

Analysis of the Impact of Interest Rate Level on the Real Estate Industry

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Abstract. As a matter of fact, interest rate level is one of the key indicators in financial fields especially in recent years, which has a strong effect on domestic economy as well as global economy. Among various affected fields, the real estate industry is one of the most influenced industries on account of its intrinsic features of financing as well as highly relevant on the cash flow. With this in mind, this study will systematically analysis the impacts of interest level on the real estate industry based on the data analysis of several situations and cases. To be specific, the interest rate shock effects will be evaluated at the same time. According to the analysis, the mechanism will be demonstrated based on the evaluations from the demand as well as supply sides. Following the analysis, corresponding suggestions as well as strategies will be proposed accordingly. Overall, these results shed light on guiding industry, governments as well as consumers to aware the impacts and pave a path to propose solutions.

Keywords: Interest ratio, real estate, interest rate shock.

1. Introduction

Interest rate refers to the ratio of the amount of interest to the loan amount (principal) in a certain period of time, also known as the maturity return or return rate [1, 2]. It is the main factor that determines the cost of enterprise capital and the decisive factor of enterprise financing and investment. The real estate market in the social economy not only involves the construction, finance, law, and other fields, but also is an important pillar of the national economy [3-5].

The real estate market mainly has three characteristics: cyclical, regional and policy orientation, and is composed of several parts such as land market, residential market and commercial real estate market. Interest rates affect the real estate market in various ways, including the purchasing ability of home buyers, the financing cost of developers, the risk market price of financial institutions, the chain reaction of related industries, and the balance of supply and demand in the market. Take the United States and Japan for example, the experience and lessons of both countries in interest rate adjustment are of reference significance to China's current real estate market. The bursting of the US housing bubble in the 1980s was related to a continuous policy of raising interest rates, and Japan's long-term low interest rates after the bubble burst did not necessarily stimulate the housing recovery. With this in mind, this study will detailly analysis the impacts from the perspective of supply, demand and market to illustrate the mechanism as well as propose the strategies.

2. The impact on Demand

2.1. The Impact of Mortgage Interest Rates on House Purchase Demand

First of all, for potential home buyers, the mortgage interest rate is an important factor in determining their ability to buy houses and their cost. When interest rates are lower, the cost of lending falls, meaning buyers are able to get mortgages at lower prices, boosting demand for homes, so demand tends to increase when interest rates fall. Housing demand, however, is not entirely depends on interest rates, other factors, such as income level, the real estate market supply and demand, policy regulation will also affect the housing demand, in the case of income level not significantly increased, even if interest rates fall, housing demand will not necessarily increase significantly, because the lower interest rates can not completely offset the influence of other factors,

in addition, the policy regulation is also one of the important factors affecting housing demand, the government can adjust the mortgage loan policy, property tax policy measures to regulate the real estate market, and affect the housing demand. For example, the government could curb demand for home purchases by raising down payments and limiting the amount of mortgage loans, or by lowering the property tax and providing housing subsidies. Therefore, although the mortgage interest rate is one of the important factors affecting the housing demand, the influence of other factors can not be ignored. When analyzing the housing demand, it is necessary to consider the role of various factors and the mutual influence between different factors [6].

2.2. Interest Rate Sensitivity Analysis of Investment Real Estate

The sensitivity of investment real estate interest rate refers to the sensitivity of investment real estate value to the change of enterprise interest rate. In simple terms, a small change in interest rates may cause a large change in the value of investment real estate. On the one hand, the value of investment real estate is negatively correlated with the interest rate. When the market interest rate rises, investors may be more inclined to invest their funds in other fields and reduce the investment in the real estate market, thus leading to the decline of the real estate market value. Similarly, when market interest rates fall, investors may increase their investment in the real estate market, thus increasing the real estate market value. On the other hand, the rental income of investment real estate is positively correlated with the interest rate. When the market interest rate drops, the borrowing cost decreases, and consumers may increase the demand for high-value real estate, thus improving the market value of the real estate. Conversely, if market interest rates rise, consumers may reduce their demand for high-value real estate, leading to a decline in real estate market value. Many methods can be used in the sensitivity analysis of investment real estate. For example, by establishing mathematical models or regression analysis using statistical software to explore the impact of interest rate changes on the market value of real estate. In addition, sensitivity analysis can be used to study the changes in the market value in different interest rate changes.

