

The Influence of Exchange Rate, Export, Import and Economic Growth on Turkish Inflation

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Info Articles

Article history:
Received July 31, 2024
Revised August 12, 2024
Accepted August 31, 2024
Available online August 31, 2024

Keywords: Economic Growth; Exchange Rates; Exports; Imports, Turkish Inflation

JEL Classification:
N15, P44

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P-ISSN 2963-9239
E-ISSN 2716-4799

Abstract

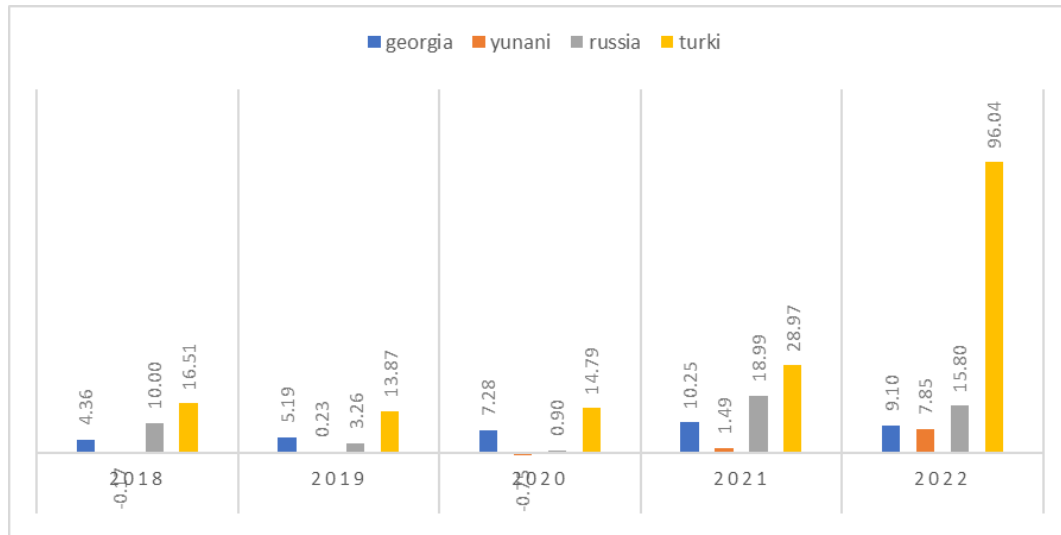
This study aims to analyze the effect of exchange rate, exports, imports, and economic growth on inflation in Turkey over the period 1992-2022. Using annual time series data, this study applies the multiple linear regression method to identify the relationship between these variables. Before conducting the regression analysis, a stationarity test is performed using the second difference method to ensure that the data does not have significant trends or seasonal patterns. The results show that the exchange rate has a positive and significant effect on inflation in Turkey. Exports and economic growth show a positive but insignificant effect, while imports have a negative and significant effect on inflation. These findings indicate that fluctuations in the exchange rate and import volume are more influential in determining the inflation rate in Turkey than exports and economic growth. This study concludes that an effective economic policy to control inflation in Turkey should consider exchange rate management and import control. Other factors such as exports and economic growth may have a lesser influence on inflation during the period studied.

INTRODUCTION

Inflation is an economic phenomenon in which there is a general and continuous increase in the prices of goods and services over a certain period. Inflation can reduce the purchasing power of money so that each unit of currency will buy fewer goods and services than before. The causes of inflation can vary, including higher aggregate demand than aggregate supply (*demand-pull inflation*), rising production costs (*cost-push inflation*), and expansionary monetary policy. In general, moderate inflation is considered healthy for the economy because it can encourage consumption and investment, but high and uncontrolled inflation can damage the economy by reducing purchasing power and creating economic uncertainty. In this context, Turkey is an interesting research subject because it has unique and complex economic characteristics. The country often experiences high and fluctuating inflation rates, which are a challenge for economic and monetary policy. In addition, Turkey's strategic geographical position, located at the crossroads between Europe and Asia, makes it an important centre for international trade. This geographical location not

only increases trade volume and investment flows but also affects domestic economic conditions, including inflation.

