HOUSING EQUILIBRIUM PRICE FRAMEWORK FOR MALAYSIAN MIDDLE
CLASS GROUP IN AFFORDABLE HOUSING MARKET

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For my beloved mother and father
My brother, my sister,
My love

Much appreciate for all the support,
understanding and love
from all of you

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ABSTRACT

Failure in getting housing equilibrium price for affordable housing market has become a hot topic that is often discussed in the press due to the imbalance between housing demanded and supplied. The basic purpose of the research was to investigate the relationship between macroeconomic housing demand and supply determinant factors and affordable housing needs in Malaysia, and to determine the equilibrium house price for middle-class income in the affordable housing market. The research involved the development of theoretical framework by synthesising the models and framework developed by past researchers on the housing equilibrium price framework. It also uses time series analysis together with regression analysis to collect and analyse data. As initial, 371 respondents from household's side and 32 respondents from developer's side in Melaka Tengah were selected as samples as case study in Melaka. During data analysed, around 200 questionnaires from households and 32 questionnaires from developers can be used. The data was analysed using SPSS software to investigate the relationship between macroeconomic housing demand and supply determinant factors towards the needs and supply of affordable housing market. From the investigation, current house price, monetary status and population changes are the most critical factors that lead to the needs of affordable housing supplies. Meanwhile, developers put the interest rate, government interventions and population changes as the catalyst to develop the affordable housing projects. On the other hand, the empirical data of housing prices are collected from NAPIC from 2006 to 2015. The equilibrium price calculated from the sales performance within four quarter reported by NAPIC is examined using linear regression method. Based on these themes, the research contended that the housing equilibrium price can be achieved using empirical data from demand and supply with supported from current house price, monetary status and population changes the interest rate, government interventions and population changes. Hence, government is the key player and be a pulling effect in controlling the housing price by using the housing demand and supply determinant factor to create a win-win situation between middle-class income and housing developers.

ABSTRAK

Kegagalan dalam mendapatkan harga keseimbangan perumahan untuk pasaran perumahan yang mampu dimiliki telah menjadi topik hangat yang sering dibincangkan dalam akhbar kerana ketidakseimbangan antara perumahan yang diminta dan dibekalkan. Tujuan asas penyelidikan ini adalah untuk mengkaji hubungan antara permintaan perumahan makroekonomi dan faktor penentu bekalan dan keperluan perumahan yang mampu dimiliki di Malaysia, dan untuk menegtahui harga rumah keseimbangan untuk pendapatan kelas pertengahan di pasaran perumahan yang berpatutan. Kajian ini melibatkan pembangunan model teoritis dengan mensintesis model yang dibangunkan oleh penyelidik terdahulu mengenai kerangka harga keseimbangan perumahan. Ia juga menggunakan analisis siri masa bersama-sama dengan analisis regresi untuk mengumpul dan menganalisis data. Sebagai permulaan, 371 responden dari pihak isi rumah dan 32 responden dari pihak pemaju di Melaka Tengah dipilih sebagai sampel memandangkan kajian kes di Melaka. Sebanyak 200 soal selidik dari isi rumah dan 32 soal selidik dari pemaju boleh digunakan. Data dianalisis dengan menggunakan perisian SPSS untuk menyiasat hubungan antara permintaan perumahan makroekonomi dan faktor penentu bekalan ke arah keperluan dan penawaran pasaran perumahan yang mampu dimiliki. Status kewangan dan perubahan penduduk adalah faktor yang paling kritikal yang membawa kepada keperluan bekalan perumahan yang mampu dimiliki., Pemaju meletakkan kadar faedah, campur tangan kerajaan dan perubahan penduduk sebagai pemangkin untuk membangunkan projek perumahan yang mampu dimiliki. Sebaliknya, data empirikal harga perumahan dikutip dari NAPIC dari 2006 hingga 2015. Harga keseimbangan yang dikira daripada prestasi jualan dalam tempoh empat suku yang dilaporkan oleh NAPIC diperiksa menggunakan kaedah regresi linear. Kajian ini menegaskan bahawa harga keseimbangan perumahan dapat dicapai dengan menggunakan data empirikal dari permintaan dan bekalan kerana permintaan untuk perumahan selalu wujud sebagai perumahan adalah suatu keperluan bahkan harga yang ditawarkan tidak munasabah. Walau bagaimanapun, kerajaan adalah pemain utama dan menjadi daya tarikan dalam mengawal harga perumahan dengan menggunakan permintaan perumahan dan faktor penentu bekalan untuk mewujudkan situasi menang-menang di antara isi rumah dan pemaju perumahan.

