

The Effect of Economic Policy Uncertainty (EPU) of the Trade Partner Countries on the Real Effective Exchange Rate of Türkiye

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Ticaret Ortağı Ülkelerin Ekonomik Politika Belirsizliğinin (EPU) Türkiye Reel Efektif Döviz Kuru Üzerindeki Etkisi

Abstract

This study investigates whether external uncertainties, which significantly impact the exchange rate through various economic channels, are a determining factor in the Turkish economy. The research analyses the impact of the effective exchange rates (EPUs) of five countries, among Türkiye's most important trading partners, on Türkiye's real effective exchange rate using monthly quantile regression for the period 2000-2021. According to the key findings, the EPUs in the UK and France increase the value of the Turkish lira against foreign currencies, resulting in an appreciation of the TL, while the EPUs of the USA and Germany decrease the value of the Turkish lira, resulting in a depreciation of the TL. In addition, Russia's EPU has a negative impact on Türkiye's real effective exchange rate at only the highest quantile level. The results reveal that the Turkish economy is affected by any economic event in foreign powers, highlighting how globalisation has blurred the distinction between national borders and how countries are interconnected through invisible ties.

Keywords : EPU Index, Economic Policy Uncertainty, Real Effective Exchange Rate.

JEL Classification Codes : E60, D80, F40.

Öz

Bu çalışmanın amacı, çeşitli ekonomik kanallara sahip olan döviz kurunun kontrol edilmesinde kilit rol oynayan dış belirsizliklerin Türkiye ekonomisi üzerinde belirleyici bir güce sahip olup olmadığını araştırmaktır. Araştırmada, Türkiye'nin en önemli ticaret partnerlerinden olan beş ülke EPU'sunun Türkiye'nin reel efektif döviz kuru üzerindeki etkisi, 2000-2021 dönemi için aylık frekansta kantil regresyon kullanılarak analiz edilmektedir. Temel bulgulara göre, İngiltere ve Fransa için EPU, Türk lirasının yabancı para birimleri karşısındaki değerini artırırken (TL için değer kazancı), ABD ve Almanya için EPU ise Türk lirasının değerini düşürmektedir (TL için değer kaybı). Ayrıca, Rusya'nın EPU'su Türkiye'nin reel efektif döviz kurunu yalnızca en yüksek yüzdalik kantil diliminde negatif olarak etkilemektedir. Sonuçlar, küreselleşme ile birlikte dünya sınırlarının ortadan kalktığını ve ülkelerin birbirini bağlayan görünmez bağlarla birbirine bağlandığını göstermenin yanı sıra, Türkiye ekonomisinin dış güçlerde yaşanan herhangi bir ekonomik olaydan nasıl etkilendiğini ortaya koymaktadır.

Anahtar Sözcükler : EPU Endeksi, Ekonomik Politika Belirsizliği, Reel Efektif Döviz Kuru.

1. Introduction

The world has faced numerous events that have caused global political and economic uncertainty to date. Borders have disappeared as the world has opened its doors to globalisation, and the situation has reached the point where an economic, political, or social event in any country can affect other countries. Over the last few years, economic and political events began with the Arab Spring and continued with the trade wars and the COVID-19 coronavirus pandemic. While the pandemic persisted, the events related to the Russian Federation's occupation of Ukraine also affected the countries' relations. As these events unfold around the world and the world continues to develop and change rapidly, changes such as these produce a perception of political and economic instability, increasing worldwide uncertainty.

