

The relationship between foreign exchange rate, interest rate and inflation in Turkey: ARDL approach

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ABSTRACT

Different policies at various times in order to ensure price stability in Turkey were applied. The policies implemented in the fight against inflation have been effective in some periods, while in some periods, the increase in inflation has continued. For this reason, the phenomenon of inflation and the factors that cause inflation have attracted wide interest in the literature. The interest rate in Turkey's economy and the exchange rate as macroeconomic variables in this study that examined the effects on inflation, the 2005Q1-2019Q2 period between obtained from the Central Bank database inflation, exchange rate and analyzed using data on the rate of interest is made. ARDL (Auto-Regressive Distributed Lag) model was used to test the relationship between variables in the study. Accordingly, when the test results are analyzed ARDL Turkey in exchange rates and interest rates in the short and long term variable has concluded that the cause inflation.

MAKALE BİLGİSİ

Anahtar Kelimeler:

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ÖZET

Türkiye'de fiyat istikrarının sağlanabilmesi için çeşitli dönemlerde farklı politikalar uygulanmıştır. Enflasyonla mücadelede uygulanan politikalar bazı dönemlerde etkili olmuş, bazı dönemlerde ise etkisiz kalarak enflasyondaki yükselme devam etmiştir. Bu nedenle enflasyon olgusu ve enflasyona neden olan faktörler literatürde geniş bir ilgi alanı bulmuştur. Türkiye ekonomisinde faiz oranı ve döviz kuru gibi makroekonomik değişkenlerin enflasyon üzerindeki etkilerinin incelendiği bu çalışmada, 2005Q1-2019Q2 dönemleri arasında TCMB veri tabanından elde edilen enflasyon, döviz kuru ve faiz oranına ilişkin veriler kullanılarak analiz yapılmıştır. Çalışmada değişkenler arasındaki ilişkinin test edilmesi amacıyla ARDL (Auto-Regressive Distributed Lag) modeli kullanılmıştır. Buna göre ARDL testi sonuçları incelendiğinde Türkiye'de döviz kuru ve faiz oranı değişkenlerinin kısa ve uzun dönemde enflasyona neden olduğu sonucuna ulaşılmıştır.

1. Introduction

Inflation refers to the continuous increase in goods and services prices. The concept of inflation, which has an important place in the literature, cannot be expressed only by increases in the prices of one or more goods or services. Inflation is defined as the increases in the average prices of all goods and services consumers use during the year. In other words, the prices of some goods and services increase in inflation periods, while the prices of some goods and services may decrease during the period (Doğan vd., 2015). In addition, inflation is an increase in wages and wages as well as an increase in the prices of goods and services in the economy, and these increases are continuous without covering a certain period. Based on this point, if the increase in inflation is more than salaries and wages, purchasing power of consumers is negatively affected. In addition, salary and wage increases usually follow inflation with a one-year delay and therefore the inflationary environment operates against fixed income. On the other hand, inflation disrupts the relative price balance and causes the terms of trade to turn against. As a result, the foreign trade balance is disturbed and inflation can be further increased through the exchange channel. In the inflationary environment, which is expressed as supply and demand imbalance, investments should increase in order to overcome the supply deficit (production deficit), and savings should increase into investment. However, as the small savings owners cannot protect their savings against inflation in the inflationary environment, this situation reduces savings and increases consumption, while the increase in demand accelerates inflation even more. On the other hand, large savers direct their savings to areas that generate high-interest yields where they can earn real income. In addition to the recession,

crises can also arise with factors such as increasing demand for consumer goods, decreasing investments, relatively expensive imports, decreasing the share of the fixed income segment from income, and uncertainties about the future. On the other hand, many decisions such as investment are negatively affected in the economy and the decisions are taken short-term, as the instability of the key indicators, which makes the investments requiring long-term decisions for the future, also highly risky. Therefore, the negativities occurring in inflation processes and their results have been examined by many economists (TCMB, 2013).

