CURRENT TURKISH REAL ESTATE MARKET CYCLE IN TURKEY

By

Marwa Tlas Farzat

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APPROVED BY:

Prof. Beliz Özorhon ....

(Head of Department)

Assist. Prof. Semra Çomu ....

(Project Advisor)

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ABSTRACT

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The main aim of this project is to determine the Real Estate cycle stage in Turkey recently, where the house prices are supposed to be decreasing. In order to do this, the project tries to define the cycle concept, by reviewing literature of the housing sector in Turkey through different economical indicators, in order to figure out the market‘s current situation. The common view among economists is that timing the real estate cycle is critical to achieving big returns on investment. Since in a country the housing market is a leading indicator for the whole economy, the determinants, that are affecting aggregate housing supply and demand, are widely searched. In this study, we try to find the variables which describe the demand and supply status of real estate market in Turkey, in order to determine the cycle phase in the Real Estate market. It is difficult to be specialized on the housing market and rather study the real estate market in the aggregate due to data limitations. After examining several earlier examples and some published papers based on studying the Real Estate cycle in different countries, the research documents the Turkish housing market indicators in order to be informed about the current state according to previous studies. Even though the exposure of the real estate market on the financial sector is lower in Turkey compared to advanced countries, housing loans were significantly increasing, until the year 2018 when the high inflation occurred. The results suggest that Turkish housing sector is quite in recession, due to the unstable economical situation and some political uncertainties.

According to the empirical findings, the signs of all the variables are as expected and are significant in the long-run. Specifically, interest rate and cost variables that are significant in order to determine the consumer confidence level in the market.

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1.INTRODUCTION

1.1Main Introduction of the Study

Wherever there are financial crises, they often cause enormous shocks and adverse consequences. The main causes of this type of crisis are still being investigated. Such inquiries illustrate differences in market structure, timing and degree of vulnerability to crises. The real estate industry in Turkey accounted for about 8.4 per cent of gross domestic product (GDP) during the period of this study. The current study investigates the conditions in a rapidly growing economy under which the real estate sector has become a major source of vulnerability. In addition to that, a number of other studies have shown how a rapidly growing economy can cause market inefficiency and uncertainty when there are insufficient regulatory measures in place, resulting in a high level of speculation on asset markets. Turkey‘s costly financial crisis in 2001 consisted of at least three different crises: Real Estate crisis, a banking crisis and finally a currency crisis. Some people fear a real estate crisis may happen again in the future, given what has happened in the past. Given that policy makers, academics and business people in Turkey want to know how to prevent real estate crises from happening again, in which it is necessary the real estate cycle needs to be analyzed. Through this point of view, the real estate cycle can be seen as a logical consequences of reoccurring events reflected in variables such as price volatility, vacancies, rents and demand. Most real estate cycle reports illustrate how it is moving alongside the economic conditions. Generally, a business cycle upturn causes a property cycle leading to fewer vacancies and higher rents. Construction continues to expand as the productivity of developing properties improve profitability. On the other hand, the expansion of credit fed by the construction boom triggers a rise in interest rates as monetary policy tightens to combat inflation. The economic boom is slowing down and demand for real estate is falling. The economy goes into recession, and the prices of rents become low. A credit squeeze is hitting property companies, leading to wider housing downturn. Nonetheless, when attempting to clarify the cycles of real estate one needs to be cautious. Firstly, it is difficult to measure when the market has peaked or troughed, so relying solely on some leading indicators can lead to less ability to predict for real estate developers, home buyers, and policy makers. Second, there is no direct relationship between the real estate cycle and the economic cycle in a boom-and - bust scenario. For a developing country like Turkey, what would be the endogenous determinants between the real-estate cycle and the business cycle, especially during a recession, is still unclear. As the economy contracts, higher interest rates occur, which reduces domestic spending that then triggers a decline on the housing market. As the overall economy keeps slowing, developers and buyers are becoming more cautious, particularly when spending on big-ticket products. Real estate transactions are still taking place during this phase of recession, but few new housing projects are being started and consumers are delaying purchase decisions. On the other hand, a major cause of economic recession could be lower investment in real estate property. Observers in the real estate industry would like to know where the real market is heading so that more realistic strategic strategies can be made. Because each country has its own specific duration and magnitude of real estate cycles, this project aims to estimate the particular real estate cycle in Turkey by evaluating its peak, trough, expansion and recession periods. Starting from giving an overview of the housing sector in Turkey, some effects of the global economic crisis on the Turkish housing sector were addressed also. The estimation of the Real Estate sector will be discussed afterwards. In addition to that, a general overview of the housing demand in Turkey will be discussed from different aspects. The following section estimates the real estate cycle and its pro-cyclical indicators from different economical aspects. After analyzing those indicators, the last section will discuss the result of the current overall Real Estate sector in Turkey, especially the housing market.

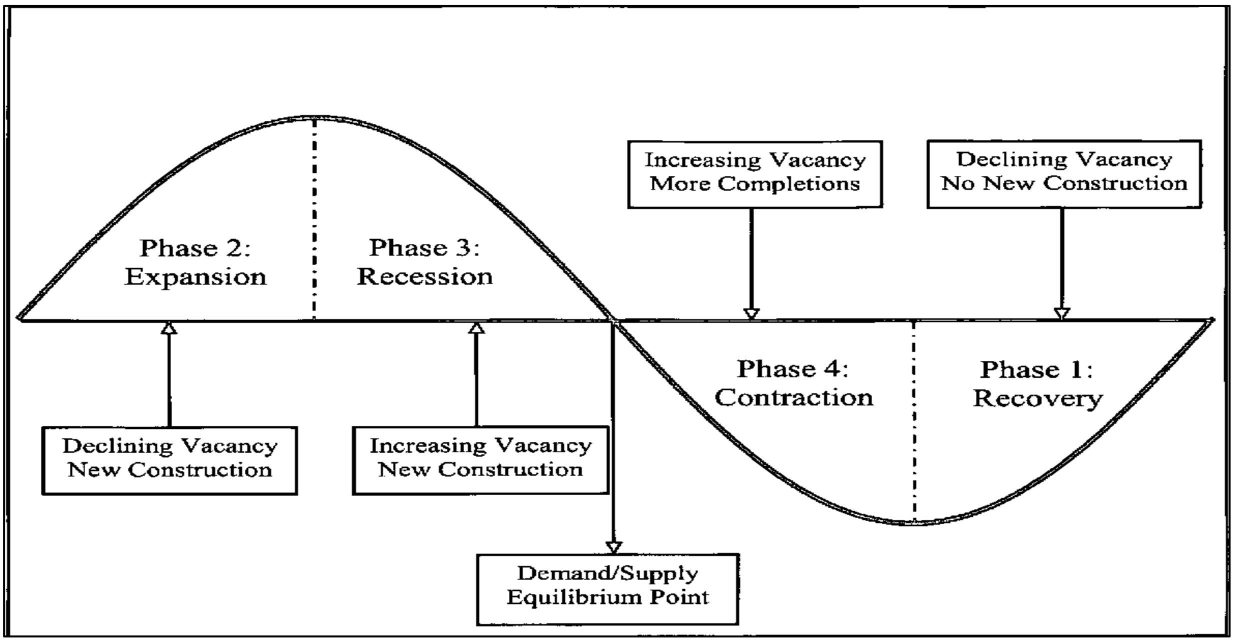

Figure 1: Real Estate Cycles Phases

1.2 Background of the Study

The Real-Estate sector plays a key role in the formation of country's economy.

The Real-Estate is a tangible asset which has three basic categories: Residential, Commercial, and industrial unites. In this research, the residential units only will be considered.

"Cyclic dominance is the degree to which the ups and downs of a time series are the result of the cycle in contrast to the variations that are caused by other factors" (Dewey, 1967).

The Real-Estate cycle is a sequence of recurrent events reflected on economic and demographic factors, that significantly affect the demand and supply of the property, and subsequently the Real-Estate market. Each cycle examines four phases: Recovery, Expansion, Hyper-Supply, and Recession.

The Real-Estate sector contains different participants, such as investors, financial institutes, construction development companies and public authorities.

The property cycle can assist the low-income homebuyers to understand the characteristic of each phase, to make a decision whether to invest or not. The cyclical behaviour of the Turkish Real-Estate market will be analyzed from different perspectives in the housing sector.

There are lots of papers and academic researches focusing on this subject and discussing the property cycle from different perspectives. It could be microeconomic factors related to the construction sector, or macroeconomic factors such as the inflation, vacancy rate, and rent levels. This study will be a quantitative research based on mathematical equations and historical statistics, that analyse the housing sector in order to investigate the investment climate in Turkey, and a case study that offers a background of the Turkish Real-Estate industry.

1.3 Purpose of the Study

The main aim of this research is to determine the current real estate cycle phase in Turkey from a holistic point of view that have an effective role on Real Estate making investments decisions, considering the economical criteria that affect cycle's current phase determination.

Macro economic data analysis is applied to identify the most significant leading indicators of supply and demand that affect the housing market in Turkey.

In order to reach the aim, the following objectives are targeted to meet:

- To identify the main factors that affect the Real Estate housing market.
- To compare those factors and indicators in the four main phases of a Real Estate cycle.
- To determine the relation of each indicator with the ups and downs of the housing market.

1.4 Literature Review

Real estate is one of the foremost and traditional investments in the Turkish housing market. Analysing the Real-Estate cycles and their significant affecting indicators have been a subject to various research studies. Pholphirul and Rukumnuaykit (2009) determined the Real-Estate cycles by two main cycles, the Physical Market Real Estate Cycle and the Capital Market Real Estate Cycle, they suggested the estimation of the housing price using the income approach, and the determination of the real estate bubbles caused by the speculation in the market.

