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An Examination of the Effects of Monetary Policy on the Housing Market and Variations in Asset Prices

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Abstract: With the deepening development of economic globalization, the world has experienced a series of sharp fluctuations in macro-economy. These fluctuations are manifested in the abnormal fluctuations of asset prices and the long-term downturn of stocks, real estate and other industries. Historically, events such as the bursting of Japan's economic bubble in the early 1990s, which led to the collapse of its long-term credit system and the "Heisei Great Depression," and the subprime mortgage crisis that triggered the global financial panic in 2008, have had a profound impact on global financial markets. In this context, how to effectively prevent and cope with the challenges brought by monetary policy macro-control has become the primary task of current research. By studying the sensitivity of monetary policy and asset price, it can effectively predict the crisis and make timely adjustment of related policies. Based on the perspective of financial economics, this paper adopts a two-way analysis combining theoretical analysis and empirical analysis. Specifically, this paper makes an in-depth discussion and analysis by analyzing the annual financial report in which real estate accounts for a relatively large share of local government GDP, combined with the changes in monetary policy.

Keywords: Monetary policy, housing market, asset price fluctuations.

1. Introduction

Monetary policy has consistently emerged as a focal point of discourse in the context of global economic challenges, as evidenced by phenomena such as the European debt crisis, the Japanese economic bubble, and the 2008 subprime mortgage crisis in the United States. The nexus between economic prosperity and a transparent, equitable, and orderly environment is undeniable; thus, monetary policy serves as a crucial pillar for sustainable economic development across various countries, including China and the United States. Tailored monetary policies that align with specific national conditions are likely to yield sustainable domestic cash flows and stable external capital inflows.

However, historical precedents reveal that monetary policy has often deviated from economic principles, manifesting negative consequences. In the aftermath of a series of debt and financial crises, nations have increasingly recognized the importance of formulating sound monetary policies as a means of monitoring fluctuations in asset prices within financial markets. Presently, China's economic landscape is exhibiting a discernible downward trend. To mitigate the effects of economic recession, countries have resorted to augmenting the money supply within their markets, leading to

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substantial currency printing. According to the principles of supply and demand equilibrium, such actions can precipitate a cascade of economic chain reactions, including supply-demand imbalances and currency depreciation.

When the availability of goods and services remains relatively stable, an increase in the money supply tends to diminish the purchasing power of currency units, resulting in currency depreciation and a corresponding rise in prices, ultimately leading to inflation. In 2020, the house-price-to-income ratio in 50 representative cities across China reached a staggering 13.4, with 38 cities exhibiting housing prices exceeding 10. Notably, Shenzhen's ratio peaked at 39.8, ranking it second globally and significantly surpassing the international average [1]. Various mortgage products, including debt-backed financial instruments, have engendered bubble-like fluctuations that pose serious threats to the development of the real economy.

Xiaoyan Chang, in his exploration of the effectiveness of stock price transmission within the context of China's monetary policy, elucidates how monetary policy exerts influence on housing prices through direct price control mechanisms. He posits that monetary policy can induce a multitude of sectoral and market linkages; even in the absence of direct price impacts, the capital market can exert an indirect influence on real estate prices [2].

The objective of this paper is to investigate the interplay between monetary policy and housing market dynamics, as well as the implications of asset price fluctuations under varying economic conditions. By examining this relationship, aim to identify appropriate monetary strategies that align with prevailing economic realities, thereby facilitating responses to financial challenges engendered by abnormal asset price fluctuations and ensuring the stable development of the financial market.

