

# Discussant remarks on Chan Lily, Ng Heng Tiong and Rishi Ramchand's paper "A clustering analysis approach to examining Singapore's property market"

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Chan Lily, Ng Heng Tiong and Rishi Ramchand have written a highly policy-relevant paper, which starts with a review of the recent literature on boom-bust cycles in housing, describes the historical evolution of Singapore's property market, and then presents findings on the use of the clustering analysis approach to monitor the state of the market.

## I. The property cycle

I am glad to note that the authors are all with the Monetary Authority of Singapore (MAS), an indication of MAS' close monitoring of the property market. The volume of literature on boom-bust cycles in housing has itself witnessed a boom in the recent decade, with momentum decidedly increasing since the financial crisis of 2008. This recent attention to the property cycle from both policymakers and researchers is certainly in marked contrast to an earlier period not too long ago when housing hardly figured in either central bank research or in macroeconomics textbooks.

The recent boom in Asian real estate prices in particular has been followed up with much interest. Traditional and standard ways to track cycles identify the peaks and troughs, and use these to mark out the upturns and downturns of a series. These approaches require a long-dated time series, which is often not present in the property markets of many emerging countries. For Asian countries, there was only a concerted effort to develop relevant housing market datasets in the post-Asian Financial Crisis period. The lack of readily available data rather than the lack of interest has been a major constraint for researchers studying Asian property cycles.

The question arises as to whether the factors driving the Asian real estate boom are "different this time" from the 1990s boom. We are certainly seeing international spillover effects of a different kind and from a different source. The US Federal Reserve's Quantitative Easings 1 and 2 and its recent forward commitment to zero rates for two years have led to massive capital flows into Asian countries. Asian central banks' attempts to resist currency appreciation have resulted in conditions that have contributed to the Asian housing boom.

Focusing on Singapore, the authors have provided a detailed description of one property cycle from 1996 to 2010. Similar to the situation in many East Asian economies in the post-financial crisis period, housing market price indices are currently at all-time highs, as are population and employment numbers, GDP and GDP per capita figures (both real and nominal), as well as measures of money supply and housing loans. The Singaporean dollar has also tested historic highs vis-à-vis the US dollar, while the Swap Offer Rate, one of the key interest rates to which many housing loans are pegged, entered the negative territory in recent months. Is there a bubble in the housing market? Or has policy intervention been

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effective in preventing the development of a bubble? This paper attempts to provide answers to these important questions.

## II. Policy measures to regulate the property cycle

Countercyclical policies are a major challenge given the extreme openness of Singapore's economy to external trade, capital and labour flows. Section 3 of the paper provides a comprehensive chronology of countercyclical policy measures utilised to "regulate" the Singapore property cycle since 1996. This history is useful in tracing the changes in the Singapore government's policy on property market intervention over the past two decades.

What is unusual about Singapore's overall housing market is the extent to which it has always been subject to policy intervention. With four-fifths of the housing stock built by the government housing agency, the Housing and Development Board (HDB), numerous rules governing the HDB resale or secondary market impact the private housing market. For example, deregulation of HDB and Central Provident Fund rules for resale housing loans in the 1993 period contributed significantly to the housing boom then.

The year 1996 marked the implementation of the first anti-speculative package for private housing. This occurred after much policy debate on the merits of leaving private housing prices to market forces. The period of the Asian Financial Crisis (1997 to 2005) witnessed policy measures that tried to stimulate the housing market. In the more recent housing boom, the hesitation by policymakers to intervene in order to stabilise the housing market that was evident in the pre-1996 period has all but disappeared. Between September 2009 and January 2011, there were in all three rounds of anti-speculation measures to cool the market.

The recent developments represent the "triumph" of market regulators. The market stabilisation measures implemented have not been confined to central bank measures of loan-to-value (LTV) ratios and criteria for housing loans. They have been complemented by fiscal measures which include taxation of capital gains from short-term holding of property, seller stamp duties, as well as other measures in the HDB sector.

