

# THE EFFECTS OF INTEREST APPLICATIONS IN THE COVID-19 PERIOD ON THE HOUSING MARKET AND INDIVIDUALS' HOUSING INVESTMENT DECISIONS: EVIDENCE FROM TURKEY

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**Abstract. Actuality:** *As a result, interest rate policies implemented in Turkey after 2018 revealed negative real interest rates in some periods. On the other hand, After Covid-19 outbreak in Turkey, like other countries, economic life is also affected negatively. During this period, Turkish public banks followed a policy of supporting housing sales and economic activities through interest rates well below inflation. In addition, the negative real interest rates have led investors to focus on investment alternatives such as stock, gold, currency, automobiles and housing. While low interest rate increases purchasing power, the expected increase in demand also increases housing prices. Changes in housing prices and interest rates cause individuals to lose depend on their conditions*

*Therefore, the purpose of the study is to question whether the decisions of individual investors to purchase houses are rational and to analyze the housing market where individuals are trading.*

**Research Method:** *In the study, monthly housing sales, monthly housing price index, monthly consumer price inflation and monthly housing loan interest rates data for the 2013-January and 2020-July period were used.*

**Results:** *In the period of 2018 exchange rate fluctuations and the first Pandemic of 2020, it has been observed that the sales in the Turkish housing market have bottomed out in April 2020 on a monthly basis in the last 8 years, reaching a peak with 229.357 units in July 2020 in only three months later. This situation shows that Turkish investors see building purchases as an important investment alternative. On the other hand, in the May- July 2020 period, it was observed that housing prices reacted before interest rate cuts and housing sales. This increased the likelihood of loss for those who withdraw their money from bank deposits and buy housing for investment purposes. This loss increases especially when low-income investors have a low loan utilization rate.*

**Implications:** *The findings reveal the importance of a balanced policy in the interest rate decisions of the public. Findings also contain essential information for investors, academics and other market actors.*

**Keywords:** *Mortgage, Housing, Investment, Interest Rate, Consumer Price Index*

**JEL CLASSIFICATION:** *D14, G51, G41*

## 1-Introduction

As a result, interest rate policies implemented in Turkey after 2018 revealed negative real interest rates in some periods. On the other hand, After Covid-19 outbreak in Turkey, like other countries, economic life is also affected negatively. During this period, Turkish public banks followed a policy of supporting housing sales and economic activities through interest rates well below inflation. In addition, the negative real interest rates have led investors to focus on investment alternatives such as stock, gold, currency, automobiles and housing instead of bank deposit. While low interest rate increases purchasing power, the expected increase in demand also increases housing prices. Changes in housing prices and interest rates cause individuals to lose depend on their conditions.

## 2- The purpose

The purpose of the study is to analyze the housing market during Covid-19 period and to see effect of low interest rate policy.

### 3- Method

I used data in the study include that monthly housing sales, monthly housing price index, monthly consumer price inflation and monthly housing loan interest rates for the 2013-January and 2020-July period.