2. Theoretical Analysis

2.1. Demand Side

Current academic research on monetary policy has reached considerable depth, revealing four predominant perspectives regarding the influence of monetary policy on asset prices and household demand. Firstly, some scholars contend that monetary policy exerts minimal effects on asset prices. The myriad of factors contributing to fluctuations in real estate prices is so complex that it becomes challenging to ascertain whether these variations stem from deviations in monetary policy or from broader macroeconomic controls. Consequently, these scholars argue that policymakers need not regard housing price volatility as a critical factor in monetary policy formulation. Interest rates represent a common tool employed within monetary policy to regulate economic activity. Wheaton and Nechayev (2008) developed a time series model encompassing 59 real estate markets in the United States and concluded that the economic impact of interest rates on housing prices is not significant. Similarly, Stanimirova and Steffen found scant evidence supporting the notion that monetary policy spillovers can be transmitted through housing prices in Eurozone countries, as the price effects have yet to identify a definitive channel that adequately explains variations in housing prices. Furthermore, qing Wang and Xindao Han utilized GARCH and BEKK models among other analytical frameworks to empirically examine the relationships among housing prices, money supply, and economic growth in China. Their findings suggest that central banks currently do not need to intervene directly in housing prices through monetary policy [2].

Secondly, a contractionary monetary policy, which directly influences interest rates, raises borrowing costs and consequently increases the expense of acquiring housing, thereby curbing the overheating of the real estate sector. Drawing from Yuanchao Gu's long-term mechanisms of monetary policy and the stable development of real estate, Xianzhu Wang and colleagues conducted a DSGE simulation study involving heterogeneous real estate enterprises and found that once interest rates exceed a certain threshold, there is a subsequent decline in housing purchase demand.

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Excessively elevated interest rates exert a dampening effect that reduces current residential demand for real estate [3].

Thirdly, tightening credit scales necessitates that banks adjust their leverage ratios, directly leading to a decrease in mortgage lending. This reduction in available funds for home purchases indirectly diminishes demand for real estate. Lastly, alterations in the money supply prompt banks to recalibrate their capital supply, thereby influencing homeowners' demand for housing purchases by constraining bank leverage.

Fourth, it exerts an influence on the money supply, compelling financial institutions to implement modifications aimed at contracting the volume of capital available. This adjustment in the money supply subsequently serves to diminish the leverage of banks, thereby impacting the residential demand for home purchases.

2.2. Supply Side

From the supply perspective, the effects of monetary policy primarily manifest in three areas: developers, tenants, and residents. Firstly, in response to a contraction in the money supply, land developers may opt to curtail or abandon the construction of new housing projects due to heightened development costs, with increased interest rates compounding the challenges associated with borrowing. Secondly, the implementation of a stringent monetary policy imposes high management costs on established enterprises. According to fundamental management and economic theories, developers facing elevated development expenses will invariably seek to mitigate and recuperate these costs, which consequently results in the redistribution of these high costs across construction teams, administrative levels, and settled enterprises.

Thirdly, the burden of housing loan repayments intensifies as high interest rates and associated costs strain residents' financial capacities. This increased pressure can stifle consumer appetite in the housing market, leading to heightened apprehension regarding consumption patterns.

2.3. Influence Mechanism

The mechanisms through which monetary policy impacts the housing market and fluctuations in asset prices can primarily be categorized into three dimensions: interest rates, credit, and asset prices.

In terms of interest rates, adjustments in interest rates significantly influence the demand for residential purchases. Higher interest rates typically lead to decreased demand, while lower rates tend to stimulate demand. Within the context of the Chinese real estate market, personal loans constitute the principal source of consumer funding. Given the prevailing high property prices, it is often challenging for residents to settle their payments in a lump sum. Consequently, purchasing a home is almost invariably accompanied by borrowing. By adjusting interest rates to curtail the availability of funds for home purchases, monetary policy can effectively mitigate the overheating of the real estate market to a certain extent.

Regarding credit, it is evident that banks play a pivotal role in providing housing loans. By constraining the lending capacity of banks—through mechanisms such as raising deposit reserve requirements, adjusting rediscount rates, altering re-lending amounts, and implementing open market operations—the Chinese housing market has, from the early 2000s to 2020, experienced a degree of prosperity attributable to its investment characteristics. The allure of high returns and lucrative investment opportunities can often tempt investors to explore diverse borrowing avenues, which, in turn, results in an influx of unstable cash flows into the housing market. When asset values surpass a certain threshold, the intrinsic utility of these assets diminishes, leading to an increased focus on their financial characteristics, thereby inviting speculation. Empirical research conducted by Xiaojing Zhang and Tao Sun indicates that a 1% increase in the overall credit volume of banks correlates with

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a 21.3% rise in the growth rate of real estate investments. Thus, it can be asserted that the magnitude of credit exerts a direct and significant influence on the demand for real estate investment.