Governments and central banks in many East Asian countries have also been proactive in intervening in their property sector. In 2010 alone, the list of countries which carried out such intervention includes China, Hong Kong SAR, India, Korea, Malaysia, and Thailand. Other than conventional interest rates and LTV ratios, lending criteria rules and exposure limits have been used. In some countries, measures specifically target cities and even districts within a city, and specific market segments within the housing market. As housing supply elasticity numbers can vary widely across a country and housing bubbles are often localised geographically, these targeted micro policies on lending are rational and understandable once a macroprudential decision has been taken to intervene.

The question then arises as to why East Asian governments and central banks have been so much more "interventionist" in their housing cycles in comparison with their counterparts elsewhere. There are some who consider interest rates and LTV ratios as too vicious in their effects and therefore overly blunt as instruments for policy intervention. Moreover, directed lending or non-lending may not be possible or acceptable in the institutional and political context of many countries. However, despite the limitations of these instruments, Basel III's solution to introduce a countercyclical capital charge (CCC) appears to be even more blunt in comparison and potentially less effective than the policy tools which Asian central banks and governments have been using. As these issues will be analysed and debated in greater depth by other paper presenters at this workshop, the next section of my discussion will contain comments more specific to the K-means clustering analysis approach used by the authors.

### **III. Clustering analysis approach to monitoring housing cycles**

This is the first paper to use the clustering analysis approach to examine the Singapore housing cycle and represents a valuable contribution to the local literature. The authors have incorporated factors that are known to contribute to property market booms and busts into the analysis in a relatively simple manner. The eight factors (listed in Table 1 of the paper) include:

- external demand and international transmission mechanisms through “foreigner and company share of transactions” and “BOP banking flows”;
- domestic demand and migration across other asset markets through “HDB resale price index” and “STI”;
- speculative activity through “transactions volume” and “subsale share of transactions”; and
- supply side constraints through “vacancy rate” and “tender price index”.

The authors have shown that the approach can be useful as one of the tools to evaluate policy. It provides useful answers to the following important questions. In which state is the property market? What are the main drivers? Is further policy action necessary? Or are measures implemented working? What are the potential policy risks of further intervention?

The approach is particularly useful in a context where there is a relatively short time series and certainly scores well for ease and visual simplicity in the presentation of results. Instead of having to examine eight different variables, there is only the need to track the cluster score which is presented in Chart 3 of the paper. However, information on individual variable contributions to each cluster score is still available for analysis in Table 2 of the paper.

From Table 2 of the paper, it is interesting to note that the HDB price effect is rather small in clusters 1 to 4 when the private housing market is in the doldrums, but that its effect becomes more pronounced in clusters 5 to 8. This can perhaps be explained by the effective cushion for HDB resale flat prices that is provided by prices for new HDB flats – another market stabilisation policy that is often not recognised as such. To illustrate, during the post-Asian Financial Crisis period, the HDB generally maintained its new flat prices despite having to hold a large inventory of unsold flats.

As shown in Chart 3, the cluster scores track the market well and are potentially a useful leading indicator for the Property Price Index. However, as the authors have pointed out, the results are sensitive to the initial allocation of the observations, the number of clusters (states), and new data becoming available. The predictive ability of the technique has also not been ascertained, and more research in this area is warranted.

Although the K-means method has its shortcomings and limitations, it is another useful approach to monitoring the housing market. There is a need for more rather than fewer tools for monitoring and macroprudential surveillance. Multiple approaches are needed, and it would be interesting to compare the authors’ findings with other approaches and forecasting techniques currently used by the MAS.

### **IV. Final comment**

The property cycle is a more challenging cycle to track than the business cycle, since it is much more sensitive to “animal spirits”. The role of expectations is a factor that is currently not considered within the framework of this approach. Other than expectations of market variables such as interest rates and exchange rates, expectations of policy intervention at

various stages of the property cycle could serve to temper irrational exuberance as well as mute the effects of intervention.

To conclude, the authors have written a thought-provoking and valuable paper on monitoring the state of the Singapore property market and the role of policy intervention to stabilise the market. This is an increasingly important policy area – certainly controversial – and I am certain the paper will contribute to informing the debate in Singapore and elsewhere.