Determinants of housing prices: evidence from East Coast Malaysia

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Abstract

Purpose – The purpose of this study is designed to achieve the learning process in producing studies involving economic issues and scenarios in business management in Malaysia. In addition, this study will provide exposure to the integration of managerial skills by using both microeconomics and macroeconomics concepts and theories to aid decision-making in a business environment.

Design/methodology/approach – The research method comprised qualitative methodology of literature review, case study and quantitative methodology of multiple linear regression (MLR). In this case, seven microeconomics and macroeconomics factors which are believed to significantly affect house price index (HPI) are taken into consideration which includes gross domestic product, consumer price index (CPI), government tax and subsidy on housing, overnight policy rate, unemployment rate (UNEMP), the median income (INC) and cost of production index.

Findings – This research has resulted in three significant factors affecting HPI from MLR, which include CPI, UNEMP and INC where the increase of these factors will cause a high increment of HPI. The other four factors are not significant.

Originality/value – Malaysia has been facing the stagnancy in house market these recent years due to issues such as massive oversupply, impacting Malaysia’s economy specifically focusing on domestic direct investment. To avoid oversupply issues, the vitality of future house demand and pricing forecast should be comprehended by involved bodies for more effective planning for the house development industry. To make a better and bigger impact, this research is intended to analyse the microeconomic and macroeconomic factors affecting the HPI to better understand the significance of each of these factors to the changes of HPI to resolve these economic issues.

Keywords Consumer price index, Cost of production index, Gross domestic product, Housing price index, Overnight policy rate, Unemployment rate

Paper type Research paper

1. Introduction

An increase in housing prices is not a new issue in Malaysia because from 2009 until 2019, housing prices have been on an increasing trend. However, households take house ownership as a family aspiration and as the most expensive investment for the household. In
Malaysia, the housing sector plays an important role in the country’s economic development whereby it can support and sustain the growth of the economy. Moreover, households may worry that they cannot afford such higher housing prices. The Malaysian Government has implemented various housing policies such as 1 Malaysian Peoples Housing Program [Perumahan Rakyat 1 Malaysia (PRIMA)], First Home Scheme and 1 Malaysian Civil Servant Housing Program to ensure that all citizens have an opportunity to own a place to stay (Ong and Analytica, 2020). However, the affordability of housing is still an issue in Malaysia whereby the housing price keeps increasing and the effectiveness of the affordable housing policy is inconclusive.

According to National Property Information Centre (NAPIC, 2020), house price has been rebuked due to the situation that ordinary Malaysian people cannot afford to buy it. In customers point of view, product mismatch, slow growth of income, the rising cost of building homes, quotas and cross-subsidies are primary reasons Malaysian faces the unaffordable house. The NAPIC (NAPIC, 2020) depicts that around 33,000 units of properties are unsold for more than six months in the first half of 2019. Even worse, the house price between the range of RM201,000 to RM300,000 categorized as affordable to purchase by the Housing Ministry of Malaysia showed the most overhang property followed by homes at RM300,001 to RM400,001 respectively. Furthermore, these properties also do not match market requirements as they are often far from city centres, lacking connectivity and public transportation that is eventually making them unappealing to potential customers. Thus, the price of housing booming over the years resulted in unsold housing properties. Despite this problem, overbuilding of the house is a normal phenomenon in Malaysia. Developers ignore this situation that leads and contributes to the changes of housing price index decrease, as shown in Figure 2 (Delmendo, 2020). Although the housing price index relatively increase over the years, as shown in Figure 1, in terms of changes, it showed a decreasing trend due to overwhelming unsold housing properties.

Based on Figure 3, by indicating 2010 as the base year price, the trend was decreasing trend in house price index (HPI) based on estimated Q2 2020 compared to Q2 2019 for High Rise, Semi-Detached and Detached house. The only terraced house showed an increasing trend as compared to others in Q2 2020 compared to Q2 2019.

In the past 20 years, the residential property business of Malaysia has been a major economic engine, producing vast investment and opportunity regions. As a result, tens of millions of

![Figure 1.](image)

Real residential property prices for Malaysia, base year 2010

Sources: FRED (2021)
Malaysians are also allowed to find their dream home. Fortunately, Malaysia has a properly controlled industry with smart people tracking it. So, we can reflect on how this transition looks due to the tireless people at the NAPIC (NAPIC, 2020). It would be surprising to see that Malaysia’s overall number of real estate transactions has increased. This represents a massive rise in our market transaction activity. Moreover, the value increases during the time, with the entire transaction value increasing from RM15.16bn to RM141.40bn. This doubles the number of transactions but is nearly ten times the value (NAPIC, 2020).

The government has offered many incentives to help consumers purchase more residential houses and cope with increasing residential prices. One of these is total stamp

Sources: NAPIC (2020)
duty exemption for first-time homebuyers until 2025, PRIMA, the introduction of My First Home Scheme (Skim Rumah Pertamaku, SRP) and the introduction of Rumah Selangorku and Residensi Wilayah (Bhatt, 2021). In 2020, the performance of residential property throughout 2020 was relatively consistent due to the government’s commendable actions, such as returning the Home Ownership Campaign, which took effect from 1st June 2020 to 31st May 2021 (Wong et al., 2021). In addition, the government also open residential housing to foreigners through Malaysia My Second Home. This program has been supported by the Malaysian Government to allow foreign nationals meeting specified conditions to be in Malaysia on a multiple-entry social visit pass for as long as possible (MAMPU, 2021).

East Coast Region in Malaysia including Pahang, Terengganu and Kelantan are 3 out of 13 states and have obtained benefits from the development of the housing industry. East Coast Region in Malaysia just other region has considered housing are basic need and one of the main sectors in national economy, therefore need to be appropriate plan. Residence serves as a shelter for human beings and is one of the human basic needs apart from food and clothing. It is also an important component of the urban economy in Malaysia. These have led of policies and programed aimed at ensuring that all East Coast Malaysia have the chance to obtain an appropriate place to stay and other related activities.

2. Research issue

Why housing market has been stagnant in recent years? How significant do microeconomic and macroeconomic factors affect HPI? How true is the qualitative value outcome of factors affecting HPI in comparison to the other previous research? The affordability of housing is still an issue in Malaysia, whereby the housing price keeps increasing and the effectiveness of the affordable housing policy is inconclusive.

3. Research objective

This study is to analyze the microeconomic and macroeconomic factors affecting the House Price Index (HPI) and to understand the significance of each of these factors to the changes of HPI.