Mueller (2001) suggested that the lag between supply response and demand growth is the major cause of the volatility in the real estate market cycles, he considered the Normalized Occupancy Level for each cycle as the market goes through the Long Term Occupancy Average during an up-cycle and a down-cycle. Muller also suggested the Rental Growth Theory that consider the rent as a function to determine the market's position in the real estate phase as indicated by market occupancy. A research by Kaiser (1997) found that exaggerated supply of residential property, which at that time was higher than demand, had triggered inflation and negative returns on the real estate cycle. Jang *et al.* (2010) found that the unsold housing stocks is an important indicator in the housing market, it is related to the profitability of the construction industry in the country, and it appears as a result of an imbalance in the supply and the demand of the real estate property.

Hussein (2009) suggested calculating the absorption rate obtained from percentage of spaces, by determining the absorption as the amount of changes in the occupancy to the vacancy rate derived from a mathematical equation. Beraia, *et al*. (2015) suggested the Hodrick-Prescott filter in order to determine the applicability in analyzing the different variables and time intervals that are characterized with the growth rate of changeable median, this approach used for distinguishing long-term tendencies, trends and cyclic instability in Georgia. Zelazowski (2017) found that the correlation between cycles is significant for the housing market cycles analysis using the Harding-Pagan algorithm, in addition to the verification of the correlation degree and the synchronisation of the analysed cycles. Coşkun (2010) suggested the cost-benefit analysis for the objective assessment of the Turkish real estate market.

Krystalogianni *et al.* (2004) suggested the Growth Cycles approach to estimate the periods of expansion and contraction represented as cyclical movements, in addition to the Classical Cycles approach, in which the expansion and contraction were represented by the level of activity. Rottke and Wernecke (2002) evaluated the real estate cycles from macroeconomic perspectives, as the real estate cycles are regarded as part of the business cycle, they focused on the overall construction activity and sector unemployment rates, they considered also the microeconomic factors to differentiate the space market, the investment market, the market for new construction and the land market, as a significant part of the real estate market.

1.5. Organization of the Study

The structure of this project is formed into six main chapters excluding the introduction section. In the second chapter, the global financial crisis in 2008 is illustrated with its effects on Turkey's Real Estate housing market in terms of residential buildings number and house sales. In chapter three, a general overview of the housing sector in Turkey is investigated with the explanation of the demand leading factors since the social housing movement existed, and the enrollment of Banks in providing housing loans. Chapter three is explaining the mechanism of estimating the real estate cycle. Housing demand is discussed in chapter four, which is resulted from economic and demographic factors, considering house sales in the main three cities in Turkey, in addition to the importance of consumer consumption behaviour effect. Macro data analysis is examined in chapter five, considering the economic leading indicators that drive the demand and supply of the real estate market, and thus its status in the country. Chapter six is a discussion of the findings based on chapter five analysis. Summary and conclusion of the project is supplied in the final chapter.

2. An Overview of Housing Sector in Turkey

Many important factors lead the increasing demand for housing in Turkey, such as the high rates of population growth and urbanization. In addition to the population growth rate and urbanization, there are some other factors and reasons that cause an increase in the housing demand. The shortage of regulated lands could be an important restrict on the housing production. Some other factors could also affect the market, such as the insufficient mortgage credits, income distribution problems, unemployment rate, and per capita income level are factors that create a pressure on housing supply. The social housing movement did not exist significantly in the period started from 1950 to 2000. That period can be differentiated by many indicators, such as the lack in housing regulations, the rapid rate of urbanization, and the existing legal framework that has not been implemented sufficiently. “The problem was mainly observed to be the insufficient housing in that period” (Yetgin and Lepkova, 2007). Due to the financial status of the people and the need for housing, the situation led people to live in slums, in which most of those places were in illegal status. After the 2000s, the problem of the housing market had been assumed to be the low-quality houses, rather than the supply shortage. Turkey's Housing Development Administration placed great emphasis on providing housing supply for the middle-income and low-income groups. In any country, the political stability is considered to be as important as the economic stability in the housing sector development (Ören and Yüksel, 2013). Turkey faced a financial crisis in 2001, some of its effects were the closing down of thousands of companies, more than 20 banks failed, budget deficits reached to about 14 percent of GDP, and the unemployment rate increased.

In more recent years, the banks had the opportunity to provide more funds for housing sector, and the global investors have been more interested in Turkey. Some improvements in the banking loans system have affected the housing sector significantly, in which the house-related debts increased by about 50%, and the mortgage loans have increased by about 7% in the period 2003-2005. In addition to that, after the 2001 crisis, the expansion of funds provided an opportunity for increasing the mortgage loans as well. The demand for housing increased, and the houses‘ prices rose accordingly.

The earthquake in 1999 has affected the housing sector, for the houses that have not fixed permits, or building permit, in addition to the corruption in construction sector due to the lack in auditing, inspection have been subject to tempered debates. “The financial crises in 2001 in Turkey, and the global financial crises in 2008, showed that the mortgage system can be quite vulnerable to the ongoing situation, as the households might not be able to pay mortgage loans” (Coşkun, 2011).
Cultural transformation is another important factor which affects the housing market. Both increased pace of urbanization and the rapid growth of the population increased the gap in houusing. The families are more likely to sperate; the young members leave their families at early age (because of personal independence, schooling, or work), and hence the demand for housing is growing.
The supply of housing in Istanbul and the coastal cities may have exceeded a threshold; but in the other rapidly rising cities there is a shortage of supply. Public housing policies are therefore relevant.
According to the Turkish Statistical Institute (TSI), the residential stock was approximately 16 million in 2000, and approximately 84 per cent in urban areas. Only 33 per cent have a per mit for the occupancy.
Each year since 2006, 500 thousand houses have been built. In 2011, the volatility in exchane rates and the rise in interest rates decreased the construction by around 20 percent, but

increased marginally in 2012 and rose again by about 79 percent in the following years. That rises came as finance costs decreased, and the expected increase in VAT on new homes.

Thus, at the moment there appear to be about 22 million homes. The demand for housing is expected to rise, as the population is expected to grow from 38.8 million in 2013 to 47.1 million in ten years. Therefore, the number of houses is projected to grow to over 25 million, and the estimated growth in housing demand is on average around 450 thousand per annum. Some estimates are even higher. Some figures also are higher. GYODER expect an extra housing demand of 7.7 million, which means 700 thousand additional houses per year (Smith, 2012). Approximately 24 percent of the purchases of households took place in Istanbul, 15 percent in

Ankara and 7 percent in Izmir in the period 2008-2012. Over the past decade, foreigners tendency to buy a house has risen by around 9 per cent annually. Istanbul is expected to be ranked among Europe's most favored metropolitan. In the meantime, prices in the housing sector rose about 10 per cent annually due to declining interest rates and higher VAT. The correlation between the rent and house prices is around 0.99. The mortgage loan ratio to GDP in 2011 and 2012 is around 5.6 per cent and 6 per cent respectively. In the EU, this ratio is about 52 per cent. The ratio of mortgage loans to total loans from households is about 50% (50% in 2006 and 45% in 2013). The ratio dropped in the wake of the global crisis of 2008. The government has announced rent subsidy of 18 months and lower interest rates for house owners particularly in the earthquake areas. The EU-27 ratio is about 52 per cent. The ratio of household mortgage loans to total household loans is about 50% (2006 50% and 2013 45%). The ratio declined after the financial crisis of 2008.

However, all these partial policy implementations are not adequate to boost mortgage loans due to the uncertainty of economic indicators and low willingness to pay compared to monthly installments, in addition to the high inflation levels since 2018 and the high interest rates applied, which have generally changed the entire real estate market situation.

In the graph below, the mechanism of the housing market cycle is illustrated:

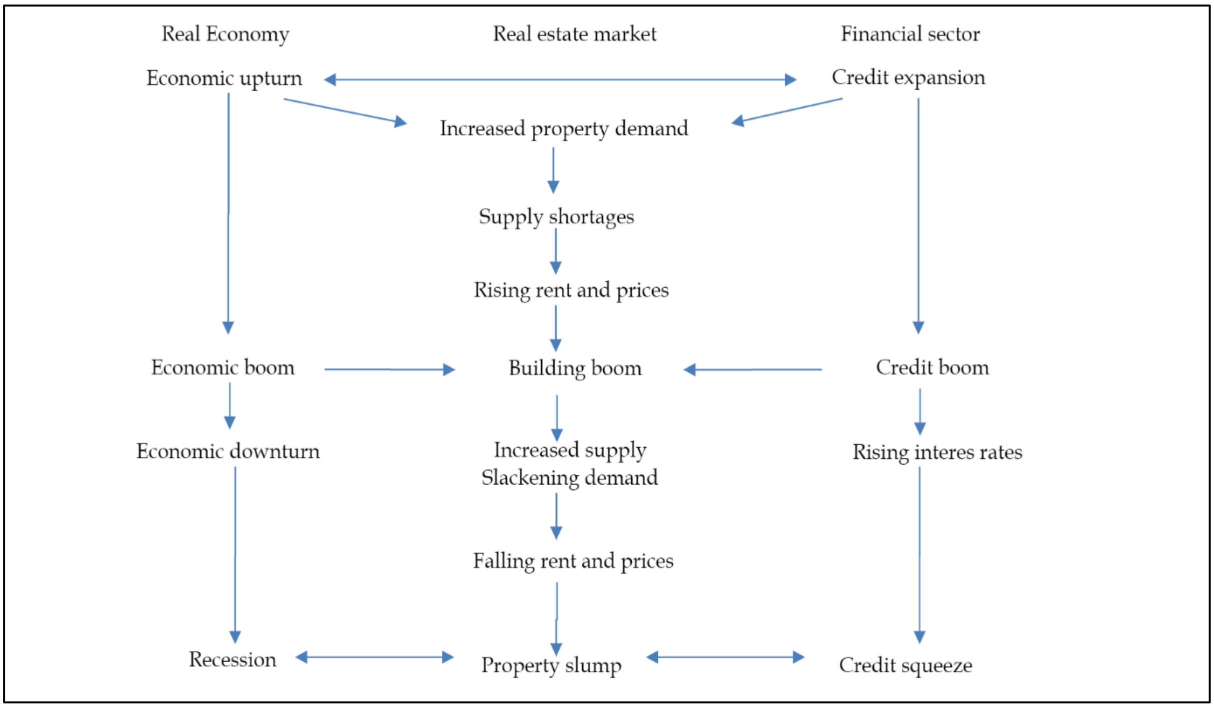

Figure 2: The mechansim of the housing market cycle [8]