Considering the developments in Turkey's economy from a historical point of inflation on January 24, 1980, Turkey represents an important transition in the history of economics. In Turkey as of January 24, 1980 in order to provide financial liberalization, imported substitution industrial policies implemented in the 1970s were abandoned and capital movements were liberalized. With the abandonment of the import substitution industrialization policy after 1980, an export-oriented industrialization policy was initiated and with this effect, inflation was aimed to be reduced and price stability was maintained, but it continued to rise again after inflation remained low for a while. The main reason for the increase in prices between 1985 and 2000 is expressed as monetary expansion. In 1995 and afterwards, a tight monetary policy was implemented as an internal borrowing policy to prevent inflation. In the 2000s, inflation was tried to be reduced by controlling the money supply. In 2001, the inflation targeting regime was introduced in order to increase the effectiveness of the TCMB and to strengthen its independence, implicit inflation targeting was implemented between 2002 - 2005, and the rate of inflation decreased between

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these periods to single-digit levels and was effective in achieving sustainable growth (Taban & Şengür:2016). After 2006, inflation was tried to be kept under control by applying open inflation targeting, but this was not successful due to the global crisis in the world (Şahin & Karanfil, 2015).

When Turkey's long years of high inflation, problems with the show that nested in order inflation phenomenon is numerically evaluated, inflation rates were observed in single-digits in the period up to 1971, it increased to 16% in 1971. In the following period, this increase continued and reached 57% in 1979, 116% in 1980, 50% in 1993, 106% in 1994, and an average of 74% between 1995 and 2001. With the transition to strong economy program in 2001, inflation fell to single-digits and the average inflation was realized as 8.4% between 2004-2012. When considering this situation in Turkey it is observed to watch for many years and inflation is calculated as the average of 46.7% (TCMB, 2013).

Considering the theoretical framework of the concept of inflation, there are differences of opinion among economic theories regarding the factors that cause inflation. However, among the factors that cause inflation in today's economies, exchange rate and interest rate are among the most discussed issues, and how changes in these variables affect inflation are analysed.

2. The relationship between exchange rate and inflation

Exchange rates, which are accepted as an important indicator of the macroeconomic performance of countries, take their place as an important variable in explaining the causes of inflation. As an indicator of this, the main reason for the crises that occurred in the 1990s can be shown to be the exchange rate. The common characteristics of the crises that occurred in Mexico in 1997, Thailand, Korea and Indonesia in 2000, and Argentina in 2000 were the economic shrinkage observed as a result of the excessive exchange rate. Turkey axis exchange rate experienced in the world in parallel to this crisis, 'it is clear that the depreciation of TL 1994, and suffered greatly as a result of the 2001 financial crisis, extreme price increases in an overvalued exchange result was observed. As a result of these effects occurred in Turkey's economy in the exchange rate regime by going to change practice abandoned the previously announced exchange rate regime and transition to a free-floating exchange rate regime. Transition to a free-floating exchange rate in Turkey is also in this period, Turkey's means of enforcement of the inflation targeting regime. As a matter of fact, between 2001 and 2005, the TCMB started to apply implicit inflation targeting regime and in 2006 and beyond, the explicit inflation targeting regime (Kaya, 2018).

In the literature, the relationship between exchange rate and inflation is explained by the transition effect. The transition effect refers to the transition from the exchange rate to the prices. In other words, it expresses the effect of the change in the prices of imported or exported goods as a result of the change in exchange rates on inflation. In other words, it expresses the effect of any change in the exchange rate primarily on costs and then on prices. In this case, considering the transfer mechanism in the standard model, an increase in exchange rates is primarily reflected in raw materials and production costs by increasing the prices of imported inputs, and the price and cost increases experienced in this way cause inflation (Doğru et al., 2019). In other words, as the increase in the exchange rate will have an impact on decreasing imports and increasing exports, the total demand will increase and the increase in total demand will cause inflation again. Increases in the exchange rate in the open economy systems increase the prices of imported inputs, while the imported inputs cause an increase in the prices in the domestic market as it is an important cost factor in developing economies. On the other hand, due to the prevailing of the inflationary structure in the emerging economies, savers want to keep their assets in foreign currency, which is stronger and want to preserve the value of their savings. In addition, interest rates will decrease as a result of the increase in domestic money supply, falling interest rates will increase the exchange rates of imported inputs, increasing the exchange rate, as foreign deposits leave the country (Sydzzykova:2016).