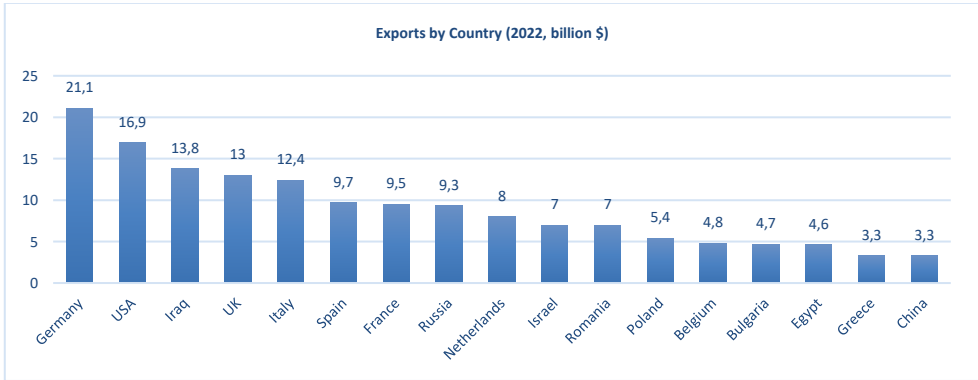
Economic uncertainty could be defined as unexpected alterations that affect the economic atmosphere and how these changes in monetary, fiscal, or other government policies affect firms (Abel, 1983: 228-233), while the World Bank (1997) defines political uncertainty as "Political uncertainty is the incapacity to endure shocks from the outside and inside that upend the socioeconomic system". A country's economy and political atmosphere are inextricably linked, much like the two halves of an apple. This is because uncertainties, whether in political or economic life, increase the risk of delaying businesses' and individuals' expenditures and investments, as they cause market uncertainty.

Economic policy uncertainty (EPU) refers to the situation in which there are uncertainties and fluctuations regarding the direction of a country's economic policies (Jmaii & Gargour, 2023). These uncertainties can make it challenging to predict policy trends and changes in monetary, fiscal, and trade policies, as well as other economic decisions (Liming et al., 2020: 1; Gupta et al., 2018). Policy uncertainties play a critical role in shaping the economic results of each country. Uncertainty is very significantly impacted by the spending and investment of governments, policies, businesses, and households (Kostka and Van Roye, 2017). In particular, increasing unemployment and income inequality, which are common problems in many countries, as well as immigration and sudden fluctuations in oil prices, have made interlinked global economies even more disruptive (Dong et al., 2019). In this respect, Baker et al. (2016: 1594-1602) say that the global financial crises, partisan policies spreading in the USA, and uncertain economic policies raise concerns.

The effects of the EPU on the real effective exchange rate can vary depending on various factors. Political and economic instabilities can impact the financial and economic sectors, particularly the exchange rate, through multiple channels (Ozcelebi & Izgi, 2023). Trade barriers, preferences, import-export policies, external debt situations, capital movements, portfolios, and relative productivity can be considered as these channels (Kostka & Van Roye, 2017). When the EPU increases, uncertainty and risk become apparent in investors and international capital markets. In this case, confidence in the country's economy may decrease, and foreign investors may lose interest in the country's assets. This may impact the country's demand for foreign exchange, resulting in a downward pressure

on the real effective exchange rate. If a country’s exchange rate is subject to a free-floating system, an increase in the EPU can directly affect the country’s exchange rate. Investors’ demand for the local currency may decrease due to uncertainty, which may pressure the exchange rate. An increase in EPU may cause uncertainties in trade policies, making it difficult for export and import firms to forecast future trade conditions. This, in turn, may affect the deterioration in the foreign trade balance and, thus, the exchange rate. On the other hand, the increase in the EPU could also impact the central bank’s monetary policy determination process (Liming et al., 2020). The central bank may be more cautious in an uncertain economic environment. This, in turn, can affect interest rates or the money supply, leading to changes in the exchange rate. All of these can cause fluctuations in the currency markets. These fluctuations can lead to short-term volatility in the exchange rate. In this case, the exchange rate can change rapidly, which in turn affects the real effective exchange rate. All these factors cause fluctuations in exchange rates due to their uncertain nature. The link between economic uncertainty and the exchange rate has a decisive impact on the economy through various channels (Kostka & Van Roye, 2017).

Figure: 1
Exports by Country (2022, billions \$)



Sources: TİM- 2022 Export Assessment by Turkish Exporters Assembly.