Figure 1. Graph of Inflation Rates in Georgia, Greece, Russia and Türkiye 1028-2022



Source: World Bank 2024

Based on Figure 1, Turkey stands out with a significant spike in inflation in 2022, reaching 96.04%. This extreme increase in inflation is due to several factors, including a controversial monetary policy where the Turkish Central Bank lowered interest rates despite rising inflation, political and economic instability, and a significant depreciation of the Turkish Lira which caused the price of imported goods to increase. In addition, global crises such as the COVID-19 pandemic and supply chain disruptions have also contributed to the spike in inflation in Turkey. Meanwhile, other countries in the chart also show variations in inflation, but not as large as the increase experienced by Turkey. Russia, for example, reached inflation of 18.99% in 2021 and 15.80% in 2022, which is also high but not as high as in Turkey. Georgia and Greece showed more stable and lower inflation rates compared to Turkey. The Turkish government has implemented various economic policies to address these challenges, including efforts to reduce inflation, increase foreign investment, and diversify the economy. Some of the main sectors driving economic growth in Turkey include manufacturing, construction, and services such as finance, health, and tourism. The Turkish government has implemented a variety of economic policies to address these challenges, including efforts to reduce inflation, increase foreign investment, and diversify the economy. Some of the key sectors driving economic growth in Turkey include manufacturing, construction, and services such as finance, health, and tourism.

Fluctuations in the Turkish Lira exchange rate against the US dollar and other currencies can have a direct impact on the prices of goods and services, especially imported ones. Depreciation of the Lira exchange rate often leads to an increase in the prices of imported goods, which in turn increases domestic inflationary pressures

(Aysan et al., 2014). Exchange rate stability is very important for Turkey to maintain price stability domestically. (Karahana, 2020) . In addition to the exchange rate, exports and imports also play an important role in determining the inflation rate in Turkey. Turkey is a country that is highly dependent on international trade. Dependence on imports, especially for raw materials and energy, makes the Turkish economy vulnerable to international price fluctuations. The increase in the price of imported raw materials directly affects domestic production costs and the final price of goods and services. On the other hand, strong exports can help stabilize the economy by increasing state revenues and exchange rate stability. (Aysan et al., 2014) . Rapid economic growth is often accompanied by increased demand for goods and services, which can drive inflation if not matched by increased production capacity. In Turkey, periods of rapid economic growth have sometimes been followed by increased inflation, especially if the growth has been driven by high domestic consumption and investment. (Boğa, 2020).

In a previous study conducted by Azzam Abdullah Hasan Aidaro entitled "The Impact of Inflation on Economic Growth" in 2023. This study uses secondary data obtained from the *World Bank website* and *World Development Indicators (WDI)* from 1990-2022 on inflation and economic growth. The results of this study found a positive impact of inflation on economic growth in the short term but negative in the long term. The results of the F test show that H0 (which states there is no long-term relationship) is rejected, and H1 (which supports a long-term relationship) is accepted. Because it is proven that there is a long-term relationship between the variables, this study then applies the cointegration model and error correction model (ECM) for further analysis.

Suhesti Ningsih and LMS Kristiyanti conducted a study entitled "Analysis of the Influence of Money Supply, Interest Rates, and Exchange Rates on Inflation in Indonesia in the Period 2014-2016". The money supply, interest rates, and exchange rates in Indonesia are the population of this study. Researchers choose subjects or objects to represent the population of this study can be found on the official website of the Central Statistics Agency (BPS) at www.bps.go.id and Bank Indonesia at www.bi.go.id. The purposive sampling method is used to collect macro time series data released by Bank Indonesia in 2014-2016, which includes data on the money supply, interest rates, and exchange rates every month. This study uses quantitative data, and to achieve the research objectives, data analysis is carried out using multiple linear regression analysis techniques, and purposive sampling techniques are used. The F test shows that the money supply, interest rates, and exchange rates have a positive and significant effect on inflation with a significant value. The t-test shows that the variable of money supply has a negative and significant effect on inflation, and the variable of interest rate has a negative and significant effect on inflation. In other words, the factors that affect the exchange rate partially and significantly affect inflation.

This study identifies a gap in the literature, where no study has comprehensively examined the effects of exchange rates, exports, imports, and economic growth on inflation simultaneously. Although several studies have discussed these variables separately, none have examined them all in a single integrated analytical framework.