3. The Global Financial Crisis and the Turkish Housing Market

Various studies show that 2007-2008 global financial crisis has affected many developed and emerging countries both in their financial and real sectors. Its effects spread to whole world through some contagion channels. Turkey is one of the countries who has been effected deeply. Until global crisis Turkey has faced various crises and Turkey was almost ready for global crisis as the Turkish government has implemented various stabilization programs which were based on a stand-by agreement with the International Monetary Fund (IMF). As a result of these problems, Turkey has a better public finance balance and is now more experienced than before the crisis. Also the auditing in financial sector has strengthened (TOBB, 2008). Compared to the first nine months of 2008, according to the Occupancy Permits, the number of residential buildings dropped from 52,185 to 38,820, decreasing by 25.6 %. At the same period, floor area of residential buildings reduced from 44,627,128 m2 to 35,565,942 m2, decreasing by 20.3% (TurkStat, 2010b). On the other hand, despite the global crisis, the number of house sales increased 531,746 units in 2009 (TurkStat, 2010c). But after a reasonable time-lag, it seemed that the number of house sales predicted to be below 2009 house sale levels number at the end of 2010.

4. Estimation of the Real Estate Cycle

This section presents an estimated cycle in the real estate and property sector as well as estimating an appropriate fundamental price level for real estate and property. In addition, this section attempts to configure leading indicators of the cycle and various pro-cyclical indices using both theoretical models and existing data. Asset price bubble theories have gained significant attention from micro and macro economists alike. A variety of studies rely on interpretations of the asset price volatility, which may not be focused on the asset's own fundamentals. Analysts need to consider the cycle of each asset when attempting to justify price movements. The price movement of each asset depends on both internal and external factors, such as determinants of demand, determinants of supply, government policies and the overall economic status. In the real estate market, the cycle of each type of asset has a distinct feature led by differences in each phase of the cycle itself. Ahuja, Poonpatpibool and Mallikamas (2003) researched the real asset cycle as overall, particularly focused on the real estate. They noted that the asset price usually rises slowly over the expansionary period, but falls rapidly over the down period. There is about 40 percent chance of a gradual rise, followed by a significant decline in prices. In the event of a significant price adjustment, the real estate price index will fall by approximately 30 per cent, where the adjustment process from the peak to the lowest point takes approximately four years. The real asset price index, however, also correlates with the overall economic performance of the country and the Gross Domestic Product (GDP). The consequences of the changes in the country's GDP also have a significant impact on this sector. The real asset price index, however, also correlates with the overall economic performance of the country and the Gross Domestic Product (GDP). Finally, they found that the impact of the economic bubbles on the real estate market vary in different countries due to the financial system applied by each government. If a country bases accumulation of funds via the banking system, the adverse effects of an economic downturn on the real estate sector will be more serious than in countries that collect funds through financial resources. In theory, the real estate market has adjustments that follow a cycle. This cycle affects the overall price level, rental prices and the market value of houses that have been occupied or properties that are under construction. Demand and supply factors affect the dynamics of the real estate market in every way. For example, if there is a surplus, induced by excess housing supply or a decline in housing demand, the vacancy rate will increase, causing suppliers (landlords or real estate companies) to decrease the rental rates and the real estate prices. The decline in those prices also has a negative effect on the estimated market value of mortgages.

Followed by a sharp decline in real estate prices overall. Other than the factors from real demand and supply, real-estate investment is one of the most significant factors that decide cycle ups and downs.

Speculation in the real estate market is a phenomenon in which investors expect that they are able to sell (buy) a real estate asset at a higher (lower) price than the price at the time the asset is bought (sold) at a specific period. Malpezzi and Wachter (2002) suggest that speculation is a major factor affecting the fluctuation of real estate prices. They also find that speculators' irrational expectations are a major cause of real estate bubbles. Additionally, some studies suggest that a high proportion of loans from commercial banks to the real estate sector have a direct impact on a rapid increase in property prices. Collyns and Senhadji (2002) and Herring and Wachter (2002) find that excessive commercial bank loans are a major factor contributing to bubbles in the real estate market. The price of real estate depends on projected future rentals of real estate assets and other interest rate variables, from a standard asset-pricing model. Expected future rents are projected by demand factors such as the Gross Domestic Product, rate of population growth and number of new property loan applications. Houses Supply factors are found to have no major impact on these projected rents as the supply in those markets is fairly inelastic due to the fact that land availability is fixed and house construction typically takes a long time. Thus, the number of houses supplied has no major impact on the price of the properties. In summary, real estate prices are determined by fundamental factors from market demand and supply and from information and adjustments in the financial market. Problems related to these factors, such as imperfect information, rigidity of supply and an imbalanced financial market, may therefore trigger a change in the real estate price that may be more than that based on the expected value of the real estate. Problems on other markets, may lead to bubbles in real estate. Recall from an earlier discussions, two main cycles, the Physical Market Real Estate Cycle and the Capital Market Real Estate Cycle, determine the Real Estate cycles. The Capital Market Real Estate Cycle reveals movements in the capital market that are affected by investment and speculation in the real estate market from policies and strategic actions in the money and capital markets. An analysis of the capital real estate cycle market process will define pro-cyclical variables, which are variables that can predict fluctuations in real estate prices over various periods of time. The period in which housing prices increase indicates expansion of the real estate market while the period in which the housing price falls indicates market recessions. From the theoretical point of view, house prices are dictated by market demand and supply, the price rises as a result of an rise in demand that exceeds the supply. The price begins to fall when demand starts outstripping the supply. Therefore, by studying demand and supply factors, we can forecast home prices, and compare the magnitude of market’s demand and supply. The impact of demand and supply factors on housing prices, and subsequently on real estate prices, are summarized in the table below.

Table 1: The Impact of Demand and Supply on housing Prices

Variable	**Contraction**	**Recovery**	**Expansion**	**Recession**
Supply	Decrease	Recovery	Increase	Increase more than Demand
Demand	Decrease	Recovery	Increase more than Supply	Gradually Increase
Vacancy Rate	Significantly Increase	Decrease to Normal Level	Lower than Normal Level	Increase to Normal Level
Rent	Decrease	No Change	No Change	Low Expansion
Investment	Low Transactions	Almost no Transactions	High Transaction Volume	High Transaction Volume
The Effects on the value of Real Estate	Decrease Rent and Increase Cape Rate	Increase Rent but Cap Rate at Highest Level	Increase Rent and Decrease Cap Rate	Stable Rent or Decrease Rent but Cap Rate Starts to Increase

5. HOUSE DEMAND IN TURKEY

Many developing countries faced an increasing trend in housing demands. This observed change has mainly resulted from economic and demographic factors. As Turkey has been considered as a developing country, this trend is valid for. Many factors affect the housing demand in the country, such as higher population rates, increased urbanization, decreasing averages of household population, and the economic growth rates, which affect the demand in Turkey significantly. The analysis of housing demand has recently become highly important for the decision makers and market investors, because of the widespread effects of the housing sector on the economy.

The Household consumption behaviour, which is named as household expenditures is one of the main determinants of the housing sector, which can shape both demand and supply of the housing market. The household expenditures are strictly correlated with the policy restrictions and the current situation of the domestic market. The stable political and economic environment, can increase the household's buying desire with creating multiplier effect on the economy. The increasing population, government regulations and the housing sector share in the country's fixed capital investment, are the most significant factors that could directly affect the household consumption expenditures. The construction confidence index, which showed the volatile trend, is another important indicator that represents consumer's attitude to the housing market and gives general outlook for the future developments.

Despite the rate cut policy of the Central Bank of Turkey (CBRT) and the new incentives of the government for the housing market, growth for household expenditures in the housing sector is not expected to be high, as the uncertainty in the domestic market continues. Many uncertainties could affect the behavior of the house market, such as the depreciation of the Turkish lira against the dollar, and the rising inflationary pressures and geopolitical risks are the main obstacles that could restrict consumers from investing in the housing sector.

Because of the surplus in the housing sector, property prices have fallen by as much as 20 per cent in many parts of Istanbul after large-scale urban development projects produced over-supply on the market.

According to industry representatives, the equilibrium in supply and demand in the sector has faded. The falling trend in house prices is particularly prominent in terms of high-end units and in neighborhoods undergoing intense urban transformation. According to experts there are two major explanations behind this trend. Firstly, as part of urban transformation projects, many people needed to rent new homes because their own properties were being reconstructed. Prices immediately rose as the sector saw a growing trend in housing demand. When most of these people started returning to their rebuilt homes, their rent contracts ended one by one, resulting in over-supply of the rented houses. Second, developers for a number of properties were demanding very high prices for their apartments, but those prices started to fall in line with the reality of the market. Housing developers who can't sell their properties have now begun slashing prices.

Turkey is in a sort of crisis and the property market is a reflection on that. One symptom is a very high level of inflation that means that the apparent rise in Turkish property prices is not reflective of reality. In addition, when adjusted for inflation, real estate property prices fell. There are high interest rates, a stalling economy, a plunging currency and a debt buildup, all of which are not necessarily a full-scale economic emergency but could be characterized as economic influenza. This means low growth for the locals, rising unemployment and dropping property prices in the coming years. House prices in Turkey fell by 9.2 percent in the inflation-adjusted terms during the year until November 2018, a sharper decline over the same period last year occurred in the inflation-adjusted price drop of 1.5 percent. Additionally, total residential sales in Turkey also fell by 2.41 per cent in 2018..

Nominal house prices in Istanbul, Turkey's largest city, rose by 6.3 percent during the year to November 2018. However, when adjusted for inflation, house prices actually fell by 12.6 per cent y-o-y.