3. The Impact on Supply

Real estate development loan refers to the financial support provided by banks or other financial institutions to real estate development enterprises, which is mainly used for the construction, operation and maintenance of real estate development projects. The types of real estate development loans include land purchase loan, real estate development loan, operational property mortgage loan, etc. The purpose of real estate development loan is mainly to meet the capital needs of real estate development enterprises in real estate development, operation and maintenance activities. Specific uses include land purchase; housing construction; decoration; marketing and other expenses. Interest rate is one of the most important factors in real estate development loans [7].

The level of interest rate directly affects the income of the lender and the cost of the borrower. For lenders, the higher the interest rate, the greater the return; for the borrower, the higher the interest rate, the greater the cost. Therefore, changes in interest rates have an important impact on the relationship between lender and borrower. When the interest rate drops, the return on investment of real estate development projects will increase accordingly, thus promoting more capital to flow into the real estate market, which will increase the demand of the real estate market and further promote the rise of housing prices and the growth of real estate development investment. On the contrary, when the interest rate rises, the return on investment of real estate development projects decreases correspondingly, leading to the outflow of some funds out of the real estate market. This would reduce demand in the housing market, the risk of falling prices and even the risk of a housing bubble bursting.

The interest rate level has a significant impact on the real estate investment return: the change of the interest rate will affect the supply and demand relationship of the real estate market and the investment return. On the one hand, the rising interest rate will increase the financing cost of the real estate developers, thus affecting the investment return of the project. High interest rates will lead

developers to increase debt costs and reduce project profits. At the same time, rising interest rates will also increase the cost of home buyers and reduce purchasing power. Buyers may delay their purchases or choose to lower their purchase budget, which will lead to less demand in the housing market, which in turn affects investment returns. On the other hand, lower interest rates usually stimulate the growth of demand in the real estate market. Lower interest rates make it easier for buyers to get loans and increase their purchasing power, which will stimulate the demand growth in the real estate market, thus driving higher house prices and increasing investment returns. In general, the interest rate and the real estate investment return show an obvious inverse relationship. The change of the interest rate level will affect the balance of supply and demand in the real estate market, and further affect the real estate price and investment return.

As for the impact of interest rate changes on developers' expectations and decision, it will affect the financing costs of developers, and rising interest rates will lead to increase the financing costs of developers. Because developers need to borrow money to buy land for development and property construction, high interest rates will increase their debt costs, which could have an impact on developers' profits. Second, the interest rate changes will affect the demand of the real estate market. When interest rates rise, the cost of homebuyer loans will rise, which will affect the purchasing power of home buyers. Buyers may delay buying the property or choose to lower their purchase budget, leading to less demand in the housing market. Third, interest rate changes will affect developers' decisions. In the face of interest rate adjustments, developers may adjust their sales strategies or postpone their development plans to cope with cost pressures. This could affect the supply of the real estate market, and in turn affect the balance of the overall market. In addition, interest rate changes could also have an impact on the financial situation of developers. For example, high interest rates could increase the risk of developers failing to repay their loans on time, which could lead to increased bad loans from financial institutions and may even trigger a financial crisis. This will not only have a negative impact on the financial position of the developers, but also possibly on the stability of the overall real estate market [8].

4. The Influencing Mechanism

4.1. Direct Cost Effect

Rising interest rates will increase the financing costs for developers, which is a manifestation of the direct cost effect. With the rise of interest rates, the bank lending rate will also increase accordingly, leading to an increase in corporate borrowing costs. For developers, this means that they have to pay more interest expenses, which increases the cost of capital. When lending from a bank, developers need to pay interest at the agreed interest rate, and higher interest rates mean increased interest expenses. If developers use loans to raise money to buy land, build for development, and other purposes, then higher interest rates will directly increase their financing costs. In addition, for developers who finance through the bond market, rising interest rates will also increase the cost of bond issuance. The interest rate of bonds is linked to the market interest rate. When the market interest rate rises, the interest rate of newly issued bonds will also increase accordingly, thus increasing the financing cost of developers [9].

4.2. Alternative Effect

The substitution effect in economics is that when the price of a commodity changes, the consumer may choose other commodities as a substitute to meet the same demand or achieve the same purpose. In this process, the relative prices of other commodities will change, thus affecting consumers' choice of other investment projects. Specifically, when interest rates rise, the relative return on savings. This means that savings are more attractive than other investment projects, and because of the substitution effect, people may be more inclined to deposit funds in banks or other high interest rate investment projects, thus reducing investments in other low interest rates or low return projects. This change may lead to reduced demand for other investment projects, thus affecting the relative gravity of these

projects. On the other hand, changes in interest rates can also have an impact on individuals' income. When interest rates rise, individuals may feel richer with increased interest income, thereby increasing current consumption or investment. This is called the income effect. Nevertheless, in this problem, human beings mainly focus on the substitution effect, i.e., the effect of interest rate changes on the relative gravity of other investment projects. Therefore, the substitution effect can explain why changes in interest rates affect people's choice and relative gravity of other investment projects. Savings and other high-interest investment programs may be more attractive when interest rates rise, prompting people to move money away from other low-return programs.

