

# Analyzing The Effect Of Gold Prices And Exchange Rate On Financial Markets In Turkey Using Quantile Regression Method

*Türkiye’de Altın Fiyatları ve Döviz Kurunun Finansal Piyasalar Üzerine Etkisinin Kantil Regresyon Yöntemiyle İncelenmesi*

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## ABSTRACT

The aim of this study is to measure the impact of changes in gold prices and exchange rates in Turkey on the BIST 100 index. For this purpose, monthly data for the period of January 2000- March 2025 and 303 time series were considered and the Quantile regression technique, one of the alternative regression analysis methods, was used. In the analysis, the BIST100 index was used as the dependent variable; gold and exchange rates were used as independent variables. According to the results obtained, a significant and positive relationship was found between gold prices and the BIST100 index at all quantile points; and a negative relationship was found between exchange rates and the BIST100 index. In addition, Granger Causality analysis was applied to determine the direction and causality of the relationship between the variables. As a result of the analysis, there is a bidirectional causality relationship between Gold and BIST 100 index; and a unidirectional causality relationship between foreign exchange rate and BIST 100.

**Keywords:** *Gold, Exchange Rate, BIST100 index, Quantile Regression, Granger Causality Test*

## ÖZET

Bu çalışmanın amacı Türkiye’de altın fiyatlarında ve kurunda meydana gelen değişimlerin finansal piyasalar üzerindeki etkisini araştırmaktır. Bu amaç doğrultusunda 2000 Ocak- 2025 Mart dönemine ait aylık veriler ile 303 zaman serisi ele alınarak alternatif regresyon analiz yöntemlerinden Kantil regresyon tekniği kullanılmıştır. Analizde bağımlı değişken olarak BIST100 endeksi; altın ve döviz kuru ise bağımsız değişkenler olarak kullanılmıştır. Elde edilen sonuçlara göre, altın fiyatları ile BIST100 endeksi arasında tüm kantil noktalarında anlamlı ve pozitif yönlü; döviz kuru fiyatları ile BIST100 endeksi arasında ise negatif yönlü bir ilişki tespit edilmiştir. Ayrıca değişkenler arasındaki ilişkinin yönünü ve nedenselliğini belirlemek amacıyla Granger Nedensellik analizi uygulanmıştır. Analiz sonucunda Altın ile BIST 100 endeksi arasında çift yönlü nedensellik ilişkisi; döviz kuru ile BIST 100 arasında ise tek yönlü nedensellik ilişkisi bulunmuştur.

**Anahtar kelimeler:** *Altın, Döviz Kuru, BIST-100 Endeksi, Kantil Regresyon, Granger Nedensellik Testi*

## 1. INTRODUCTION

The impact of globalization and rapid changes in technology have led investors and savers to invest in different financial assets. As a result of these changes and transformations, it has become possible to access financial assets faster and more easily. With globalization, financial systems in the world have been reshaped, and with the development of financial markets, world economies have tended to be more interrelated with each other (Ayhan and Abdullazade, 2021:509). This interaction in world economies causes changes in the prices of macroeconomic variables. It is important to reveal the relationships between stocks and macroeconomic variables that play a role in the development of national economies in terms of affecting the financial attitudes and behaviors of investors (Şanlı et al., 2021: 930).

Individual and institutional investors, who play an active role in the financial system, need to use their resources and savings effectively in order for the financial system to function properly. Investors who want to generate returns turn to different financial instruments and expand their existing resources with the right strategies (Kakacak et al., 2020:3088). Especially in periods of high economic uncertainties and inflation rates, investors both in the world and in Turkey generally turn to gold (Cingöz and Kendirli, 2019: 546).

