CHAPTER 1: INTRODUCTION

1.1 Introduction

Residential property prices have increased steadily in tandem with economic development and the rise in income levels. Recently, specific locations, particularly in and around urban centres, have experienced faster growth, both in the number of transactions and in house prices. The development in growth was supported by an increase in financing provided for multiple unit purchases by a single borrower, suggesting increasing investment activity that is of a speculative nature leading to a possible bubble economy (The Star, Sept. 8, 2011). However, BNM remains supportive of the objective of encouraging home ownership among Malaysians which continues to be an important national agenda.

The interest in asset pricing or valuation of a residential property is different from other assets. A residential property may be acquired as a basic human need for shelter as home ownership or as investment to generate income in the form of rental and as a hedge against inflation for capital appreciation since it is recognized to appreciate over time (Henderson and Ioannides, 1987; Lee, 2009; Kranz and Hon, 2006). Land in which properties are built on is a scarce asset and unlike other form of assets it is difficult to reproduce although efforts are being made on land reclamation such as in Singapore. Land is also subject to competitive demands in its use for development into residential, commercial,

industrial, agriculture, mining, forestry or even just to be preserved as a natural reserve of green lung for the environment.

As in any asset pricing, there is the primary and secondary markets. The financial market is well established in Malaysia with fluidity supported from the money market and the stock exchange whereby the pricing of the securities are openly established daily with transparent pricing according to demand and supply based on information on hand or perception by respective parties. On the other hand, the pricing for property is not readily available due to its infrequent turnover and neither is there a daily index to provide the transaction volume nor price movement. The property sector is a very important component of the Malaysian economy. It provides broad employment because of its effects in the construction sector. An accurate assessment of a house value is important to its owner, prospective buyers, investors, housing developers, financial institutions who provide housing loans and the government in its tax collections.

Primary pricings of properties are usually based on a developer's internal pricing mechanism or structure. The secondary market pricings of properties then rely on the local estate agents and/or a real estate valuer. The reliance of local estate agents for valuation poses some problems. First and foremost, is the conflict of duty as his role to the principal owner who is offering his property for sale and paying his commission, and to the buyer who is looking for a good deal. The agent will be interested to convince the owner to list his property with him and tend to paint a rosy picture by inflating the value. Once he is appointed as

the agent, he may be interested in closing a sale as soon as possible to avoid losing his commission to competitors and hence may present a lower price than holding out for better offers. At the same time, he may withhold information to the buyer in order to close the deal.

Secondly, real estate agents use a popular crude method to ascertain a property's value by the use of capitalisation of yields on property (Norhaya et al., 2008). Basically, this capitalises the amount of rental collectable in a year by the number of times it is judged to payback the capital and the expected capital appreciation from it. Gross rent may not be accurate to assess the factors that make a property valuable. Thirdly, another quick and common method is the use of their database to select a range of prices for a comparable piece of property. However, since no two properties are alike and the accuracy is subject to their database having transactions reflecting up-to-date market values this is again at best a rough rule of thumb. As an investment asset, the performance of rental income against the outlay to generate yields or returns is important. Hence, finance takes an important view to analyse the property market. Further development in Malaysia has now progressed to the establishment of REIT (Real Estate Investment Trust) whereby the investment trust acquires properties (currently focused on commercial real estates) to generate income and management fees. These companies generally use capitalisation rates through prices and rental movements. According to Ball et al. (1998), there are two main ways in which capitalisation factors are determined through the valuation rules and economic evaluation. The valuation rules rely on the professional valuation,

which is discussed further below, to determine the property market. As these companies are able to hire professional management team, like accountants, they conduct economic evaluation based on expected annual rental income flow less outgoing expenses including depreciation and usually apply the theory of payback period or positive net present value techniques. Hence, for the layman, the capitalisation of rental yields may be simple enough for him to understand and accept the pricing of a residential property.

A typical professional valuer will inspect the site of location, the physical condition of the property taking note of its features and carry out a search with the land and property department of the last transaction done in the nearest vicinity for a comparable piece of property to gauge the fair value. Based on these factors the professional valuer will carry out his adjustments to recommend the subject property in the price range of low, median and high. His adjustment formula is a trade secret and unique only to his firm as the best and most accurate to reflect the subject property's worth. While using a professional valuer's service will produce an unbiased best estimate for a buyer or seller or to support a housing loan application, it does cost a hefty fee, especially if the intention is just a preliminary survey for the next step of decision. According to the Board of Valuers, Appraisers and Estate Agents Malaysia Seventh Schedule Rule 48, there is a scale fees payable ranging from RM1,500 to 1/25% on the residue over RM500 million (Source: The Board of Valuers, Appraisers and Estate Agents Malaysia, http://www.lppeh.gov.my/fees.html). Hwang and Quigley

(2010, pp. 4) also have the same comment, "… housing purchases require costly search to uncover the prices and attributes of commodities."