This study aims to fill this gap by analyzing how these four variables affect inflation, providing deeper insights into the relationship between these key economic factors and inflation.

The study aims to analyze the influence of exchange rates, exports, imports and economic growth on the inflation rate in Turkey from 1992-2022.

RESEARCH METHODS

Population and Research Sample

The population selected in this study is the Exchange Rate, Export, Import, Economic Growth and Inflation Rate in Turkey. In the study, the sample used panel data with a period from 1992-2022, in other words, the number of observations is 31. Data was obtained from the World Bank database.

Data collection technique

The method used for data collection is purposive sampling. To better understand the topic being studied, the research was conducted by conducting a literature study and obtaining data from books, journals, websites, and other sources that are used as references or research guides.

Data Analysis Techniques

In this study, the stationarity test was conducted using the Augmented Dickey-Fuller (ADF) Test to ensure that the data used did not have disturbing trends or seasonal patterns. The first difference is accepted when the data becomes stationary after taking the first change between periods. However, if the data is still non-stationary after the first difference, the second difference is used to eliminate the remaining trend. The data is considered stationary and suitable for further analysis if the ADF test shows that the value of the test statistic is greater in absolute terms than the expected critical value.

In this study using a linear regression model. There are several independent variables used in the linear regression model. Several regressions are selected as analyses because there are several variables. Regression to find out how close the relationship and influence of variables (X1, X2, X3 and X4) are to the variable (Y), multiple linear functions are used. Researchers will utilize Microsoft Excel 2010 applications and applications to obtain clearer results Excel 2010 and Eviews 12 Software applications. The method of data analysis with panel data, the formula is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 \dots \dots \dots (1)$$

Y = Inflation Rate; a = Constant; $\beta_1 \beta_2 \beta_3 \beta_4$ = Regression Coefficient; X_1 = Exchange Rate; X_2 = Export; X_3 = Import; X_4 = Economic Growth; e= Interfering Variable (Error)

Time Series Data Regression Model Estimation

Classical Assumption Test

The regression model is evaluated using the classical assumption test to check whether the model indicates a normal distribution between the independent and

dependent variables. A good regression model will indicate a normal or near-normal distribution.

Normality Test

The normality test aims to test normality in the regression model, the dependent variable and independent variables have a normal distribution or not. The best regression model is one that is normally distributed or close to normal. In using Eviews software, normality can be known by looking at the JB probability. If the JB probability > 0.05 then the data is normally distributed while if the JB probability < 0.05 then the data is not normally distributed.

Multicollinearity Test

The Multicollinearity Test aims to test whether the regression model finds a correlation between independent variables. A good regression model should not correlate with independent variables. If the correlation coefficient between independent variables is more than 10, it can be concluded that the model has a multicollinearity problem. Conversely, if the correlation coefficient is less than 10, then the model is free from multicollinearity.

Autocorrelation Test

The autocorrelation test is used to determine whether the confounding error of period t and the confounding error of period $t-1$ (previous) are correlated in a linear regression model. A good regression model does not have autocorrelation. To determine its validity, two tests use autocorrelation, namely the Durbin-Watson test and the Breusch-Godfrey test. This study uses the Breusch-Godfrey method which states that autocorrelation does not occur if the probability value is greater than or equal to $\alpha = 5\%$ and autocorrelation occurs if the probability value is less than or equal to $\alpha = 5\%$.

Heteroscedasticity Test

The heteroscedasticity test aims to evaluate the contents of the model. There is no equality of variance between the remainder of one observation and the remainder of another observation in the regression. The residual of an observation is said to be homoscedastic if its variance remains constant, and heteroscedastic if it varies. If heteroscedasticity or homoscedasticity does not exist for a long time in the regression model, then it is considered desirable. This study was tested by examining the scatterplot graph. However, in this study, the Glejser Test is used to find out whether there is a heteroscedasticity problem or not.

Hypothesis Testing

Determination Coefficient Test (R^2)

The coefficient of determination is a value to measure the independent variable against the rise and fall of the dependent variable. The coefficient of determination is usually symbolized by r^2 and is also expressed in percentage. In other words, the Y variable is explained by the X variable by $r^2\%$ and the rest is explained by other

variables. The remaining Y variables are caused by other factors and can also influence them.