Gold, which has maintained its importance from past to present and is seen as an alternative investment instrument such as stocks, is preferred by savers as a medium of exchange due to its precious metal, its scarcity in nature and its economic value. Especially the increases in gold prices in recent years have led to a higher preference for gold by investors (Menase, 2009:40). Gold, which formed the basis of the monetary system between 1870-1930 and became convertible into dollars between 1944-1973, was seen as a sign of power between kingdoms. As kingdoms gained power between the 16th and 18th centuries, trade increased and gold became more important. The fact that gold was a symbol of power for civilizations caused wars between civilizations as well as trade (İlkhan et al., 2022:47). As a result of the crises that occurred in the economy along with the wars, the need for a healthier functioning financial structure emerged. In this direction, the Bretton Woods system was established and with this system, exchange rates were linked to each other. One of the most important features of the system is that the dollar is linked to gold. In this way, there was an exchange between gold and dollars. With the collapse of the system, gold lost its redeemable feature and the price of gold started to be shaped according to the supply and demand in the market (Özmen, 2011:39). All these developments show that the importance of gold does not only stem from its use as an ornament, but also that it plays an active role in financial markets and is affected by price changes.

Fluctuations in gold prices, which are easily affected by changes in financial markets, lead to differences in the financial behavior of investors. Changes in the market affect the supply and demand for gold and lead to fluctuations in gold prices. Changes in gold prices direct investors to other financial instruments and this leads to new price formations in other financial instruments (Kakacak et al., 2020:3089). One of the important factors why investors prefer gold is that it is less risky compared to other financial instruments. Since uncertainty increases especially during periods of economic crisis, war, natural disasters and epidemics, alternative financial instruments are seen as more risky. This situation leads investors to gold, which they see as a safe haven (Ayhan and Abdullazade, 2021:511). Among investors, gold is seen as both faster convertible and preferred as a substitute for equities. Generally, when stock prices fall, gold prices increase and when stock prices tend to increase, gold prices decrease. In other words, there is a negative relationship between both variables. When the economy is bad and there is an economic crisis, investors turn to gold, which they see as a safe haven. This situation increases the prices of stocks. The decline in gold prices, on the other hand, increases the prices of stocks, so investors trade on the stock exchange (Güney and İlgin, 2019:227).

Stock markets are defined as the barometer of the country and the markets where the long-term supply and demand for funds meet. Stock markets are the first markets to be affected by inflation, changes in Gross National Product, changes in money supply and political changes and complexities. The tendency of the firms whose stocks are traded on the stock exchanges against the changes that occur is reflected in the stock prices. Therefore, the prices formed in the stock markets are economic data for investors (Aytekin, 2018:155). BIST 100 refers to the 100 firms with the highest share in terms of trading volume in Market Istanbul. The high trading volume of these firms and the high capitalization rate in the market are the main indicators for the stock market. Therefore, the changes in the index express the performance of the economy and investors direct their investments accordingly (Kakacak et al., 2020:3088). One of the markets where investors can invest their savings other than gold is the foreign exchange market. The high volatility in foreign exchange markets directs investors to these markets. An increase in foreign exchange markets decreases the value of the national currency and investors invest their savings in these markets.

There is generally a negative relationship between gold prices and stock prices. However, it is not possible to speak of a single direction for the relationship between foreign exchange markets and stock prices. There are two approaches to explain the relationship between foreign exchange markets and stock markets. The first of these approaches, the traditional approach, states that changes in the

exchange rate positively affect the stock index. According to this approach, the value of the national currency decreases and fluctuations in the exchange rate increase export figures, thus increasing the competitiveness of firms and increasing stock prices (Muhammad et al., 2002:536).

According to another approach, the portfolio approach, there is a negative relationship between exchange rate prices and stock prices. This approach argues that increases in stock prices will affect investors positively and this attitude will increase the value of the national currency and decrease the exchange rate (Güney and Ilgın, 2019: 227).

The aim of this study is to determine the extent to which price changes in gold prices and exchange rates affect the BIST 100 index. The independent variables are gold and exchange rate prices, while the dependent variable is the BIST 100 index. In the study, monthly data for the period between January 2000 and March 2025 are considered for all variables. In order to analyze the collected data and examine the relationship between the variables, 303 samples were analyzed by quantile regression method. The most important feature of the quantile regression method is that it provides different regression models by giving different results at different quantile points.

