

Developments in the Housing Market and Implications on Financial Stability

Developments in the housing market can have an important impact on financial stability. Changes in house prices have both direct and indirect impact on the demand for credit by households and their debt servicing capacity, particularly in situations in which rising house prices has not been accompanied by rigorous lending standards and if it results in excessive debt accumulation by households and housing developers. In the event of sharp downward adjustments in house prices, the impact on the balance sheets of banking institutions could be severe, with significant risks to financial stability.

As with most economies, the housing market in Malaysia is an important component of the domestic economy. For households and businesses, residential properties have also become an attractive form of investment. Over the period from 1Q 2010 to 2Q 2012, house prices in Malaysia, measured by the Malaysian House Price Index (MHPI), registered a strong average increase of 9.1% annually, surpassing the average annual growth of 3.2% in the preceding 10-year period. During the same period, bank financing for property acquisition and development also recorded robust annual growth, expanding at double digit levels since February 2008. Bank lending (including holdings of debt securities) is highly concentrated in the property market, particularly in the residential segment. Aggregate financing by the banking system for property acquisition and development amounted to RM454.3 billion or 41% of total financing as at end-2012, while bank holdings of private debt securities was RM4.6 billion. Of this amount, the banks' exposures to the residential property market in the form of end financing stood at RM303.9 billion or 27.4% of total banking system loans (2011: RM269.2 billion), with another RM19 billion in the form of working capital and bridging loans for construction of properties. The lending market for purchase of residential properties is, however, competitive and relatively well-dispersed across institutions, with the normalised Herfindahl-Hirschman Index valued at 0.08 at the end of 2012.

As a pre-emptive measure, macroprudential policies were introduced by the Bank in late 2010 to mitigate unsustainable developments in the property sector. Importantly, this has also been accompanied by heightened supervisory scrutiny over bank lending practices which are observed to have remained intact with no evidence of a systematic easing of prudent lending standards. The Bank also took early actions to address weaknesses in the pricing practices for home loans observed among some banking institutions.

The Bank's assessment remains that risks to financial stability from price adjustments in the housing market are contained. Impaired financing for the residential property sector by the banking system remained low at 1.9% of total financing for purchase of residential properties (2011: 2.3%). Apart from some positive signs that the macroprudential measures are taking effect and that continued discipline is being observed in bank lending practices, risks to financial stability are also assessed to be modest based on evidence that suggests macroeconomic fundamentals continue to drive house price developments. This article presents an analysis on the factors driving trends in house prices in Malaysia based on findings from a multivariate regression model of the MHPI.

Modelling House Prices in Malaysia

While the increase in house prices has generally been broad-based, the trend has been more pronounced in certain locations such as in Kuala Lumpur, Selangor and Penang (Table 1) and for certain types of properties such as high-rise and detached properties.

To analyse the factors driving trends in Malaysian house prices, a set of independent variables was identified and tested to establish their preliminary significance in the Malaysian context. They are organised into three clusters (macroeconomic factors, financial factors and policy measures) and regressed against the MHPI using the ordinary least squares method. These 13 variables are presented

Table 1

Annual Growth of House Prices in Malaysia

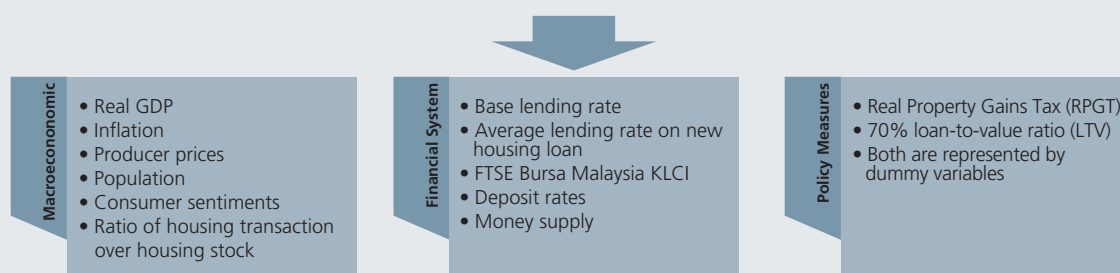
	Average growth rate (%)	
	1Q 2001 - 4Q 2009	1Q 2010 - 2Q 2012
Malaysia	3.2	9.1
Kuala Lumpur	4.0	12.2
Selangor	2.4	11.3
Penang	4.3	8.9
Sarawak	4.1	5.1