Simultaneous Significance Test (F Statistic Test)

The F statistical test is used to determine whether all independent variables included in the model have a joint or simultaneous influence on the dependent variable. The basis for decision-making is based on the probability value. If the probability <0.05 then it can be concluded that all independent variables have a joint influence on the dependent variable.

Statistical T-test (Partial Test)

The t-statistic test is conducted to determine how far the independent variable influences the dependent variable by assuming the other independent variables are constant. In this case, decision-making is based on the probability value, namely if the probability value <0.05 then the independent variable significantly influences the dependent variable. Conversely, if the probability value > 0.05 then the independent variable has no significant effect on the dependent variable.

RESULTS

Stationarity Test

Variable	ADF Prob.
C	0.0000
X1	0.0000
X2	0.0000
X3	0.0000
X4	0.0000

Based on the output obtained P-Value Augmented Dickey-Fuller, all independent variables <0.05. So it can be concluded that the data is said to be stationary and suitable for further analysis.

Classical Assumption Test

Normality Test

Table 1. Normality Test Results

Jarque-Bera	21.82226
Probability	0.121530

Based on the normality test above, it shows that the Jarque-Bera probability value is 21.82226, this value is > 0.05 so it can be decided to reject H1 and accept H0, so it can be concluded that the data is normally distributed.

Multicollinearity Test

Table 2. Variance Inflation Factor Results

Variable	Centred VIF
C	NA
X1	1.205140
X2	2.543024
X3	2.513368

X4	2.720714
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According to the table above, it shows that each independent variable has a Centered VIF figure < 10, so it can be said that there is no multicollinearity.

Autocorrelation Test

Table 3. Breush-Goedfrey LM Test Results

Serial Correlation LM Test: Breusch_Godfrey	
Chi-Square Prob.	0.2302

Based on the test results above, it was obtained that the value of the Prob. The Chi-Square Breusch - Godfrey autocorrelation test was 0.2302. This value is greater than 0.05. So it was decided to accept H0 or it can be concluded that there is no autocorrelation.

Heteroscedasticity Test

Table 4. Glejser Test Results

Heteroscedasticity Test: Glejser	
Chi-Square Prob.	0.1483

Based on the Glejser test, the Chi-square probability value is 0.1483, which is greater than 0.05. So it can be concluded that there is no heteroscedasticity problem.

Multiple Linear Regression Model

Table 5. Regression Test Results

Variable	Coefficient	t-Statistic	Prob.
C	1.598230	0.485599	0.6328
EXCHANGE RATE	1.013910	7.968128	0.0000
EXPORT	2.335118	1.624057	0.1208
IMPORT	-3.976248	-3.511252	0.0023
ECONOMIC PER.	0.958222	1.816699	0.0851
Prob. (F-Stat)	0.000000		
Adj. R-Square	0.858126		

Based on Table 5, the following conclusions are drawn:

- a. Exchange Rate = The regression coefficient of the Exchange Rate variable is 1.013910. This indicates a positive influence between the Exchange Rate and the Inflation Rate (Y). The Exchange Rate variable has a probability value of 0.0000 which indicates that the variable has a significant effect on the Inflation Rate variable because the probability value is less than 0.05.
- b. Export = The regression coefficient of the Export variable is 1.013910. This indicates a positive influence between Export and Inflation Rate (Y). The Export variable has a probability value of 0.1208, which indicates that the variable has no significant effect on the Inflation Rate variable because its value is more than 0.05.
- c. Import = The regression coefficient of the Import variable is -3.976248. This indicates a negative influence between Import and Inflation Rate (Y). The Import variable has a probability value of 0.0023, which indicates that the variable has a significant effect on the Inflation Rate variable because the probability value is less than 0.05.

- d. Economic Growth = The regression coefficient of the economic growth variable is 0.958222. This indicates a positive influence between economic growth and the Inflation Rate (Y). The economic growth variable has a probability value of 0.0851, which indicates that the variable has no significant effect on the Inflation Rate variable because the probability value is more than 0.05.
- e. C = Constant of 1.598230 is the Inflation Rate on the variables of exchange rate, export, import and economic growth. This constant value has a probability value of 0.6328, which shows that this constant has no significant effect on the inflation rate because the probability value is more than 0.05.

