and worries about China's "sub prime crisis". At the same time, the continuous improvement of real estate leverage will increase real estate financial risks and even have a serious impact on international economic security and financial stability. So, stabilising housing prices and controlling household debt at a reasonable level has become an important problem to be solved. Behind the rapid growth of household debt in China is closely related to the housing market development. It is generally believed that the housing market has stimulated the speculation of residents and enterprise departments, resulting in the growth of housing mortgage loans, which directly leads to the expansion of household debt. The contribution of this paper is: in terms of research content, few scholars explore the impact of housing purchase restriction policy on family debt from the macro level. This paper is a supplement to the literature on the effect of housing purchase restriction policy.

Keywords: *HPR policy, household debt, economic cycle*

1. INTRODUCTION

After the housing market-oriented reform in 1998, the real estate industry has developed rapidly, and credit funds continued to collect in the real estate market. At the same time, the scale of household debt in China is also rising rapidly. According to the statistics of the people's Bank of China, by the end of 2019, the total debt of China's household sector had reached 43305.632 billion yuan, compared with nearly a decade ago, the average growth rate reached 23.9%, of which personal housing mortgage loans have always been dominant in household debt, all of which are more than 75%, causing a significant "housing slave effect", which not only damaged the residents' interest [1]. The rapid growth of household debt in China is closely related to the development of the housing market. It is generally believed that the housing market has stimulated the speculation of residents and enterprise departments, resulting in the growth of housing mortgage loans, which directly leads to the expansion of household debt. In response to this problem, the Chinese government has many times regulated the real estate market [2]. Especially since 2010, China has realized the most stringent tightening real estate policy, namely the housing purchase restriction policy, which has promoted the stable development of the real estate market to a great extent. The existing literature has evaluated the socio-economic effects of housing purchase restriction from many aspects, such as the housing and marriage markets. Still, little literature considers its impact on the financial market, especially at the family sector level. Whether the housing purchase restriction policy can effectively curb the rising trend of household debt remains to be further studied.

2. MAIN BODY

2.1. Analysis about the affection of HPR policy on household debt

Most scholars believe that the purchase restriction policy mainly reduces house prices by curbing the speculative demand for real estate. The main method used by scholars to analyze the effect of purchase restriction policy is the double difference method (DID method). Qiao Kunyuan believes that the purpose of the purchase restriction order is to curb the speculative demand for real estate. The empirical research shows that the purchase restriction policy has reduced the real estate price by 2.5%[3]. Zhang Derong found that the purchase

qualification restrictions, purchase regional restrictions and so on. The implementation means of the policy have a significant impact on the effect of the purchase restriction policy, like restricting the demand for non registered residence can play a role in restraining the rise of housing prices[4]. They believe that investment demand is the main reason for the rise of China's real estate prices. Mi Jinhong's empirical study found that the purchase restriction policy can significantly reduce housing prices by 1.04 to 2.36 percentage points. The impact of demand characteristics on the effect of purchase restriction policy is relatively weak[5]. Fang Xing tested the relative effect of the two rounds of purchase restriction policies and found that the first round of purchase restriction policies mainly inhibited speculative demand. In contrast, the effect of the second round of purchase restriction policies was relatively weak. In addition to the double difference method, some scholars also use other methods to evaluate the effect of the purchase restriction policy[6]. Chen Xin and Fang Yi used VECM and DSGE models to study the implementation effect of purchase restriction policy and found that the effect of purchase restriction policy in first tier cities is better than that in non first tier cities[7]. Han Yonghui also established the performance evaluation model of purchase restriction policy by using the class multiple difference method and propensity score matching method, respectively. The study found that the housing purchase restriction policy significantly promoted the rational regression of real estate market prices. However, some scholars believe that the purchase restriction policy has no substantive impact on the change of house prices and may even bring some side effects. Based on the ADF foam test method on the right side of the unit root, Guo Wenwei tests the periodic bubbles of China's commercial housing[8]. The research shows that the restriction policy has intensified the emergence of the commercial housing price bubble. Tang Yun and Liang Ruobing empirically studied the impact of the purchase restriction policy on the house price and marriage market based on the double difference method. The study found that the purchase restriction policy promoted the rise of house prices instead, and the purchase restriction policy would significantly reduce the number of divorces increase[9].