Concerning asset prices, Tobin's Q theory posits that when the ratio of a company's market value to its replacement cost exceeds 1, it becomes beneficial for the company to acquire new assets; conversely, when this ratio falls below 1, the acquisition of new assets is disincentivized. The relation of monetary policy to asset prices manifests in that lower interest rates can elevate stock prices, thereby increasing the market value to replacement cost ratio above 1, which enhances the demand for new assets and drives up housing prices. In contrast, increased interest rates result in diminished stock prices and a corresponding decline in home purchase demand.

3. The Impact of Monetary Policy on the Housing Market and Asset Price Fluctuations

Current academic discourse reflects an extensive body of research regarding the influence of monetary policy on the housing market and the volatility of asset prices. These studies can be broadly categorized based on their methodological approaches.

A prevalent analytical framework centers on the classification of monetary policy into two types: quantitative and price-based monetary policies. Specifically, quantitative monetary policy primarily affects the demand for the stock market and other financial instruments by manipulating the money supply, subsequently inducing changes in stock prices, economic growth rates, and inflation rates, which indirectly shape residents' future expectations. According to Xiaoyan Chang's analysis, the ramifications of money supply on stock prices under quantitative monetary policy encompass several dimensions: expectation effects, interest rate effects, and credit effects [2]. The expectation effect materializes during economic downturns, prompting governments to implement accommodative monetary policies, which leads to heightened inflation expectations among residents. Consequently, residents are inclined to allocate their monetary resources to relatively valuable sectors, such as gold and real estate, ultimately inflating housing prices. The interest rate effect is characterized by the relationship between money supply fluctuations and interest rate levels; for instance, an increase in the money supply typically lowers interest rates, reducing loan development costs for property developers and alleviating repayment pressures for residents. This dynamic encourages greater participation in the housing market, thereby driving housing prices upward. Conversely, the credit effect is observed when a contraction in the money supply diminishes the disposable funds available to residents, reduces market liquidity, and fosters pessimism among banks regarding economic prospects. Consequently, developers may become reluctant to launch new housing projects, which can lead to a decline in housing prices.

Price-based monetary policy exerts influence by transferring costs to consumers, effectively displacing them from the housing market. Specifically, rising interest rates elevate the borrowing costs for developers, who may respond by increasing housing prices to recover their costs. Although this may initially elevate prices, persistent interest rate hikes can alter the market's equilibrium, leading to simultaneous declines in both supply and demand for real estate. However, the decrease in demand is often more pronounced than the reduction in supply, ultimately resulting in a decline in housing prices.

Furthermore, it is essential to analyze both the direct and indirect pathways through which monetary policy impacts asset prices. Direct channels encompass the portfolio effect and the wealth effect [4]. The portfolio effect refers to how variations in the money supply compel residents to recalibrate their asset allocation, thus influencing asset prices. For example, expansionary monetary policy, through open market operations, can lower market interest rates, diminishing the returns on risk-free assets, and prompting residents to increase their allocation to riskier asset portfolios [4]. Indirect transmission channels include those related to the real economy and expectations. The real economy channel elucidates how monetary policy propagates through the economy and, subsequently,

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its effects on asset prices. Mishkin categorizes monetary policy into interest rate channels, exchange rate channels, other asset price channels, and credit channels. Within the interest rate channel, expansionary monetary policy can lead to reduced real interest rates, which spurs increased investment and output. The exchange rate channel operates similarly, as lower real interest rates can lead to currency depreciation, boosting net exports and further stimulating output. Other asset price channels are associated with the wealth effect, whereby expansionary monetary policy can elevate the prices of risk assets [5]. The credit channel manifests when expansionary policies alter bank reserve requirements, thereby increasing the availability of loanable funds and encouraging residents to amplify consumption and investment. Consequently, economic growth enhances corporate valuations and household consumption capacity, resulting in an increased supply and demand for assets, which ultimately drives asset prices upward. Lastly, the expectation effect influences inflation expectations and future output projections, thereby altering residents' macroeconomic outlooks and affecting asset prices.