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LIST OF SYMBOLS AND ABREVIATIONS

α	-	Alpha
β	-	Beta
ρ	-	Price
CAGR	-	Compound Annual Growth Rate
CFO	-	Certificate of Occupancy
DIBS	-	Developer Interest Bearing Scheme
EP	-	Equilibrium price
GDP	-	Gross domestic Product
ICS	-	Interest capitalization schemes
NEAC	-	National Economic Action Council
NEP	-	New Economy Policy
NKRAs	-	National Key Result Areas
NRV	-	National Research Venture
OPR	-	Overnight Policy Rates
PAKR	-	Public Low Cost Housing Program
PHP	-	People Housing Program
PIR	-	Price-Income Ratio
PPA1M	-	*Perumahan Penjawat Awam 1 Malaysia*
PR1MA	-	1 Malaysia Housing Program
REHDA	-	Real Estate and Housing Developers
RUMAWIP	-	*Rumah Mampu Milik Wilayah Persekutuan*
SPNB	-	*Syarikat Perumahan Negara Berhad*
UNCHS	-	United Nations Centre for Human Settlement

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CHAPTER 1

INTRODUCTION

1.1 Background of Research

In recent decades, the demand for affordable housing has been increasing over the world until today (Wood, 2007). Even today, the affordable housing sector market has yet to meet the demands of the global population in the city (Jenkins et al., 2007). The population of Malaysia has increase from 21.3 million in 2000 to 30 million people in 2013 with a growth rate of 1.6%. The GDP has increased within this time along with the per capita income. The housing prices have increased by 12.3% annually all over the country (DoS, 2015). In the last decade, housing needs increased more than three times as fast for very low-income households with full-time employment than for all other very low-income households. It is generally accepted because housing market conditions can vary greatly across geographic areas so local planning agencies and governments have a greater understanding of the demographic and housing characteristics for their regions and are able to develop effective housing strategies (Feldman, 2002).

The issue of affordable housing in the world has not subsided. Past research in the US showed housing absolutely needs assistance in the form of federal financial and require either for profit or for non-profit parties to be responsible (Wallace, 1995). Immense chasm between demand and supply of affordable housing supply will cause the housing market price to be unstable besides leading to the problem of squatters (Arman et al., 2009). According to the Kalarickal & Buckley (2006), affordable housing market sector was identified as one of the most under-penetrated markets by private companies.

As an alternative to compulsory affordable housing construction, the government take initiatives to provide free land at strategic areas backed by efficient public transportation systems. The government can also fix the price or the proportional rise in price per square feet for affordable housing units under the development projects (EPU, 2015). Besides that, starting the year 2014, developers must build at least 20 percent low-cost houses and 20 per cent medium-cost houses in any housing project. The houses are open to first-time buyers with a monthly household income of RM3,000 for low-cost houses and a maximum of RM6,000 for medium-cost houses (Shuid, 2011).

The Tenth Malaysia Plan includes establishing 78,000 affordable housing units, out of which 38,950 will be under the People's Housing Program (PHP) and 39,050 units will be under the programs conducted by Ministry of Rural and Regional Development. Government has a lot to do when it comes to developing low-cost and affordable housing for the people of Malaysia. Most importantly, in 2014 Budget, government is providing subsidy of RM30,000 per unit, which encourage developers to build more low- and medium-cost houses (EPU, 2015; KRI, 2015).

1.2   Research Problem

Failure in getting equilibrium price for affordable housing in Malaysia lately has become a hot topic that is often discussed in the press due to the increase in a number of overhang units of housing recorded across our country. Residential, Shops and Industrial Properties Market Status Report Q1 2014 issued by NAPIC shows that the houses priced below RM50,000 recorded the highest sales performance which is about 73 percent of the total new houses launched in the past two years (NAPIC, 2014). However, NAPIC (2014) found that developers tend to build houses ranging from RM150,000 until RM500,000 even the majority of overhang units is about 7,801 units of 13,055 recorded after being launched into the market came from house prices below RM300,000. According to the Malaysia Housing Minister, there is about 40% difference between the demand for affordable housing and its supply in Malaysia recorded in the year 2014 (EPU, 2015). Dos (2014) states that 80% Malaysians earn less than RM 6,900 per month and cannot afford houses priced at higher than RM 300,000 (EPU, 2015).

