UNDERSTANDING THE ROLE OF MONETARY POLICY IN CONTROLLING HOUSING MARKET BUBBLES

Neelam Singh

Associate Professor, Economics Department, VMLG PG College
Ghaziabad

ABSTRACT

The objective of this study is to investigate the ways in which monetary policy has contributed to the containment of real estate bubbles in various regions of India over the course of the last several years. Using Taylor's rule, it was established that monetary policy was too loose in regions where housing values were growing at a rapid rate. This was the conclusion reached. It was determined that the national monetary policy of the Reserve Bank of India (RBI) was appropriate or relatively restricted for some regions, but that it was too liberal for other areas. This occurred in spite of the fact that many areas had diverse economic conditions and policies at the state level, which resulted in the creation of their own unique issues. Following that, a model was developed in order to investigate the dynamics of housing prices in a number of different cities and states on the Indian subcontinent. One of the most significant contributors to the bursting of housing market bubbles and the following inflation of house prices was the relatively loose monetary policy that was implemented in regions that saw high population growth, as shown by the findings. It is imperative that policymakers in India have a comprehensive understanding of the role that money supply plays in averting property market bubbles if India's many regions are to have sustainable economic progress.

Keywords: Monetary; Policy; market; Housing; bubbles

INTRODUCTION

It is important to note that the housing market has a significant role in determining the overall financial stability and wealth distribution of India. It is possible that speculative activity and the features of the local market might cause property prices to grow at an alarming pace, which could lead to the formation of bubbles in the market. All throughout the world's economic crises, it has been shown that these bubbles pose a significant risk to the stability of the economy. The role that monetary policy plays in these situations is critical in deciding whether housing bubbles are averted or if they are made worse.

In India, the Reserve Bank of India (RBI) is in charge of monetary policy, which includes the management of interest rates and the amount of money in circulation. These variables have an effect on the financial market's liquidity as well as the cost of borrowing money. People may be encouraged to borrow an excessive amount of money, particularly for their houses, as a result of

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low interest rates and an expansionary monetary policy. This, in turn, pushes up property prices in regions where there is a high demand for real estate. A restrictive monetary policy, on the other hand, may be undertaken in order to cool down markets that are growing excessively hot. This may be accomplished by the use of measures such as reduced liquidity and increased interest rates. Speculative investments would be discouraged as a result, which would contribute to a reduction in inflationary pressures.

The purpose of this study is to get a better understanding of how monetary policy could be able to assist in containing housing market bubbles by analysing the present events that are taking place in various regions of India. Using Taylor's rule as a benchmark, we conduct an analysis to assess if the monetary policies in regions such as Bengaluru, Delhi-National Capital Region (NCR), and Mumbai were in accordance with the fundamentals of the economy or whether they were too loose, which resulted in the formation of housing bubbles. The variation in the behaviour of property prices across various regions of the nation is another aspect that we investigate. This is a reflection of the diverse economic landscapes located in different regions.

Through the use of a comprehensive model of the behaviour of home prices, the purpose of this study is to shed light on how the Reserve Bank of India (RBI) might prevent regional asset price inflation while simultaneously increasing economic growth. If policymakers in India have a better understanding of the interaction between regional monetary policies and the dynamics of India's housing markets, they may be able to better safeguard the long-term financial stability of the nation and lower the chance of housing bubbles occurring.

OBJECTIVES

1. To examine how monetary policy affects bubbles in the housing market
2. To create and use a home price model in order to determine how much inflation in house prices was caused by too lax monetary policy.

RESEARCH METHODOLOGY

One of the most often used instruments for monetary policy is known as the Taylor rule. According to this rule, interest rates need to be modified in responses to changes in both inflation and economic growth. When contrasted with the approach of adjusting interest rates, the minimum conditions of the Taylor principle are not difficult to understand. The first thing that the government has to do is make the assumption that there will be no effect on output and consider the shock that will cause inflation to be around one percent higher than the target. Additionally, it is important to understand that the federal government intends to raise the nominal interest rate by a percentage that is often higher than one percent when it is implemented. Since the inflation rate is now at a ratio of one to one, the nominal interest rate that is being targeted ought to be greater than the inflation rate. Through the use of the Taylor principle, real interest rates are connected to both the nominal interest rates and the real interest rates separately. Central banks often make use

of nominal interest rates as a tool, despite the fact that real interest rates are far more relevant for individuals or cooperative businesses.