4. Macroeconomic indicator

Macroeconomic indicators involved in this research are as follows.

4.1 Gross domestic product

Gross domestic product (GDP) is one of the most popular measures used to assess a country’s economic health. The computation of a country’s GDP considers a variety of different economic elements, such as consumption and investment. GDP is undoubtedly the most frequently followed and significant economic measure for economists and investors since it represents the total dollar worth of all products and services generated by an economy over a certain period. GDP is stated in two ways: nominal GDP and real GDP. Nominal GDP is based on current market values and does not account for inflation or deflation. Nominal GDP examines the natural movement of prices and monitors the gradual growth in the worth of an economy over time. Inflation is factored into real GDP means that it accounts for the overall increase in price levels. Economists typically prefer to compare a country’s economic growth rate using real GDP. Economists use real GDP to determine if there has been any real growth from one year and the next. To adapt to price changes, it is computed using goods and services prices from a base year rather than current values.
According to Sabrina Abdul Latif et al. (2020) the GDP is one of the variables that influence house prices, and it is well known that if GDP rises, house prices rise. When wealthiness grows, the wealth impact is likely to increase consumer expenditure, resulting in higher aggregate levels. As a result, demand is expected to rise, resulting in a rise in Real GDP and a faster pace of economic expansion. However, GDP has no direct influence on housing prices. If the property market ever collapses, it will spread across the economy, causing the GDP to decline.

Property is an essential requirement for many Malaysians. Unfortunately, only a few of them could afford it. If the government decides to boost household credit one day, demand for housing will dry up, leading to a drop in residential investment (Sabrina Abdul Latif et al., 2020). Real GDP is defined as the primary predictor of real estate cycles by Case et al. (2000) and Wit and Dijk (2003). According to Zhu (2004), real GDP growth incorporates data from other more direct family income indicators, such as unemployment and salaries. Vui Kiong and Aralas (2019) discovered that real GDP is the primary determinant of Malaysian home prices.

Malaysia’s real GDP in 2020 was US$376,654m. Malaysia’s real GDP increased significantly during the previous 50 years, growing from US$22,776m to US$376,654m at an increasing yearly rate that peaked at 11.70% in 1973 and then fell to −5.59% in 2020. The trend of Real GDP from 1960 to 2020 is as shown in Figure 4.

In addition, it has been found house prices have a positive significant correlation with the GDP. Callen (2008) indicate the positive significance of the GDP effect whereas a 1% increase in GDP will result in 0.46% house prices, respectively. Other research has supported the positive influence of GDP and housing prices such as Vui Kiong and Aralas (2019) which shows a coefficient value of 0.021 and Kok et al. (2018) with results of 0.12 coefficient. Besides, Valadez (2012) supports the relationship showing the correlation between GDP and HPI is at 0.69. Pinjaman and Kogid (2020) obtained a positive coefficient of 2.44 which explains the 1% increase in real GDP causes house prices to increase by 2.44%. Li (2020) research resulted in a percent increase in the GDP that can bring about over 0.3% increase in housing prices.

Source: The World Bank (2022)

Figure 4. GDP (Constant 2010 US$)
4.2 Business cycles
The real estate cycle, sometimes called the housing market cycle, is a model that represents economic changes within commercial and residential real estate industries. Most previous production and multi-sector real business cycle models such as Cooper (1998) do not distinguish housing from other consumer durables. In this simplest multi-sector model, different sectors tend to co-move negatively, since there is a strong incentive to switch production between sectors in response to sector-specific productivity shocks. The four phases of the real estate cycle are recovery, expansion, hyper supply and recession. The real estate cycles are influenced by global crises, population disparity, interest rates and overall economic health. Figure 5 shows the trend of Annual Growth Rate of Leading Index and Business Cycle in Malaysia from 1991 to 2016.

4.3 Inflation
According to Yanescha (2022), inflation can be defined as the weakening of purchasing power and a continuous increase in the pricing of goods and services. However, a temporary increase in price or a price increase for a certain commodity does not consider inflation (Neville et al., 2021). Central banks play a major role in controlling inflation and avoid deflation through monetary policy. Typically, during inflation, the price of raw materials and construction items will be increased. The developer has to increase the selling price of a new house to compensate for the increment in construction cost. From a positive perspective, inflation is good for house investors because their asset value increases when inflation happens. On the other hand, inflation impacts the rental fee of the house. When the rental fee increases it will increase the demand for houses and followed by the increase in housing prices. Therefore, when the inflation rate increases, housing prices tend to increase correspondingly. This observation was true according to Yusof et al. (2021).

**Figure 5.**
Annual growth rate of leading index (Smoothed) and business cycle

**Source:** Department of Statistics, Malaysia (2018)
There is a relationship between inflation and house prices. Likewise, there are relationships between inflation and any good with an inadequate supply. To exemplify, considered an economy with a money supply of only $10 and five matching houses in the entire economy (Nguyen, 2020). Each home would be valued at $2 by assuming no other goods in the economy. Suppose the central bank agrees to pattern additional notes and the money supply increases to $20. Now each unit would be valued at $4. In this basic example, Nguyen (2020) showed the growing money supply initiating inflation and increasing house prices.

From 2005 to 2015, Kuala Lumpur property values pitched by nearly 122% (73% inflation-adjusted). In comparison, domestic price increases have been more discreet. From 2005 to 2015, Malaysia’s house prices rose by 96.1% (52.4% inflation-adjusted). From 2016 to 2018, nationwide house prices rose by an annual average of 5.2% (3.3% inflation-adjusted). However, the housing market finally lost steam last year, as the government’s market cooling measures took effect (Delmendo, 2020). Unsold apartments in Malaysia’s metropolises are now valued at MYR 8.3bn (US$1.9bn), the consequence of uncompromising over constructions of top-end houses throughout the latest thriving (Delmendo, 2020).

Inflation is frequently indistinct as a continuous rise in prices for a wide variety of services and goods. Figure 6 shows the inflation, consumer prices (annual %) in Malaysia from 2002 to 2018. The inflation rate in Malaysia shows up and down during that particular period. Economists clarify that increases in prices are the sign, not the root of the problem. The fundamental reason for inflation is currency depreciation, which is consequently affected by the increase in printed currency in the market. Recently, the quantity of papers cites the effect of inflation on the housing market and prices. Zandi et al. (2015) keen out that rising inflation rate increasing in residential property price. Pillaiyan (2015) mentioned that house prices have significantly inclined above the market value, which influenced the inflation rate contributed to hiking. However, the research conducted by (Zandi et al., 2015) indicates that the inflation rate is not a significant variable of the residential property price.