Most of the private housing developers used the cost-based pricing method to determine the price of residential properties (Rasid, 2013). According to Sheehan (1997), cost-based pricing method is referring to the total up from the land cost, construction cost, and soft cost. Even though the local authorities had set the price ceilings housing category but the developers still disobey the regulations (Shuid, 2011). The mismatch between real market demand and what is being offered obviously happen because of the developer's behaviour. Even the policy had been regulated which is there must be 30% medium-cost and 20% low-cost components respectively to the landed development more than three acres while 30% medium-cost component for developments on an area less than three acres, still the developers do not show their interest to participate (NAPIC, 2014). Situation always happen more likely despite there are 10 affordable houses unit requested by the market, the developers only supplying two affordable units, four office spaces units, two retail spaces units and two very high-cost properties units (MoF, 2015).

Besides that, developers seem take too much profit up to above 50% of the cost of selling the house since there is no specific ways or methods they must followed. This is happen because the developers are forced to pay high amounts of constructions premium to the state government besides the soft cost, which act as a hidden cost in the housing development projects. As sequences, the developers will include the addition costs when pricing the house (Osmadi et al., 2015). They set the house price at will even for the affordable housing price because there is no monitoring from the government done all this time (Sinar Harian, 2013). The impact is, the buyer cannot afford to buy the house and the speculators will control the housing situation until the house price boomed (Osmadi et al., 2015). However, limited studies have discussed on the weaknesses of pricing method used by the developers to evaluate the housing prices (Osmadi et al., 2015).

Nevertheless, the traditional method used can be improved so that the developers are more interested to provide the affordable house with affordable price without ignoring the profit margin (Rasid, 2013; Bakhtiar, 2013). In addition, the problem encountered based on the report shows immense chasm happening between demand and supply for affordable housing in our country. From the perspective of surplus in high-cost housing, it shows that our country has prompted real estate developers, which are more focused on developing luxury property instead of developing affordable housing (JPN, 2015). This statement is strongly agreed by

Wood (2007) who opines that property owners are more interested in projects that can give them lucrative return and this, of course, do not refer to affordable housing projects. Hence, prices of existing homes in the low and middle price segment continue to grow (EPU, 2015). Figure 1.1 shows total of housing unit's construction approved from year 2010 until 2014. The figure reaffirms the overview about the scenario happening in housing supply based on house price category. From the figure, it is prove that the majority of developers apply approval for high-cost houses instead of other categories. More troubling issues are approval for the construction of low-medium cost houses which decreased by 79.2% (4,621 units) in 2014 compared to 2013.
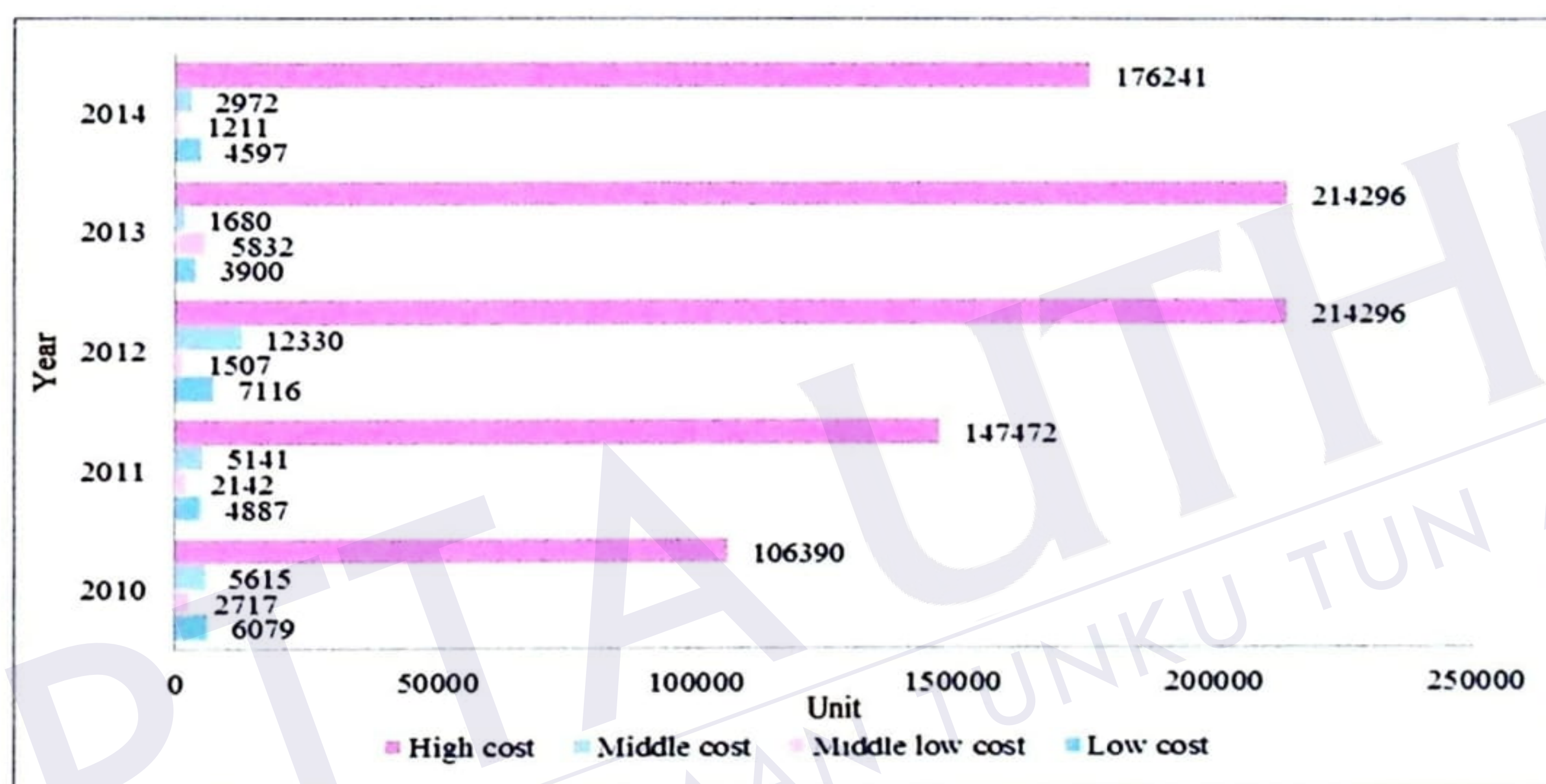
Figure 1.1: Total of Housing Unit's Construction Approved from Year 2010 until 2014
(JPN, 2015)