When we look at the TİM-2022¹ Export Assessment (see Figure 1), it is clear that Germany is the country to which Türkiye exports the most in 2022, with a value of \$21.1 billion. Following Germany, the United States ranks second with \$16.9 billion, Iraq ranks third with \$13.8 billion, the United Kingdom ranks fourth with \$13.0 billion, and Italy ranks fifth with \$12.4 billion. While five out of the top ten countries are members of the EU, the fact that the USA, from North America, Iraq, and Israel, from the Middle East, are on the list indicates that Türkiye’s capabilities in market diversity have improved. Therefore, the sample-generated economies are the five selected trading partners of Türkiye, including the United States, France, Germany, the United Kingdom, and Russia. The motivation behind

¹ TİM- Turkish Exporters Assembly (Türkiye İhracatçılar Meclisi).

the study is the lack of an extensive theoretical and empirical examination of the impact of economic uncertainty in countries with which Türkiye trades on Türkiye's exchange rate.

The study shows the effects of EPU on the exchange rate, as measured by these countries' news-based Economic Policy Uncertainty Index. The EPU index catches uncertainty from policy, news, economic indicators, and the market (Baker et al., 2016: 1598-1600). This index is measured as follows, combining all of these variables into a new measure (the EPU index) by averaging three components: the amount of economic uncertainty connected to policy covered by newspapers, the number of federal tax law provisions that are about to expire, and the degree of disagreement among economic predictors. The study employs the Quantile Regression methodology to investigate the association between countries' EPU and Türkiye's exchange rate across different quantiles, as examining samples in these quantiles reveals the relationship more clearly. Comprehending relationships between factors outside the data's mean is made possible by the quantile regression methodology, which clarifies non-normally distributed outcomes and has nonlinear associations with predictor variables. In this respect, the research correlated economic policy uncertainties with exchange rate fluctuations over 22 years (2000-2021) at a monthly frequency using Quantile Regression. Therefore, due to the nature of the research and the data gathered, the study contributes to finance and economics by illuminating the consequences of EPU on the exchange rate. This study is particularly beneficial for academics, financial analysts, researchers, and economists, as it provides valuable insights into the impact of policy uncertainty on currency fluctuations.

The study findings indicate that economic uncertainties in the UK and France increase the value of the Turkish lira against foreign currencies, resulting in appreciation for Türkiye, which in turn enhances Türkiye's trade competitiveness. On the other hand, the economic policy uncertainties of the US and Germany diminish the value of the Turkish lira. Moreover, Russia's EPU has the most significant impact on the domestic real effective exchange rate in the highest quantile. The results can originate from Türkiye's strong or weak trade relations with these countries. When Türkiye's relations with the US and Germany are taken into consideration, it becomes apparent that they have more sensitive relationships. Therefore, Türkiye can easily be influenced by economic or political events in the US and Germany. As a result, the effect of the EPU on the real effective exchange rate is a complex issue. It may vary depending on the country's economic structure, policy framework, and international conditions. The likelihood of volatility and changes in the exchange rate increases with uncertainty.

The rest of the paper is structured as follows: Section 2 addresses the literature about EPU. Section 3 mentions the data and methodology. Section 4 presents the study's results and findings. The last part includes the conclusion.

2. Background Literature

The literature reveals a historical relationship between the appreciation of the national currency and the political atmosphere of countries. Political issues significantly influence the exchange rate, where positive political indicators raise the currency's value, whereas political tensions weaken or depreciate its value (Blomberg & Hess, 1997: 189-205). Political uncertainty and instability have a direct impact on the currency exchange rate (Youness, 2022: 414-424). For example, the political context significantly increases exchange rate volatility. Lobo and Tufte (1998: 351-365) note that political factors, including elections, political systems, and policy decisions, have a significant impact on the exchange rates of numerous currencies.