- In Ankara, the capital of the country, house prices in November 2018 rose by 8.9 per cent y-o - y. However, when adjusted for inflation, they fell by 10.5 per cent.
- In Izmir, the third largest city in the region, house prices increased by 12.3 percent y-o-y in November 2018, but prices actually dropped by 7.6 percent y-o-y when adjusted for inflation.
- Turkey 's national house price index rose by 10.5 per cent in the year to November 2018, according to the Republic of Turkey's Central Bank (CBRT). But when adjusted for inflation they dropped by 9.2 per cent y-o – y.

6. Macro Data Analysis in Turkey

6.1 consumer confidence

The consumer confidence index is about the tendency and probability of buying or building a home by households over the next 12 months from 2012 to 2020.

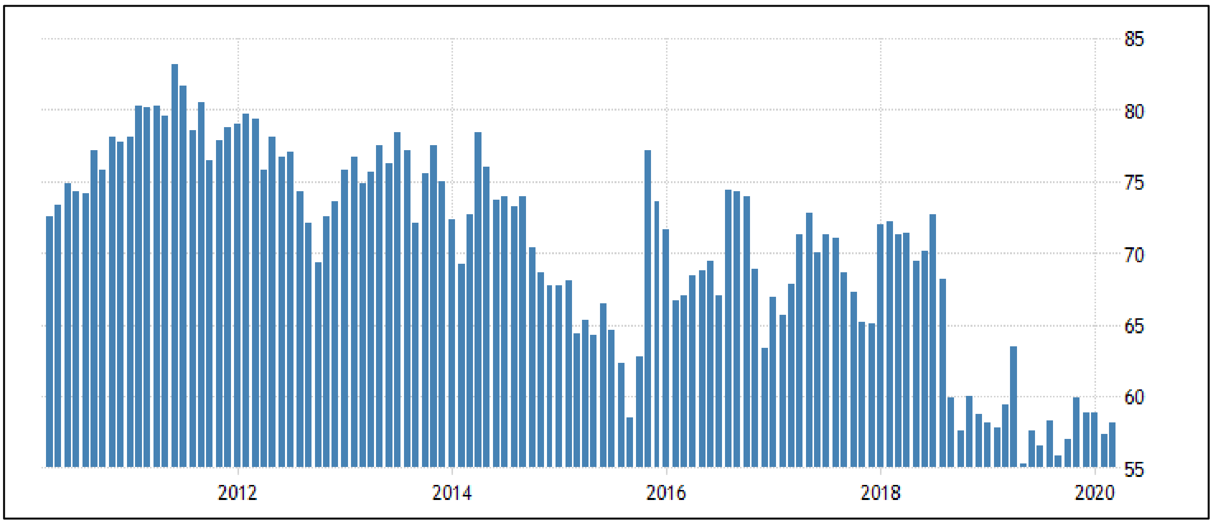

Figure 3: The Consumer Confidence Index

Source: TUIK

The expectation of a household consumption is related with the future home prices, it is important for the housing market because the potential investments in the future are determined by those expectations. In Figure 1, the probability of buying or building a home by households over the next 12 months shows the decreasing trend from 2012 to 2020. The Consumers in Turkey may expect the reduction in housing prices over the upcoming period. These expectations may lead to additional decreases in housing prices. As it is shown in the graph, the highest point between 2012 – 2020 is observed in 2012, most probably because of many indicators such as (the growth of the Turkish economy, less inflation rate, labor and employment, public finance, foreign trade, and the balance of payments) that affect the Turkish economy significantly in which it built the consumers confidence and increased their tendency to buy homes at that period. The consumer confidence in Turkey decreased significantly in 2019 after it raised to more than 70 in 2018, it reached 58.8 in Oct 2019, this happened as a result of the general economic situation.

6.2 Weighted Average Interest Rates on Mortgage Loans

Weighted Average Interest Rates on Mortgage Loans in percentages from 2015 to 2020.

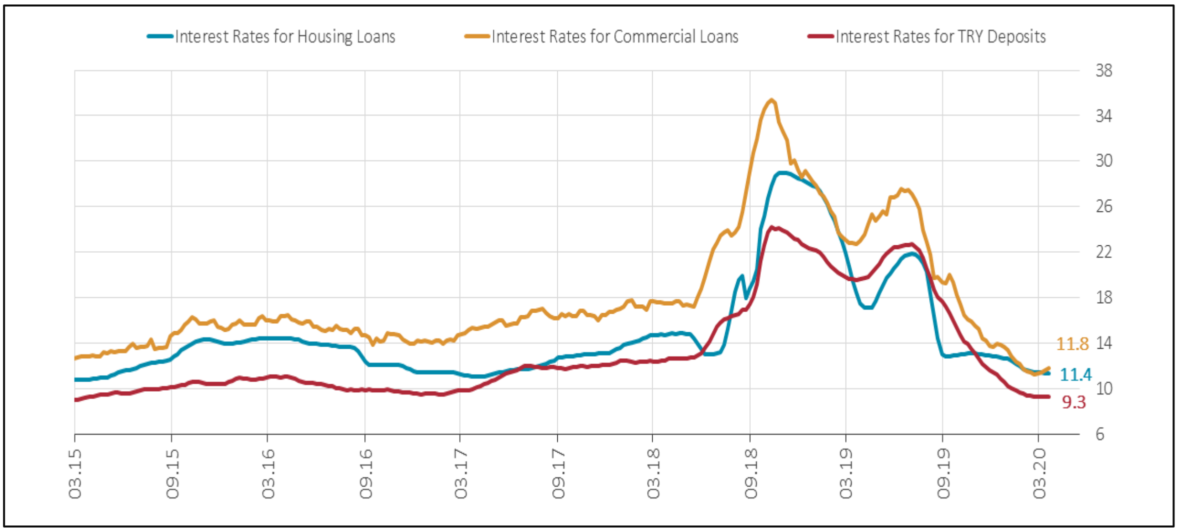

Figure 4: The Weighted Average Interest Rates on Mortgage Loans

Source: TCMB

The interest rate on mortgage loans for housing increased slightly from 2015 to 2016, then it showed a slight movement with few fluctuations in 2017, the low interest rate on long term credits makes borrowing less costly, hence, increase the demand for those loans regardless of the consumer expectations in macroeconomic theory. The aim of banks to increase credit expansion and boost the housing sector by inducing investments, lowering the interest rates and increase the demand on mortgages. At that period a boom was expected due to the discounts and the 1.4 million units sold at 2017. Turkey Central Bank has sharply increased its benchmark lending rate in 2018, that dramatic increase has been recorded as the Bank was trying to stem the heavy decline in the lira. The country is one of the most vulnerable emerging markets because of its heavy dependency on the foreign debt. The sharp increase in the interest rate in 2018 (24%) started to slow down in 2019, the bank cut set the interest rate to be 12%, this happened due to which the Turkish economy was battered by currency volatility, high inflation and high-interest rates, resulting in tumbling domestic demand from consumers and investors.

6.3 The Housing Price Indexes of Three Major Turkish Cities.

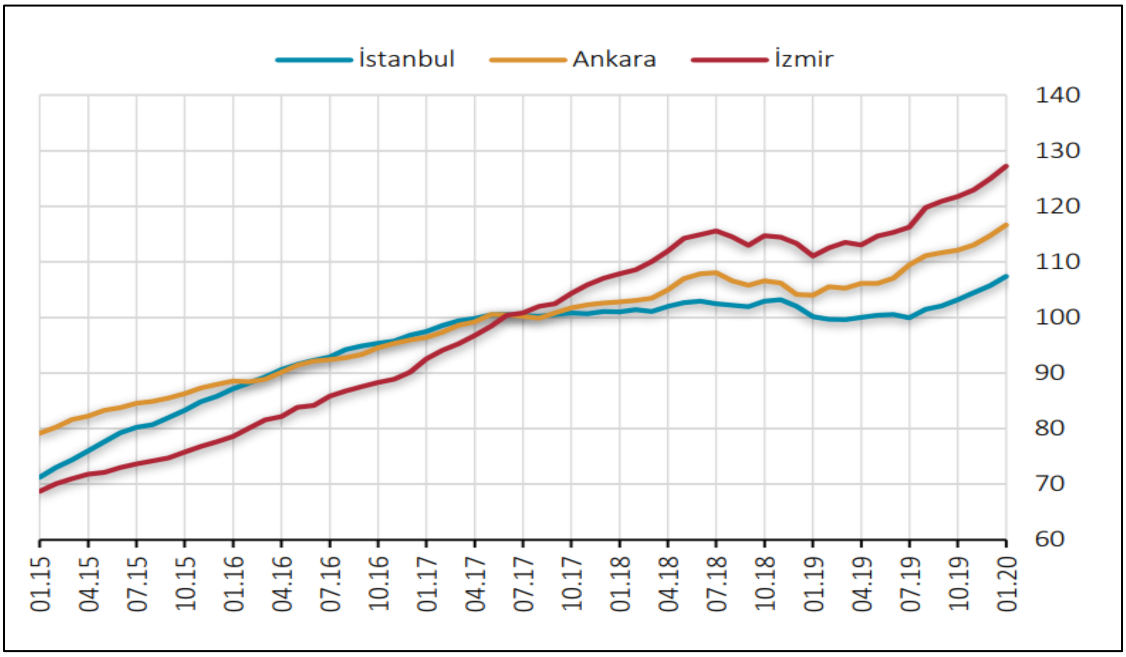

Figure 5: The Housing Price Indexes

Source: TCMB

Housing prices are crucial indicators of the real estate market and overall economy. Hence, the data analysis of house price index gains importance to monitor the housing market. However, Central Bank of Turkey began to take house price index into consideration, particularly after 2010. The effect of financial crisis in 2008 was huge in this manner. As the nominal house price index of three main cities in Turkey (Istanbul, Ankara, Izmir) is investigated in this figure. The property prices increase in average between 2015 and 2020. After 2017, house prices in all the three cities moved up. The highest record in 2020 is for Izmir, as a result of the urban transformation and the increase in the net migration rate in the city.