Hypothesis Testing

Coefficient of Determination R-squared (R²)

The R-square Determination Coefficient (R²) is 0.858126 or 85.8%. This shows that the efforts of the independent variables, namely the exchange rate, exports, imports and economic growth, explain the dependent variable, namely the inflation rate, by 85.8% and the remaining 14.2% can be explained by other variables.

Based on the regression equation, it can be seen that the constant coefficient in the equation is 1.59822957099. The coefficient of each accumulation variable is positive. If the review of the probability constant has a probability of 0.6328, the exchange rate has a probability of 0.0000, exports have a probability of 0.1208, imports have a probability of 0.0023 and economic growth has a probability of 0.0851. The estimation results show that the exchange rate and import variables significantly affect the inflation rate in Turkey because the probability value is <0.05 while the export and economic growth variables affect the inflation rate in Turkey insignificantly because the probability value is > 0.05. The following is a discussion of each independent variable that affects inflation in Turkey.

Simultaneous F Test

Based on the analysis results in Table 5, the value of Prob (F-statistic) = 0.000000 is obtained. This value is smaller than 0.05, so it was decided to reject H₀. Therefore, it can be concluded that at least one of the variables of exchange rate, export, import and economic growth affects the inflation rate.

Partial T Test

Exchange Rate Variable

Based on the results of the analysis, it can be seen that the Unemployment variable has a t-count of 7.968128 with a probability of 0.0000 <0.05, so it can be concluded that the Exchange Rate variable has a significant effect on the Inflation Rate.

Export Variables

Based on the analysis results, it can be seen that the Export variable has a t-count of 1.624057. with a probability of 0.1208 > 0.05, so it can be concluded that the Export variable does not have a significant effect on the Inflation Rate.

Import Variables

Based on the results of the analysis, it can be seen that the Import variable has a t-count of -3.511252 with a probability of 0.0023 <0.05, so it can be concluded that the Import variable has a significant effect on the Inflation Rate.

Economic Growth Variables

Based on the results of the analysis, it can be seen that the Economic Growth variable has a t-count of 1.816699 with a probability of $0.0851 > 0.05$, so it can be concluded that the Economic Growth variable has no significant effect on the Inflation Rate.

DISCUSSION

The Effect of Exchange Rates on Inflation Rates

In this study, the results of the exchange rate variable analysis have a negative and significant effect on the inflation rate in Turkey. The results of the exchange rate variable estimation show a coefficient of 1.013910. This shows that if other independent variables (exports, imports and economic growth) are constant, then every 1% increase in the exchange rate will affect the inflation rate by 1.013910. As well as for the partial test results where the exchange rate is proven to be significant at the 5% significance level. When the exchange rate decreases (depreciation), the price of imported goods becomes more expensive, but if the demand for imported goods is elastic, people may reduce the consumption of imported goods and switch to cheaper local products, thereby reducing inflationary pressures from the demand side of imported goods. Monetary policy also plays an important role; the Central Bank of Turkey may respond to exchange rate depreciation by raising the exchange rate to reduce aggregate demand and suppress inflation. Turkey's import-dependent economic structure also provides an important context, as producers may not be able to pass on increased costs to end consumers due to limited purchasing power (Grima, 2020). External factors such as changes in global commodity prices can also offset the impact of exchange rate depreciation, which ultimately helps suppress inflation. These phenomena provide a comprehensive picture of the mechanisms behind the negative and significant effects of exchange rates on inflation in Turkey.

The results of this study indicate that the exchange rate has a positive and significant effect on the inflation rate in Turkey. An increase in the exchange rate, which indicates a depreciation of the local currency against foreign currencies, can cause the price of imported goods to become more expensive. This increase in import costs will push up the price of goods and services in the domestic market, which in turn increases inflationary pressures.