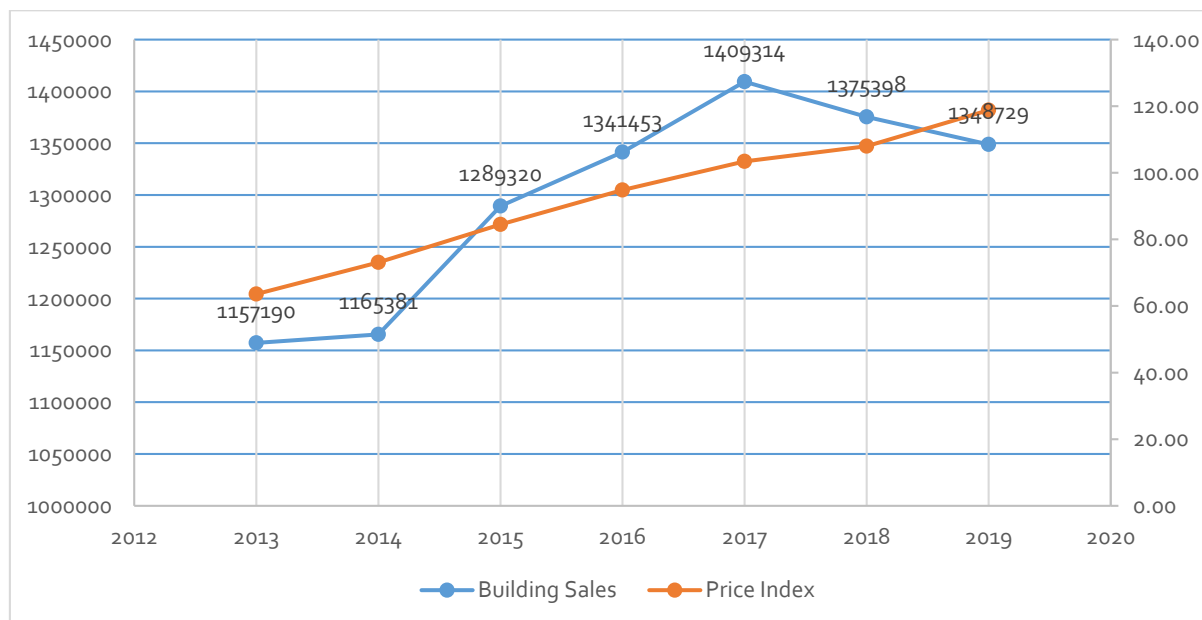
### 4-Findings

In the period of 2018 exchange rate fluctuations and in the first months of Covid-19 Pandemic in 2020, it has been observed that the sales in the Turkish housing market have bottomed out in April 2020 on a monthly basis after 8 years. But, in only three months later it has reached to peak with 229.357 units in July 2020, aftermath of the pandemic.

We see total housing sales and housing price index data by years from 2013 to 2019 in Table 1 and Figure 1. Data say us that both total housing sales and housing price indexes are in increase during the period. We understand that sales number of housing reached to 1.348.729 from 1.157.190 yearly. Total increasing rate of the sales is %16,55. As for housing price index, it raised to 118,80 from 63,60. This means there is %86,79 increase in housing price index. So we can see the inflation, causing by costs, in housing sector.

**Table 1: Total Housing Sales and Housing Price Index**

Years	Total Housing Sales	Housing Price Index
2013	1.157.190	63,60
2014	1.165.381	73,10
2015	1.289.320	84,50
2016	1.341.453	94,80
2017	1.409.314	103,40
2018	1.375.398	108,00
2019	1.348.729	118,80



**Figure 1: Total Housing Sales and Housing Price Index**

Source: [http://www.tuik.gov.tr/PreTablo.do?alt\\_id=1056](http://www.tuik.gov.tr/PreTablo.do?alt_id=1056)

When we see the Figure 1, we can realised the inflation effect on prices of housing sector. Even the sales were in Peak in 2017 and were in falling next two years, housing price index still was rising and reached the top in 2019.

Table 2 shows that Monthly Housing Sales Data Versus Housing Price Index, Loans Interest Rate and Customer price index (CPI) in the the period between 2019-01 and 2020-07 monthly<sup>14</sup>. According to Table 2, we can see the housing price index was rising during period. Loans interest rate is low than CPI during last 7 months except for 2020-April. So we can see negative interest rate evidence of Central Bank of Republic of Turkey's interest rate policy.

In April 2020, we see that housing sales hit the bottom due to the Pandemic effect. It was totally only 42.783. So, government has decided to support housing sector by low interest rate through State Banks (Ziraat bank, Vakıflar bank and Halk Bank). The news on this policy showed its effect quickly on the housing prices, because producers expected that demand of housing would rise and sell more houses. We can show the evidence on this argue on Table 3. Thanks to low interest policy of the government housing sales reached peak on July 2020.

**Table 2: Monthly Housing Sales Data Versus Housing Price Index, Loans Interest Rate and CPI<sup>15</sup>**

Months	Housing Price index	Housing Loans Interest Rate	CPI	Mortgage Sales	Cash Sales	Total Sales
2019-01	107,60	26,22	20,35	6537	66400	72937
2019-02	108,60	22,98	19,67	8890	69560	78450
2019-03	109,00	18,16	19,71	22762	82284	105046
2019-04	109,30	17,70	19,50	22461	73610	96071
2019-05	110,20	20,45	18,71	14916	77021	91937
2019-06	111,00	21,81	15,72	7319	54036	61355
2019-07	112,40	21,06	16,65	13064	89172	102236
2019-08	114,40	14,15	15,01	34148	76390	110538
2019-09	115,20	12,98	9,26	57811	89092	146903
2019-10	116,00	13,12	8,55	50411	92399	142810
2019-11	117,10	12,96	10,56	43911	94461	138372
2019-12	118,80	12,69	11,84	50278	151796	<b>202074</b>
2020-01	120,90	11,88	12,15	42237	71378	113615
2020-02	123,70	11,43	12,37	43733	75020	118753
2020-03	125,40	11,40	11,86	43329	65341	108670
2020-04	127,50	11,72	10,94	<b>17088</b>	<b>25695</b>	<b>42783</b>
<b>2020-05</b>	135,70	11,23	11,39	18483	32453	50936
2020-06	139,50	9,30	12,62	101504	88508	190012
2020-07	N/A	9,11	11,76	<b>130721</b>	98636	<b>229357</b>

Data Sources: <https://evds2.tcmb.gov.tr/index.php?/evds/portlet/K24NEG9DQ1s%3D/tr>

<sup>14</sup> <https://evds2.tcmb.gov.tr/index.php?/evds/portlet/K24NEG9DQ1s%3D/tr>.