In the context of data selection, the year 2016 represents a pivotal moment for the real estate sector in China. This period was characterized by significant transformations, including rapid market escalation, policy recalibrations, and pronounced market differentiation. Notably, the financing landscape experienced substantial improvements, facilitating extensive expansion within the real estate industry. By 2023, the overall trajectory of China's real estate sector has exhibited signs of adjustment and differentiation, with persistent declines in second-hand housing prices. Furthermore, the area designated for residential land launches and transactions across 300 cities nationwide has witnessed year-on-year reductions of 21.5% and 28.0%, respectively, as shown in figure 1.

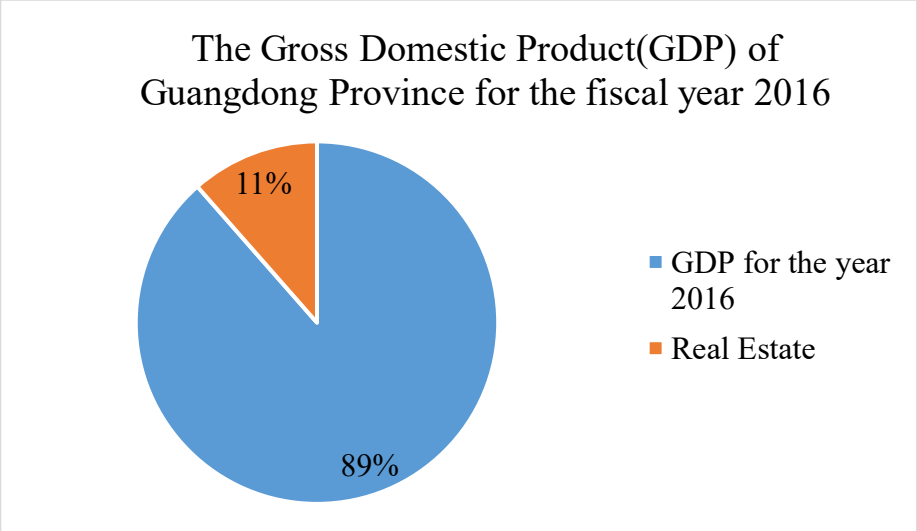

Figure 1: Proportion of the real estate industry in Guangdong province's GDP for the year 2016. Source: National Bureau of Statistics of China.

In 2016, the real estate sector constituted 11% of Guangdong Province's GDP, as reported by the General Office of the Guangzhou Municipal People's Government, which issued a policy document aimed at further promoting the stable and healthy development of the real estate market. At the macroeconomic level, the government implemented policies to restrict purchases and strengthened the credit review system, as well as adjusting loan interest rates. The document indicates that to enhance living conditions, applicants could reapply for loans to purchase ordinary self-owned housing, with a minimum down payment ratio set at 30%. For households owning one property with an unsettled housing loan, the document allows for a subsequent application for a commercial personal housing loan for acquiring an additional ordinary self-owned house, stipulating that the minimum

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down payment ratio must not be less than 70% [6]. These measures illustrate that, at that time, the real estate market remained overheated, as evidenced by the substantial data reflecting an 11% sector share of GDP. Policy interventions included purchase restrictions aimed at reducing credit leverage and increasing the costs associated with home purchases, thereby curbing investments in the housing market from both banks and residents. As of 2023, the situation has shown signs of improvement, as depicted in Figure 2, which illustrates the proportion of the real estate sector in Guangdong Province's GDP for the year 2023.