The global financial crisis in 2008, and the enactment of mortgage law in 2007 made it clear that a house price index was needed for Turkey. The important point here is that the sharp increase in the index shown in 2018 followed by some fluctuations, it decreases slightly in the first half of 2019. In that period of higher interest rates, the increase in borrowing costs discourages households to get housing loans and invest in housing, leading to lower house prices. On the contrary, when the housing loan interest rates go down, the demand for housing loans increase leading to higher house prices. The sharpest increase is observed in Izmir.

6.4 Annual Changes in Nominal and Real Housing Price Index.

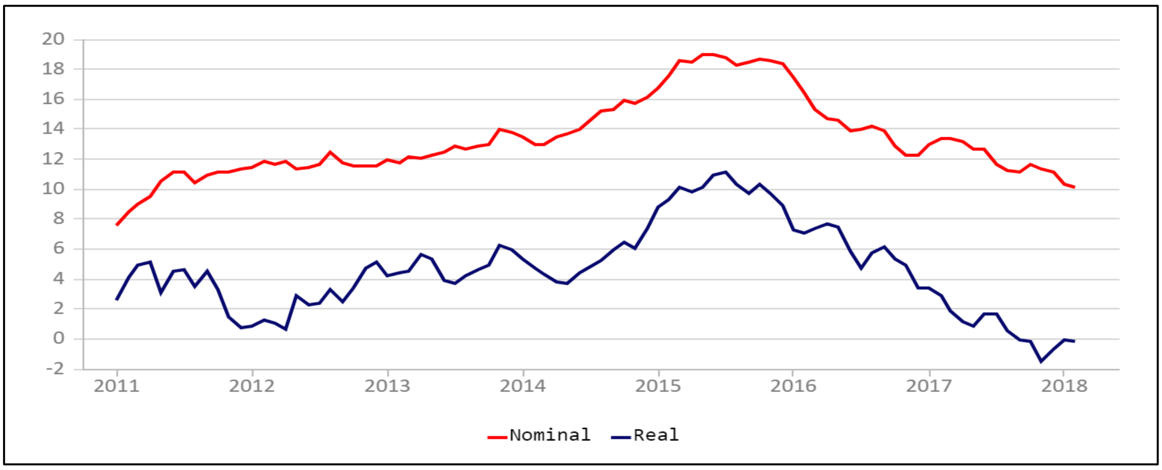

Figure 6: The Annual Changes in Nominal and Real Housing Price Index

Source: TCMB

As it's realized from the above figure, the change between 2011 and 2018, annual changes in the real and nominal Housing Price Index move together. There are fluctuations between these years, however, we realize a sharp decline in 2018, the significant point here is that the sharp decreases in the index following a rising trends after 2012 and 2014. This situation may show the housing bubble that Turkey experienced in those years. In housing bubble, decrease in the housing prices come after regular increase in prices.

6.5 Consumer Price Index graph in Turkey.

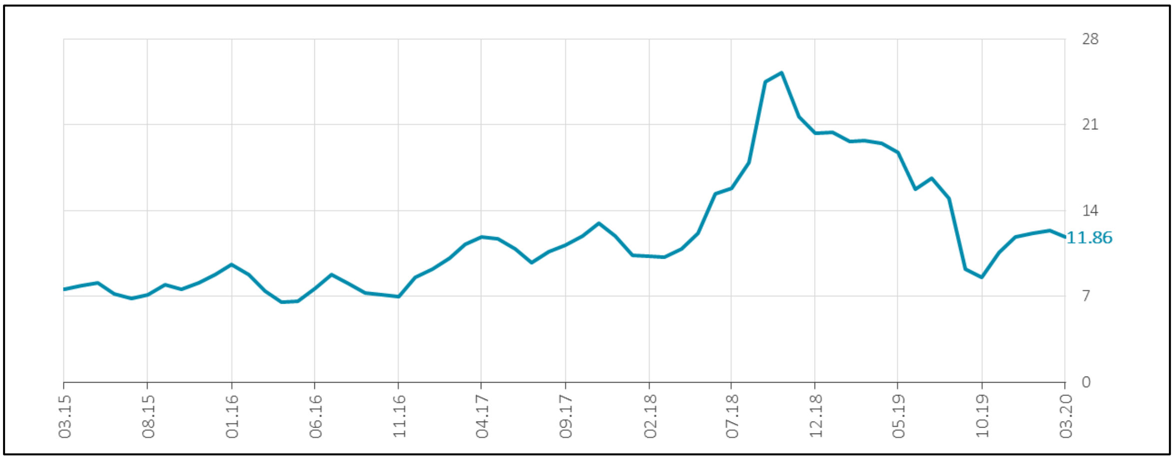

Figure 7: Consumer Price Index

Source: TCMB

The Consumer Price Index is important because it reflects the real value of housing prices in Turkey. The CPI aimed to calculate the inflation rate by using the change in the housing sector. The expenditures of households, foreign visitors, and constitutional population are taken into account. The graph reflects the inflation on housing prices in Turkey. The gradual decrease after a sharp price increase in 2018 may be a sign for a house bubble. The high increase in 2018 happened due to the high inflation rate that happened in Turkey at that period.

6.6 The Construction Permit Index in Turkey.

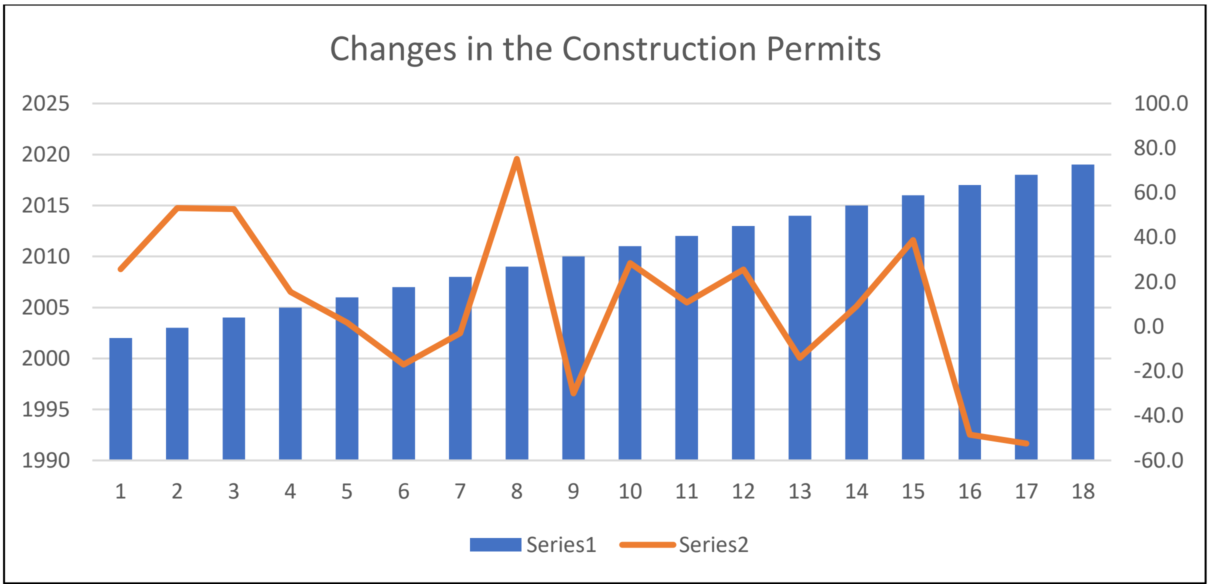

Figure 8: The Construction Permit Index

Source: TUIK

The Construction permits fluctuate from 2002 to 2019. The sharp increases in 2010, 2012, 2014 and 2016 are observed. Here, the increase in construction permits in 2012 and 2014 is coherent with the findings in previous figure. The sharp increase in house price index in 2004, 2005 and 2010 is matched with the increase in construction permits in those years. Till 2016, the relatively small but sharp increase in construction permits may arise from the government policy of the reduction in ad valorem taxes to revive the housing market.

We observe a sharp decrease in the construction permit index in 2018 and 2019 relatively, it happened due to many factors such as the increase in the consumer price inflation rate, the Turkey's economic confidence index fell further by 5%, which is the lowest level seen since January 2009, in addition to the low mortgage rate at that period.

6.7 Household debt to GDP, in percent in Europe

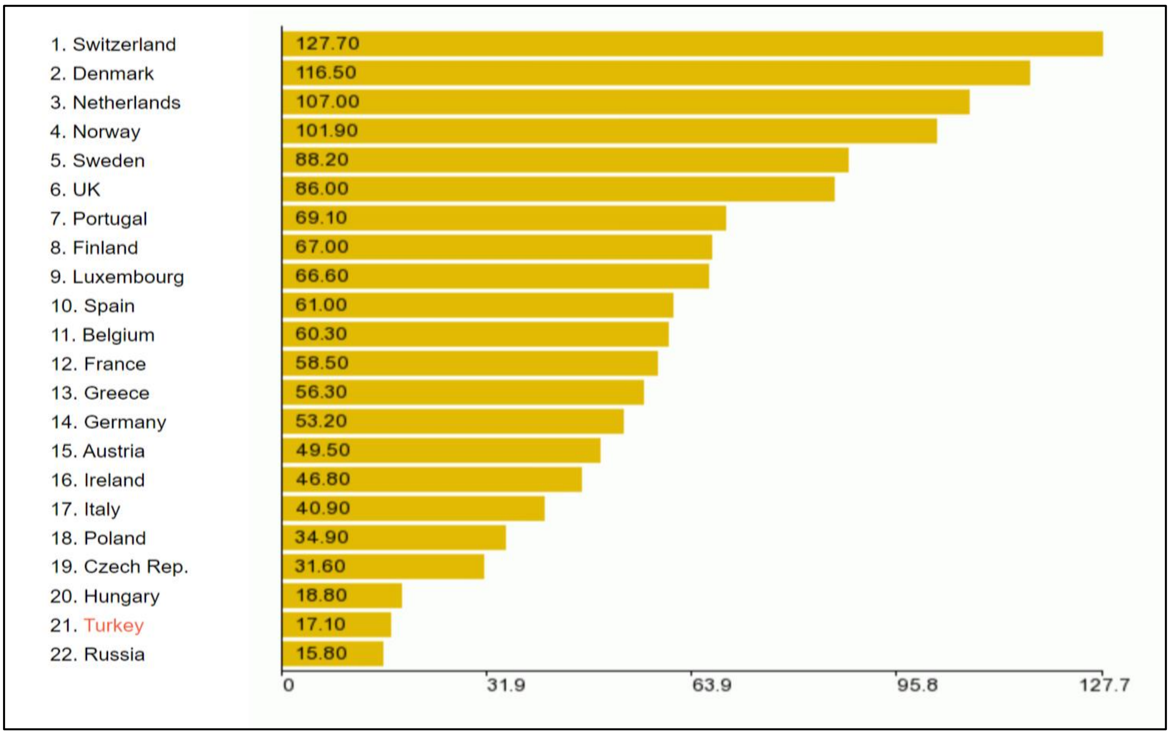

Figure 9: Household debt to GDP in Europe (Source: The Bank for International Settlements.)