According to the transfer mechanism put forward by Mc Callum and Nelson (1999), the increase in import prices as a result of the increase in exchange rate will cause a decrease in the amount of output. The decrease in the output will increase the output gap and cause the general level of prices to increase.

3. The relationship between interest rate and inflation

The relationship between inflation and interest rate was first included in Irving Fisher's book "The Theory of Interest Rate" in 1930. The relationship between interest rate and inflation put forward by Fisher, one of the representatives of the classical economic approach, is called the fisher hypothesis.

$$r = i - \pi^e \quad (1)$$

$$i = r + \pi^e \quad (2)$$

According to the Fisher hypothesis formulated in the form; There is a long-term relationship between interest rate and inflation. According to this approach, although inflation is equal to the difference between the nominal interest rate and the real interest rate, it suggests that inflation and nominal interest rate affect each other and any change in inflation will be eliminated with a change in the nominal interest rate. However, according to this hypothesis, the change in inflation does not affect real interest rates (Tunalı & Erönel, 2016). The reason for this is that the real interest rate is stable in the long term and it is not affected by the monetary changes that cause inflation (Merican, 2013). In other words, the changes in monetary policy do not affect the real interest rate but affect the nominal interest rate (Tunalı & Erönel, 2016).

Different policies at various times in order to ensure price stability in Turkey was applied. The policies implemented in the fight against inflation have been effective in some periods, while in some periods, the increase in inflation has continued. For this reason, the phenomenon of inflation and the factors that cause inflation have been widely studied in the literature.

This works for many years the head to head with the inflation problem and implementing various policies to prevent inflation in Turkey inflation to address the current dynamics and interest rate due to rise to more forefront of the effects of inflation in the macroeconomic area in recent years and exchange rate in the short and prices in the long term It is important in terms of revealing its effect on the general level.

4. Literature

When developing countries in the world are analyzed, it is noteworthy that the inflation rates in these countries are high. For this reason, the efforts of developing countries to bring inflation rates to 1-2% levels, as in the economies of developed countries, brought forward the factors causing inflation in these countries. In the literature, the factors that cause inflation have been revealed in the studies conducted, but the effects of these factors on inflation differ in terms of the results obtained from the studies.

Muço et al. (2004) tested the effects of money supply, exchange rate and foreign trade variables on inflation in the Albanian economy between 1994-2003 with the VAR analysis method. In the study, it is emphasized that ensuring stability in the exchange rate will bring about price stability, the exchange rate plays a key role for the inflationary indicators, and monetary controls in the economy will prevent inflation.

Mpofu (2011) in his study, using monthly data between 1999 and 2000, he tested the effect of money supply, interest rate, exchange rate, oil prices on inflation rate in South Africa by using OLS method. In the study, the deterministic effect of macroeconomic variables on inflation was tried to be observed by the using multiple regression model. Accordingly, as a result of the analysis, it was concluded that the changes in money supply in the short and long term caused inflation, at the same time, there was an inverse and indirect relationship between the interest rate and inflation, and the reason for this was that the money supply control was tried to be achieved through the interest rate. It is also emphasized that the changes in the exchange rate play an important role in ensuring price stability.

Saeidi and Valian (2011) in their studies, they tested the effects of changes in the exchange rates and interest rates on the inflation in the Iranian economy between 1991-2009 using the Least Squares method. In the study, the analysis was made with the annual data of the variables. Accordingly, in the study, it was observed that there is a linear and positive relationship between inflation and interest rate, and there is a reverse relationship between exchange rate and inflation. Therefore, it is concluded that the increases in the interest rate increase the inflation and the increases in the exchange rate indirectly cause a decrease in inflation.