Figure 6. Inflation, consumer prices (annual %) – Malaysia

Pillaiyan (2015) argues the correlation between the inflation rate and interest rate that the house price is related to the rental market, whereby the use of deposit-taking as the form of guarantee to the owner that the tenants will stay for a certain period that agreed on upfront for both parties) on the other. The critical point of his paper was that the market value depends on the ratio of inflation to real interest rate, and, therefore, even when the banking institutions continue to announce a new level of the inflation rate, the actual price of sales to choose increases if the real interest rate declined. This result increased the level of knowledge that the rise of the residential prices despite stabilized the prices. Significantly support the relationship, it may be practical to slow down the new level of inflation rate in the market so that the real interest rates decline continuously if the community requests to reduce its adverse effect on the wealth circulation between landlords and tenants.

4.4 Unemployment and employment

The unemployment rate (UNEMP) has been a serious issue which requires the right solution in an effective and efficient manner. The initiatives that are related to macroeconomics in Malaysia depend on what the government does to help develop Malaysia’s economy in terms of economic plan action. As a means of securing a long-term spot among the group of high-income nations, Malaysia has pursued productivity-enhancing reforms to quicken the growth of quality human resources and economic competitiveness. According to the Department of Statistics of Malaysia (DOSM 2021a, 2021b), high unemployment is an indication that the labour force is not being used in any useful way. In Parliament, there are serious debates and decisions affecting this subject. Economic growth may be influenced by a prosperous economy, which is one strategy to deal with this problem.

For several reasons, unemployment is a significant macroeconomic indicator. The level of unemployment reflects how well our economy is doing. Due to inefficient labour use caused by unemployment, we are not creating as much in the way of products and services as we could. But, if we relate to the economic situation, the issue of unemployment has grown alarmingly serious over the past few years, especially in developing countries like Malaysia where it is increasing at an alarming rate as shown in Figure 7. Numerous factors lead to this phenomenon. As a means of securing a long-term spot among the group of high-income nations, Malaysia has

Figure 7. Unemployment rate, 1982 – 2020

Source: Department of Statistics, Malaysia (DOSM 2022)
pursued productivity-enhancing reforms to quicken the growth of quality human resources and economic competitiveness.

Unemployment and economic growth are inversely proportional; due to the high UNEMP, fewer people have the financial means to purchase a home, reducing the demand for residential real estate in general. As crucial as job growth is, it is also essential to consider the quality of employment and the wages and salaries earned on the job when making decisions. UNEMPs that are too high can also dampen the growth of real wages, which has obvious implications for real estate value in the long run. This theory has led to the inclusion of the unemployed as a variable in economic models. There has been widespread speculation that the housing market bubble that burst in 2008 contributed to the US’ Great Recession. This measure was necessary to put an end to abnormal increases in house prices, which were primarily caused by excessive lending to unqualified buyers and the use of subprime mortgages. Increased unemployment was caused by the contraction of the construction industry, which spread to other sectors of the economy through multiplier effects, ultimately leading to an increase in the overall UNEMP across America. As a result, unemployed individuals who could not make their mortgage payments were forced to sell their homes or face foreclosure, further exacerbating the decline in home values. The property market will have a similar outlook to that of the COVID-19 outbreak due to this recession.

According to Brueggeman and Fisher (2008), there is disagreement about whether the relationship between property prices and the UNEMP demonstrates a strong connection. However, Sydney’s UNEMPs and housing prices have been shown to have a long-term relationship and statistically significant negative indicators (Al-Masum and Lee, 2019). As a result, the UNEMP impacts the demand for real estate, reflected in the price levels. In their study of the primary determinants of housing prices, Housing prices are negatively affected by the UNEMP, as discovered by Nistor and Reianu (2018). UNEMPs are associated with lower average housing prices in Ontario, Canada, where higher UNEMPs are associated with higher average housing prices. Meanwhile, according to the authors, the evidence that the UNEMP impacts housing prices in the nonlinear model is limited to a few states in the USA (Bahmani-Oskooee and Ghodsi, 2018). On the other hand, evidence from the Organization for Economic Co-operation and Development (OECD) economies indicates that the relationship between UNEMPs and housing prices is positive but not statistically significant, which is perplexing that UNEMPs and housing prices are increasing (Vogiazas and Alexiou, 2017). Moreover, the findings of Xu and Tang (2014) indicate that the UNEMP has a significant positive impact on house prices, with rising house prices being associated with higher levels of unemployment.

5. **Microeconomic indicator**
The microeconomic indicators involved in this research are as follows.

5.1 **Supply of housing**
Factors involved in supply of housing are as follows.

5.1.1 **Construction companies.** Construction industry refers to the commercial and industrial sectors of the economy that deals with building, repairing and maintaining infrastructures. It is a factor in determining the country’s technological and technical improvement, frequently controlling the expansion of the nation’s infrastructure development, which frequently leads to the advancement of the nation in terms of sustainability assurance.

The construction sector exerts an exceptional impact on economic development all over the world. A country’s capability to achieve goals for social development, industrialization,
freight transportation, sustainable development and urbanization is dependent on the construction industry producing adequate structures and infrastructure (Butcher, 2022). The economy in Kelantan is moving towards sustainable production with more emphasis on the construction sector.

5.1.2 Cost of production for construction companies. Based on Property Industry Survey 2H2021 and Market Outlook 2022, Real Estate and Housing Developers’ Association Malaysia (REHDA) forecasts an increase in construction cost of around 19% in 2022 which will lead to an increase in house market price from 8% to 12% (Butcher, 2022). According to REHDA, the cost of house prices could reach up to 80% (Cheah et al., 2012). Kamaruzzaman and Ali (2010) highlight the issues of additional costs than the budgeted plan due to several contributing factors such as raw materials price fluctuations, unforeseen site conditions, and the use of expensive machinery. In addition, it is found that 74.6% of new construction work is mostly from the cost of materials and subcontracted work (Windapo et al., 2018). In contrast, some other research such Abd. Wahabb et al. (2019) indicates construction cost is not significant to Malaysia house price which supports the study done by Hoxha and Salaj (2014). However, when compared to value of construction work in Malaysia from 2013 to 2022, its show increasing trend from 2013 to 2019 but decreasing trend from 2020 to 2022 as shown in Figure 8.