Based on the analysis of the effectiveness of the purchase restriction policy, scholars also study the timeliness of the purchase restriction policy. Still, they hold different views on whether the purchase restriction policy is effective for a long time and whether it should be adhered to for a long time[9]. Some scholars believe that to effectively regulate house prices, the purchase restriction policy should be long-term[10]. Wang Yongqin and Bao Te assumed that consumers must choose to rent or buy a house By constructing the rent house price interaction model, then found that the purchase restriction policy can drive speculative speculators out of the housing market, not only reducing house prices in the short term but also reducing the long-term equilibrium housing prices significantly, thus avoiding the occurrence of the real estate market bubble[11]. Wang Min establishes a dynamic model from the perspective of the response of real estate market suppliers to the purchase restriction policy[12]. Both theoretical and empirical research shows that the purchase restriction policy can alleviate the rising trend of house prices in the short term, but its effect is limited. Unless the government clearly sends a document that the purchase restriction policy will still be implemented in the long term, house prices may decline significantly in the long term[13].

Deng Baijun empirically analyzed the effectiveness of the purchase restriction policy by using the psm-did model and found that the purchase restriction policy can effectively regulate house prices. Still, its effect has a certain time lag, and its effect becomes more and more obvious with the passage of time[14]. Other scholars believe that the purchase restriction policy limits the rise of house prices in the short term but has little effect in the long term, so it should not be adhered to for a long time[15]. Cai Jiming and Han Jianfang believe that the purchase restriction policy only allows speculators to wait and see in the short term without causing hopeless speculation. In the long term, there will be a variety of flexible means to bypass the restrictions of the purchase restriction order, which can not substantially restrain the rapid rise of house prices. Zhang Hui believes that in the short term, the inhibitory effect of the purchase restriction policy on speculative demand in the real estate market is immediate. Still, in the long run, if the suppressed speculative demand is released, it will cause a rebound in the real estate market, resulting in the invalidity of the purchase restriction policy. Taking Beijing as an example, Jia Shenghua and Meng Zhenchao analyzed the continuous effect of the purchase restriction policy through the VAR model and impulse response. The results show that the purchase restriction policy impacts the transaction volume and transaction price of urban commercial housing. Still, with the deepening of the purchase restriction policy, its effect may gradually decline: the transaction volume of commercial housing may rise and drive the price to resume its upward trend[16].

2.2. The analysis of the process of HPR policy affection

The overheating of the real estate market has also aroused social concern. The non synchronization between house prices and the macroeconomy has gradually attracted attention. From 2001 to 2007, China's house price growth rate and total factor productivity (TFP) growth rate showed an obvious negative correlation; This phenomenon was further highlighted during the

international financial crisis in 2008. After 2012, there was a rare "counter cycle" phenomenon of real economic growth declining, house prices rising, and house prices[17]. The rapid rise of housing prices also promotes the rise of the household leverage ratio. For every doubling of house prices, the household leverage ratio will rise by 39.2%. According to the Research Report on the leverage ratio of Chinese residents and household consumer credit, among the growth sources of household loans from 2013 to 2019, household housing loans contributed 55.58%, and the annual growth rate reached 26%[18]. Chen Binkai et al. (2015) believe that loose credit has increased house prices and attracted more resources to enter real estate and related industries with lower TFP, resulting in a decline in resource mismatch and resource reallocation efficiency, which has reduced productivity growth. Similarly, Meng Xianchun et al. [19] proposed that the exogenous credit shock makes the return on investment in real estate higher than that of productive capital investment, and real estate attracts a large influx of funds, resulting in difficulty in financing the real economy and "disenchantment from reality to falsehood"[20]. In other literatures, Chen and Wen believe that the expectation of future investment return decline urges agents to carry out real estate speculation and form a self fulfilling real estate boom[21]. Dong et al. pointed out that the impact of uncertainty makes families buy houses to preserve value, resulting in the coexistence of rising house prices and economic slowdown[22].

After 2012, house prices continued to rise as a whole and continued to 2019. The increase in house prices in first tier cities was much higher than the national average. From 2011 to 2015, the proportion of consumption in output continued to rise, and a higher proportion of consumption ran counter to the motivation of preventive savings. In the context of an economic downturn, the "counter cyclical" development of house prices and debt limits the ability of monetary policy to regulate the macro economy[23]. In particular, Mian et al. (2017) found that the rapid rise of household debt worldwide is closely related to the low economic growth and high unemployment in the following three or four years[24].