The Effect of Exports on Inflation Rates

In this study, the results of the analysis of export variables have a positive and significant effect on the inflation rate in Turkey. The results of the export variable estimation show a coefficient value of 2.335118 and are significant at a significance level of 5% which is indicated by a probability of 0.1208. This shows that if other independent variables (exchange rate, imports and economic growth) are constant, then every 1% increase in exports will cause a change in the inflation rate of 2.3%. An increase in the export sector can make a positive contribution to the economy by increasing national income and improving the trade balance. However, its impact on inflation tends to be limited. One of the main reasons is that much of the additional income obtained from exports is used to import goods and services needed in the production of export goods, thereby reducing the potential for inflationary pressures. In addition, in some cases, increased exports can be accompanied by a moderate increase in investment, which means that the increase in economic activity is not large

enough to significantly boost aggregate demand and cause strong inflationary pressures.

In addition, export sectors in Turkey are often integrated with global markets, meaning that increases in export prices do not always directly affect domestic prices. (Karahan & Çolak, 2020) . For example, if exports focus on commodity goods or intermediate goods that are sold at fixed prices in international markets, an increase in export volumes may not be enough to create significant price pressures domestically. On the other hand, exchange rate appreciation that sometimes occurs with increased exports can help offset potential increases in domestic prices by making imports cheaper.

The results of this study indicate that exports have a positive and insignificant effect on the inflation rate in Turkey. While increasing exports can contribute to economic growth, its impact on inflation is not strong enough to be considered significant in the period studied. Other factors, such as domestic demand and monetary policy, maybe more dominant in influencing the inflation rate. Therefore, although there is a positive relationship between exports and inflation, its influence is not large enough to be a major factor in controlling inflation in Turkey.

The Impact of Imports on Inflation Rates

In this study, the results of the import variable analysis have a negative and insignificant effect on the inflation rate in Turkey. The results of the import variable estimation show a coefficient value of -3.976248 and are significant at a significance level of 5% which is indicated by a probability of 0.0023. This shows that if the independent variables (exchange rate, exports and economic growth) are constant, then every 1% decrease in imports will cause a change in the inflation rate of 3.9%. In this case, imports have a negative and significant effect on the inflation rate in Turkey. This means that the greater the imports made by Turkey, the lower the inflationary pressure experienced by the country. This is because imported goods are often cheaper than locally produced goods. With the entry of cheaper imports, consumers in Turkey have access to goods at lower prices, which in turn lowers overall prices and reduces the rate of inflation (Yurdakul, 2014) . Increased imports also trigger greater competition in the domestic market. When cheaper imported goods flood the market, local producers may have to lower their prices to remain competitive. This price competition can put downward pressure on prices in various sectors, which ultimately helps to lower the inflation rate. In situations where high inflation is a problem, increased imports can be one solution to curb price increases, by increasing the supply of cheaper goods and increasing the availability of products for consumers. In addition, higher imports can help reduce production costs in Turkey, especially if the country imports raw materials and capital goods at lower prices than it produces itself. When production costs decrease, producers can offer goods and services at more competitive prices, which will lower prices in the market and contribute to lower inflation. Therefore, increased imports not only provide cheaper goods for consumers but also help to maintain price stability in the domestic market, making it an important factor in controlling inflation in Turkey.

The results of this study indicate that imports have a negative and significant effect on the inflation rate in Turkey. An increase in imports significantly lowers the inflation rate. When imports increase, the supply of goods from abroad increases, which helps to reduce the pressure on the prices of goods and services in the domestic market. Cheaper imported goods reduce costs for consumers and producers, thereby depressing domestic prices. With increased supply of goods and greater competition,

prices of goods and services tend to fall, which contributes to a decrease in the inflation rate.

The Effect of Economic Growth on Inflation Rates

In this study, the results of the analysis of economic growth variables have a positive and insignificant effect on the inflation rate in Turkey. The results of the estimation of the economic growth variable show a coefficient value of -0.958222 with a significance level of 5% which is indicated by a probability of 0.0851. This shows that if other independent variables (exchange rate, exports and imports) are constant, then every 1% increase in economic growth will cause a change in the inflation rate of 0.95%. Increased economic growth can increase income and aggregate demand, which has the potential to drive up the price of goods and services (Mishchenko et al., 2018). However, this impact is not large enough to be considered significant in substantially influencing the inflation rate.

