State Of The Current Property Market In Relation To The Property Bubble Phenomenon In Johor.

Investigate Whether The Property Bubble Phenomenon Is Prevalent In The Current Property Market In Johor.

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Abstract— **For the past fifteen years, housing property in Malaysia has underwent tremendous price increment. However, once the housing price deviates too much from its fundamental value, it may give rise to problems and even generates subprime crisis. This paper discusses the possible existence of property bubble in Johor and what is the state of the current property market in relation to the property bubble phenomenon in Johor. The property bubble is investigated based on different districts by incorporating the examination of macro-economic indicators with micro-measures, using a comprehensive set of indicators to test the bubbles. The analysis applies to residential property, that is single-storey terrace type and double-storey type. The study is done on three districts in Johor using the Rational Expectional Model and Fama-French Three Factor Model. Generally, the study focuses on the existence of housing bubble that stemmed directly from the housing price and the expected housing price in the study area. In conclusion, the findings of this study strongly suggest that the existence of housing bubbles in the Johor residential property market is getting stronger.**

Keywords—Housing bubble, subprime crisis, residential property, housing price.

I. Introduction

For the past fifteen years, housing property in Malaysia has underwent tremendous price increment. With our country's current strong economics and demographics display, soaring of the price of residential property is inherent (ZA Hashim 2010). Currently, Malaysia's population is encroaching at around 28.4 million people in year 2010 compared to 23.4 million people in the year 2000 (World Bank 2012). As our country's population is expanding exponentially, the same exponential demand on housing sector is expectable.

The price of a property is assessed based on the factors that influence the value of a property. Location is one of the strongest factors associated with the value of a property. Location and housing are the two factors having a strong element of exclusivity in which one of these elements will affect the one other element (Nur Faizal Abdullah, 2005).

Along with Malaysia's robust economic growth, house price will continue to soar to a new height and could possibly make it unaffordable in the near future. According to Property Sentiment Survey which was completed in the year 2011, two-thirds of respondents feel properties in Malaysia are too expensive (Steve Melhuish, 2011). Residential property has an imminent role and direct linkage to a country's economic capability and capable to stimulate a more vibrant and vigorous economy. Due to close connections between housing property and economy, a protracted high house price could cause economy meltdown and perhaps a regional financial instability (Abraham and Hendershott, 1996).

II. Problem Statement

For the past few years, residential property prices recorded few staggering price increment especially in Kuala Lumpur, Selangor and Johor. It has been recorded that in the year 2011 alone, property prices have increased for about 30% (Utusan Malaysia 2011).

This scenario will cause the volume and price of housing to increase. According to the Property Market Report 2011, the volume and value of residential overhang has moved up. The volume and value of residential overhang increased marginally by 2.4% (2010: 23,133 units; 2009: 22,592 units) and 14.5% (2010: RM 4.21 billion; 2009: RM 3.68 billion) respectively against 2009.

Although the price of house is higher, people still buy and invest in the properties. Therefore, the demand for property will increase. Demand for residential is a reflection of the strength of the economy. However, a note of caution is that projections of strong demand usually lead to overbuilding, and eventually an oversupply situation.

Thus, if the housing price keeps going up, it may cause people not being able to afford to buy or invest in property. Therefore, it creates the property bubble phenomenon. Property bubble is a type of economic bubble that occurs periodically in local or global real estate markets. It is characterized by rapid increases in the valuations of real property such as housing until they reach unsustainable levels relative to incomes and other economic indicators, following by decreases that can result in many owners holding negative equity (Canadian Mortgage Inc, 2009).

According to CIMB Research Head Terence Wong, talk of a property bubble in Malaysia is overstated as the sharp rise in residential property prices over the past few years is confined to selected areas (The Sun Daily, 5th MARCH 2012). This report is also supported by Low Yee Huap, Head of Research, Hong Leong Investment Bank, who stated that low interest–rate environment and accumulation of liquidity has encouraged buying of property which might cause a potential bubble (The Star, 15th MAY 2012). This scenario will lead to the subprime crisis in property market.

III. Research Objective

The objective of this study is to assess the existence of housing market's bubble in selected Johor districts during the period 2002 to 2011, using macro- economic indicators together with the Three Fama- French Three Factors model.

IV. Materials And Method

Data was obtained from the Valuation and Property Services Department (JPPH), Bank Negara and Department of Statistics from the year 2002 to 2011. This study used two samples which are Malaysia Housing Selling Price and the Rental Price for Single-Storey Terrace House Type and Double-Storey Terrace House Type. Three selected districts were Johor Bahru District, Batu Pahat District, and Segamat District. The main focus is to identify whether there is any existing housing bubble at selected districts because of the high demand for residential property.