Nucu (2011) in his study, he tested the effect of GDP, money supply, interest rate and exchange rate on the inflation rate in the Romanian economy by using the Least Squares method between 2000-2010. In the study, it was concluded that changes in money supply and exchange rates caused inflation.

Akinbobala (2012) conducted a study to examine the effects of money supply, exchange rate and interest rate on inflation in Nigerian economy between 1986 and 2008 are analyzed by cointegration and vector error correction test method. Quarterly data on the interest rate, exchange rate, money supply and inflation were analyzed. Accordingly, it was concluded that the increases in the money supply caused inflation in the short term, but there was no relationship between money supply and inflation in the long term, and changes in the exchange rate increased the domestic inflation rate by causing cost inflation.

Ebiringa and Nnneka (2014) in their study, they tested the effect of changes in

exchange rates and interest rates in the Nigerian economy between 1971-2010 on inflation using the ARDL model. In the study, it was concluded that there is a long-term relationship between interest rate and inflation rate, and there is both a long-term and short-term relationship between exchange rate and inflation. In addition, it was found that there is a negative but low-level relationship between exchange rate and interest rate.

Chiaraah and Nkegbe (2014) in their study, using GDP, Exchange rate, Money supply and Inflation data in Ghana economy between 1980-2010, they tested the long and short term effects of these variables on inflation by using Engle-Granger cointegration test method. In the study, the effect of money supply and changes in the exchange rate on the inflation in the Ghana economy was emphasized, and it was concluded that the increases in the money supply, in the long run, caused inflation, but no relationship was observed between the exchange rate and inflation in the long run. The reason for this is shown as the monetary policy applied in the economy of Ghana.

Afshan and Betul (2014) in their study, they analyzed the effects of the changes in the exchange rate and interest rate in Pakistan's economy between 1971-2013 on inflation by using ARDL limit test method. In the analysis, ADF unit root test was used to determine the stationarity levels of the variables. In the study, it is concluded that the increase in the exchange rate will increase the cost of imported inputs, thereby increasing inflation, and the high-interest rate will bring inflation to high levels.

Ali et al. (2015) in their work, they tested the effects of money supply, interest rate and exchange rate on inflation in Pakistan's economy between 2000-2009 using the methods of Johansen cointegration and Vector Error Correction model. In the study, it was concluded that there is a long and short-term relationship between exchange rate and inflation, there is an inverse relationship between money supply and inflation, and changes in exchange rates arise from interest rates.

Nchor and Darkwah (2015) in their study, they tested the effect of the exchange rate and interest rate on inflation in Ghana economy between 1991-2003 with ARDL limit test method. In the study, it was concluded that the exchange rate and the nominal interest rate in Ghana economy had a significant effect on inflation, and inflation was affected by the exchange rate and interest rate both in the long term and in the short term, although low inflation rates were observed in the Ghana economy.

Moroşan and Zubas (2015) in their studies, they analyzed the effects of interest rate and exchange rate on inflation in the Romanian economy between 2005 and 2014 by using the Least Squares method with annual data. In the study, it was concluded that the relationship between exchange rate inflation exists only if the changes in the exchange rate reflect the inflation rate with a delay in the period, and the interest rate affects inflation, but this effect is at very low levels.

Hawk and Carnation (2015) between the years 1980-2013 the work they have done with the money supply in the economy of Turkey Johansen relationship between the inflation rate was analyzed by cointegration and Granger causality test methods. Annual data on inflation, money supply, real exchange rate and budget deficit were used in the analysis. According to the results of the cointegration test conducted in the study, there was no long-term relationship between money supply, exchange rate and inflation rate, and according to the Granger causality test results, no causality relationship was found between money supply and inflation rate.

Torun ve Karanfil (2016) 1980-2013 years in the work they have done in the relationship between inflation and interest rates in the economy of Turkey have tested using Johansen cointegration test and Granger causality analysis methods. Annual data on the exchange rate, interest rate, GDP and Inflation rates were used in the analysis. According to the results of the cointegration test conducted in the study, it was concluded that there was a long-term relationship between inflation, exchange rate, interest rate and GDP, and according to the Granger causality analysis, there was a one-way causality relationship between interest rate and inflation rate.