The average for 2017 based on 22 countries was 62.49 percent. The highest value was in Switzerland: 127.7 percent and the lowest value was in Russia: 15.8 percent.

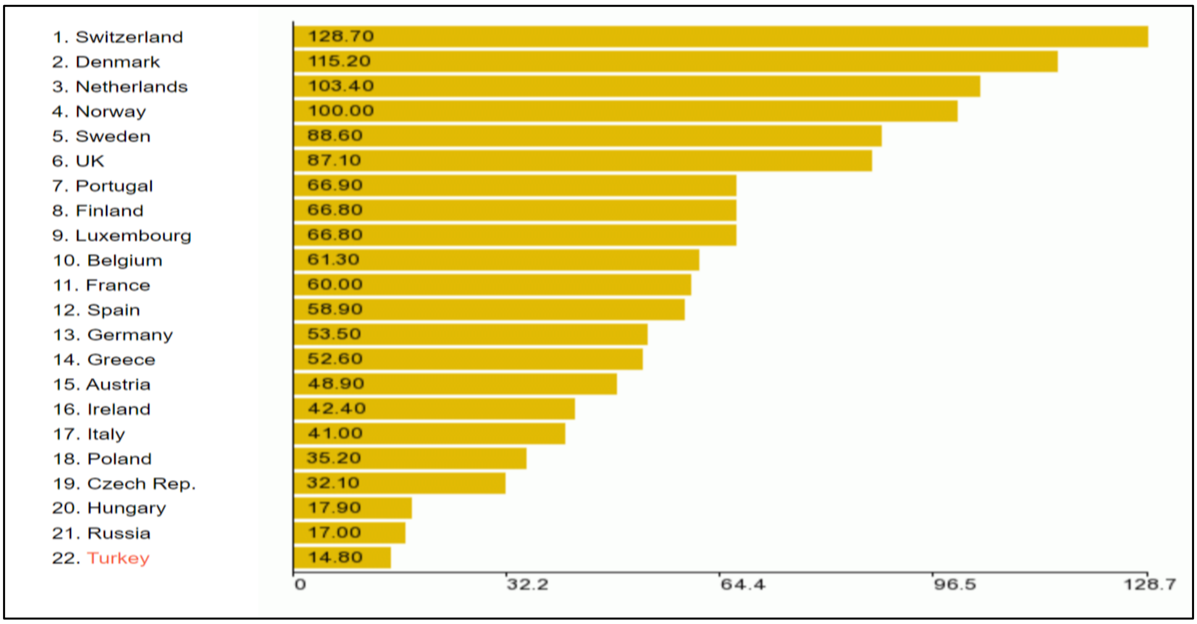

Figure 10: Household debt to GDP in Europe (Source: The Bank for International Settlements.)

The average for 2018 based on 22 countries was 61.78 percent. The highest value was in Switzerland: 128.7 percent and the lowest value recorded for Turkey: 14.8 percent.

Household debt to GDP ratio represents the size of the total household debt in relative to the size of the economy, where the higher the ratio, the more vulnerable the economy is to shock. household debt was found to be significantly affected by positive changes in the GDP and the household consumption.

If the ratio of the household debt to GDP reaches 100%, it means that household is carrying debts as much as its income. Turkey ratio has declined in 2018 to be the lowest in Europe, this is an indicator for a less demand to own a house, or a car.

6.8 Mortgage Loans (As % of GDP) in Turkey

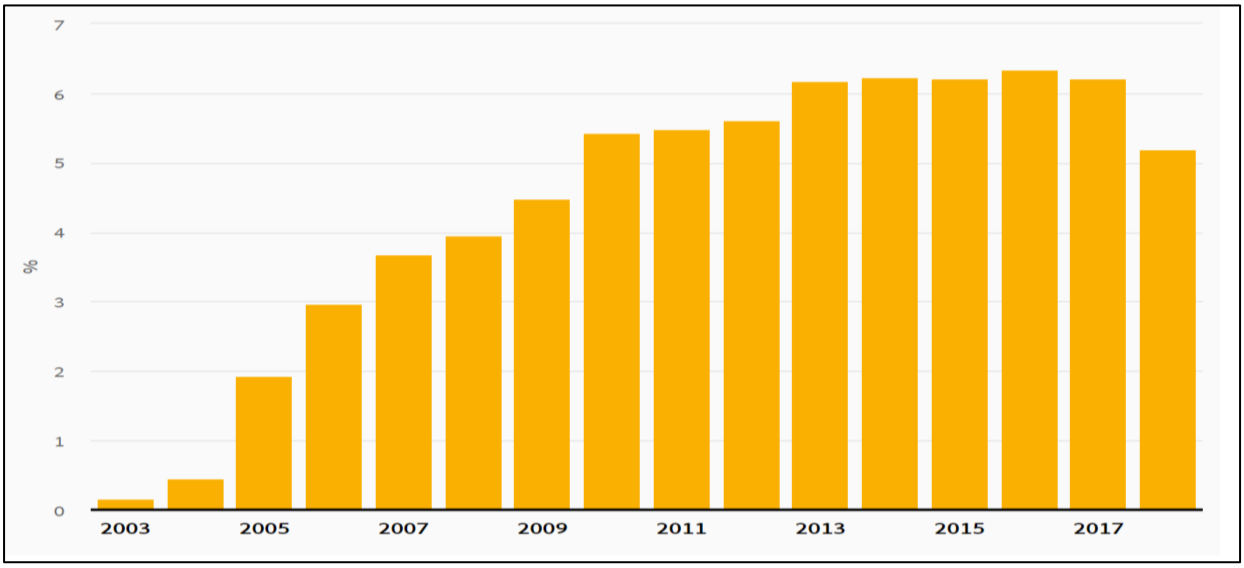

Figure 11: Mortgage Loans As % of GDP in Turkey (Source: The Natural Central Bank.)

According to the National Central Bank, mortgage loans as a share of GDP reached a percentage of 5.20 per cent in Turkey in 2018. This is 16.4 per cent less than the previous year's statistics.

This ratio shows the potential rise of housing credit. That represents lower levels of home ownership,when the ratio declines.

6.9 Home Ownership in Turkey

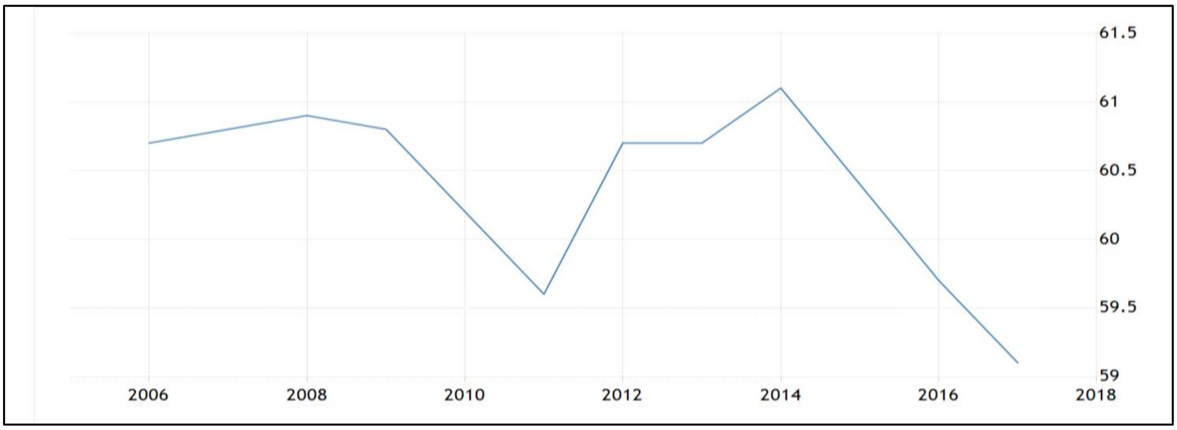

Figure 12: Home Ownership (Source: EuroSTAT)

This figure shows the levels of home ownership among Turkey's total population from 2006 to 2018. The home ownership rate in Turkey has fluctuated between approximately 60.5 to 61 percent of the total population over that timeframe. From the chart, we observe a sharp decline in 2018 to 59 percent, this could be an indicator of the decreased home ownership, or an increasing population rate in Turkey. The homeownership rates have increased significantly in over recent years, given the potential consequences of homeownership for economic performance, A deeper understanding of the factors driving these trends is useful. Some of these factors could be the lower income households, the increased interest rates on mortgage loans, high exchange rate especially in 2018 after the high inflation, or less attractive offers given by the banks.