Another possible source to ascertain a property value is to use the House Price Indicator compiled by JPPH (Jabatan Penilaian dan Perkhidmatan Harta) or Valuation and Property Services Department, Ministry of Finance. Prior to the year 2001 The Department compiles the House Price Indicator (HPI) on yearly basis but has since updated its methodology to quarterly basis to reflect the increasing development of this sector. Its report is also very informative since it gives breakdown of the types of housing as terraced, semi-detached, detached and high rise unit. It also indicates the breakdown into the important states of Kuala Lumpur, Selangor Johore, Penang, Negeri Sembilan and Perak. While this indicator is useful to know the general trend of the housing market it has limited application on the individual level. For one thing, the indicator is published with time-lag despite the improvement of quarterly report as all information must be gathered and it is time consuming. As indicated above, despite the breakdown into different types and locations to provide a closer index, it is nevertheless, still at a generalised level.

1.2 Problem statement

Housing prices are affected by micro factors of location and house characteristics; and macroeconomics variables in the country.

Many researches have been conducted using hedonic regression with micro variables to determine the spatial and temporal attributes differences influencing residential house prices (Gourieroux and Laferrere (2009); Hill. and Melser (2008); Kestens, Theriault and Rosiers (2006); Case et al. (2004); Bourassa, Hoeshi and Peng (2002); Englund, Quigley and Redfearn (1999). However, housing attributes in Europe, United States of America, Australia and New Zealand are very different from Malaysia. The differences arise from climatic with heating versus air-conditioning system, insulation requirement, use of more timber versus bricks, use of bath tub versus shower system, age of buildings, garage availability and neighbour attributes. As time progress, macro variables were added into the model. While these studies contribute to our knowledge of hedonic pricing, this paper aims to construct an applicable model for Malaysia.

From the study of Norhaya et al. (2008), they reviewed the modelling of the property market of the Malaysian experience and identified many large research gaps that need to be filled to understand about the property market behaviour. They noted that many researches on the property market models address single market at the micro level and quoted the well known works of Azhari (1991); Azhari and Ghazali (1994); Dzurlkarnain et al. (1996). At the same time, some researches focused on the macro level Aminah (2002); Wan Zahari and Nasir (2002). This paper differs from other researches done in Malaysia. Instead of selecting single market (Chau and Chin, 2002) in Penang; Chin (2002) on valuation of condominiums in Penang; Dzurlkarnain, Thiruselvam and Ibrahim

(1996) in Johore Bahru; Azhari and Ghazali (1994) focusing in Johor Bahru, it incorporates a wide region from north to south and extend eastward to Sabah.

In this study, the micro factors selected are similar in structure but different in form with other researches using hedonic model who focused on number of rooms, number of bathrooms, the age of the building, the floor level in an apartment or condominium, location view, the proximity to public transport systems, surrounding schools and public amenities (Pashardes and Savva, 2009; Gourieroux and Laferrere 2009; Hill and Mesler 2008; Filho and Bin 2005; Chin 2002) and will be explained in the methodology section.

Different researches have used a combination of per capital GDP, interest rate on mortgages, inflation rate, population size and unemployment rate as economics data in their work to explain the housing price dynamics (Pashardes and Savva, 2009; Glindro et al., 2008; Aminah, 2002; Wan Zahari and Nasir, 2002). Likewise, the selection of key economics data in this research will be further explained in the methodology section too.

The hedonic housing price model was popularised by Rosen (1974, pp 35-55), entitled "Hedonic prices and implicit markets: Product differentiation in pure competition." In the article, Rosen highlighted,

… observed product prices and the specific amounts of characteristics associated with each good define a set of implicit or "hedonic" prices. A theory of hedonic prices is formulated as a problem in the economics … in which the

entire set of implicit prices guides both consumer and producer locational decisions in characteristics space.

Since then the hedonic housing price model has been widely used in the world (Gourieroux and Laferrere 2009: Dorsey et al., 2010, Hill and Melser 2008). The multiple regression analysis was adopted in Malaysia (Azhari 1987; Fadilah and Fauzi, 1991). According to the comment of Norhaya et al. (2008), the hedonic housing price model is limited to the Malaysian academic discussion and not popularly practiced. The Valuation and Property Services Department (VSPD) Malaysia publishes property transaction information into region, types, district, stock supplies and selected samples of transacted prices and compiles it into the Malaysian House Price Index (HPI). The aim of the HPI is to establish a national price index to monitor the movement of house prices in Malaysia. It is used by the government to formulate national economic policy with respect to housing and property development.