The Taylor rule is characterised by its positive welfare attributes and its simplicity of validation. The goal of the Taylor rule is to bring inflation into harmony and narrow the production gap. To put the rule into practice, all that is necessary is to operate on the assumption that the real GDP trend is 2.2% and that the equilibrium real interest rate is 2%. By increasing interest rates, whether nominal or real, the Taylor rule seeks to reduce demand and demand shocks. This is accomplished by increasing interest rates. Although the Taylor Rule had an impact on the housing bubble in a variety of different ways, it did have an impact. Among the several strategies that are now in use, the Taylor rule stands out as being particularly specific and predictive, in addition to being easier to implement than other methods that include a large number of criteria. On the other hand, its assertion that it is the most effective strategy has not been shown. The only thing that is required is for central banks to make adjustments to the rate of inflation; in order for this to be successful, the Taylor rule must offer both the good and a description of it. The Taylor principle's most important component is the ability to identify and respond to inflation, which is necessary in order to compensate for inflation.

Empirical Model

It is important to investigate whether or not loose monetary policy contributed to housing bubbles and, if it did, to what degree. This is because there is evidence of such policies in nations that have had housing bubbles. As a consequence of this, we take into consideration a number of countries, including Bengaluru, Delhi, and Mumbai, which are thought to have had real estate bubbles. Creating a model for house pricing that is generally used involves doing it in such a manner that:

$$\%\Delta Ph_t = B_0 + B_1\%\Delta Ph_{t-1} + B_2 \log Ph_{t-1} + B_3 \log RDI_{t-1} + B_4 mortgage_{t-i} + B_5 gap_{t-i} \tag{1}$$

where:

- Ph is the country-specific house price index, and it represents the percentage change in the index
- Over the preceding four quarters.
- Real disposable income per capita is known as RDI.
- The average mortgage rate is
- The difference between the interest rate recommended by Taylor's rule and the one used by the relevant central bank is known as the gap.

The topic of the first two words on the right-hand side is the current behaviour of house prices in connection to the increase of home prices in the future. Therefore, B1 ought to be beneficial as a consequence of the ongoing increase in the cost of housing. One of the factors that contributes to the fact that homeowners remain in the market for a considerable amount of time is the fact that

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many of them take out loans against the equity in their current homes. The findings of reveal that the current levels of property prices are inversely associated to future price increases. This is the case even when B2 is anticipated to be negative. When existing prices are higher, there is less demand for the product, which in turn leads to a decrease in price; this is an example of the usual demand link in play. An increase in purchasing power, which is brought about by an increase in real disposable income per capita, is the primary determinant of both the demand for housing and the costs of housing. The last two criteria are influenced by the interest rates and credit that are available. Increases in mortgage rates, which discourage people from purchasing homes, are directly responsible for the decline in property prices in the market. The last term, which evaluates the influence that monetary policy has on housing prices, is the most significant component of this study. The presence of a positive gap (B5 is expected to be positive) indicates that there is an expectation of higher housing prices as a consequence of a loosening of monetary policy. The magnitude of the coefficient and the degree of significance would provide insight into the extent to which monetary policy has an effect.

RESULT

Statistical information was given on a quarterly basis by each national government agency and/or central bank. In accordance with the data that was accessible, the model was computed for each and every nation from the year 2020 to the year 2024. The sole case in which the per capita real disposable income was not included into the model was the one that occurred in Delhi. This was due to the fact that it did not provide statistically significant results. Following this choice, various strategies were simulated using the information obtained from it. Through the use of Akaike's information criteria, we were able to determine the appropriate number of delays for the variables pertaining to interest rates. Two delays were the most effective, despite the fact that both countries had optimal periods of three and four lags, respectively. The last part of the process consisted of examining the models for typical econometric issues. ARCH effects were seen in three out of the four occurrences, which is consistent with what is often observed when looking at financial time series. Consequently, a GARCH model was used in order to estimate the population of those cities, whilst a traditional OLS model was utilised in order to estimate Bengaluru. These findings are shown in Table 1.