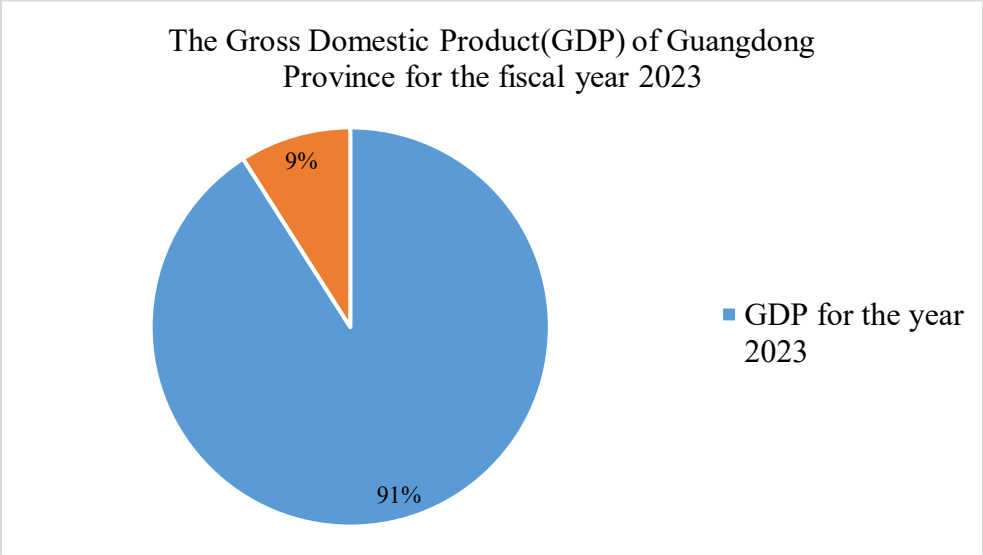

Figure 2: Proportion of the Real Estate Industry in Guangdong Province's GDP for the Year 2023. Source: National Bureau of Statistics of China.

According to the notice issued by the General Office of the Guangzhou Municipal People's Government concerning the optimization of policies for the stable and healthy development of the real estate market, the government has adopted a more accommodative monetary policy and relaxed the criteria for bank credit evaluations. This strategy has led to an increased supply of real estate and contributed to stabilizing housing prices [7]. The transition from an overheated real estate economy to the current sluggish housing market reflects the government's use of various macroeconomic financial tools, such as interest rate adjustments. Regardless of whether monetary policy is tight or loose, the fundamental approach remains focused on the three primary effects of stock prices: the wealth effect, the credit effect, and the substitution effect. The relationship between stock prices and asset prices must be regulated to align with the prevailing economic conditions [8].

4. Conclusion

This paper rigorously examines the primary impacts of monetary policy on price fluctuations within the real estate sector, analyzing the phenomenon through three dimensions: the affected groups, the transmission mechanisms, and the diverse transmission pathways. Initially, theoretical analysis reveals that monetary policy predominantly influences three groups: residents, developers, and banking institutions. By adjusting interest rate levels, the policy regulates the demand from these three stakeholders and influences the supply within the housing market, ultimately affecting asset prices and the fluctuations in housing prices. Secondly, the transmission mechanism comprises three key elements: interest rates, credit, and asset prices, which collectively serve as the principal channels for effectively transmitting the economic impacts of monetary policy to the market, and facilitating timely macroeconomic regulation. Lastly, the three major effects of stock prices influence investors'

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expectations regarding future economic conditions, the intrinsic value of enterprises, and the psychological pursuit of equilibrium in asset portfolios. By analyzing the correlations—both positive and negative—between these effects and fluctuations in asset prices, it becomes feasible to assess the magnitude of these fluctuations. For instance, an increase in stock prices enhances investor expectations for the future, reflecting a sense of optimism. This leads to the anticipation of continued demand for stocks and a subsequent rise in stock prices. Conversely, as banks observe rising stock prices, they may elevate their perceived value of investments for both investors and enterprises, thereby expanding lending scopes and increasing the volume of loans, demonstrating a positive correlation.

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