The figure illustrates a significant difference and imbalanced proportions between Malaysian housing supply and needs of what has been constructed and what Malaysia actually needs. The effects from the surplus of high-cost housing units lead to a huge total number of squatters by each state across our country including Sabah and Sarawak (Shuid, 2003; KRI, 2015; JPN, 2015; NAPIC, 2014; MURNInets, 2016). Obviously, the gap supply for lower cost housing is more important than high-cost housing. Furthermore, a number of people with a monthly income of RM700.00 consist of at least 440,000 people recorded since the year 2011. However, the 10th Malaysia Plan is only talking about 78,000 affordable units when Malaysia has more than 1,300,000 people living under the poverty line (Bakhtiar et.al, 2013). High-cost

housing is indicated by prices over RM100,000 while low-cost housing is indicated by prices less than RM42,000.

Table 1.1 shows the total number of squatters according to each state in Malaysia during the year 2015. We can say that only Melaka recorded the lowest total number of squatters since the state provided not only sufficient housing supply units but also affordable housing prices. From Table 1.1, Sabah has the highest total number of squatters in Malaysia followed by Johor and Sarawak where each of them recorded 133059, 31553, 35233 inhabitants respectively. None of the states across the country had zero squatters recorded for all this time. However, Melaka, Negeri Sembilan, and Terengganu recorded the lowest total number of squatters in this year. This sign actually warns responsible agencies to realize that there is still a huge gap between demand and supply housing due to socioeconomic changes, urbanization and evolving population structures. Squatters will continue to be widespread among the low and lower middle-income households in urban areas as long as the issue of inadequate supply of affordable housing is still unresolved.

Therefore in such situations that already discussed by NAPIC (2014), Wood (2007), EPU (2014), *Sinar Harian* (2013) & MoF (2015) the implementation of an equilibrium price for Malaysian middle-class income in the affordable housing market among developers should be proposed in order to make sure they set an equilibrium price on par with total demand. Considering that the private developers carry out many housing development projects, it is vital for them to know and implement the framework proposed in this research to ensure an adequate supply of affordable housing to the middle-income households. According to KRI (2015) and Osman et al. (2017) Melaka Housing Board is the only board who one step forward in providing adequate affordable housing where it also indirectly solving the squatters problem even Johor, Pulau Pinang, Pahang and Selangor were established at the same time. The board showed that they can manage to oversee the affordable housing development projects even the other housing board. Melaka Housing Board is a state government agency that had been organized to oversee the affordable housing development projects in Melaka. The Board was established in 2002 through the passing of the Melaka Housing Board Enactment 2002. Secondly, all over the years, Melaka is one forward step in providing adequate affordable housing where it also indirectly solving the squatters problem compared to other states such as Johor,

Pulau Pinang, Pahang and Selangor by showing the improvement of house price year by year in Melaka (KRI, 2015; Osman et al.,2017).