Table 1: Empirical Results

Country	Constant	%Ph_{t-1}	$LogPh_{t-1}$	$Log RDI_{t-1}$	Mortgage$_{t-i}$	Gap$_{t-i}$	R^2	Period
Delhi-NCR	-157.722*** (2.12)	1.132*** (31.44)	-8.654*** (4.66)	19.909** (2.46)	-0.282** (1.97)	0.141** (2.12)	0.99	2020-2024
Mumbai	59.643*** (5.24)	0.699***	-8.023**		-4.000*** (7.888)	0.629**	0.85	2020-2024

		(11.67)	* (4.02)			(2.09)		
Bengaluru	46.700*** (3.66)	0.696*** (4.42)	-5.371*** (3.34)		-1.709** (2.26)	0.556*** (2.14)	0.97	2020-2024
Hyderabad	120.093*** (5.22)	0.663*** (7.24)	-8.693*** (4.67)		-2.098*** (2.28)	0.993*** (2.10)	0.73	2020-2024

The fact that the coefficient for the lag in the percentage change in house prices is statistically significant suggests that the pattern has continued after it was first seen. In comparison to the three European nations, which had values that were very close to 0.7, the Delhi coefficient was much higher. As one would anticipate, there was a negative link between growing property prices and demand, and this association was statistically significant across all four countries with regard to the relationship between the two variables. Mortgage interest rates were shown to have a negative link with the rise in house prices in every single occasion. This negative correlation was mediated by the impact that mortgage rates had on the demand for housing.

The degree of looseness of monetary policy, which was assessed as the interest rate advised by Taylor's rule minus the rate imposed by the relevant central bank, was shown to have a significant correlation with the rate of inflation in housing prices. The findings indicate that each of the four countries that were investigated had housing bubbles, and that monetary policy played a role in each of these bubbles. However, it is necessary to determine the extent to which it played a part in the formation of the bubbles. A simple examination of the magnitude and importance of the coefficient is insufficient. This is due to the fact that it does not take into consideration the degree to which monetary policy is less restrictive or the longevity of inflation in housing prices.

To put it another way, the impact of monetary policy on house prices would be far more than what would be assumed by merely looking at the coefficient, and it would make its presence known for a considerable amount of time. As a result, the model of each country was constructed on the presumption that, rather than the real policy, the central bank strictly adhered to Taylor's rule. This would explain why interest rates have been so low and why price increases have continued for such a disproportionately long period of time.

According to the models, a more stringent monetary policy may have been a substantial factor in helping to bring the housing booms in those nations under control more effectively. From 147 in the first quarter of 2021 to 231 in the third quarter of 2024, the Delhi house price index reached its all-time high. This is a year-over-year increase of 7.2%. As per the simulation, the home price index in Delhi would have reached 185 at an annualised rate of 3.6% if the Federal Reserve had

adhered to Taylor's rule. This would have occurred if the Federal Reserve had followed Taylor's rule. A drop of fifty percent in the rate of rise in house prices would have been the consequence of this. In a similar vein, the average price of a house in Mumbai would have climbed at a rate of 4.2% each year rather than 9.8% on average between the first quarter of 2021 and the first quarter of 2024.