The World Bank (1997) defines political uncertainty as "the inability to endure shocks from outside and inside that upend the socioeconomic system." On the other hand, economic uncertainty is defined as unexpected changes that affect the economic ecosystem and how fiscal, monetary, or other government policies affect firms (Abel, 1983: 228-233). According to Osterloh (2010: 5), a nation's political climate can affect its economic performance. Due to the decline in investment resulting from political instability, employment rates and productivity suffer, incomes fall, and eventually, inflation results (Easterly & Rebelo, 1993: 429-430; Benhabib & Spiegel, 1992: 144-145). Therefore, political and economic risks are represented by political events and decisions that affect the business environment, causing investors to remember their investments with a reduced margin of profit (Howell & Chaddick, 1994: 76).

Besides the micro context, each nation's financial and economic policies are intimately linked to its economic strategy (Gupta, 2018). Fundamental concerns regarding the function of macroeconomic stabilisation measures underlie interest in policy uncertainty and its impact on economic activity (Mumtaz & Ruch, 2023: 6). Hence, uncertainty or instability significantly affects the financial and economic sectors, particularly the exchange rate. The unstable political environment of countries is a significant factor that weakens national economies and deters investors; therefore, economic prosperity is generally linked to political stability and security. For example, Aisen and Veiga (2011: 3) characterise political instability as a serious condition that harms economic performance. Political instability reduces policymakers' expectations of the inadequacy of short-term macroeconomic policies (Kostka & Van Roye, 2017). Moreover, political uncertainty leads to frequent policy changes, negatively impacting local economies through economic and political fluctuations.

Regarding economic control mechanisms, economic policy announcements determine the business cycle expectations. Therefore, expectations have a deterministic effect on decision-makers in an economic environment. Announcements impact expectations, but so does the uncertainty surrounding the direction that economic policy will take in the future (Beckmann & Czudaj, 2017: 2). Therefore, uncertainties affect the economy through various channels. One of the most important factors is the exchange rate,

which is influenced by multiple factors, including trade barriers, preferences, import-export policies, external debt situation, capital movements, portfolios, and relative productivity (Kostka & Van Roye, 2017). All these factors cause fluctuations in exchange rates due to their uncertain nature. The link between the exchange rate and economic uncertainty has a decisive impact on the economy through these channels (Kostka & Van Roye, 2017).

Economic policy uncertainties (EPU) contribute to exchange rate volatility (Bartsch, 2019: 21; Nilavongse, 2020: 4). There is a negative mean and excessive dependency between EPU and FERs (real exchange rates) because provide compelling proof of causality-invariance from both local and U.S. financial and EPU to FER (Al-Yahyee et al., 2019: 66). Economic policy uncertainties are reflected in countries as economic fluctuation and changes in the exchange rate. Political polarisation and division, as well as the growing role of government spending in the economy overall, are the leading causes of the rise in the EPU index in the USA during the 1960s (Baker et al., 2016: 4). According to another study involving US-related work, if the US EPU remains low, high-yielding currencies are appreciated, while the Japanese yen depreciates, and otherwise conversely (Kido, 2016: 52). Both the home country (ten countries²) and during difficult economic times, concern about US economic policy increases currency volatility (Krol, 2014: 251-252). The article highlights that policy uncertainties, particularly during economic downturns, can hinder economic growth by amplifying volatility in foreign exchange markets. International investors need to be aware of the risks associated with EPU in the foreign exchange market. For example, while China's EPU has been very high since 2016, the exchange rate has experienced significant fluctuations during this period (Dai et al., 2017: 37). Moreover, although the local currency depreciates in most quantiles during a floating exchange rate period, it increases under specific quantiles in response to increased uncertainty around Russian economic policy (Sohag et al., 2021: 542-544). Moreover, the EPU index has a positive link with the exchange rates of the Indian rupee and the new Mexican peso (Aimer, 2021: 126). Policy uncertainty has negative impacts on economic growth, consumption, and investment in Türkiye, where high uncertainty leads to more investment declines than production and consumption (Şahinöz & Coşar, 2018: 1-4). The COVID-19 pandemic ultimately impacted our lives until a few years ago, shifting the focus from uncertainty in monetary and fiscal policy to uncertainty in trade policy (Song et al. 2022: 14).