1.3 Research questions/objectives

Using hedonic house pricing with multiple regression will be better than the real estate agent's of capitalisation of rental yields since it is more scientific and mathematical in its formulation. This model is expandable to include many localities by regions and not necessarily limited to have the nearest and latest transaction to base its value. In fact, from literature review of housing economics journals this approach seems to be in favour of the professional valuers' method with their in-house secret formula, minus the costs of their fees. As we know,

multiple regression analysis model allows us to predict the dependent value (house price) by adjusting the independent variables; therefore, it can be used anytime without having to wait for compilation from the JPPH. By incorporating more relevant factors into the model, the hedonic house pricing model is more accurate to the real market price than a generalised model. By combining micro level analysis in different states of Malaysia and macro economics, this cross-market analysis will be beneficial to fund managers and developers as they are able to distinguish between performing and non-performing markets.

The objectives of this research are to identify the micro and macro variables that have a significant relationship to residential house prices and index. With this, it aims to promote knowledge in the understanding of housing valuation as affected by micro locations and type characteristics as well as the macro environment. It aims to overcome the current crude methods of housing price valuations employed by the real estate agents, the costly fees of professional valuers and the time-lag of MHPI. Once, the foundation of the multiple regression analysis model is completed it can be used anytime to estimate a house price within the selected locality.

Some of the research questions that arise are;

1.3.1. To investigate the relationships between housing prices and the micro factors.

1.3.1.1 Are there significant relationships between housing prices, supplies in the market and types of residential houses?

1.3.2 To investigate the relationships between the HPI and the macro economic variables.

1.3.2.1 Are there significant relationships between HPI and GDP, KLIC, CPI, BLR, and FDI?

1.4 Purpose of the study

With the national trend of citizens and foreigners acquiring houses and government's encouragement of home ownership it is foreseeable that there will be great interests in residential property valuations. The purpose of this quantitative study is identify micro and macro variables affecting house prices in a scientific method that has been well researched in advanced countries and applicable in Malaysia.

1.5 Significance of the study

This paper is relevant to provide knowledge and promote interest in this subject topic of housing price estimation. It should be helpful to house buyers and investors who are interested to have a preliminary calculation of the housing price in the location where they are interested to acquire the property rather than base on wild guess or depending on uninformed third party valuations; to the estate agents in providing their prospective customers with a scientific calculation

of housing price in their locality; and investment fund managers and housing developers to differentiate performing and non-performing locations. Hwang and Quigley (2010, 3-23), found that, "… investor with better knowledge of price diffusion over time and space outperforms the uninformed investor…"

This paper will help academicians to expand their knowledge and spur further interest in this field.

1.6 Scope of the study

The scope of this research will focus on micro variables which will make up the house characteristics that impact house prices. The macro variables will be used to determine its impact at the national level of price index.

This study is by using the hedonic house pricing with multiple regression analysis and "hedonic prices are defined as the implicit prices of attributes and are revealed to economic agents from observed prices of differentiated products and the specific amounts of characteristics associated with them. They constitute the empirical magnitudes explained by the model. Econometrically, implicit prices are estimated by the first-step regression analysis (product price regressed on characteristics) in the construction of hedonic price indexes" as defined and explained by Rosen (1974)

This research implies that the micro variables are producing a significant relationship to the dependent variable of price and the macro variables are producing a significant relationship to the dependant variable of price index. As a

result, the multiple regression will hence produce a linear function. More advanced researches have used technology to extract geostatistics to create spatial hedonic pricing model (Dorsey, Hu, Mayer and Wang, 2010; Yoo and Kyriakidis, 2009) or heterogeneity in hedonic modelling (Xu, 2008; Kestens, Theriault and Rosiers, 2006). However, according to Norhaya et al. (2008, pp. 1-12), "The problem with the local market is the availability of these data and in many cases it is difficult to get access to these data particularly at the local level".

This paper is divided into two frames of micro and macro variables level analysis to widen the comparison of how markets behave in the property market structure in a cross-market analysis in Malaysia.

1.7 Organisation of the study

In this paper, the report is mainly subdivided into five chapters. Chapter 1 is about the overview of this research which includes the background of the study, the research objectives, problem statement, and the significance of this study. Chapter 2 presents the literature of development of house price indexes, hedonic regression limitations and the Malaysian experience. Chapter 3 shows the research methodology adopted for this study. It also includes the hypotheses and regression models applied in this study. In Chapter 4, the study reports and discusses on the results of the models. Lastly, Chapter 5 concludes this research with recommendations for the future.