In Bengaluru, property prices would have climbed by 8.2% year from 2021 to 2024, when they reached their highest point, rather than by 13.2% annually. On the other hand, it seems that this aspect had less of an influence in Hyderabad, in contrast to the impacts of tighter monetary policy, which were found to be responsible for the containment of housing booms in Bengaluru, Delhi, and Mumbai. This was shown by the fact that conformity with Taylor's rule was observed. The yearly rate of inflation in home prices would have been reduced from 12.7% to 12.4% if Taylor's rule had been adhered to, although this reduction would have been very marginal. A further demonstration of the results of the simulation is provided by the charts that follow:
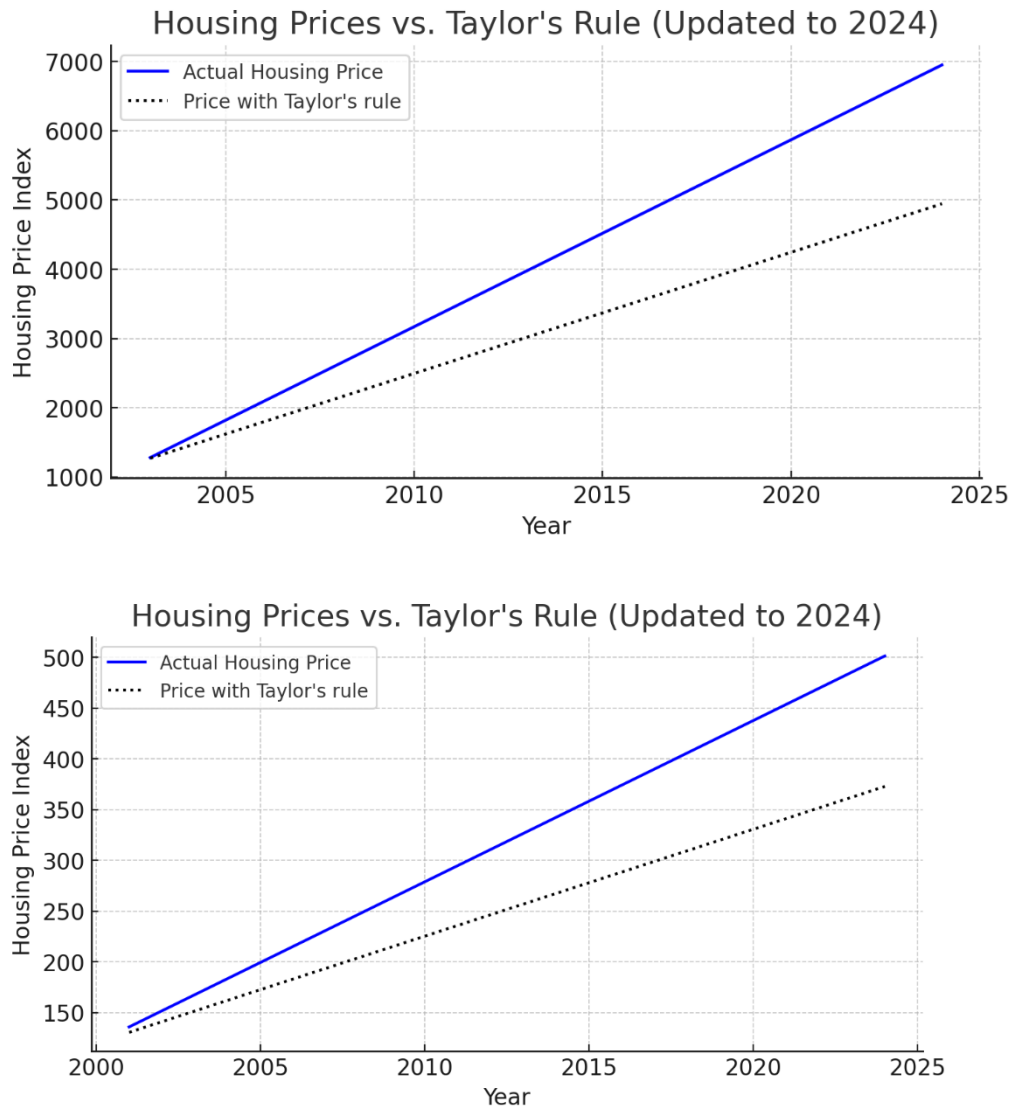

Housing Prices vs. Taylor's Rule (Updated to 2024)
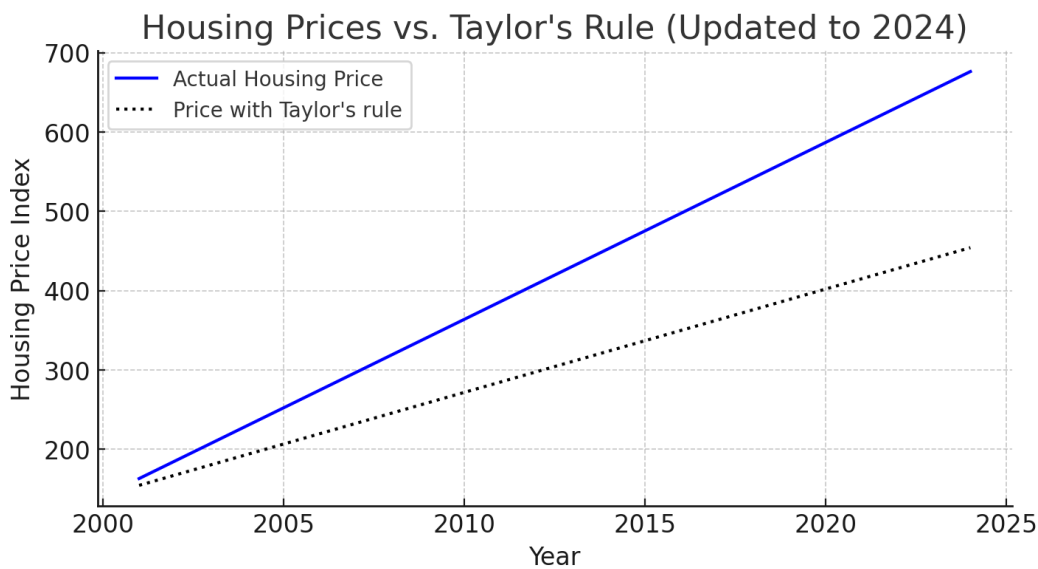
Figure 1. Housing price index