This study aims to contribute to the literature in two ways. The first of these is to examine the effects of changes in gold prices and exchange rates on the BIST 100 index. For this purpose, monthly data from January 2000 to March 2025 were used and the Quantile regression technique was used. Secondly, the causality between the variables was examined and the direction of causality of the variables was determined. The relationship between the variables was tested with Granger Causality analysis.

In the second part of the study, the literature on the subject will be included, in the third part, the analysis method, analysis methodology and information about the data set will be included, and in the fourth part, the findings will be included. In the conclusion part, the results obtained in line with the findings will be evaluated.

## 2. LITERATURE

It is seen that many studies have been conducted to examine the relationship between investment instruments and to measure the direction in which changes in financial markets affect investment instruments. When the studies are analyzed, there are many studies examining the relationship between stocks and macroeconomic variables. In the literature, the effect of gold prices on stocks and the effect of exchange rates on stocks have been analyzed separately. However, there are fewer studies examining the effect of both gold prices and exchange rates on stocks compared to others. In this study, the effect of changes in gold prices and exchange rates on the BIST100 index is investigated.

There are many studies in the literature in this field. For example, Gilmore et al. (2009) examined the relationship between stocks by considering the gold price series between 1996 and 2007. With the VAR model, a high correlation was found between both variables. Balı and Cinel (2011) examined the effect of gold prices on stock prices. It was concluded that the changes in gold prices between 1995-2011 had no direct effect on stocks. Subarna and Zadeh (2011) examined the effects of different macroeconomic variables on stock returns and stock volatility. Gold price, dollar price, and oil prices were analyzed to represent macroeconomic variables, while stocks selected from the Dow Jones index were analyzed to represent stocks. The study concluded that not all variables move in the same direction, and oil and dollar prices are affected by price changes more than other variables. Bhunia and Das (2012) analyzed the relationship between gold prices and stock market returns using Granger causality test. As a result of the analysis, it is observed that the variables affect each other and both variables move in the same direction before and after the global crisis.

Additionally, Jawaid and Haq (2012) examined the effect of price changes in interest rates and exchange rates on the stock prices of the banking sector. In the study where causality and sensitivity analyses were conducted, it was found that interest rates and exchange rates were effective on banking

sector stocks. Aksoy and Topcu (2013) investigated whether there is a short- and long-term relationship between gold, equities, government domestic debt securities, CPI and PPI variables. As a result of the analysis, it was concluded that there is a long-run relationship between gold, stocks, government domestic debt securities, CPI and PPI. Mohd et al. (2013) examined the interaction between gold, oil price and Islamic stocks in Malaysia using VAR model. They concluded that Islamic stocks are not affected by gold and oil prices in the long run. oşkun and Ümit (2016) investigated the effect of these variables on the BIST100 index by using gold price, foreign exchange price, deposit interest rate and real house price index between January 2000 and July 2004. According to the findings, no long-term relationship was found between the variables used and the BIST100 index.

Moreover, Elmastaş and Aktürk (2016) analyzed the economic variables affecting gold prices in Turkey by VAR analysis method. Monthly data for the period January2005-April2015 were considered. As a result of the study, it was determined that gold prices were most affected by oil prices and least affected by interest rates. Budak et al. (2017) aimed to measure the stock returns of macroeconomic variables using BIST indices in their study. In the study where BIST 30, BIST 50 and BIST 100 indices were used, three models were created by applying the ARDL test. According to the findings, it was determined that there was cointegration between the indices and macroeconomic variables such as foreign exchange, interest rate and UFE. Güney and İlgin (2019) examined the effect of gold prices, exchange rates and interest rates on BIST100 index prices, which is one of the alternative investment instruments. Using VAR model analysis, the study found a bidirectional relationship between gold and BIST100, a bidirectional relationship between interest rates and BIST100, a unidirectional relationship between foreign exchange and BIST100, and a unidirectional relationship between gold and interest rates. Tuna (2019) examined the relationship between the BIST banking index and interest rates, gold prices and exchange rates. As a result of the study, it was determined that there is a significant and statistically negative relationship between the banking index and gold price, a significant and negative relationship with interest rates, and a significant and positive relationship with the exchange rate. Kakacak et al. (2020) examined the relationship between gold prices and the BIST100 index. The data collected between 2016 and 2019 were analyzed using the VAR model and as a result of the study, it was observed that the change in gold prices did not affect the BIST100 index, and the price changes in the BIST100 index did not affect gold prices.