6.10 Turkey’s Household Income Per Capita

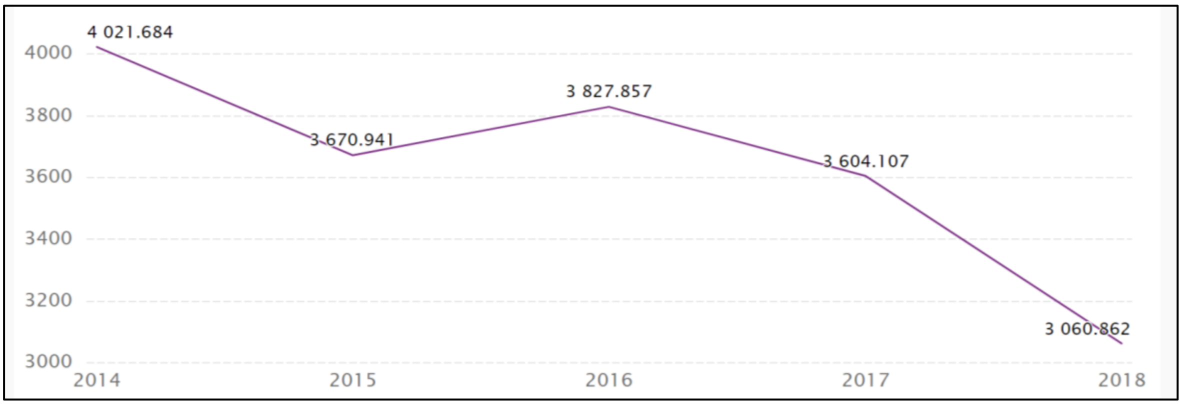

Figure 13: Turkey’s Household Income Per Capita (Source: CEIC DATA)

The household income is the combined gross income of all members of a household, who are 15 years old and more. From the chart, Turkey's Annual Household Income per Capita declined to 3,060.862 USD at the end of 2018, compared with the previous value of 3,604.107 USD in 2017.

6.11 Turkey's Interest rate change

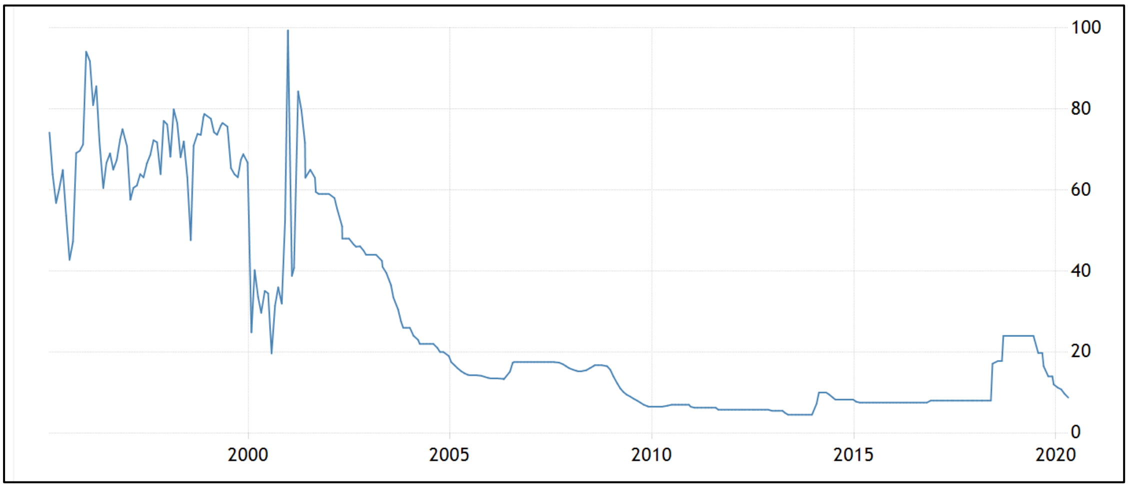

Figure 14: Turkey's Interest Rate Change (Source: Central Bank of the Republic of Turkey)

Interest rates will increase or decrease mortgage capital costs which affect the time to decide when to buy a property. When interest rates go up, mortgage debt is much more expensive. Conversely, when interest rates go down, less will be paid.

With interest rates rising, capitalization rates (also known as cap rates) are increasing. The cap rate is the rate of return to be generated on an investment in Real Estate property. A cap rate is normally higher than the Treasury yield of 10 years. This spread is referred to as the risk premium, it measures the demand for an asset at greater risk than a treasury bond.

Interest rates are mostly linked to inflation. Interest rates usually rise when an economy is in a stable state and is doing well, besides putting the brakes on inflation by the government. Inflation is the rate at which prices rise, whereas the interest rate is based on the rate of federal funds set by the Federal Reserve.

In the normal situations, when interest rates are decreased, more people can borrow money, and when that happens, more people will have money to spend. This will allow the economy to develop due to low interest rates on a savings account, thus encouraging investors to take money out of savings and bring it into the market. Inflation can lead to higher hard asset prices as the real-estate market is significantly affected by the economic situation and the ability of people to purchase a property.

6.12 House Sales by Years and Province

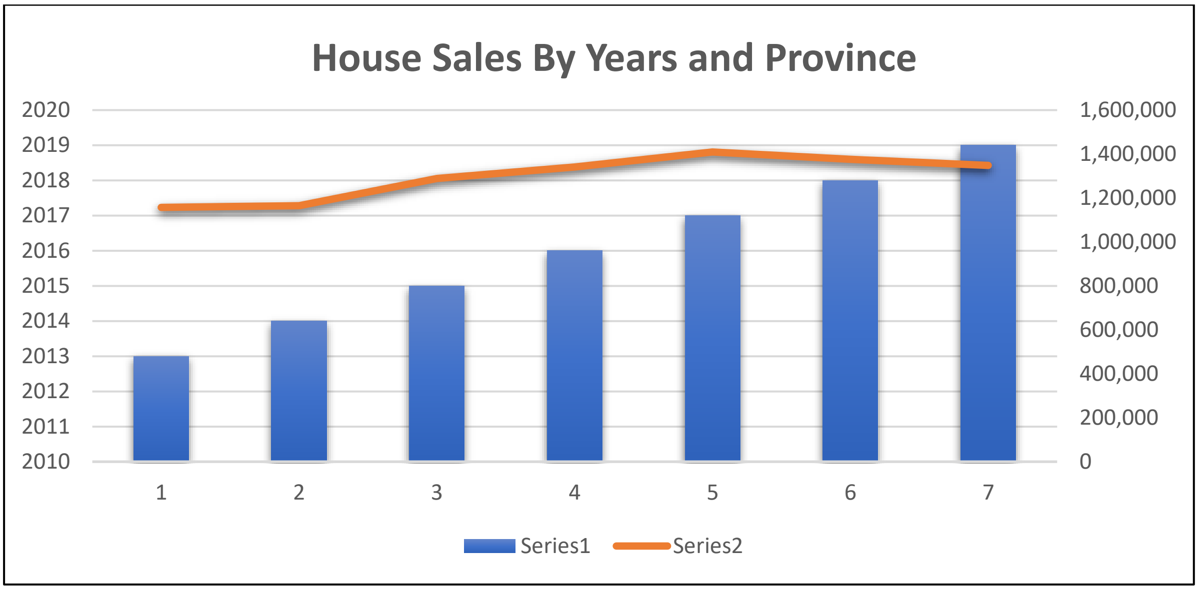

Figure 15: House Sales by Years and Province (Source: TUIK)

As it is observed from the chart, the total house sales are taken from the Turkish Statistical Institutes from year 2013 to 2019. The total number for each year is inserted into the chart. The house sales total number increased through years 2013 to 2017, and then started to decline from 1,409,314 houses sold in 2017, to 1,375,398 houses in 2018, and then continued to decrease in 2019 to reach 1,348,729 houses that had been sold at the end of last year.

Many factors can affect the house sales, such as the high interest rate. In 2018, the interest rate increased to 24%, which means less demand on loans, and thus affects the house sales negatively.

6.13 House Supply-Demand in Turkey

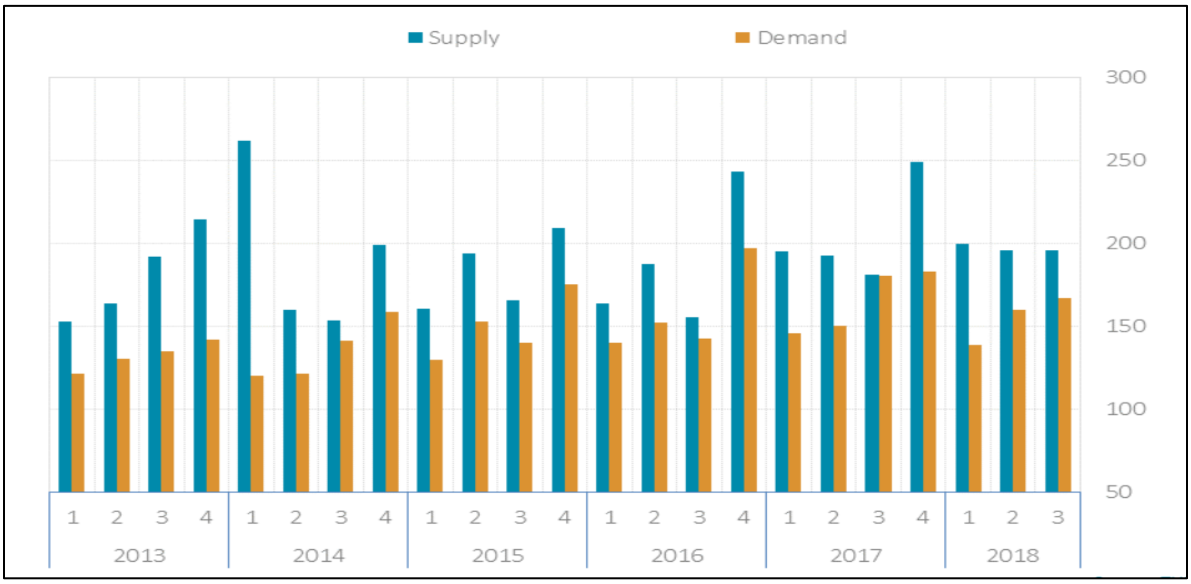

Figure 16: House Supply-Demand in Turkey (Source: TUIK)

When a strong demand for a product or service occurs, the price increases. In comparison, when there is a large supply of a good or service but not much demand for it, the price falls. The supply and demand theory is a fundamental economic concept. Supply and demand work against each other until the price of equilibrium is reached, when demand on the market is equal to supply. Numerous factors influence the demand for housing include lower interest rates and borrowing costs. People are generally willing to take on more loans when the interest rates are low. In the meantime, housing stocks are in a constant state of transition. When people move or try to make more room for an expanding family, the inventory may increase, while others may buy their first home.