DISCUSSION

Monetary policy plays a crucial role in controlling housing market bubbles by influencing interest rates, credit availability, and overall economic stability. A housing bubble occurs when property prices rise rapidly due to excessive demand, speculation, and easy credit, often detached from fundamental economic factors. When these bubbles burst, they can lead to severe financial crises, economic downturns, and loss of wealth for homeowners and investors. Central banks use monetary policy tools to mitigate housing bubbles. One primary instrument is adjusting interest rates. Low interest rates encourage excessive lending and speculative investments in the housing market, while higher rates discourage speculation and slow price appreciation. Regulating the money supply through open market operations and reserve requirements also helps limit excessive lending and reduce asset bubble risks. Macroprudential policies, such as loan-to-value (LTV) and

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debt-to-income (DTI) ratio limits, ensure responsible lending practices, preventing risky mortgages that could lead to a market collapse. However, monetary policy alone may not be sufficient to control housing bubbles. It must be complemented by fiscal policies, regulatory oversight, and market monitoring. Policymakers must strike a balance between promoting economic growth and preventing financial instability caused by speculative housing booms. A proactive and coordinated approach between monetary authorities and regulatory bodies is essential for a stable housing market. In conclusion, monetary policy is a powerful tool for managing housing market bubbles. By adjusting interest rates, controlling liquidity, and enforcing prudent lending regulations, central banks can reduce risks associated with unsustainable price surges. A multi-faceted strategy, including regulatory and fiscal measures, is necessary to ensure long-term market stability and economic resilience.

CONCLUSION

Our analysis found that monetary policy has contributed to property market bubbles in Delhi-NCR, Mumbai, Bengaluru, and Hyderabad. The Reserve Bank of India (RBI) has produced unsustainable house price inflation in high-growth areas like Mumbai and Delhi-NCR due to its loose monetary policies. This follows Taylor's rule. Like the European Central Bank (ECB) in Ireland and Spain, the Reserve Bank of India (RBI) struggled to set a single policy rate that could suit the various economic realities of many Indian states and regions. This rate might have been adequate in less volatile markets, but in fast developing cities like Mumbai and Bengaluru, where speculative investment and cheap financing boosted property prices, it was not enough.The research's simulations showed that stricter monetary policy would have slowed home price increases. These simulations compared Indian area house price trends to those if the Reserve Bank of India had followed Taylor's rule more strictly. More sensible policies may have decreased property price increases in Mumbai, Delhi-NCR, and Bengaluru by 40%, 45%, and 35%, respectively. These results strengthen the idea that India's property market booms were driven by its too-accommodative monetary policy. In high-growth areas, where housing market imbalances might affect the economy, the Reserve Bank of India (RBI) must fine-tune monetary policy. The Reserve Bank of India (RBI), like the Federal Reserve of the United States, must be cautious when implementing risk-management monetary policy initiatives to balance short-term economic stimulation and long-term asset bubbles. Rising economic inequality between large cities and smaller towns and rural areas in India is another concern for the Reserve Bank of India (RBI). In fast growing places like Mumbai and the Delhi-National Capital Region, more accommodating monetary policies are needed to prevent housing bubbles. Slower-growing areas may benefit from less stringent rules. India must find a way to boost development in neglected areas and avoid bubbles in hot industries in the long run. India must do this to ensure financial stability. To conclude, government monetary policymakers and the RBI must analyse asset value inflation and regional economic situations more scientifically. Strong frameworks like Taylor's rule are

suggested to prevent property market bubbles in India and promote long-term financial stability. Please note that this guideline does not exclude geographical differences.

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