What more, Ayhan and Abdullazade (2021) examined the effects of oil and gold prices and the number of cases on the exchange rate after the COVID-19 pandemic. According to the findings of the study, oil prices had a negative and statistically significant effect on the exchange rate in the long run. Şanlı et al. (2021) aimed to determine the extent to which the BIST100 index is affected by changes in interest rates, exchange rates and gold prices. Different results were obtained in the study in which more than one analysis was used. Granger causality analysis revealed a bidirectional relationship between the BIST100 index and interest rates and exchange rates, and a unidirectional relationship between gold prices. According to the findings of cointegration analysis, a long-run relationship was found between interest rates and exchange rates; however, the same relationship was not found for gold prices. Şak and Özkaya (2022) aimed to reveal the interaction and volatility spillover effect between gold, stock market and exchange rate markets among macroeconomic variables in Turkey after 2000. According to the findings, the volatility spillover index between the dollar, Euro, Gold and BIST100 index was found to be 46.9%. In the post-2000 period, the lowest volatility spillover value was realized in 2012; there was a sudden increase in 2013, and an increasing trend in volatility spillovers has been effective since 2017. In 2020, it was observed that the increase in volatility diffusion continued with the impact of the pandemic.

Recently, İlkhani et al. (2022) examined the relationship between gold prices, the US dollar and the BIST100 index. Using monthly data for the period between May 1986 and October 2021, the study concluded that there is cointegration between the US dollar and BIST100. And it was stated that an

investor investing in Turkey would not diversify his portfolio and minimize risk since the three variables move together. Boyacıoğlu et al. (2023) examined the effects of changes in stock, commodity, foreign exchange and money markets on the Turkish economy by considering daily data between July 2010 and March 2020. In the study, where structural breaks were taken into account and analyzed, it was concluded that the BIST 100 index, the dollar exchange rate, Brent oil prices and Bitcoin prices moved together in the long term. In his study, Ünlü (2023) examined the effects of one-month deposit interest rates, production index and dollar exchange rate on the XBANK banking index from macroeconomic factors. In this direction, the ARDL model method was used in the study and the study period was determined as November 2002-May 2023 monthly data. According to the analysis results, it was determined that there was a negative long-term relationship between deposit interest rates and the banking index; and a positive long-term relationship between the dollar exchange rate and the production index and the banking index. Karaca (2024) investigated the effects of gold prices, interest rates and exchange rates on the BIST100 index. With 262 observations, Fourier ARDL and Fourier Quantile Causality analysis were used in the time series study. As a result of the study, it is found that there is a long-run and negative relationship between the BIST100 index and the interest rate, and a long-run positive relationship between the BIST100 index and gold and exchange rates. In addition, the study concluded that there is a causality relationship between variables in different quantiles.

There are many studies on macroeconomic variables such as gold, exchange rate and stock market. However, the use of quantile regression technique in this study reveals the originality of the study. With the support of this analysis, this study aims to fill an important gap in the literature.

### 3. DATA AND METHODOLOGY

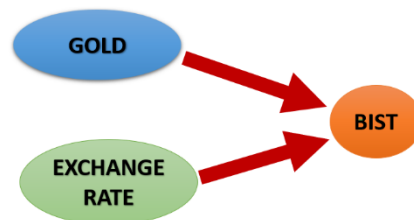
The aim of the study is to measure the effect of changes in gold prices and exchange rates on the BIST100 index in Turkey. For this purpose, monthly data for the period between January 2000 and March 2025 are used. The variables in the study and their sources are given in Table-1 below:

Table 1. Variables Used in the Study

	Variable	Source
Dependent Variables	BIST 100 Index	BIST
Independent Variables	Gold	CBRT
	Exchange Rate index	

Since a single dependent variable was used in the study, a single model was created.