Yolanda (2017) in his study, he examined the factors affecting inflation in Indonesia between 1997-2016. In the study, the effects of these variables on inflation were analyzed using the Least Squares method, using annual data on the exchange rates, money supply, oil prices and gold prices. Accordingly, it has been concluded that there is a relationship between inflation and exchange rate, but this relationship is low, and money supply has a strong effect on inflation, that is, increases in money supply cause inflation.

Islam et al. (2017) in their studies, they analyzed the factors affecting inflation by using the annual data of the Malaysian economy between the years 1980-2014 by using the Least-Squares (LS) method. Money supply, exchange rate and unemployment rate data were used as factors affecting inflation. Accordingly, in the study, it was found that in the Malaysian economy, the reverse curve between unemployment and inflation rate was confirmed, the

increase in the exchange rate caused inflation and at the same time, the increase in the money supply triggered the inflationary process.

Korkmaz (2017) 1980-2015 years in the work that it has done in Turkey in the relationship between inflation rates and factors affecting inflation have analyzed using the least-squares method. Quarterly data on inflation, GDP, money supply, interest rate, nominal wages, real credit volume and real exchange rates were used in the analysis. In the study, it was concluded that the increases in the interest rate caused inflation both in the short run and in the long run, while there was a relationship between the exchange rate and the inflation in the short run, but there was no relationship in the long run, that is, the exchange rate did not affect the inflation.

Abasimi et al. (2018) in their work, they tested the effect of money supply, interest rate and exchange rate on inflation in Ghana economy between 1990-2017 with ARDL limit test method and Error Correction Model methods. In the study, money supply does not affect the inflation rate in the short and long term, but it is concluded that the exchange rate and the nominal interest rate affect inflation in the same direction in both the short and long term.

5. Methodology

ARDL (Autoregressive Distributed Lag) border test approach In 2001, Pesaran et al. It was suggested by. Engle-Granger and Johansen cointegration tests are mostly used to examine long-term relationships between variables. In order to perform these cointegration tests, the variables must be at the same level. These cointegration tests cannot be applied to non-stationary variables at the same level.

Pesaran et al. According to the ARDL model proposed by (2001), the fact that the variables are stationary at different levels does not constitute an obstacle to the implementation of the ARDL method. Variables can be tested using the ARDL method, even if $I(0)$ or $I(1)$ are stable at the level. However, according to Pesaran, ARDL method cannot be applied if the variables are stationary in the second difference $I(2)$.

ARDL method provides advantages over other test methods in terms of applicability to small samples and more reliable statistical results compared to other test methods (Akel & Gazel:2014).

Another advantage of this model over other cointegration tests is that it achieves more reliable statistical results by using unlimited error correction model. Accordingly, the error correction model defined in the ARDL test:

$$\Delta \ln Y_t = \beta_0 + \sum_{i=1}^k \beta_{1i} \Delta \ln Y_{t-i} + \sum_{i=0}^k \beta_{2i} \Delta \ln X_{t-i} + \sum_{i=0}^k \beta_{3i} \Delta \ln X_{2t-i} + \beta_4 \ln Y_{t-1} + \beta_5 \ln X_{t-1} + \beta_6 \ln X_{2t-1} + \varepsilon_t \quad (3)$$

It is expressed in the form. Based on these explanations, the model defined in ARDL model to test long-term relationships:

$$\ln Y_t = \beta_0 + \sum_{i=1}^k \beta_{1i} \Delta \ln Y_{t-i} + \sum_{i=0}^k \beta_{2i} \Delta \ln X_{t-i} + \sum_{i=0}^k \beta_{3i} \Delta \ln X_{2t-i} + \varepsilon_t \quad (4)$$