5.1.3 Government taxation and subsidy. Government can help to boost the demand for real estate by offering incentives such as exemption from stamp duty and taxation. Figure 9 shows Malaysia Tax Structure, stamp duty and taxation for housing can be considered as indirect taxes. Subsidies in the form of relaxation of tax for house buyers can help enhance the demand for real estate property in the country. According to claims by the federal government, the federal subsidy is unlikely to lead to large windfall gains, and the government claims to perceive a lack of evidence on the price effects of housing purchase subsidies (McGee et al., 2019). However, several features of the subsidy design speak in favours of potentially large price effects.

5.1.4 Industrialized building system technology. Technology plays an important role in the construction industry. With technology, developers may shorten construction time and

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**Figure 8.**
Value of construction work in Malaysia from 2013 to 2022 (in billion RM)

**Source:** Statista (2022)
reduce construction costs significantly. For instance, The Industrialized building system (IBS) is a great innovation that can help developers to offer houses at a reasonable price. According to the former IBS Chairman, the IBS system has the capability to reduce construction costs by 35–50% (NAPIC, 2020). The IBS is also known as prefabricated and off-site construction. The component is manufactured in a controlled environment. The application of the IBS system would contribute to enhancing productivity, reducing labour requirements and giving a positive impact on the surrounding environment (Akram et al., 2017; NAPIC, 2020).

5.2 Demand of housing
The demand for and supply of houses have dramatically changed over the last couple of years. It has been highlighted that fluctuations in housing prices indicate a balance between supply and demand. There are many factors that affect the demand for houses in Malaysia (Osmadi et al., 2015) and as follows:

5.2.1 Affordability. Demand for homes increases as houses become more affordable, and vice versa. Because more individuals may afford to buy homes when the price of homes
lowers (Osmadi et al., 2015). The standard of living in East Coast Malaysia is moderate, Kelantanese for example, can afford and prefer to live in bungalows rather than apartments. In addition, the Kelantanese who seem normal in terms of their way of life, have a lot of assets everywhere such as large land, a lot of livestock and a developed business.

5.2.2 Disposable income. The demand for houses rises as people’s disposable income rises, and vice versa (Osmadi et al., 2015). When people have enough disposable income, they frequently purchase houses so that their weekly spending does not affect them considerably. Besides, Kelantanese prefer bungalows or private houses over apartments. This is because, with the vast land conditions in Kelantan, many people buy land and build their own houses. Figure 10 shows Malaysia Household Income (Bumiputera) from 1990 to 2016 and the trend keep increasing.

5.2.3 Monetary trends. The demand for houses rises overall when the economy is strong. Similarly, the demand for houses declines during a recession (Osmadi et al., 2015). An emerging economy indicates general economic health, which leads to higher demand for all types of goods. Although the standard of living in Malaysia is as high as in the capital of Malaysia, Kuala Lumpur, Kelantanese are still able to shop for essentials and food items cheaply.

5.2.4 Supply of substitutes. There is a net increase in demand for houses when the supply of substitutes, such as rental accommodation decreases, and vice versa. There is an increase in the price of rented apartments if the supply of rented accommodation is affordable. Therefore, in the long run, people find that it is cheaper to buy houses than to live in rented accommodation. Hence, then they will tend to purchase a house. Thereby, increasing the net demand for houses (Osmadi et al., 2015).

5.3 Overnight policy rate and lending rate
The overnight policy rate (OPR) is the minimum lending rate charged amongst banks in the interbank market, from which they borrow funds from each other. When a bank has a fund deficit to meet the withdrawal demand from depositors, the bank will borrow from another bank with an excess fund. The OPR is determined by the Monetary Policy Committee of Bank Negara Malaysia (2021) that meets six times annually. The OPR level will influence lending rates in other markets, including the credit market as OPR is the primary reference rate. When OPR is lowered, other lending rates will be guided accordingly, and vice versa.

Figure 10. Malaysia household income: mean; Bumiputera

Source: Department of Statistics (2018)
The trend of OPR in Malaysia is shown in Figure 11. The lending rate refers to a cost to the borrower by the lender mainly because this is a rate at which the borrowers need to pay back the principal with extra cost to the lender for the use of the money. There is a strong relationship between housing prices and lending rates, the reason is that if customers are requiring houses, they need a huge amount of capital. In this case, most people are not able to afford their savings and, therefore, they will go to the bank to borrow the money. Banks will charge an interest rate on the loan borrowed by customers according to the length of the loan, otherwise, banks will require some liquidity assets as collateral. When they are unable to pay back the principal and interest charged, banks will sell all the collateral and convert it into cash.

Based on the study of Irina Barakova et al. (2003), better accessibility to loans will cause an increase in housing since people can borrow more money. The increase in demand will then be reflected in higher housing prices. Besides that, in Theodore Panagiotidis and Panagiotis Printzis (2015) interpretation of the result, they found that interest rate raises are highly related to the housing market. Assuming the interest rate rises, the potential buyers must pay a higher cost to own a house. As this situation happens it will result in a decrease in housing demand. The housing demand decrease will cause the housing to drop. When the interest rate decreases, the cost of borrowing will go down and the housing demand will increase. This will result in an increase in housing prices. Andrews (2010), argues housing prices and interest rates are inversely related.

Most of the researchers found that housing prices and lending rates are negatively correlated. It means that with a lower interest rate, people tend to borrow more money and have the affordability to own a house. Hence, the housing price will rise as the demand for houses increases. The researchers who have done this research are Ong and Analytica (2020), Pillaiyan (2015) and (Osmadi et al., 2015), saying that the lending rate is associated with housing prices negatively.

Figure 11. Malaysia overnight policy rate

Source: MacroMicro (2022)
There are few researchers that have been done, saying that the exchange rate has positively correlated with the housing price in East coast Malaysia. It means when Ringgit Malaysia depreciates against the foreign currency, it will attract more foreigners to engage in Malaysia’s bungalow market. Therefore, the demand for Malaysian houses has increased. Hence, the housing prices result in a sharp increase (Kok et al., 2018).

5.4 Price of substitutes
The costs of construction do not just rely on the type of material used, but also rely on the method or system used to construct the infrastructure. While the costs are now increasing for conventional building materials, the feasibility of using ISO shipping containers to build low-cost houses in Malaysia has been one of the potential substitutes as a replacement since the costs are cheaper by 20% than the economic conventional house (King Hui Wong et al., 2018). Compared to the other potential substitutes, construction using interlocking block building systems could potentially save costs from 11.36% to 2.6% (Siti Aishah, 2012). Potentially, the use of an IBS could contribute to the reduction of construction costs by 11.9% in comparison to the conventional method based on the research done by Ramli (2016). However, Malaysia is lacking skilled local workers, thus, placing high reliance on foreign skilled workers for training and implementation, incurring higher labour costs to start the practice of using new substitutes in the effort of reducing the construction cost.