Figure 1.



The above model shows a simple showing of the relationship between the dependent variable and the independent variables. The formula for the model is as follows:

$$\text{MARKET}_{i,t} = \beta_0 + \beta_1 \text{GOLD}_{i,t} + \beta_2 \text{EXCHANGE RATE}_{i,t} + \varepsilon_{i,t}$$

In the formula, MARKET stands for BIST-100 Index representing financial markets, GOLD stands for gold ounce prices, EXCHANGE RATE stands for exchange rate index and  $\varepsilon$  stands for error coefficient.

Although many statistical approaches have been developed to determine the relationships between variables, the most widely used of these approaches is regression analysis. Regression analysis is a type of analysis that examines the relationship between dependent and independent variables and allows the establishment of mathematical models within these relationships (Yavuz and Aşık, 2017:138). The Least Squares Method (LSM) is most commonly used in regression analysis. However, some assumptions must be met in order to use this technique. These assumptions are that the errors are independent, have zero mean, have equal variance and normal distribution, and that there is no relationship between independent variables (Montgomery et al., 2013). If all assumptions are not met, one of the alternative methods to be used is the Quantile Regression technique.

Quantile regression is the technique in which the relationship between the dependent variable and the independent variable or variables is modeled by the researcher by identifying certain quantiles between these variables. This technique, developed by Koenker and Baset (1978), is used especially in cases where conditional cantils vary (Chen and Wei, 2005). This method has two important advantages over ECC regression (Aysal et al., 2024:456):

- Robustness against extreme values,
- There is no need for any interpretation with the answer variable.

In the quantile regression technique, the conditional distribution of the dependent variable is created for different quantile points. Therefore, different regression models emerge (Uyar et al., 2016:590). The quantile regression model is formulated as follows:

$$Y_i = \beta + e_i \quad (1)$$

$Y_i$  is a random variable with a symmetric F distribution function, an independent identical distribution, and a median of  $\beta$  (Koenker and Baset, 1978:38).

$$\text{Min} \beta \frac{1}{n} \{ \sum_{i: y_i \geq \beta} \theta |y_i - \beta| + \sum_{i: y_i < \beta} (1-\theta) |y_i - \beta| \} \quad (2)$$

In the model, the minimization of the quantile expression  $\theta$ . is estimated as in formula (2) (Judge et al., 1985:834).

#### 4. FINDINGS

Descriptive statistics of the variables are given in Table 2.

Table 2. Descriptive Statistics

	Observation	Median	Average	Std. Deviation	Min.	Mak.
Market	303	663.0600	1380.364	2315.780	75.46000	10647.91
Gold	303	1232.750	1153.149	613.1771	260.9000	2998.620
Exchange rate	303	101.5300	95.33158	20.17521	50.28000	127.7100

When the raw values of the variables are considered, it is seen that the standard deviation values are very high. This situation leads to the inability to interpret the results to be obtained as healthy results (Özdamar and Ersoy, 2016: 143). For this reason, the logarithms of the variables were taken and analyzed in their logarithmic states.

The correlation table showing the relationship of the variables with each other is given in Table 3.

Tablo 3. Correlation Matrix

	Log Market	Log Gold	Log Exchange rate
Log Market	1.000000		
Log Gold	0.885821	1.000000	
Log Exchange rate	-0.631597	-0.453033	1.000000

The correlation table above shows the relationship of the variables to each other. According to Table 3, there is a positive relationship between Gold and the Market; A negative correlation between Gold and Exchange rate; There is a negative relationship between the exchange rate and the market.

In this study, Zivot-Andrews unit root test, one of the single break unit root tests, was applied to test the stationarity of the series. Zivot and Andrews (1992) criticized the external break point made by Perron (1989) and developed a new unit root test. In Zivot-Andrews (1992) unit root test, the break date is determined as an internal and additional break (Çemrek and Şeker, 2020). In Zivot-Andrews unit root test, three models are used that allow a single break at the level, slope and both level and slope (Yıldırım Tıraşoğlu, 2014).