EPU hinders imports of non-durable consumer goods, capital goods, and those used in export production. It has been demonstrated that a 1% increase in policy uncertainty results in a 0.02% decrease in the growth of goods and services trade volume, indicating that uncertainty hinders trade growth (Constantinescu et al., 2020: 287). On the other hand, as EPUs contain indefinite structures, their effects vary from country to country; each country's EPU can have a heterogeneous impact on other countries (Chen et al., 2020: 3-4). For

² Canada, the Euro Area, Japan, Sweden, the United Kingdom, Brazil, India, Mexico, South Africa and South Korea.

example, China's exchange rate volatility is affected differently by EPU in different countries (Chen et al., 2020: 3).

In summary, the EPU is commonly used as an indicator to enhance the predictive ability of macroeconomic models for future exchange rate events (Abid, 2020: 7-10). However, although the literature has decisively examined how the exchange rate is affected by uncertainty in economic policy, these studies are limited to certain countries due to difficulties in accessing data.

In Figure 2, the EPU of the US indicates that some political and economic issues emerged between 1985 and 2019. The Black Monday event occurred on October 19, 1987, when the world's stock markets experienced significant losses in a short period, directly affecting the US exchange rate. As evident in various political and economic issues, the exchange rate has always been sensitive to political factors, including elections, political systems, and policy decisions, which significantly influence the exchange rates of many currencies (Lobo & Tufte, 1998: 351-365). Apart from this, restrictive policy activities applied by countries to each other's trade are also a significant determinant of exchange rates. In 2018, President Trump formally declared trade conflicts with numerous countries. Starting with steel and aluminium tariffs, uncertainties emerged worldwide, and the US exchange rate negatively affected this situation. Issues such as epidemics that affect the entire world and occur unexpectedly impact human health production chains and exchange rates due to their uncertain nature. For example, the emergence of the COVID-19 coronavirus had a significant impact on the dollar rate. Thus, all these events affected the other economies of countries such as Türkiye.

Figure: 2
EPU Index for the US

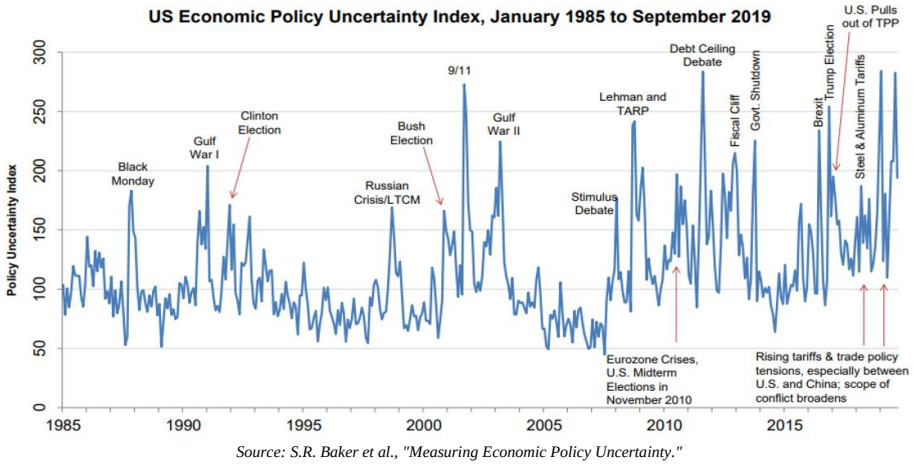
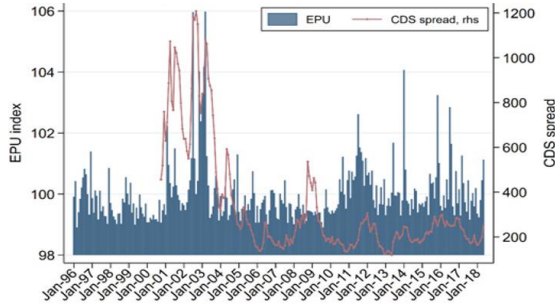