5.5 Consumer confidence
Chun (2017) has suggested that consumer confidence is another pertinent factor that drives the housing industry and real property finance markets. The property crisis particularly in Malaysia is closely related to consumer confidence in the housing industry (Carmelo Ferlito, 2018). Consumer sentiment, either positive or negative, would cause housing prices to go up and down. High consumer confidence in the real property market indicates that there might be a steady increase in housing prices (Chun, 2017). If consumer confidence falls, this will lead to lower consumer spending. Thus, reducing the economic growth rate would finally affect the development of Malaysia’s housing industry. Therefore, nowadays studies on consumer confidence in property prices have thrived significantly as it provides a picture to comprehend consumers’ behaviours in the real property market (Chun, 2017). Figure 12 shows the trend of Consumer Confidence in Malaysia from 1990 to 2014.

![Figure 12](image-url)

**Figure 12.**
Consumer confidence: YoY change; quarterly: Malaysia 2016

**Source:** CEIC (2016)
6. Research methodology
6.1 Multiple linear regression

With respect to the research objective in identifying the significant level of macroeconomics and microeconomics factors which affect HPI, HPI is chosen as the dependent variable (DV) affected by the other microeconomic and macroeconomic factors identified. The macroeconomic and macroeconomic factors chosen are identified based on their contribution to the significant change in HPI identified from the literature readings with strong result output, and several other factors that arguably have fair results of being both significant and insignificant in the vast number of research done to avoid literature research biases. For this study, quantitative data with the statistical technique approach of multiple linear regression (MLR) are used to analyze the relations between HPI and the other seven variables of the independent variables (IV) that are believed to have high relation to house pricing which include three variables of macroeconomic including GDP, consumer price index (CPI) and UNEMP, and the other four variables of microeconomic factors including OPR, the median income (INC), government taxation and subsidy of federal government development expenditure specifically on social service category of housing (GTSH) and cost of production index (COPI). Even though there are many macroeconomic and microeconomics factors discussed in literature review. However, this research focused on seven factors only due to constraint of data and budget. The seven factors focused on the most variable used in different research, location and country.

MLR is performed with respect to the East Coast states which includes Kelantan, Pahang and Terengganu to test the significant level of microeconomic and macroeconomic factors with the change of HPI and its relationship with the other factors involved. To avoid biased estimates, MLR with a forced entry is applied in comparison to the stepwise entry, which is appropriate with the small range of data provided. The data provided for each state are from the years 2009 to 2021 performed quarterly at the span of 156 data for each variable involved obtained from the DOSM as secondary data collected. The samples collected are arranged according to the panel data method in which the data are provided according to the timeline. The results of regression obtained are examined with respect to the hypothesis inferred from the literature research done, thus, further evaluations are made. The results of regression include the evaluations made from the descriptive statistics on the standard deviation of each mean value of variables provided to observe the dispersion of the data and its reliability. R-squared $R^2$ or the coefficients of determination are observed to evaluate the reliability of the whole functions and issue the possible multicollinearity that might occur. To obtain the significant level and make evaluations based on the hypothesis formed, two tail $t$-tests and F-stat are executed whereas F-stat is carried through to test the significant level of the group variables as a whole. In contrast, the significant level of a single variable is observed from the two-tail $t$-test.

Theories with respect to the seven IV mentioned are listed to compare with the output of the regression analysis of whether it is supporting the hypothesis or vice versa:

$H_1$. UNEMP has a negative impact on HPI.

$H_2$. Income (INC) has a positive impact on HPI.

$H_3$. COPI has a negative impact on HPI.

$H_4$. CPI has a positive impact on HPI.

$H_5$. GDP has a positive impact on HPI.

$H_6$. OPR has a positive impact on HPI.

$H_7$. GTSH has a negative impact on HPI.
The theoretical equation of MLR for HPI as DV and the other seven related IV obtained are in the theoretical form of as shown below:

\[ DV = \beta_0 + IV_1\beta_1 + IV_2\beta_2 + IV_3\beta_3 + IV_4\beta_4 + IV_5\beta_5 + IV_6\beta_6 + IV_7\beta_7 \]

where it will be expressed in the form of as shown below for each different state:

\[ HPI = \beta_0 + UNEMP\beta_1 + INC\beta_2 + COPI\beta_3 + CPI\beta_4 + GDP\beta_5 + OPR\beta_6 + GTSH\beta_7 + \epsilon \]

6.2 Descriptive statistics and R square
To investigate the relevant factors affecting HPI, method collection of panel data is used and shown in Table 1 of descriptive statistics. Variables of the HPI, CPI, OPR, UNEMP and COPI present small values of standard deviation indicating the low dispersion of data and providing higher data reliability. These data are more concentrated towards its mean, reflecting the consistency and the symmetric distribution of the data. However, it is different for GDP, GTSH and INC which is widely spread within its data at a bigger range.

From the Table 2 of regression model summary, the \( R^2 \) identified is at 0.693 indicating 69.3% changes in HPI can be explained by the group factors of the UNEMP, INC, COPI, GDP, CPI, OPR and GTSH. \( R^2 \) value also indicates the absence of multicollinearity since it is lesser than 0.8 where the correlations of the group variable to be within an appropriate range.