It is expressed in the form. The hypotheses established to test the cointegration relationship between the variables used in the model are;

$$H_0: \beta_1 = \beta_2 = \beta_3 = 0 \rightarrow \text{There is no cointegration.} \quad (5)$$

$$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq 0 \rightarrow \text{There is cointegration.} \quad (6)$$

It is defined in the form. By looking at the F statistic value obtained as a result of the ARDL test, it is tested whether there is a cointegration relationship between the variables. In the case of a cointegration relationship, it is possible to talk about the existence of a long-term relationship between the variables. In addition, in the presence of a cointegration relationship, it is possible to explain the short-term relationships between the variables with the Error correction model.

$$\Delta \ln Y_t = \beta_0 + \sum_{i=1}^m \ln Y_{t-i} + \sum_{i=0}^k \beta_{1i} \Delta \ln X_{t-i} + \sum_{i=0}^k \beta_{2i} \Delta \ln X_{2t-i} + ECT_{t-1} + \varepsilon_t \quad (7)$$

Short-term relationships between variables can be evaluated with the error correction model expressed in the form. ECT in the model shows how much of the errors in the model can be fixed in a period.

5.1. Data set and Model

Turkey's economy 2005: 1-2019: between 2 periods of inflation, interest rates and the exchange rate between long and short-term relationships ARDL This study was conducted to analyze (distributed lag autoregression) limit test approach was preferred.

In the study, Consumer Price index, Interest rate and exchange rate nominal values were used as inflation data. The data used in the analysis were obtained from the TCMB EVDS database. The variables used in the study are INF: Inflation, DK: Exchange rate and İ: interest rate for simplicity. Linear regression model consisting of variables used in the study;

$$\ln INF_t = \beta_1 + \beta_2 \ln DK_t + \beta_3 \ln \dot{I}_t + \varepsilon_t \tag{8}$$

It is shown in the form. Stability test and ARDL limit test results of the variables used in the analysis are given in the Tables below.

5.2. Results

ADF unit root test was applied to determine the stationarity levels of the variables. Unit root test results showing the stationarity levels of the variables are given in Table 1.

Table 1: ADF Unit root test results

Variables	Level [I(0)]	Difference [I(1)]
lnINF	1.393501	-6.596786***
lnDK	2.639970	-5.495556***
lnİ	-1.082191	-5.593214***

*** 1%, ** 5%, * 10% express the level of significance.

According to the ADF unit root test results, the variables are stationary in the difference. According to the unit root test results obtained, there is no obstacle in the application of ARDL boundary test method in order to test the long and short term relationship between the variables. Therefore, the ARDL model established to test the long-term relationship between the variables is as follows:

$$\ln INF_t = \beta_0 + \sum_{i=1}^k \beta_{1i} \Delta \ln INF_{t-i} + \sum_{i=0}^k \beta_{2i} \Delta \ln DK_{t-i} + \sum_{i=0}^k \beta_{3i} \Delta \ln \dot{I}_{t-i} + \varepsilon_t \tag{9}$$

ARDL test results obtained according to the installed model are given in Table 2.

Table 2: ARDL bounds test results

F Statistic		
	7.125442***	
Significance level	Lower limit	Upper limit
%1	4.13	5
%5	3.10	3.87
%10	2.63	3.35

*** 1%, ** 5%, * 10% express the level of significance.

The F statistic value obtained according to the ARDL bounds test results in Table 2 is above the upper limit calculated at the 1%, 5% and 10% significance level. This indicates that the model is meaningful and that there is a cointegration relationship between the variables. Long term test results and coefficient values obtained from ARDL model are given in Table 3.

Table 3: Long-term coefficients from ARDL test

Variables	Coefficients	T Statistics
lnDK	0.806701	3.186791***
lnİ	0.214077	3.605214***

*** 1%, ** 5%, * 10% express the level of significance.

Table 3 according to the long-term in Turkey as a result of ARDL test from exchange rate and interest rate affects inflation in the long term. Therefore, an increase of 1% in the exchange rate increases inflation by 0.80%, and a 1% increase in interest rate increases inflation by 0.21%. According to the test results obtained, the most unfavorable effect on inflation, in the long run, is due to changes in the exchange rate. Short term coefficients are given in Table 4.