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<https://www.tcmb.gov.tr/wps/wcm/connect/TR/TCMB+TR/Main+Menu/Istatistikler/Reel+Sektor+Istatistikleri/Konut+Fiyat+Endeksi/>

According to table 3, new house sales decreased by 56.95% and second hand house sales decreased by 62.30%. One month later, in May, housing prices raised sharply %6,43, eventhough interest rate felt %4,17. We see that the main increase in housing demand occurred in the month after May. Thus, it is seen that price increases react to low interest rates faster than demand. According to the table 3, there was a boom in house sales through mortgages in June, and the increase was more than 400%.

**Table 3: Changing Rate in Sales by Mortgage, Housing Price Index and Interest Rate**

Months	Changing in Housig Price Index	Changing in Interest Rate	Changing in New Housing Sales by Mortgage	Changing in 2.hand Sales by Mortgage
2020-01	1,77%	-6,33%	-8,93%	-19,24%
2020-02	2,32%	-3,85%	2,37%	4,15%
2020-03	1,37%	-0,20%	-4,45%	0,87%
2020-04	1,67%	2,81%	-56,95%	-62,30%
2020-05	6,43%	-4,17%	2,70%	11,17%
2020-06	2,80%	-17,19%	420,17%	463,92%
2020-07	N/A	-2,03%	21,10%	32,39%

We want to analyse the relationships between data on housing price index, interest rate and sales number of housing in total, mortgage sale and by cash sale. So that we see the relationships, I applied Correlation anaysis and prepared Table 4, 5 and 6.

**Table 4: Correlations Between Housing Price Index Interest Rate and Total Housing Sales**

		Priceindex	Interestrata	Sales
Price index	Pearson Correlation	1	-,796**	,195
	Sig. (2-tailed)		,000	,437
	N	18	18	18
Interest rate	<b>Pearson Correlation</b>	<b>-,796**</b>	<b>1</b>	<b>-,452</b>
	Sig. (2-tailed)	,000		,060
	N	18	18	18
Sales	Pearson Correlation	,195	-,452	1
	Sig. (2-tailed)	,437	,060	
	N	18	18	18

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4 shows that the Correlations Between Housing Price Index Interest Rate and Total Housing Sales. According to table, there are significant and negative correlations between interest rate both price index and housing sales in total. 1 unit decrease in interest rate causes increase in prices of housing 0,796 unit and increase in sales 0,452 unit. So, we understand that increase in prices is higher than that of housing sales number.

We see in Table 5, the correlations between housing price index, interest rate and housing sales by mortgage. Correlation analysis result is significant and there is negative correlations between

interest rate both price index and housing sales by mortgage. 1 unit decrease in interest rate causes increase in prices of housing 0,796 unit and increase in sales 0,732 unit. It is clear that interest rate has big effect on price of housing. The interest rate has big effect on price than on the sales by mortgage. Besides, 1 unit increase in sales by mortgage lead to increase prices 0,592 unit.

**Table 5: Correlations Between Housing Price Index Interest Rate and Sales by Mortgage**

		Priceindex	Interestrata	Mortgage
Priceindex	Pearson Correlation	1	-,796**	,592**
	Sig. (2-tailed)		,000	,010
	N	18	18	18
<b>Interestrata</b>	<b>Pearson Correlation</b>	<b>-,796**</b>	<b>1</b>	<b>-,732**</b>
	Sig. (2-tailed)	,000		,001
	N	18	18	18
Mortgage	Pearson Correlation	,592**	-,732**	1
	Sig. (2-tailed)	,010	,001	
	N	18	18	18

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 6: Correlations Between Price Index Interest Rate and Housing Sales by Cash**

		Priceindex	Interestrata	CashSales
Priceindex	Pearson Correlation	1	-,796**	-,214
	Sig. (2-tailed)		,000	,393
	N	18	18	18
<b>Interestrata</b>	<b>Pearson Correlation</b>	<b>-,796**</b>	<b>1</b>	<b>-,075</b>
	Sig. (2-tailed)	,000		,767
	N	18	18	18
CashSales	Pearson Correlation	-,214	-,075	1
	Sig. (2-tailed)	,393	,767	
	N	18	18	18

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6 shows the correlations between housing price index, interest rate and housing sales by cash. There is still negative correlations between interest rate both price index and housing sales by cash. Interestingly, there is so low correlation between interest rate and cash sale.

## CONCLUSION

We can state that low interest rate may get benefit to the economy and housing owner than the investors. We see there is low correlation between interest rate and cash sales, but there is high correlation between interest rate and mortgage sales. That buy house by low cost loan may be rationale for investor eventhough high prices. But we see that cash sales were increasing while prices rising. These investor, buy house by cash, may have expectation that housing prices will increase in

the future and think that buying house is a good investment option. But we can ask a question, why they didnt buy the house before housing prices went up? Why they showed herd behavior?

I study on this paper still. And need to reveal answers of some questions above. This may be investigated by the context of behavioral finance. Is there herd behavior? Does it rely on expectations theory?

#### **REFERENCES**

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