

Research on the Influence of China's Real Estate Prices on the Degree of Inflation Based on TVP-VAR Models

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Introduction

Changes in real estate prices have a significant impact on the economy. In recent years, with the acceleration of China's urbanization process, the real estate market has been heating up, occupying an important part of the country's economy. Changes in real estate prices not only have a direct impact on the lives of residents, but also have a profound impact on the capital market, financial markets and other global issues. Changes in China's economic growth and inflation levels can also have a huge impact on housing prices. When inflation rises, the real estate industry may experience a pattern of bubble expansion in order to alleviate inflationary pressures and the need for asset preservation, thus further exacerbating market risks. Therefore, an in-depth study of this issue can provide a better understanding of the mechanism of the impact of real estate market prices on inflation in China's economic environment, and provide an important reference basis for China's macroeconomic policy making.

Influenced by the global economic environment and pandemics and other factors, China's economic growth has entered a new period, facing a series of new challenges and opportunities, in which the stable operation of the real estate market plays an important role in achieving economic growth and stability. Therefore, analyzing the mechanism of the influence of real estate prices on the degree of inflation plays a very important role in promoting the country's macroeconomic development and the healthy and stable development of the real estate market.

Research Questions

Although there have been some studies on the relationship between real estate prices and inflation, from an empirical point of view, the conclusions obtained from the studies are not consistent, and there are still insufficiencies in the modeling framework and analytical methods. The study of the impact of China's real estate prices on the degree of inflation based on the TVP-VAR model can look at this issue from a new perspective and answer this question more comprehensively and objectively.

Methodologies

- 1) Theoretical analysis and empirical research
- 2) Use Markov Monte Carlo simulation (MCMC) for Bayesian estimation of the parameters and calculate the impulse response shocks between the variables by Bayesian modeling.

Mathematical Formulas

$$Ay_t = F_1y_{t-1} + \dots + F_sy_{t-s} + \mu_t, \quad t = s+1, \dots, n \quad \mu_t \sim N(0, \Sigma) \quad (1)$$

$$y_t = B_1y_{t-1} + \dots + B_sy_{t-s} + A^{-1}\Sigma\varepsilon_t, \quad \varepsilon_t \sim N(0, I_k) \quad (2)$$

$$y_t = X_t\beta + A^{-1}\Sigma\varepsilon_t, \quad \varepsilon_t \sim N(0, I_k) \quad (3)$$

$$y_t = X_t\beta_t + A_t^{-1}\Sigma_t\varepsilon_t, \quad \varepsilon_t \sim N(0, I_k) \quad (4)$$

$$\beta_{s+1} \sim N(\mu_{\beta 0}, \Sigma_{\beta 0}), \alpha_{t+1} \sim N(\mu_{\alpha 0}, \Sigma_{\alpha 0}), h_{t+1} \sim N(\mu_{h 0}, \Sigma_{h 0})$$

Tables

Table 1. Variables and data sources

Variable Name	Abbreviation	Calculation Method	Data Sources
Consumer Price Index	CPI	/	National data
Real Estate Price Volatility Scale	FSTRA	Cumulative growth in real estate investment/Cumulative growth in fixed asset investment volume	National data
Real Estate Price Volatility Efficiency	FSTRB	National Housing Prosperity Index	Oriental Fortune Choice Data
Real Estate Price Volatility Depth	FSTRC	Cumulative value of sales of commercial properties/Land transaction price of real estate industry	National data

Conclusion

1) Demand Management Policies for Speculative Home Purchases

Speculative home purchases are an important factor affecting the degree of real estate prices to inflation in China. Demand management policies should be adopted to target speculative home purchases.

2) Supply Management Policies

It is found that there is significant time-variation in the impact of real estate prices on the degree of inflation in China. Effective supply management policies are therefore one of the most important means of controlling fluctuations in the real estate market.

3) Cost Management Policies

It is necessary to establish effective cost management policies to stabilize the development of the real estate market and maintain macroeconomic stability.

4) Financial Control Policies

It requires financial control policies to maintain the smooth operation of the macro-economy.