Source: National Property Information Centre

in Diagram 1. The selection of these variables was made on the basis of an array of published studies on determinants of house prices in developing as well as developed economies. Two key studies were instructive for this purpose (i) a study by Glindro et al. (2011)¹ of nine Asia-Pacific economies, including Malaysia, from 1993 to 2006 using 13 variables² which found that house prices tend to be more volatile in markets with lower elasticity of housing supply and a friendlier³ business environment; and (ii) a study by Tsatsaronis and Zhu (2004)⁴ across 17 industrialised countries between 1970 and 2003 based on six variables⁵, which found that house prices are driven by economic growth, inflation, term spread between a long-maturity government bond and short-term interest rates, and bank credit⁶.

Diagram 1

Selected Variables for Analysis of Factors Driving Malaysian House Prices



Note: Indicators of housing supply and variables related to bank credit, such as loans outstanding, applications, approvals and disbursements, have been excluded from the regression analysis due to endogeneity bias. In addition, bank credit has been assessed not to be significant in influencing house prices according to a study on the Malaysian housing market by the IMF-World Bank Financial Sector Assessment Program Mission 2012

Source: Bank Negara Malaysia

¹ Glindro, E.T. et al. (2011), 'Determinants of House Prices in Nine Asia-Pacific Economies', International Journal of Central Banking, September, 163-204.

² Quarterly data for nine Asia-Pacific economies. Data include house prices, real gross domestic product (GDP), population, construction index, land supply index, mortgage credit-to-GDP ratios, real mortgage rates, real effective exchange rates, stock price index, business freedom index, financial freedom index, corruption index and property rights index.

³ Refers to a business environment characterised by a high degree of ease to do business, better regulatory conditions, lower corruption, a wider range of intermediation functions by the financial sector, a higher degree of flexibility in acquiring land and better legal protection to land/home owners.

⁴ Tsatsaronis, K. and Zhu, H. (2004), 'What Drives Housing Price Dynamics: Cross-Country Evidence', BIS Quarterly Review, March, 65-78.

⁵ Quarterly data for 17 advanced economies. Data include house prices, real GDP, consumer price inflation, short-term interest rate, term spread and bank credit.

⁶ For further reading on international house prices, see Adams, Z. and Füss, R. (2010), 'Macroeconomic Determinants of International Housing Markets', Journal of Housing Economics, Vol. 19, Issue 1, 38-50.

The period under consideration was from 1Q 2001 to 2Q 2012 and was further divided into two sample periods. The first sample period was from 1Q 2001 to 2Q 2010. The second and slightly longer sample period was from 1Q 2001 to 2Q 2012, to capture the steeper increase in house prices during the period 3Q 2010 to 2Q 2012.

Results of the Model

The results showed that, in general, house prices in Malaysia are driven primarily by macroeconomic factors and to a lesser degree by financial factors, Government regulations and policies (Table 2). In the more recent period, previous values of house prices were also found to be a relevant determinant of house prices (Diagram 2 and Chart 1).