6.3 F-statistic, two tail t-test and p-value
To test the significance of regression, F-statistic is done with the hypothesis of \( H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = 0 \) indicating the seven IVs of GDP, CPI, GTSH, OPR, UNEMP, INC and CPI have no effect on HPI. The alternative hypothesis of \( H_1 \) is \( H_1: \) at least

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPI</td>
<td>148.91603</td>
<td>35.627437</td>
</tr>
<tr>
<td>GDP</td>
<td>1,073.70769</td>
<td>242.008801</td>
</tr>
<tr>
<td>CPI</td>
<td>112.69231</td>
<td>8.290014</td>
</tr>
<tr>
<td>GTSH</td>
<td>1,271</td>
<td>559.691989</td>
</tr>
<tr>
<td>OPR</td>
<td>2.78846</td>
<td>0.500124</td>
</tr>
<tr>
<td>UNEMP</td>
<td>3.35192</td>
<td>0.709654</td>
</tr>
<tr>
<td>INC</td>
<td>3,366.20513</td>
<td>1,063.672595</td>
</tr>
<tr>
<td>COPI</td>
<td>146.86154</td>
<td>22.915369</td>
</tr>
</tbody>
</table>

Table 1. Descriptive statistics  
Source: Authors’ own work

<table>
<thead>
<tr>
<th>R square</th>
<th>0.693</th>
</tr>
</thead>
</table>

Table 2. Regression model – R square value  
Source: Authors’ own work
one $\beta_1$ is not equal to 0 indicating that at least one slope $\beta_1$ has a significant effect on HPI. The significant F-statistic shown in the Table 3 is at value of $<0.001$ which is lesser than the critical value of F-statistic of 0.05, thus, the decision is to reject $H_0$ since significant $F = p$-value $< 0.05$. The rejection of $H_0$ indicates that at least one IV is significant in explaining the changes of HPI.

By digging deeper as in Table 4, the $t$-test is used to test the hypothesis of the regression coefficient and the level of significance of the variable’s slope. The hypothesis of the T-test is set to $H_0$: $\beta_n = 0$ and $H_1$: $\beta_n \neq 0$ such $n = 1,2,3,4,5,6,7$ using two-tailed tests at 0.05 significance level, $\pm t_{a/2} = \pm 1.96$, such $\beta_n$ is the coefficient value of each factor involved and rejection of $H_0$ indicate that the variable used is significant in explaining the HPI. The output of the two-tail T-test shows the presence of three factors which is significant to the change in the House Price Index which includes the factors of CPI, unemployment rate (UNEMP), and median income (INC) since $t_\beta > t_{a/2}$ at $t_\beta 2 = 2.955$, $t_\beta 5 = 3.154$ and $t_\beta 6 = 2.422$ higher than the critical value of $t_{a/2}$ which leads to the rejection of $H_0$. However, the other factors such as GDP, government tax and subsidies on housing, OPR, and cost of production index are found to be statistically insignificant in explaining the sales variation since $t_\beta < t_{a/2}$ in which $t_\beta 1 = -0.768$, $t_\beta 3 = 0.095$, $t_\beta 4 = 0.034$ and $t_\beta 7 = -1.251$ lesser than critical value of $t_{a/2}$ which lead to the acceptance of $H_0$.

6.4 Regression equation

The regression equation of house price in relation to the microeconomic and macroeconomic factors is shown in Table 5 of regression equations which state the change of HPI according to the change of the factors involved. In this case, the only negative coefficient identified is the relation between GDP and the HPI which indicates a decrease in GDP of 1%, will increase the HPI by 0.0165%. The CPI index is found to be affecting the house price positively with its increase of 1% will increase the HPI by 2.086%, while the increase in the UNEMP by 1% will increase the HPI by 9.491%. An increase in OPR of 1% will increase the HPI by 0.123%. An increase in INC by 1% will increase the HPI by 0.007%. An increase of the cost production index of 1% will increase the HPI by 0.275%. It is found that there is no

<table>
<thead>
<tr>
<th>Significant F change</th>
<th>&lt;0.001</th>
</tr>
</thead>
</table>

**Table 3.**

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>Source: Authors’ own work</th>
</tr>
</thead>
</table>

---

**Table 4.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$t_\beta$</th>
<th>$p$-value</th>
<th>$t$-Test two tail</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>-0.768</td>
<td>0.444</td>
<td>Accept $H_0$</td>
<td>Insignificant to house price index</td>
</tr>
<tr>
<td>CPI</td>
<td>2.955</td>
<td>0.004</td>
<td>Reject $H_0$</td>
<td>Significant to house price index</td>
</tr>
<tr>
<td>GTSH</td>
<td>0.095</td>
<td>0.924</td>
<td>Accept $H_0$</td>
<td>Insignificant to house price index</td>
</tr>
<tr>
<td>OPR</td>
<td>0.034</td>
<td>0.973</td>
<td>Accept $H_0$</td>
<td>Insignificant to house price index</td>
</tr>
<tr>
<td>UNEMP</td>
<td>3.154</td>
<td>0.002</td>
<td>Reject $H_0$</td>
<td>Significant to house price index</td>
</tr>
<tr>
<td>INC</td>
<td>2.422</td>
<td>0.017</td>
<td>Reject $H_0$</td>
<td>Significant to house price index</td>
</tr>
<tr>
<td>COPI</td>
<td>1.251</td>
<td>0.213</td>
<td>Accept $H_0$</td>
<td>Insignificant to house price index</td>
</tr>
</tbody>
</table>

**Source:** Authors’ own work
relationship between the HPI and GTSH due to the zero values of the coefficient identified, thus, this concludes that it is not a function of dependency on the HPI.

6.5 Correlation test
Correlation is a bivariate analysis that measures the strength of association between two variables and for example between HPI and GDP. It is also showing the direction of the relationship. In terms of the strength of relationship, the value of the correlation coefficient varies between +1 and −1. As shown in Table 6, the HPI and GDP have a correlation of 0.744 which is close to 1. It means HPI and GDP have strong positive correlation. In other words, if GDP rises, the HPI will rise. The HPI and the Consumer Price Index (CPI) have a high positive correlation of 0.807, also close to 1 and a strong positive correlation. If CPI increases, HPI will also increase. HPI and GTSH have low positive correlation of 0.281 and is not close to 1. It means HPI and GTSH do not have a strong positive correlation. If GTSH rises, HPI will not rise.