Table 1.1: Total Number of Squatters for Each State in Malaysia during 2015
(KRI, 2015)

State	Family	Family Members	Building
Johor	11,151	31,553	8,346
Kedah	2,703	13,255	2,703
Kelantan	1,685	7,780	1,649
Melaka	7	19	7
Negeri Sembilan	195	382	233
Pahang	1,134	5,632	935
Perak	1,709	6,836	1,709
Perlis	1,853	8,570	1,853
Pulau Pinang	4,208	18,909	2,875
Sabah	28,087	133,059	26,479
Sarawak	8,431	35,233	7,784
Selangor	2,542	3,299	3,299
Terengganu	469	1,976	450
Wilayah Persekutuan Kuala Lumpur	3,217	12,868	3,217
Wilayah Persekutuan Labuan	970	5,521	970
Total	68,361	284,892	62,509

1.3 Research Questions

This research seeks to answer the following questions based on the research problem identified:

1. What is the relationship between housing demand determinants with affordable housing needs in Malaysia?
2. What is the relationship between housing supply determinants with affordable housing provided in Malaysia?
3. What is the housing equilibrium price for Malaysian middle-class income in the affordable housing market?

1.4 Research Aim and Objectives

This research is conducted to propose a housing equilibrium price framework for Malaysian middle-class group to create an affordable housing market. Therefore, several research objectives need to be achieve to reach the research aim namely,

1. To investigate the relationship between housing demand determinants and affordable housing needs in Malaysia

2. To investigate the relationship between housing supply determinants and affordable housing provided in Malaysia.

3. To determine the housing equilibrium price for Malaysian middle-class income in the affordable housing market.

1.5 Scope of Research

Melaka Tengah was chose as case study in this research to represent Malaysia by taking considerations that Melaka as UNESCO World Heritage Site. This research focussed on Melaka Tengah because the district had proven that the district had improved and maintained the housing affordability among the citizen even it is surrounded with high population density together with high good potential development and urbanization (Osman et al., 2017). Population for households for Melaka Tengah was estimated around 23,540 respondents including who are living at Ayer Keroh, Ayer Molek, Batu Berendam, Bukit Baru, Bukit Rambai, Kandang, Klebang, Melaka, Paya Rumput, Sungai Udang, Tangga Batu and Tanjong Kling (DoS, 2015). However, the research had some limitations since the total number of respondents only covered for Melaka Tengah instead of all Melaka state.

The first and second research objective is to investigate the relationship between housing demand and supply determinants and affordable housing market in Malaysia. For these objectives, the researcher used the questionnaire method and distributed to two different types of respondents. The first set of questionnaire was distributed to households between the age group of 25 to 40 years old in Melaka by taking considerations from KRI (2015) which state that the majority of households aged from 25 to 40 years old are facing difficulties in homeownership. Meanwhile, the alternate survey was focused on the housing developers in Melaka because

according to DoS (2015), NAPIC (2015) and KRI (2015), Melaka had stood out providing housing under affordable level compared to other state (KRI, 2015).

Results from both set of questionnaires were analysed using SPSS software to get the strength of the relationship between the macroeconomic housing demand determinant factors (current house price, affordable housing physical state, monetary status, population changes, affordable housing location, infrastructures and amenities provided) and macroeconomic housing supply determinant factors (interest rate, construction cost, land availability, population changes, location, government interventions) toward the affordable housing market need and supply in Malaysia.

On the other hands, third objective aims to determine the equilibrium price for affordable housing for Malaysian middle-class income. The researcher use secondary data analysis method to extracted the total housing demand and supply starting year 2006 until 2015 from the Property Market Status Report from NAPIC website. According to Riddle (2004), more than 10 years is considered accepted for the housing demand and supply. This objective was focused on the landed housing properties include any type of terrace house, any type of detached house, cluster and town house, priced between RM50,000 until RM300,000 by taking considerations from MURNInets (2016) which states that RM300,000 is a maximum price in the affordable market price for middle-class income groups which normally face dilemmas in homeownership.

The different final process of analyses involved are the cost-benefit analysis process and linear regression analysis to see the equilibrium price across 10 years selected. The analysed series data was analysed by using Microsoft Excel for further explanation and SPSS software to complete the demand and supply equation so that the housing equilibrium price framework for the affordable housing market can be developed.

1.6 Significance of Research

The importance of the research is to propose the equilibrium price for the affordable housing market in Malaysia. As we know, the state of Melaka is already categorised providing the affordable housing market which the housing price is at three times of the median multiple DoS (2015), NAPIC (2015) and KRI (2015). Therefore, this

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