The relationship among the variables could be represented as stated by the rational expectation theory, or also known as the Fama- French Three Factors model, by the following function:

$$B_t = P_t - [P_{t-1}(1-r) - D_{t-1}] \tag{1}$$

Where:

B_t = Housing Bubble
P_t = Intrinsic Housing Price
P_{t-1} = Previous Housing Price
r = Lending Rate
D_t = Rent Paid to the Property Owner

Rearranging the current price of a housing unit can be expressed as the present value of the expected price and expected rent of the next period.

$$P_t = \lambda E(D_{t-1}) + \lambda E(P_{t-1}) \tag{2}$$

where "λ" is the discount factor is substituted by $1/(1+r)$; $E(R_t)$ is substituted by "r" where ''r'' means

risk adjusted with the constant rate of ($0 < r < 1$). This is followed by substitute P_t into the (2) then (3) can be replaced with:

$$P_t = \lambda E[D_{t+1} + \lambda E(D_{t+2} + P_{t+2})] \tag{3}$$

(3) can be solved by recursively substituting the expression for $P_t + i$ into the original equation with an infinite number of time (i). The solution is given in (4):

$$P_t = \sum_{i=1}^{\infty} \lambda^i E(D_{t+1+i}) + \lim_{i \to \infty} E\lambda^i (P_{t+1+i}) \tag{4}$$

Then, if it is assumed that the expected price infinitely far in the future is equal to zero, the actual P_t will equal to the fundamental price (P_t), which can be defined as:

$$P_t^* = \sum_{i=1}^{\infty} \lambda^i E(D_{t+1+i}) \tag{5}$$

If the actual price is not in line with P_t, a deviation from the fundamental price will occur. In this case, it is possible to investigate the magnitude of the deviation, i.e. a bubble. Following Flood and Hodrick (1990) and Chan et al. (2001), the bubble is defined as:

$$B_t = \lim_{i \to \infty} E\lambda^i (P_{t+1+i}) + \varepsilon_t \tag{6}$$

Where B_t, referred to as a rational bubble in most literature, represents the deviation of the actual price from its fundamental value P_t, which can also be regarded as the rational expectation price without a bubble. "t" denotes the error term.

$$B_t = P_t - P_t^* \tag{7}$$

Considering the lack of a long time series data about the return of a property, it appears inappropriate to employ directly to compute the rational expectation prices. Following Wheaton (1999) this study replaces with the following formula to compute the rational expectation price of housing.

$$P_t^* = P_{t-1}(1-r) - D_{t-1} \tag{8}$$

Where P_t, means the housing price with perfect foresight, i.e. rational housing price, r is the equilibrium return to capital,

i.e. discount rate. Then it can be translated into the following form:

$$B_t = P_t - [P_{t-1}(1 - r) - D_{t-1}] \qquad (9)$$

Clearly, the deviation of market prices from the rational expectation price could shed light on the existence of a bubble. The larger the deviation, the more likely it is that there exists a bubble.

In conclusion, the researcher chose this model in order to complete this research. This is the only model which was adapted by another researcher (Fairuz Nabilla, 2011) in her researcher. Due to the proof that this model can be applied in Malaysia, so the researcher chose this model compared with others.

v. Results

The data being calculated and regressed using the SPSS software to fulfill the objectives of this study, to assess the scenario of housing bubble in Johor by (districts) in the year 2002 to 2011. Using the Theory of Rational Expectation and Fama- French Three Factor econometric model, the existing of the bubble in the residential property market were calculated using the current housing price, rental price and lending rate to find the expectation of residential price for both types.

A. Speculative Activities of Unit Selling, Price Selling and Rental Price By Types and Districts in Johor.

Based on Rational Expectation Model and the Fama- French Three Factors model, this study found that speculation activities and bubbles do exist in the property market in each selected district in Johor for both type of residential properties. From all districts for Single-storey Type houses, the District of Johor Bahru shows the most active of bubble activities compared to other districts, which will lead for future speculation activities. As a conclusion for Single-storey Type houses, the trend in intrinsic price and market price show that they are parallel in most districts buying for their own shelter and not for the speculation purposes. But in the District of Johor Bahru the bubble does exist (Appendix 1, Figure 1a to Figure 1c).

In Appendix 2, Figure 2a to Figure 2c show the bubble and speculative activities of Double-storey Type houses. Based on all districts in Double-storey Type houses, the District of Johor Bahru has still the most active bubble compared to other districts. However, in the year 2002 to 2007 the trend of bubble in the District of Johor Bahru is flat but in the year 2008 onward, the trend is increasing. This may due to the speedy development of the districts and more Double-storey Type units have been built. Therefore, when the district has

developed the more speculation activities exist. (Refer to Appendix 2).