In the Zivot-Andrews unit root test, firstly the model defined as Model C, which allows for a break in both slope and level, is estimated. The model is selected according to the significance of the dummy variables expressing the break in level (DU) and slope (DT). If both variables are significant, Model C is applied. If only DU is significant, the model defined as Model A, which allows for a single break in level, is applied. If only DT is significant, Model B, which expresses a single break in slope, is applied (Yıldırım Tıraşoğlu, 2014).

Unit root test results for the study are shown in Table 4.

Table 4. Zivot-Andrews unit root test in presence of structural break

	Test İst	%1	%5	%10	Kırılma
Gold	-0.717364	-4.949133	-4.443649	-4.193627	2022 10 <sup>TH</sup> MONTH
Market	-6.898851	-4.949133	-4.443649	-4.193627	2021 10 <sup>TH</sup> MONTH
Exchange Rate	-3.770141	-4.949133	-4.443649	-4.193627	2016 9 <sup>TH</sup> MONTH

As seen in Table 4, the Gold and Foreign Exchange variables are not stationary at the level and have a unit root; however, the BIST variable is stationary at the level.

Inflation rates reaching high levels in 2022 caused a breakdown in gold prices. The interest rate hike decisions taken by the Central Bank in order to combat inflation caused gold prices to fall. In addition, the war between Russia and Ukraine caused an initial increase in gold prices.

The coup attempt in Turkey in 2016 caused an increase in exchange rates. The attitude of savers due to the coup attempt during this period was one of the determining factors. The decisions made by savers and investors in uncertainty and the decreasing value of the TL caused fluctuations in exchange rates.

The effect of gold prices and exchange rate on the BIST100 index was measured at different quantile levels and is given in Table 5.

Table 5. Quantile Regression Test Results

	q=0.10	q=0.20	q=0.30	q=0.40	q=0.50	q=0.60	q=0.70	q=0.80	q=0.90
Gold	1.265618 *** (0.0000)	1.277132 *** (0.0000)	1.235772 *** (0.0000)	1.236294 *** (0.0000)	1.236246 *** (0.0000)	1.232065 *** (0.0000)	1.189671 *** (0.0000)	1.210126 *** (0.0000)	1.49771 *** (0.0000)
Exchange rate	-0.887018 *** (0.0000)	-0.896745 *** (0.0000)	-0.837017 *** (0.0000)	-0.886342 *** (0.0000)	-0.947593 *** (0.0000)	-1.219533 *** (0.0000)	-1.636717 *** (0.0003)	-2.194186 *** (0.0000)	- 1.765004 *** (0.0000)
C	0.562830 (0.0935)	0.617879 (0.0199)	0.671415 (0.0110)	0.797158 (0.0068)	0.956644 (0.0092)	1.539947 (0.0056)	2.546075 (0.0064)	3.672004 (0.0000)	2.111730 (0.0774)

\* p<0.10. \*\*p<0.05. \*\*\*p<0.01

According to Table 5, it is seen that the price changes in exchange rate are statistically significant but have a negative effect on the BIST100 index. The price fluctuations in exchange rate had a negative effect on the BIST-100 index. As the quantile levels increase, it is seen that the negative relationship created by exchange rate prices on the BIST-100 index value increases except for the 0.30 and 0.90

quantile levels. These results emerged in line with the Portfolio approach examining the Exchange rate Market relationship.

The effect of gold prices, which is another independent variable, on the BIST 100 index is statistically significant and positive. Increases and decreases in gold prices at all quantile levels have a positive effect on the BIST100 index. This result differed from the studies in the literature.

In this study, the Granger causality test was applied in order to determine the direction of the relationship between variables. The Granger causality test is widely used because it is easy to apply. The Granger causality test is a technique that allows determining the direction of causality between variables. Granger causality is defined as follows: “If the prediction of Y is more successful when the past values of X are used than when the past values of X are not used, then X is the Granger cause of Y.” (Takım, 2010).