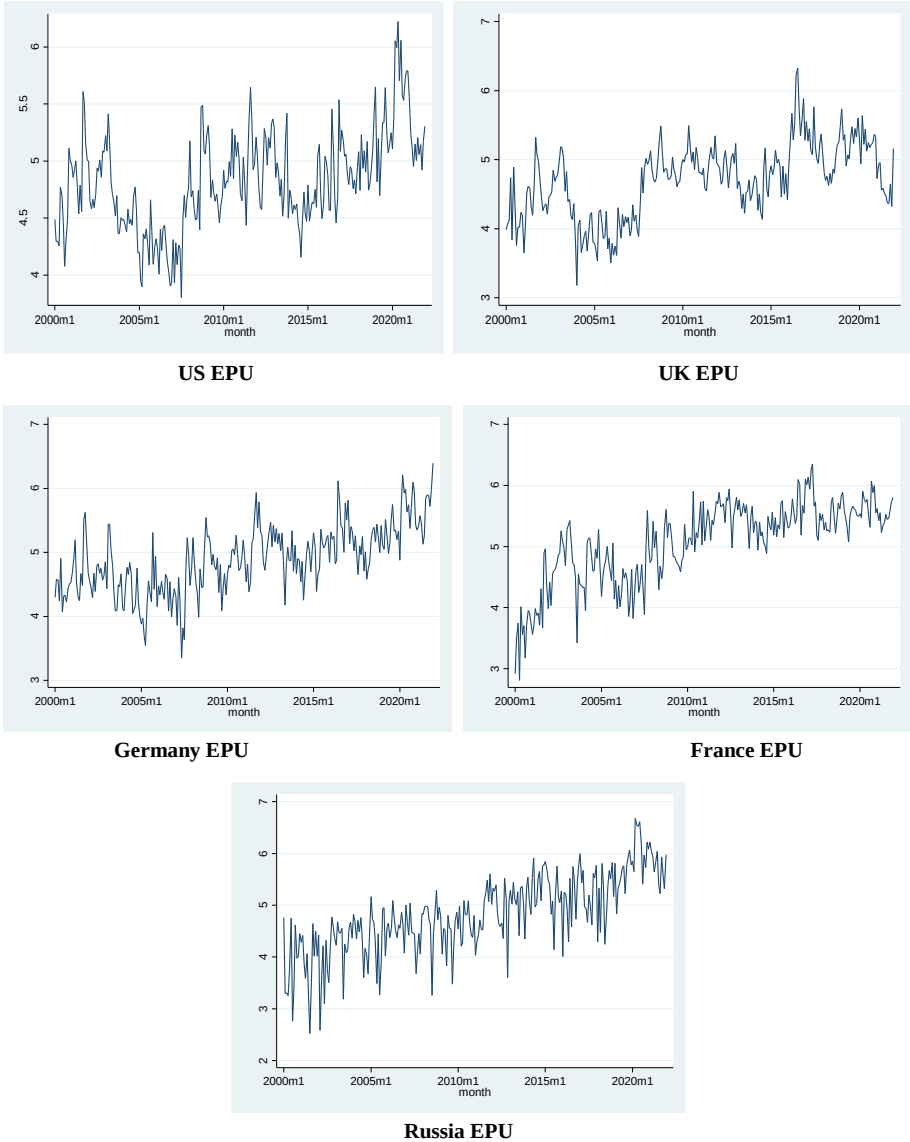
Figure: 3
EPU Index for Türkiye



Source: La-Bhus Fah Jirasavetakul & A. Spilimbergo, *Economic Policy Uncertainty in Turkey*