The advantages and disadvantages of high and low demand on the housing sector:

- Increasing the demand will increase the potential of making profits accordingly, by increasing the rental values along with the fixed property prices. In such a case, investors' interest in the housing sector would increase.
- In case of rising demand, the increase in occupancy rates due to the delayed response of the supply of housing, rents and prices cause an upward trend in the sector.
- With supply responding to demand, reductions in occupancy rates begin to occur.

- Since housing supply will increase with the increase in housing demand, rent and sales prices decrease in the opposite direction. That does not mean that prices have been reduced at nominal levels, but unpaid periods occur in rental income due to increased market availability of rental housing in the sector. In order to prevent the fall of nominal prices, credit supports for the housing sector begin to come.
- On the other hand, decreased housing prices and rents, reduces profitability and reduces the arrival of new investors in the sector.

The above-mentioned conditions have a significant impact on the rate of increased demand in the housing sector. In the event of a decline in the demand, the following points are significant to be experienced.

- The decreased vacancy rate along with the decrease in demand, result in an increase in the vacancy rate and residence time.
- When the vacancy rates are on an upward trend throughout the real estate sector will lead to decreases in rental prices and sales.
- When low rental prices and sales prices reach a certain point, demand will refresh with new equilibrium amounts and new equilibrium prices, that will be formed in the market.

The demand developments, according to the chart, suggest that housing sales have reached almost the highest level in recent years, with around 1,400,000 in 2017. Particularly, because of the tax incentives that were provided by the government and expired in September, the house sales market had a boost in the first three quarters of 2017. At the other hand, residential sales reported an annual decline of 2.4 per cent, although in 2018 more than 1,37,000 houses were sold.

To balance trends in supply-demand, monitoring was performed by subtracting the first house sales from the number of occupancy permits. The gap, was around 158 units in 2017.

The Turkey-wide analysis found that this gap decreased in 2015 and 2016, but increased dramatically in 2017 compared to the previous year. The gap between supply and demand reached nearly 125,000 in the first nine months of 2018 and was higher than the surplus that existed in the same periods that were marked with house demand of the past years. On the other hand, due to the decrease in building permits in 2018, it can be argued that the housing supply could lose pace in the coming periods. Thus the supply surplus and the closure of this supply-demand gap can be expected in the short term.

An analysis of the effect of incentives on the housing sector's supply-demand balance indicates that they were effective at reducing the supply-demand gap in the third quarter of 2017. However, this gap has once again reached high levels since the last quarter of 2017, indicating that the incentives have brought home demand forward. Financial-market fluctuations are thought to cause the demand for housing to be postponed and household expectations deteriorated in the third quarter of 2018.

7. RESULTS

Turkey fell into recession in the year 2018, in which it saw a decline for three consecutive quarters. Even though economists differ on the causes of recession, the country's excessive current-account deficit and large foreign-currency debt are some of the widely accepted causes. The political tension between Turkey and the United States, the US president's tariffs on Turkish goods and the Turkish president's monetary policy further exacerbated the situation. The economic crisis in Turkey has led to high inflation, rising interest rates, rising loan defaults and the devaluation of the Turkish lira, which was the most significant.

Owing to the easier access to mortgage financing after 2012, Turkey's real estate market saw a steady growth from 2012 to 2016. It can be observed that the volume of housing sales in Turkey showed a sudden spike in 2013. The banks started rising interest rates for business loans, consumer loans and mortgage loans when the economic contraction began in 2018. Higher interest rates have hindered borrowing in Turkey. During 2013, the interest rates on housing loans were below 10 percent but reached by December 2018 the range of ~25 percent to ~30 percent. As a result, in 2018, the unpaid mortgage loans saw a YoY rise of just 0.6 per cent. Turkey's unemployment increased and there was pessimism among the local population. Consumer expenditure in Turkey decreased and the real estate market was also affected by this. In the midst of the recession, the number of house sales dropped by 2.41 percent in 2018. In 2018 Turkey had more than 2 million unsold apartments. Although the home price index rose by 10.5 percent in 2018 on a YoY basis, there was a 9.2 percent fall in YoY after being adjusted for inflation. In Istanbul, Ankara and Izmir, the country's three largest cities, housing prices fell by 12.6 percent, 10.5 percent and 7.6 percent respectively in terms of adjusted inflation in 2018. In 2019, the fall in real estate sales continued. In the first half of 2019, the number of housing units sold fell to 505,796 units by 21.7 per cent on a YoY basis. The locals are increasingly cautious about investing in property because of the negative sentiment in the current state of the economy.

Contrary to the pattern shown by domestic buyers, however, in recent years the real estate market has seen an increase in the number of foreigners buying property in Turkey. Foreign buyers (nationals) were not permitted to buy real estate in Turkey until 2002. In 2002, however, the Turkish property market was only opened to those foreign-country nationals who are permitted for purchasing reciprocal property rights for Turkish citizens (under the "reciprocity clause").By implementing this clause, citizens from a few countries, such as the United Kingdom, Germany and the Netherlands, were permitted to purchase properties in specific areas of Turkey. However, in 2005 they had been permitted to buy property in Turkey. In August 2012, the reciprocity limit was abolished, and nationals from 183 countries were allowed to purchase properties in Turkey. Additionally, there are several measures that the government has taken over the past couple of years, including granting citizenship to foreigners purchasing property in Turkey. All those relaxed government actions continue to attract foreigners to Turkey's real estate market. Foreign direct investment in Turkey in 2017 amounted to USD 10.8 billion, of which 42.9 per cent was invested in real estate and construction. In addition to the relaxing government policies, it was the devaluation of Lira that truly attracted foreigners to buy land in Turkey. The Lira has depreciated against the US dollar since 2016, and since the beginning of 2018 Lira has lost more than 40 percent against the US dollar. This made the purchase of property much more economical and attractive to foreigners. In 2018, 39,663 units were bought by foreigners in Turkey, marking an increase of 78.4 percent for YoY. In the first half of 2019, the number of properties sold to foreigners increased by 68.8 per cent on a YoY basis, reaching 19,952 units.

While foreign property purchases are increasing, its overall base remains very low, accounting for only 3.8% of total property purchases in the first half of 2019. The real estate sector can not rely on foreigners' property purchases alone for any major turnaround. Locals' reduced buying power amid widespread weaknesses in the sector, which is not a positive factor for the country's long-term prospects.

As it observed in the figure 6, the number of construction permits has declined significantly in 2018 and continued to decline in 2019 to be a negative ratio as it recorded to be -52.4%, this ratio could be represented as a factor of the recession, since this negative ratio indicates less demand on the housing in the real estate market. By considering the Turkey's Household Income Per Capita index, the ratio has decreased also sharply in 2018, which indicates less demand and desire of buying a home.

Depending on those factors and all the economical indicators that were shown in this study, it can be assumed that the Real Estate market in Turkey is in RECESSION.

Results Table for the Most Important Indicators

Table 2: Results Summarized

Variable	**Contraction**	**Recovery**	**Expansion**	**Recession**
Consumer Confidence Index	Decrease	Recovery	Increase	Decrease
Weighted Average Interest Rates on Mortgage loans	Increase	Decrease to Normal Level	Decrease	Increase
Consumer Price Index	Increase	Decrease to Normal Level	Decrease	Increase
Construction Permits	Decrease	Increase to Normal Level	Increase	Decrease
Home Ownership	Decrease	Increase to Normal Level	Increase	Decrease
Interest Rate	Increase	Decreas to Normal Level	Decrease	Increase
House Sales	Decrease	Increase to Normal Level	Increase	Decrease

8. CONCLUSION

In this study, the housing sector in Turkey has been examined by panel data analysis. The important factors affecting the demand for housing have been found to be household income per capita, housing prices, and interest rates on mortgage loans. The fact that income is one of the most significant factors affecting housing demand reveals the importance of appropriate mortgage funding policies. Therefore, effective and reasonable mortgage financing systems to increase housing ownership needs to be always developed by decision makers.

In Turkey, the housing market for domestic investors with macroeconomic interventions as provided in supply and demand appears to be in the process of rebalancing. Since the fluctuations in interest and exchange rates, the demand and supply structure of the sector continued to hit different levels, where a surplus of supply is observed, while demand has been reduced according to the current economic situation and the global recession after COVID 19 crisis.

In macro-level data the decreasing trends in the probability of buying or building home reveal the expectations in reduction in future prices. Construction permits decreased, this may result in less supply of buildings, however, the real value of property prices tend to decrease also.

The Turkish Statistical Institute recently announced a 25 percent annual fall in house sales. However, as Turks struggle to invest, for foreigners with some capital, especially in Gulf countries, it may be the right time to buy a house in Turkey.

The Housing loans/GDP ratio is decreasing compared to the previous year, and still low compared to advanced countries. As emphasized by Coskun (2013), the secondary mortgage markets are not developed in Turkey which significantly constrains the financial weight of the housing loans. Additionally, the ratio of the mortgage loans as a percentage of the GDP, which indicates the potential growth for housing credit, showed a decline that reflects lower rates of home ownership. To sum it up, all the examined indicators show a sign of recession in the Turkish housing sector. It should also be noted that the main limitations of this study are the lack of longer and province-based data.

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