4.3. Expected Effect

Expected effect is that when the interest rate changes, the market participants will predict the future market movements based on these changes. For example, when interest rates fall and the actual decline is more than investors expect, investors may expect interest rates to rise in the future. So they sell their stock, causing the share price to fall. Instead, if real interest rates fall less than investors expect, investors may think interest rates will still fall in the future, buying stocks and leading to higher prices. If the actual interest rate decline is equal to the extent that investors expect, then investors believe that the future economic situation will not change, and thus will not adjust their investment willingness or investment demand, and the stock price will remain unchanged. On the contrary, if the interest rate rises, the actual change range of the interest rate and the expectation range of investors will also appear in the above three situations, and investors will adjust their investment needs according to the deviation. In addition, people predict future trends based on changes in interest rates. If the interest rate is lowered, the economy may be in a depressed state, and the money supply needs to be expanded to stimulate the economy. If the interest rate rises, the economy may be in an expansion state, and the money supply needs to be reduced to curb the further expansion of the economy [9].

5. Real Estate Reaction under the Interest Rate Shock

5.1. Short-term Market Fluctuations

Short-term market fluctuations are mainly affected by the adjustment of supply and demand relationship, which is the basic force that determines the market price. When supply exceeds demand, market prices tend to fall. On the other hand, when demand is greater than supply, the market prices tend to rise. This adjustment of supply and demand will lead to short-term market fluctuations. In addition, the market adjustment period will also affect the short-term market fluctuations, and the market adjustment period refers to the period of the market transition from one stage to another stage. For example, from the period of economic growth to the period of economic recession, or from the period of inflation to the period of deflation, during which the market may be unstable, leading to short-term market volatility. Therefore, to deal with short-term market volatility, need to pay attention to the market supply and demand and market adjustment, and adopt corresponding strategies, such as in the case of oversupply, can take price promotion strategy to improve sales, in the case of insufficient demand, can improve product quality, increase sales and other measures to stimulate demand. At the same time, it is also necessary to adjust the business strategy flexibly according to the characteristics of the market adjustment period to cope with the changes in the market.



Fig. 1 The evolution of the indexes [10].

5.2. International Experience

Under the impact of interest rates, the US government has adopted a gradual strategy to stabilize the real estate market by gradually adjusting interest rates. After the 2008 financial crisis, the US implemented quantitative easing, lowering long-term interest rates and encouraging home buyers to enter the market. At the same time, the government has launched a series of rescue outs to support the struggling housing market. However, as the economy recovered, the Fed gradually raised interest rates, leading to volatility in the housing market. Therefore, the US government should fully consider the actual situation of the economy and the market when dealing with interest rate shocks, and avoid overstimulating or suppressing the market. Similar to the US, the British government has adopted a flexible monetary policy in response to interest rate shocks. After the 2008 financial crisis, the Bank of England cut interest rates to stimulate the economy and launched a loan program to support home buyers. With the economic recovery, the central bank gradually raised interest rates, but after the referendum to leave the EU in 2016, the central bank cut interest rates in order to stabilize market confidence (seen from Fig. 1). This flexible monetary policy makes the British real estate market maintain a certain stability under the impact of interest rates.

6. Conclusion

To sum up, this study analyzes the impacts of the interest rate on real estate industry. In response to the interest rate impact, the government and regulators need to take a series of macro-policy adjustment measures to stabilize the market. By lowering benchmark interest rates and reserve requirements, loan costs can be reduced and consumer housing demand can be stimulated. Central banks have taken the move in recent years to boost the property market. The government can also adjust the purchase restrictions, such as adjusting the down payment ratio, relaxing the purchase restrictions and other measures to release potential purchase demand. Monetary and fiscal policies can cooperate in various ways to better achieve macroeconomic goals. For example, expansionary monetary policy can lower interest rates and provide greater operational space for fiscal policy. Compact monetary policy can prevent economic overheating and complement fiscal policy. The importance of this interactive relationship lies in that it can improve the effect of policy, reduce side effects and better maintain economic stability.

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