When the model established in the Granger causality test includes the purpose of determining the direction of causality, the variables used in the model must be made stationary by taking their logarithms (Takım, 2010). In this study, the analysis was continued by taking the logarithms of the variables.

Table 6 shows the Granger causality test results for the study.

Table 6. Granger Causality Test Results

	Test İst	Prob
Gold-Market	2.07901	0.0186 **
Market-Gold	3.20469	0.0003 ***
Exchange rate-Market	2.41013	0.0367 **
Market- Exchange rate	0.27375	0.9273
Gold-Exchange rate	0.83001	0.4782
Exchange rate-Gold	0.23274	0.8735

According to the Granger Causality Test results, there is a bidirectional causality relationship between gold and BIST, and a unidirectional causality relationship from EX to BIST.

## CONCLUSION AND RECOMMENDATIONS

The rapid change in technology and globalization have an impact on the financial system and lead to the emergence of different financial instruments. This diversity in financial instruments causes a change in the attitudes and attitudes of investors, and investors have to choose between investment instruments in order to evaluate their savings. In this study, it was conducted to measure the interaction of Gold prices and Exchange rate prices, which are considered as a safe haven among individuals, with stocks. In the study, the BIST100 index representing stocks was discussed.

This study was conducted to measure the effect of price changes in Gold and exchange rate prices on the BIST100 index in Turkey by considering monthly data between January 2000 and March 2025. In the study, 303 samples were taken and Quantile regression analysis technique, which is one of the regression analysis techniques, was used. The BIST100 index was considered as the dependent variable and analyzes were made regarding the effect of Gold and exchange rate prices on the index at different quantile levels.

According to the findings, the effect of exchange rate on the index shows that there is a significant and negative relationship at all quantile levels. This situation can be explained by the portfolio approach, which is one of the two approaches that explain the relationship between foreign exchange markets and financial markets. The portfolio approach is an approach that argues that there is a negative relationship between Exchange rate prices and the Market index. According to this approach, the increase in financial markets directs investors to buy domestic assets, and investors with this attitude tend to sell their foreign assets. As a result, as stated by Alacahan and Akarsu (2019), the national currency gains value and Exchange rate prices decrease. In addition, in cases of uncertainty, the outflow of portfolio investments from the country will adversely affect the markets. The fact that this cash outflow is in exchange rate will reduce the exchange rate in the national market and reduce



the value of the Turkish Lira against the foreign currency. This decrease will increase the exchange rate against the Turkish Lira. These results were similar to those of Berke (2012), Da Silva et al. (2014), Belen and Karamelikli (2016) and Mishra (2016). Contrary to the related studies, Aggarwall (1981), Gulati and Kakani (2012), Lee and Wang (2015), Boyacıoğlu and Çürük (2016), İlarslan (2018) found in their studies that there is a positive relationship between the exchange rate and the index.

Another result obtained is that there is a positive relationship between gold prices and the BIST100 index. As a general belief, when Gold prices fall, investors prefer to direct their savings to stocks. From this point of view, it is expected that there will be a negative relationship between Gold prices and the Market. However, the psychology of the investor while making decisions can change the direction of this relationship. They may choose to diversify so that investors hedge their portfolio risk. Another factor may be due to the fact that the relationship between Gold and exchange rate is negative. Price declines in exchange rate can be channeled into trading in the Market according to the risk-taking tendency of investors. In summary, although this relationship is not always a linear curve, the attitude of the investor, the economic and political factors in the country, and the global events occurring in the world can affect the direction of this relationship. The results obtained from the gold prices and market effect gave similar results to the studies of Albeni and Demir (2005), Zengin (2009), İlarslan (2017), Cengiz and Kendirli (2019) and Güney and Ilgın (2019). The fact that the study was conducted only on Turkey can be expressed as a limitation. The study can be improved by applying it on different countries. Contrary to the studies, Smith (2002), Balı and Cinel (2011), Sadegzadeh and Eren (2012), Aksoy and Topçu (2013), Küçükçolak et al. (2019), Yurdakul and Akdaş (2020) mention the existence of a negative relationship between gold prices and the index.

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