Table 2

Modelling House Prices in Malaysia

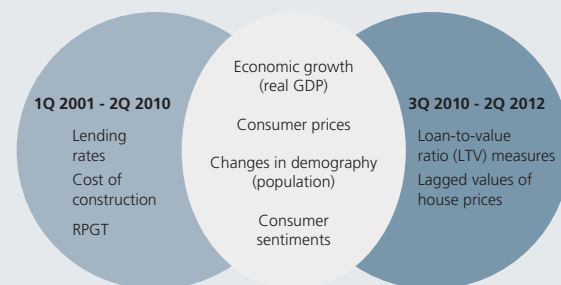
Dependent variable = Malaysian House Price Index		
	Model 1	Model 2
Constant	2.41***	5.48***
Real GDP(-2)	-	0.28***
Real GDP(-4)	0.49***	-
Consumer Sentiment	0.06***	0.04***
Consumer Sentiment (-1)	0.09***	0.03*
Consumer Sentiment (-2)	0.06***	0.02***
Consumer Sentiment (-4)	0.03***	-
Population (-4)	7.14***	7.75**
RPGT	-0.48*	-
Base Lending Rate (-1)	-2.87***	-
Inflation	0.88***	0.36**
Inflation (-2)	0.31**	-
Cost of Material for Construction (-3)	-0.34***	-
LTV	-	-4.24***
MHPI (-5)	-	0.33**
Adjusted R-squared	0.90	0.88

Note: OLS estimation, ***, ** and * indicate significance at the 1, 5 and 10 percent levels

Source: Bank Negara Malaysia

Diagram 2

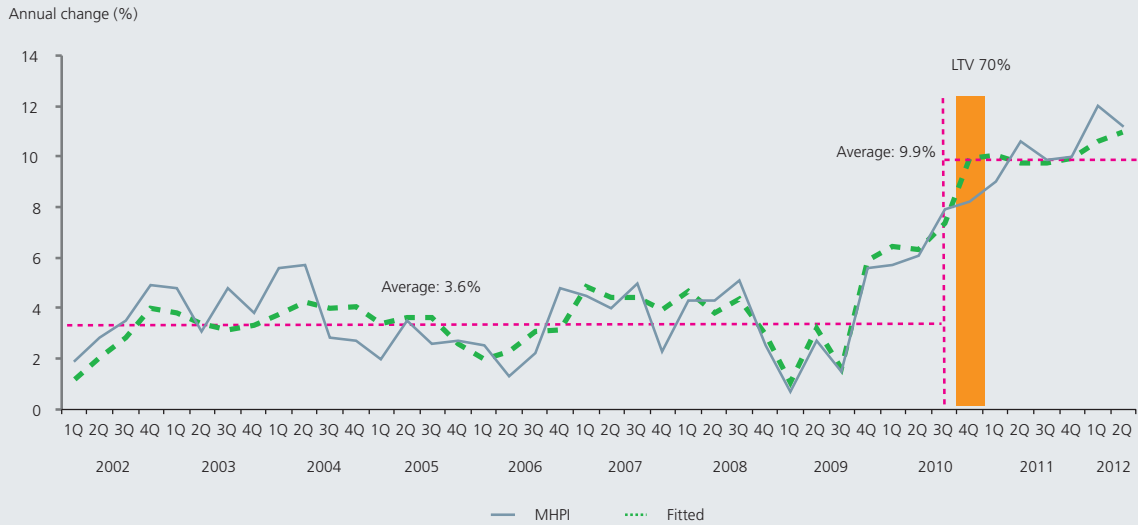
Factors Affecting Increase in House Prices



Source: Bank Negara Malaysia

Chart 1

MHPI and Fitted Values (1Q 2002-2Q 2012)



Source: National Property Information Centre and internal computation

1Q 2001 to 2Q 2010

During this period, house prices in Malaysia rose by an average annual rate of 3.4%. The increase in house prices was driven primarily by the following factors:

(i) Economic growth (real gross domestic product)

During the period of steady economic growth and stable lending rates from 2002 to 2008, house prices increased modestly at an average annual rate of 3.6% before moderating to a rate of 0.7% in 1Q 2009 when the domestic economy experienced a contraction following the global recession. This suggests a positive impact of rising household incomes on house prices. With economic growth, household incomes increase along with the means to own houses. This, in turn, induces demand for housing, consequently raising prices.