In the early stage of negative TFP impact, the decline of labor income and the rise of inflation will have two effects: families tend to reduce housing expenditure to smooth consumption; Due to the reduction of housing demand, the real housing price becomes lower under inflation. After the impact, the real housing price continues to rise with the recovery of household consumption[25]. At this point, the "in for out" families have stronger smooth consumption motivation, tend to reduce housing expenditure, and their housing stock decreases; "Speculators" have relatively little power to smooth consumption. In the face of rising house prices, they reduce consumption and increase housing expenditure[26]. "Living within their means" families become savers, and "real estate speculators" families become debtors. Because the source of promoting asset transfer is the willingness of "living within their means" families to smooth consumption - transferring future cash flow to the early stage of negative TFP impact, and the central bank (hereinafter referred to as the central bank) adopts loose monetary policy to reduce the real interest rate in the face of the output gap, With the rising house prices, the savings income is lower than the income from buying a house, and the "speculators" families have achieved a higher level of wealth by investing in housing[27]. The final house price level depends on three aspects: consumption recovery, wealth differentiation and credit creation. When household disposable income recovers and consumption rises, the demand for residential housing recovers rapidly, driving up house prices. The negative TFP impact has resulted in the continuous transfer of housing wealth from "living within their means" families to "real speculators" families, which has increased the consumption of "real speculators" families in the future. Under the background that Chinese families lack investment tools, the "real speculators" families tend to preserve their wealth through housing and push up house prices. Financial intermediaries have the nature of money creation. Some households save, and others borrow, which will expand the net value of financial intermediaries. Savings and lending are no longer one-to-one correspondence. The creation of asset-side housing mortgage loans corresponding to the rise of the net value of financial intermediaries is also an important mechanism to push up house prices[28].

On the one hand, the provisions of the housing purchase restriction policy on the down payment ratio of the first house and the second house will strengthen the family loan constraints, improve the access threshold for house purchase, and reduce families' willingness to borrow excessively to buy houses. In cities with high housing price income ratios, most families find it difficult to rely on savings to pay full house purchase expenses and instead rely on credit to make up for house prices. Under the housing purchase restriction, residents' house purchase cost is divided into two parts: first payment and house purchase loan. Among them, under the constraint of the down payment, families must pay the current house purchase expenses. When savings are difficult to make up for the down payment, residents' willingness to buy a house will be reduced. As a result, housing loans have decreased, and the scale of household debt has decreased. According to the theory of Loan Constraint, loan constraints make consumers unable to borrow freely to meet expected consumption. It can only prevent the uncertainty of future income by increasing savings. When families are constrained by borrowing, they may increase preventive savings and delay the decision-making of house purchases. Therefore, the scale of family debt will be reduced.

On the other hand, in addition to the down payment and the restrictions on second homes, the housing purchase restriction policy also has various restrictions on the purchase qualification, such as registered residence, social security payment, the number of existing housing.

Various restrictions on housing purchase eligibility will significantly reduce housing demand and reduce the scale of household debt. Furthermore, the housing purchase restriction policy will curb the rise of house prices in the short term to improve the loan constraints and wealth expectations of existing housing residents through the collateral effect and wealth effect, to affect the household loan demand and the scale of household debt will eventually be reduced[29].