Strong economic growth can drive increased consumption and investment, which often increases demand for goods and services. (Živkov et al., 2020). Although this increase in demand has the potential to increase prices, its effect may not be significant enough if there are other offsetting factors, such as sufficient production capacity or monetary policy that restrains price increases. In this case, economic growth is not always followed by a large increase in inflation, because these offsetting mechanisms can reduce the direct impact on prices. In addition, if economic growth is driven by sectors that do not directly affect the prices of goods and services to a large extent, or if the domestic market has a sufficient supply of goods to meet the increased demand, the inflationary effect of economic growth may not be as pronounced. The results of this study indicate that economic growth has a positive but insignificant effect on the inflation rate in Turkey. Although economic growth can increase demand and potentially raise the prices of goods and services, its impact on inflation is not large enough to be considered significant. The increase in economic growth does not result in a significant change in the inflation rate, possibly due to other factors such as sufficient production capacity or monetary policy that restrains price increases.

CONCLUSION

The conclusion of this study shows that the exchange rate has a positive and significant effect on the inflation rate in Turkey during the period 1992-2022. Exchange rate fluctuations affect the prices of imported goods, which directly impact inflation. Exports have a positive but insignificant effect on inflation; although exports can increase national income, their impact on domestic prices is not strong enough to be considered significant. In addition, imports have a negative and significant effect on inflation, because increased imports increase the supply of cheaper goods and reduce domestic price pressures. Economic growth also has a positive but insignificant effect on inflation, indicating that although economic growth can increase overall economic activity, its effect on domestic prices is not strong enough during the period studied. These findings indicate that the exchange rate and imports play a more significant role in influencing inflation compared to exports and economic growth in Turkey during the period.

Poverty is a complex and significant social problem in Indonesia, especially in developing areas such as Bali Province. Although Bali is known as one of the world's leading tourism destinations with natural beauty and cultural richness that attract millions of tourists, poverty remains a major challenge. Although the tourism sector

contributes greatly to the local economy, its impact on unemployment, health, education, and per capita income shows instability that affects people's welfare.

BIBLIOGRAPHY

- Aysan , A.F., Fendoglu, S., & Kilinc, M. (2014). Managing short-term capital flows in new central banking: unconventional monetary policy framework in Turkey. *Eurasian Economic Review*, 4 (1), 45–69. <https://doi.org/10.1007/s40822-014-0001-6>
- Boğa, S. (2020). Determinants of Private Investment in Turkey: An ARDL Bounds Testing Approach. *Journal of Economic Impact*, 2 (3), 86–92. <https://doi.org/10.52223/jei0301212>
- Grima, S. (2020). *The Relationship between the Exchange Rate, Interest Rate and Inflation: The Case of Turkey*. December. <https://doi.org/10.47743/saeb-2020-0014>
- Karahan, O. (2020). Influence of Exchange Rate on the Economic Growth in the Turkish Economy. *Financial Assets and Investing*, 11 (1), 21–34. <https://doi.org/10.5817/fai2020-1-2>
- Karahan , Ö., & Çolak, O. (2020). Inflation and Economic Growth in Turkey: Evidence from a Nonlinear ARDL Approach. *Springer Proceedings in Business and Economics*, May, 33–45. https://doi.org/10.1007/978-3-030-39927-6_3
- Kerem BÖRÜ, M. (2019). Enflasyon ve Ekonomik Büyüme İlişkisi: Türkiye Örneği. *Social Sciences Studies Journal*, 5 (33), 2140–2148. <https://doi.org/10.26449/sss.1421>
- Mishchenko , V., Naumenkova, S., Mishchenko, S., & Ivanov, V. (2018). Inflation and economic growth: The search for a compromise for the Central Bank's monetary policy. *Banks and Bank Systems*, 13 (2). [https://doi.org/10.21511/bbs.13\(2\).2018.13](https://doi.org/10.21511/bbs.13(2).2018.13)
- Yurdakul , F. (2014). Factors that Trigger Financial Crises: The Case of Turkey. *Procedia - Social and Behavioral Sciences*, 109, 896–901. <https://doi.org/10.1016/j.sbspro.2013.12.561>
- Živkov , D., Kovačević, J., & Papić-Blagojević, N. (2020). Measuring the effects of inflation and inflation uncertainty on output growth in the central and eastern European countries. *Baltic Journal of Economics*, 20 (2), 218–242. <https://doi.org/10.1080/1406099X.2020.1846877>