The correlation between OPR and HPI is −0.061, and low negatively correlates and not close to 1. If OPR increases, HPI will not decrease and vice versa. The correlation between HPI and the UNEMP is 0.56 and positive. It is also low and if UNEMP rises, HPI will not rise. As for the correlation between HPI and INC, it has a strong positive correlation with 0.735 and close to 1. If INC increases, HPI will also increase. The relationship between HPI and

<table>
<thead>
<tr>
<th></th>
<th>HPI</th>
<th>GDP</th>
<th>CPI</th>
<th>GTSH</th>
<th>OPR</th>
<th>UNEMP</th>
<th>INC</th>
<th>COPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>−163.786</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>−0.016</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>2.086</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GTSH</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPR</td>
<td>0.123</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNEMP</td>
<td>9.491</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INC</td>
<td>0.007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPI</td>
<td>0.275</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.
Regression equation  

Source: Authors’ own work

<table>
<thead>
<tr>
<th></th>
<th>HPI</th>
<th>GDP</th>
<th>CPI</th>
<th>GTSH</th>
<th>OPR</th>
<th>UNEMP</th>
<th>INC</th>
<th>COPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPI</td>
<td>1</td>
<td>0.744</td>
<td>0.807</td>
<td>0.281</td>
<td>−0.061</td>
<td>0.56</td>
<td>0.735</td>
<td>0.749</td>
</tr>
<tr>
<td>GDP</td>
<td>0.744</td>
<td>1</td>
<td>0.925</td>
<td>0.359</td>
<td>−0.115</td>
<td>0.465</td>
<td>0.777</td>
<td>0.921</td>
</tr>
<tr>
<td>CPI</td>
<td>0.807</td>
<td>0.925</td>
<td>1</td>
<td>0.315</td>
<td>−0.004</td>
<td>0.53</td>
<td>0.809</td>
<td>0.921</td>
</tr>
<tr>
<td>GTSH</td>
<td>0.281</td>
<td>0.359</td>
<td>0.315</td>
<td>1</td>
<td>−0.069</td>
<td>0.268</td>
<td>0.311</td>
<td>0.292</td>
</tr>
<tr>
<td>OPR</td>
<td>−0.061</td>
<td>−0.115</td>
<td>−0.004</td>
<td>−0.069</td>
<td>1</td>
<td>−0.188</td>
<td>−0.131</td>
<td>−0.066</td>
</tr>
<tr>
<td>UNEMP</td>
<td>0.56</td>
<td>0.465</td>
<td>0.53</td>
<td>0.268</td>
<td>−0.188</td>
<td>1</td>
<td>0.492</td>
<td>0.384</td>
</tr>
<tr>
<td>INC</td>
<td>0.735</td>
<td>0.777</td>
<td>0.809</td>
<td>0.311</td>
<td>−0.131</td>
<td>0.492</td>
<td>1</td>
<td>0.775</td>
</tr>
<tr>
<td>COPI</td>
<td>0.749</td>
<td>0.921</td>
<td>0.921</td>
<td>0.292</td>
<td>−0.066</td>
<td>0.384</td>
<td>0.775</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 6.
Correlations  

Source: Authors’ own work

Regression equation

\[ HPI = -163.786 - 0.016\beta_1 + 2.086\beta_1 + 0.123\beta_4 + 9.491\beta_5 + 0.007\beta_6 + 0.275\beta_7 \]
COPI has positive correlation, and the value is 0.749, close to 1. If COPI rises, HPI will also rise.

7. Research analysis and discussion
Based on the MLR results and analysis, most of the types of houses that are chosen are median bungalow houses. This research was using median bungalow price since the average bungalow price would disrupt the data due to the existence of expensive and low market prices of bungalows. The house price index (HPI) was chosen as the dependent variable and the other seven variables of the independent variable in which included the unemployment rate, income, cost of production index, consumer price index, gross domestic product, overnight policy rate and government taxation and subsidy on social services were expected to have a high relation to the house pricing index was analyze based on the results of the statistical technique of Multiple Linear regression.

The data provided were from the year 2009 to 2021 by yearly data. The data consists of the value of house price, unemployment, income, and COPI. Based on the $t$-test two tail, the result of all variables shows the insignificant price in Kelantan, Terengganu and Pahang which concludes to accept $H_0$. Based on what is explained in the research methodology, since the values of house price, unemployment, income and COPI differ according to different state environments and scenarios, researchers can compare the trends in house prices in Kelantan, Pahang and Terengganu using three different MLRs. These three states differ because each state has a way of managing the economy according to the state administration. Different economic conditions according to environmental conditions, strategic locations and types of terrain make researchers able to compare the trends in house prices. In terms of house prices, Pahang has the highest measures of central tendency, which means that the housing prices in Pahang are more expensive compared to Kelantan which is the lowest price and Terengganu house prices are between Kelantan and Pahang. Purchasing power is very important in the economic chain process. Therefore, individual per capita income is important to find out the level of individual purchasing power. For these three states, it is analyzed that Terengganu has a higher income compared to the other two states, Kelantan and Pahang.

There are several factors reflected house prices in which can be positive and negative effects. The analysis shows that gross domestic product has a negative effect on house prices. However, the positive effect can be seen from the unemployment rate, cost of production index, government taxation and subsidy on social services specific on housing, income, consumer price index, and overnight policy rate.

8. Findings
Major findings of the research are made from the analysis of the methodologies which include literature review (LR) and MLR. Three factors are found to be significant in MLR which include CPI, INC and UNEMP. The factors affecting HPI such as the CPI are consistent with MLR and LR where both stress the significant effect of its changes on HPI. It is also consistent with positive correlation and coefficient values, which is also consistent to the theory when an increase of CPI leads to an increase of HPI. The factors of INC are also consistent for both MLR and LR for its significance in changes of HPI. Both have positive strong correlation, and positive coefficient which indicate that as INC increase, the HPI also increase. However, MLR indicates the significance of the unemployment rate, which is inconsistent in terms of correlation. The MLR highlights a positive correlation, where unemployment rate increases, the HPI increase, and oppositely LR findings emphasize increasing HPI as the unemployment rate decreases. Theoretically, from a short-term view,
the UNEMP and HPI are negatively correlated as the UNEMP increase. This could be explained by the plunged purchasing power of consumers due to the unaffordability issue forcing the house price to drop due to worryingly low demand.

Four factors are found to be insignificant from MLR which include GDP, OPR, GTSH and COPI. Most LR outcomes reach mutual agreement by placing GDP as a significant factor in HPI, inconsistent to MLR outcome which results from GDP as an insignificant factor to changes in HPI, which still shows a positive correlation from both LR and MLR, but a negative coefficient of GDP from LR. MLR and LR show different outcomes for insignificant factors of HPI from MLR outcome which is the OPR whereas a positive correlation is shown from LR while a negative weak correlation and positive coefficient are identified from MLR. Government taxation and subsidy of federal government development expenditure specifically on the GTSH reach consensus for its positive correlation from both LR and MLR which deemed as weak from MLR, with zero coefficient values, consistent with the results of GTSH insignificance. The finding for the COPI is found to be consistent for both LR and MLR for its positive correlation with HPI where MLR stresses its positive strong correlation and positive coefficient.