(ii) Demographic changes

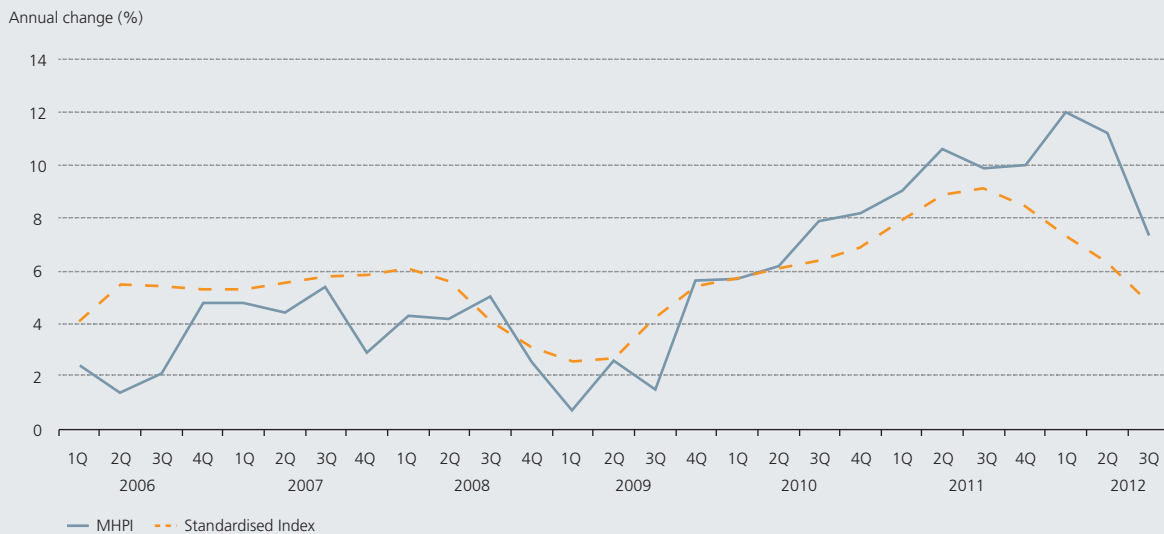
Based on the highest coefficient result, changes in demographic structures are the main determinant of house prices. As an increasing number of younger Malaysians enter the job market, more are likely to begin acquiring their first property at an early age, adding to existing demand. According to the 2010 Census by the Department of Statistics Malaysia, the working age population (15 to 64 years old) increased to 67.3% in 2010 from 62.8% in 2000. In addition, rapid urbanisation in major states and employment centres has also contributed to higher demand for housing in urban areas.

(iii) Consumer price inflation

Consumer price inflation has a positive impact on house prices. Inflation can directly impact house prices through two channels. The first is via higher input cost - as prices for construction materials, land prices and labour wages increase, newer houses become more expensive than older ones. The second relates to rental yields - increases in consumer prices and related inflation expectations are typically factored into higher rents, which in turn translate into higher house prices. Inflation also has an indirect impact by increasing the attractiveness of houses as a hedge against inflation. This has been exacerbated by the search for higher yield, given lower or more volatile returns on other forms of investments, such as deposits and equities.

(iv) Producer Price Index

The cost of construction has an effect on house prices. To ascertain this relationship, a standardised index that aggregates prices of essential construction materials, such as roofing, cement, glass and timber, was also developed in order to deal with the underlying volatility in the prices of these materials. This index was then used as a leading indicator for house prices in Malaysia. This analysis which covered the period 1Q 2005 to 3Q 2012 found that the rise in house prices has been preceded by an increase in the index level (Chart 2).

Chart 2**Standardised Index of Construction Materials for Housing Market**

Source: National Property Information Centre and internal computation

(v) Lending rate

Consistent with expectations, lending rates have an inverse effect on house prices. In general, higher lending rates would make it more costly for consumers to acquire new housing loans, leading to lower demand for houses. Given the inelastic supply of houses in the short run, which constrains the ability to adjust to changes in demand, house prices would be driven lower.