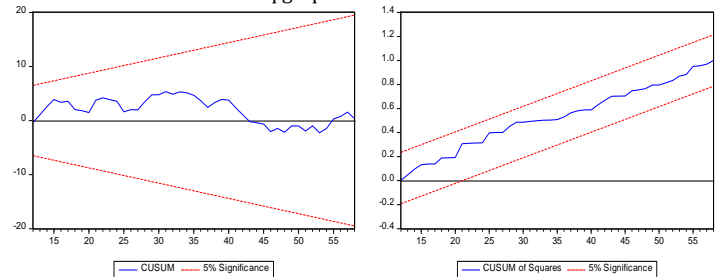
Table 4: Short-term coefficients obtained from the ARDL test

Variables	Coefficients	T-Statistics
lnDK	1.115673	4.541248***
lnİ	0.296070	5.376867***
ECM	-0.028532	3.444274***

*** 1%, ** 5%, * 10% express the level of significance.

Table 4, the ARDL test in the short term as a result of Turkey's exchange rate and interest rate affects inflation parallel to the long term. An increase of 1% in the exchange rate in the short term increases inflation by 1.11%, and an increase of 1% in the interest rate increases inflation by 0.29%. Also, the ECM variable in the table refers to the error correction coefficient. The error correction coefficient obtained is statistically significant. Accordingly, %2.85 of shocks occurring on inflation in the short term in the economy can be eliminated in the long term (Işık et al., 2019). According to the test results obtained, the most unfavourable effect on inflation in the short term is due to the changes in the exchange rate. Also, when the effects on inflation are analyzed periodically, the effects of changes in exchange rates and interest rates on inflation are felt more in the short term.

Table 5: Cusum and Cusumq graphics



The cusum and Cusumq graphs in Table 5 are used to test whether the model has a stable structure at 5% significance level. Therefore, when the graphics are examined, it is understood that the model is stable.

6. Conclusion

In Turkey, interest rate, exchange rate and the relationship between variables was tested using the ARDL method in this study that examined the relationship of inflation. ARDL method provides advantages over other tests in terms of analyzing long and short term relationships between variables. For this reason, this method was used in the analysis of variables. According to the results of the tests carried out in the short term Turkey's exchange rate and interest rate affects inflation. An increase of 1% in the exchange rate in the short term increases inflation by 1.11%, and an increase of 1% in the interest rate increases inflation by 0.29%. According to the test results obtained, the most unfavorable effect on inflation in the short term results from the changes in the exchange rate.

When examined in parallel with the short-term Long-term analysis of Turkey's exchange rate and interest rate affects inflation in the long term. Therefore, an increase of 1% in the exchange rate increases inflation by 0.80%, and a 1% increase in interest rate increases inflation by 0.21%. According to the test results obtained, the most unfavorable effect on inflation, in the long run, is due to changes in the exchange rate. Also, when the effects on inflation are analyzed periodically, the effects of changes in exchange rates and interest rates on inflation are felt more in the short term.

This results from the movement in Turkey due to high energy costs and the exchange rate increase occurred in the domestic market by increasing the cost of inflation may lead to higher price increases. At the same time, according to the short and long term test results, the reason for the negative effects of the changes in the exchange rate and interest rate on the inflation in the short term is higher than the long term because the economic policies are unprepared or the economic structure is fragile against the shock caused by the exchange rate and interest rate. weldable. Therefore, advisable to increase measures against short-term shocks in the economy of Turkey. In the long term, the effects of the increase in the exchange rate and the interest rate on inflation may be due to the time advantage, as well as the implementation of more flexible policies.

Ensuring stability in Turkey in order to prevent inflation, the exchange rate can have a significant impact on reducing inflation. In order to achieve this, as a result of increasing the foreign currency reserves by concentrating on the export incentive policy, it can provide price stability by reducing the cost inflation caused by the exchange rate.

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