From the regression perspective, the bubble events are represented as follow:

$$\mathbf{PRICEt} = \ \boldsymbol{\beta 0} + \ \boldsymbol{\beta 1} \ [\mathbf{Pe}]\mathbf{t} + \ \boldsymbol{\varepsilon t} \qquad (10)$$

Where, PRICEt : Price of single-storey terrace house in the period of t, Pet   : The expected price of single-storey terrace house in period t, εt is a stochastic error term.

From the data collected and calculated, the bubble event for Single-storey Type and Double-storey Type are stated as follow:

(a) For Single-storey Type
PRICEt = 10024.359 + 0.999 [Pe] + εt
(8006.487) (0.067)

[R- squared: 0.887; Adjusted R-squared: 0.883; F- statistics: 219.222; Durbin-Watson stat: 2.689]

From the multiple regression model, the result shows that there is a positive relationship between housing price for single- storey terrace houses and the expected price. It indicates that when the prices increase by RM1.00, the expected price of single-storey terrace houses will also increase by RM 1.001.

(b) For Double-storey Type
PRICEt = 11641.449 + 1.014 [Pe] + εt
(10342.636) (0.063)

[R- squared: 0.901; Adjusted R-squared: 0.898; F- statistics: 255.913; Durbin-Watson stat: 1.692]

From the multiple regression model, the result shows that there is a positive relationship between housing price for double- storey terrace houses and the expected price. It indicates that when the prices increase by RM1.00, the expected price of double-storey terrace houses will also increase by RM 0.986.

As a conclusion, both types of housing has a positive relationship with the housing expected price.

B. Reason Behind the Existing Scenarios in Johor Residential Property:
*   Strong Demand

    Strong underlying demand from first- second home owners and upgrades continued to support property sales, even at new benchmark prices. From Property

Market Report (2012), for the double- storey terraced houses located in new housing schemes, such as Sutera Utama, Setia Tropika, Horizon Hills and East Ledang, recorded the property transactions in the range of RM190 psf to RM230 psf in average.

- Greater Johor's Development

Few mega projects in the state are going to be build and complete in the Iskandar Development zoning as well. Recently completed, ongoing and soon-to-be-launched project include The Johor State New Administrative Center (JSNAC), The Legoland Theme Park, Nusajaya "Puteri Harbour" Waterfront Precint, Family Indoor Theme Park, Danga Bay Intergrated Waterfront City and Medini North Lifestyle Mall and so on. (Kenang Research, 2012)

- House as an Investment for Future

A long- term investment strategy suggested that over half of all landlords are wisely choosing to view their buy to rent investment for the long-term future. In fact, the average landlord plans to hold onto their property for about 15 years, making money out of it as the time ticks by. Others view residential property as a guaranteed future home. (Margerate, 2006)

VI. Conclusion

The objective of this research is to investigate whether the property bubble phenomenon is prevalent in the current property market in Johor. The researcher had managed to obtain readings from the Property Market Reports from year 2002 to year 2011. From these readings, the researcher was able to calculate and analyze the results using the FAMA Model and then find out the deviation of the market prices from the rational expectation price that could shed light on the existence of a bubble. The larger the deviation, the more likely it is that there exists a bubble.

In conclusion, the researcher chose this model in order to complete this research. This is the only model that has been adapted by another researcher (Fairuz Nabilla, 2011) in her research. Due to the proof that this model can be applied in Malaysia, the researcher chose this model compared to others. Therefore, the trend of the property bubble phenomenon were also identified and charted.

The summary from the research findings of the second objective identified that there are the bubbles existing in the property market in Johor. This research focuses on bubbles which affect price and the expected price of housing in the districts of Johor Bahru, Batu Pahat and Segamat. Bubbles do exist in the property market and have positive significant relationship with intrinsic price and market price. This research used the expected price of single-storey and double storey terrace houses as the variables. To know the existence of bubbles in Johor, this study used the Rational Expectation Theory and multiple regression for a period of 10 years, from 2002 until 2011 and run using the SPSS software. The result is expected price has positive relationship with the housing price.

After having analysed the variable using the theory, the result shows the existence of housing bubble in each district covered in the research. The result shows that the expected price has a positive relationship with the market price, main factor for increasing sales and rental price the property market.

Besides, from the analysis, the coefficient of determination (R^2) indicates 88.70 per cent of total variations in the housing price of single-storey houses in Johor can be explained by the independent variables which is the expected price for single-storey terrace house. Meanwhile, the coefficient of determination (R^2) indicates 90.10 per cent of the total variation in the housing price of double-storey in Johor. In summary, the results of coefficient of determination (R^2) have the higher explanatory variable.

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