(vi) Real Property Gains Tax (RPGT) and consumer sentiment

The implementation of RPGT had the intended inverse effect on house prices. By compressing net returns on property investments, RPGT serves to counter-balance rising consumer sentiments. This reins in over-exuberance among property investors and has a dampening effect on over-investment and speculative activities in the housing market.

These results are consistent with the rational behaviour of economic agents in the property market. Developments in house prices are therefore largely explained during this period by the expected actions of house buyers and property developers in response to economic factors and policy measures. This contributed to prices that closely resemble the 'fair' or 'equilibrium' value of property in the housing market⁷.

⁷ The 'fair' or 'equilibrium' price for a house should be equal to the discounted value of future services that one would derive from the property. In the short run, however, house prices could deviate from the 'fair' or 'equilibrium' values due to shocks or some unique features of the property.

3Q 2010 to 2Q 2012

During this sample period, house prices increased at a higher rate, averaging 9.9% annually. Similar to the previous sample period, real economic activity, consumer sentiments, demographic changes and consumer price inflation continued to influence the evolution of house prices. In addition, the following variables were also found to be significant:

(i) **Macroprudential measures**

In late 2010, the imposition of a loan-to-value (LTV) ratio of 70% on individuals with more than two housing loans had a dampening effect on the increase in house prices and also contained short-term expectations and speculative activity. The annual growth in lending to individuals with three or more housing loans declined sharply, from 14.5% in November 2010 to 1.9% in December 2012 (Chart 3).

Chart 3

Number of Borrowers with Multiple Housing Loan Accounts



(ii) **Lagged value of house prices**

Previous house prices had a positive impact on current house prices. This contrasts with the period preceding 3Q 2010 when the variable was found to be statistically insignificant. This could be explained by the large increases in house prices over a short period of time which may have impacted the way economic agents respond to new information in the pricing of properties. Theoretically, in a situation where new information on economic and financial activity is lagging or costly to acquire within a very short time, some economic agents may form extrapolative expectations⁸. By 2Q 2012, house prices had increased by 33% from the observed lows in 1Q 2009. This could have encouraged economic agents to believe that house prices will continue to rise, leading some of them to engage in over-investments and speculative activities in order to reap the higher expected return on investments. The resultant additional demand particularly in an environment of an intensified search for higher yield, in turn, feeds into higher prices of houses.

⁸ For a discussion on this concept, see Brunnermeier, M.K. and Oehmke, M. (2012), 'Bubbles, Financial Crises and Systemic Risk', National Bureau of Economic Research, NBER Working Paper Series, No. 18398.

Conclusion

The analysis shows that the increase in house prices over the period 2001 to 2012 has been largely driven by macroeconomic factors, and to a lesser degree financial variables, Government regulations and policies, and previous values of house prices. Economic growth, changes in demography and inflation are the main drivers of house prices as observed throughout the period of the study. In the more recent period, house price developments have shown some divergence from the explanatory variables observed in earlier periods, indicating the possibility of early signs of the build up of risks from over-investments and speculation in certain preferred locations. The role of lagged house prices, though having a smaller effect relative to other factors in driving the recent steeper increase in house prices, will require continued close monitoring and where appropriate, targeted actions to address any market distortions and ensure the continued affordability of housing.

It is important to note that the recent steeper increase in house prices in Malaysia has not been influenced by changes in banks' credit policies. This was the conclusion of the IMF in a separate assessment of price developments in the Malaysian housing market in 2012, which showed that the increase in the rate of loans for the acquisition of residential property has remained stable relative to current and future expectations of borrowers' income, and general conditions in the credit market. This further supports the Bank's assessment that risks to financial stability from house price developments remain modest. While the growth momentum in lending for purchase of residential properties was sustained after 2010, the implementation of the LTV ratio by the Bank had the intended effect of moderating bank lending associated with purchases of residential property for investment and speculative purposes, while preserving access to financing for genuine home purchasers. Together with recent measures by the Government to raise the RPGT (with effect from 1 January 2013), increase housing supply and improve public transportation, these measures should continue to support a more sustainable trend in house prices going forward.