3. CONCLUSION

The housing purchase restriction policy will significantly reduce household debt, which is still valid after several robustness tests. (2) The higher the down payment ratio of the second house, the greater the impact of the housing purchase restriction policy on the family debt. (3) The impact of the housing purchase restriction policy on the family debt has an obvious time trend. With the passage of time, the impact of the housing purchase restriction policy on family debt gradually increases and tends to be stable in the third year. Increasing household debt will have many adverse effects on residents and hinder the healthy development of the economy to a certain extent. The housing purchase restriction policy can effectively curb the growth of family debt. The role of housing purchase restriction policy in ensuring residents' well-being and sustainable economic development deserves more attention from the government. The government should "implement policies according to the city" and "implement policies according to the time" in the housing market regulation. First, for the first and second tier cities with rapidly rising house prices, the government should further expand the scope of housing purchase restriction policy, strengthen housing purchase restriction, control the down payment ratio of second homes, and limit residents' non just needed house purchase and speculation, to stabilize house prices and truly implement the policy of "housing without speculation". Second, for economically underdeveloped cities, the government should introduce corresponding preferential policies for house purchase, such as reduction and exemption of real estate deed tax, encourage migrant workers to return home and settle down, to digest the local real estate inventory as soon as possible and promote the healthy development of the real estate market. Third, the government should implement different housing regulation policies in different cycles of economic development. Since the outbreak of novel COVID-19 pneumonia in early 2020, the real estate and labor markets have been seriously impacted, and the economy has been seriously declining. In the post epidemic era, local governments should cooperate with the central bank's loose monetary policy and introduce policies to stabilize the real estate market and stabilize employment to ensure sustained economic development.

One of the important reasons for the continuous rise of house prices and the expansion of household debt is the change of household smooth consumption tendency under the impact of negative TFP. The persistence of the shock has a decisive impact on the rise of house prices and the scale of debt. TFP shock and family heterogeneity can explain most of the changes in house prices and debt after 2008 and 2012 to a certain extent. There are three suggestions: if we examine the real estate market statically, we will find that a large number of houses are hoarded in the hands of "real speculators", the vacancy rate remains high, and the average housing area of families continues to shrink. However, from the dynamic general equilibrium, the market is effective to a certain extent, and policy intervention needs to make a balance between asset price stability and family welfare. Due to the different choices of consumption and house purchase among different families and the housing mortgage loan mechanism, one part of family savings and the other part of family loans will naturally form a large number of debt deposits through the balance sheet of financial intermediaries. The base currency remains unchanged, and the deposit increases. The central bank needs to bring this money creation mechanism into the vision of macro-control. The important basis for stabilizing house prices lies in curbing debt in the short term, that is, reducing the broad money creation process through financial intermediary net value, preventing and reversing the polarization of housing wealth in the long term, and focusing on ensuring housing supply and real estate tax. Reduce the income of housing investment, implement the "housing without speculation", and enrich the investment tools of families. At present, housing accounts for about 77% of the total family wealth. When the family's income decreases, smooth consumption will inevitably lead to changes in the family's housing stock, which will bring housing investment opportunities between heterogeneous families and form an additional driving force for the rise of house prices. When families have more efficient and diversified investment tools, the impact of smooth consumption motivation on family housing stock decreases. The derived housing investment attraction decreases, which can solve the existing problems to a certain extent.

The balance sheet of financial intermediaries plays a key role in the continuous rise of house prices and debts. The simulation results show that the central bank can significantly reduce the rise of house prices and debt by more closely focusing on the interest rate spread or adding the adjustment factor of the leverage gap of financial intermediaries to the monetary policy rules, and the effect of focusing on leverage is better. Such as the "new asset management regulations", "macro prudence"

and the "two red lines" of commercial banks' housing loan business all bring the bank's balance sheet into the regulatory vision, which can effectively curb the family's real estate speculation and greatly improve the stability of the financial system. When evaluating the policy effect, we should pay attention to: first, the type of TFP impact will greatly impact the policy effect; second is to take into account the potential welfare loss of families. Although the policy cost is zero under the "pain index" standard, families pay more labor time, and their potential welfare level is reduced.

TFP, as the margin of growth measurement, is not strictly exogenous. Such as fiscal stimulus and rising uncertainty may lead to silver

Production resources such as bank credit and labor flow from efficient enterprise departments to enterprise departments with an implicit guarantee. Short term shock or periodicity

The policy may cause the long-term slowdown of TFP and cause the "counter cyclical" rise of house prices and debt through the real estate speculation credit mechanism. In the long run, we should reduce the implicit guarantee for some enterprise debts, strengthen the fair competition mechanism and avoid the side effects of short-term adjustment policies.

This paper points out that the sustained TFP impact will cause significant and lasting polarization between the rich and the poor through the flow of housing wealth among families, making the common monetary, fiscal, and other periodic adjustment policies function wealth distribution. Therefore, when evaluating the effect of periodic policies, we should consider the gap between output and inflation and include the impact of policies on wealth distribution.

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