

# **Fundamentals and the Volatility of Real Estate Prices in China: A Sequential Modelling Strategy**

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## **Summary**

In a similar way to the stock market, the housing market in China has often been portrayed as highly speculative, giving rise to “bubble” concerns. Over the last decade, residential prices increased every year on average by double digits in Beijing or Shanghai. However many observers and researchers argue that fundamentals of the housing sector, both sector-specific and macroeconomic, may have been the driving force behind housing price volatility.

While existing empirical work exclusively relies on downward-biased official housing prices, this paper uses original high-frequency unit price as well as transaction series for the residential resale housing markets of Beijing and Shanghai between January 2005 and December 2010 to test alternative hypotheses about housing prices volatility. We propose a sequential strategy in five steps integrating several techniques previously developed in a piecemeal and scattered way. First, we construct hedonic prices. Second, in order to search for the possible presence of bubbles, we propose using recently developed tests of an explosive root as an alternative to the unit root hypothesis. The third step is generated by the necessity of handling microstructure noise present at a daily frequency, thus filtering the raw data to extract a random walk component. The fourth step extracts a long run monthly volatility component from the filtered daily hedonic real estate data. Finally, in so far as the presence of bubbles does not seem to characterize the residential housing market in major Chinese cities, such as Beijing and Shanghai, in a fifth step we show that fundamentals are able to explain long-run volatility, as well as transaction volumes in these first-tier cities.