Unaffordable house prices mean increasing house prices. Housing affordability is an issue that affects major cities worldwide, in both emerging and developed economies. The two main factors are increased income growth and urbanization, which is fuelled by cities’ superior job prospects. Affordable housing is characterized as being of a sufficient standard of quality and location while not being prohibitively expensive for its residents to meet other essential needs. In other words, a house’s location, quality and structure is just as crucial as its affordability from a financial standpoint. The public and authorities in Malaysia would be well to keep a careful eye on changes in housing costs. Housing has become a platform for investment that may generate capital gains significantly bigger than earnings from labour or other real economy investments, not only because it is likely the single greatest investment anyone can make, and any changes will have an impact on a household’s balance sheets.

Unaffordable house prices can give a big effect on the purchasing power of the house. The relationship between house prices and the level of an individual’s ability to buy a house will give a different hypothesis. When house prices increase, the level of an individual’s ability to buy a house will decrease. However, this depends on the ability of an individual whether they can afford to buy a house. If the level of an individual’s ability to buy a house is below the ability or have a low income, maybe they will just rent instead of investing to buy a house.

The housing market would be disrupted, however, and it would be doubtful if it would be possible to build houses at a price that would be affordable to those with lower incomes. This is why revisiting the ceiling price without first examining the cause of the price increase is not recommended. This is so because the essential expenses involved in producing homes are correlated with both location and buildability. They show the viability of launching a housing project in a certain area in addition to offering information on buyers’ willingness or ability to pay for homes. Furthermore, it makes sense that housing prices would increase given the tighter regulations, higher compliance expenses, and rising inflation that all contribute to the cost of building materials.

In the perspective of this, it is important to first differentiate between price house rise and price rise. Generally, price growth just represents an increase in the basic value of a piece of property brought on by incomes, interest rates on mortgages, or other things. This might occur because of typical price changes for homes in a strong property market. Nonetheless, a
price rise shows that present home prices are far greater than their underlying values. Simply put, they are too expensive, and the price increase is unjustified.

9. Recommendation for future research
Based on the analysis of MLR done, several further steps should be taken into consideration to obtain a better outcome in identifying the significant factors in the changes in house price, as well as narrowing the probability of error for the research. Thus, for future research recommendations, wider sample data than the 2009 to 2021 span should be taken into consideration. The wider sample data could be obtained from the NAPIC person in charge, and it has to be reminded that the other factors chosen should tally with the years chosen, so it is recommended to obtain the collected data from the governmental body involved for further action recommendation. After further review, the rate of inflation should be taken into consideration to test its significance for the change of HPI.

10. Conclusion
There are several impacts of macroeconomic indicators that can be analyzed for housing prices (bungalows) in east coast Malaysia which is in Kelantan, Terengganu and Pahang. GDP, business cycle, inflation and unemployment and employment are macroeconomic indicators that impact the housing price. Firstly is GDP, as indicated in most research, it has been found that house price has a positive significant correlation with the GDP. Next, business cycle, we all know that a company’s performance throughout a period never stays the same. The economic activity and output of a company are always subject to ups and downs. Business cycles are the terms for these cyclical phases. Every business must experience its share of ups and downs. In addition, every trading cycle has its own distinct characteristics. The expansion, peak, trough/depression and recovery stages are the four fundamental phases. A company must constantly state which phase it is in. In addition, because the cycles are unpredictable, they must always be ready for a rapid shift in them. The big impact of macroeconomics which will have a negative impact is inflation. Inflation will erode purchasing power and this is the biggest and most significant impact of inflation. A general increase in prices over time diminishes customers’ purchasing power because a constant quantity of money will eventually allow for less consumption. Unemployment is where the level of unemployment reflects how well our economy is doing.

Microeconomic indicators that can be analyzed for housing prices (bungalows) in east coast Malaysia which are in Kelantan, Terengganu and Pahang can be divided by supply of housing and demand for housing. The supply of housing occurs because of several factors including construction companies, cost of production for construction companies, government taxation and subsidy and IBS companies. While factors occurring from the demand for housing included income, interest rates and lending rates, price of substitutes and consumer confidence.

Because incomes vary with age, employment might not be important. When it comes to employment, young people still cannot afford to buy a house. According to John M. Quigley in his study, nearly every young household has income stages that are relatively low compared to their long-run prospects (Quigley and Raphael, 2004). In Ong’s study, GDP is one possible reason for the percentage change of the Malaysian HPI which has been increasing year by year since 2000. Simultaneously, the Malaysian real GDP rate also has been getting higher year by year since 2000 except in 2001 and 2009 (Ong and Analytica, 2020). At the time the real GDP rate increased, which proves that economic growth is strong, and for that reason, the HPI increased too. In fact, the extension in Malaysia’s housing market has been linked to the improvement of the Malaysia Economy in current years. The
GDP is found to be significantly and positively correlated with the housing price in Malaysia. The increase in the GDP is because of the increase in personal consumption.

The impact of economic factors on the field of housing prices should be thoroughly and extensively analyzed in future research. Researchers should collect primary data directly from authorized sources rather than relying on secondary data because we cannot guarantee that the data is accurate or not when it is being updated. Therefore, to have a better result in future, the researcher needs a much longer period of study sample.

While cities all around the world have made significant progress in addressing the issue of affordable housing, development in Malaysia has been slow. In recent years, the need to enhance the supply of affordable housing has come to light. Nevertheless, to significantly improve the market for affordable housing in the long run, efforts must address the underlying problems that limit the availability of homes at an affordable price. Despite the availability of bank financing, many Malaysian people continue to struggle to afford housing, which reflects the continued worry that home price increase is outpacing income growth. This emphasizes the requirement to repair and strengthen home balance sheets coupled with putting policies in place to raise household income over the long term. To close the affordability gap, it will take coordinated efforts by the government, housing developers, banks, customers, interest groups and regulators, as demonstrated by the experiences of successful cities.

References


Bank Negara Malaysia (2021), “Second half 2021 financial stability review (2H2021 FSR)”.


Determinants of housing prices


DOSM (2022), “Key statistics of labour force in Malaysia, February 2022”, available at: https://v1.dosm.gov.my/v1/index.php?r=column/cthemeByCat&catid=124&bul_id=bU9ybEFIM2UrUlpxa2g4M1JkOFhTdz09&menu_id=Tm8zcnRjdVRWWlpWjRlbmltaOk1UT09

FRED (2021), “Real residential property prices for Malaysia”, available at: https://fred.stlouisfed.org/series/QMYR628BIS


MAMPU (2021), “Careers and what is Malaysia my second home programme”, Malaysian Administrative Modernisation and Management Planning Unit.


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