Figure 3 illustrates Turkish EPU data, highlighting fluctuations arising from political and economic uncertainty over time (Jirasavetakul & Spilimbergo, 2018: 9). Notable uncertainties are evident, including the 2001 financial crisis, the 2008 financial crisis, and the European debt crisis in 2010. For 2001, both EPU and CDS (Credit Default Swaps) spreads are very high. This indicates that political and economic uncertainties increased, as did market risk perception, during the 2001 Turkish economic crisis. A similar effect can be observed in the 2008-2009 global financial crisis. Economic policy uncertainty may have increased the country's risk premium by negatively affecting investor perception. Considering the connection between economic activity and the uncertainty of economic policy in Türkiye policy uncertainty, the negative effect of EPU on the economy, consumption, and investment in Türkiye is proven (Şahinöz & Coşar, 2018: 3). Economic policy uncertainty can increase the risk premium, making it harder for foreign capital to flow in and raise financing costs. Therefore, governments must adopt transparent and consistent policies. In times of uncertainty, volatility in financial markets can be controlled by developing risk management tools. For example, using the Central Bank's reserve management and liquidity tools more effectively can help in this process. Economic policy uncertainty has a direct impact on financial stability at both local and global levels. Therefore, countries should adopt more predictable policies to ensure economic stability.

Figure: 4
The US, UK, Germany, France, and Russia’s Economic Policy Uncertainties (EPUs)



Source: Data is obtained from <policyuncertainty.com>; charts are created using STATA.

Figure 4 displays the EPU index charts for the United States, United Kingdom, Germany, France, and Russia. A notable standard feature of the charts is that, strikingly,

EPU increased in 2020 in these five countries due to the COVID-19 crisis. Significant EPU increases are observed periodically in all countries. These increases can be associated with significant economic and political events. The US EPU reached exceptionally high levels during and after the 2008 crisis. In addition, an increase was observed around 2016. This may have been due to the US presidential elections and policy changes. Examining the UK EPU graph reveals that EPU levels have increased significantly since 2016, mainly due to the impact of the Brexit process. In Europe, EPU fluctuations have generally become more pronounced during and after the Eurozone crisis. Germany and France may have been affected by global crises and political uncertainties in Europe. Russia's EPU has shown a significant upward trend since 2014, likely due to the Crimean crisis and subsequent sanctions. The long-term upward trend in all countries may indicate increasing uncertainty in the global economic system. Therefore, countries must take initiatives to increase their policies and international economic cooperation.

3. Data and Methodology

The datasets cover the period from 2000 to 2021, with data available for every month. The Real Broad Effective Exchange Rate for Türkiye is a dependent variable, expressed as a monthly index (2010=100), obtained from the FRED Economic Database. Weighted averages of bilateral exchange rates, adjusted for relative consumer prices, are used to calculate real effective exchange rates.

The EPU index is calculated using a variety of indicators, including the frequency with which policy uncertainty is mentioned in the news. However, this study used the EPU index, which is widely used to examine recent economic uncertainty. The EPU index is based on policy uncertainty collected from the news (Baker et al., 2013: 14-15). The index adopted three different measures of uncertainty based on newspapers from the US, UK, Germany, France, and Russia. The EPU index for countries is sourced from "policyuncertainty.com." For example, for the US, to measure economic policy uncertainty, the first component of this index is composed of three types of key elements, which come from 10 significant newspapers (San Francisco Chronicle, Houston Chronicle, USA Today, Miami Herald, Chicago Tribune, Dallas Morning News, Washington Post, Los Angeles Times, Boston Globe, and the Wall Street Journal) which is an index of search results. To create the index, researchers ran monthly searches for publications that included the phrases "uncertain" or "uncertainty," "economic" or "economics," and one or more of the following terms: "congress," "legislature," "white house," "regulatory," or "federal reserve". The total number of articles within a given article is divided by the raw number of policy uncertainty elements and months to observe how the volume of articles has changed over time for that specific article. From January 1985 to December 2009, the data for each item is standardised to a one-unit standard deviation. Then, for each month, the normalised values are added to create a multi-paper index. Between January 1985 and December 2009, the data was renormalised to an average of 101.8. The statistics from the preceding two months may be slightly revised with each subsequent monthly update. Some online publications do not instantly update their online archives with all stories, so the totals for the past 1-2 months

will vary significantly. The same procedure is also used to obtain the EPU index of the UK, Germany, France, and Russia. For example, 11 newspapers are used to measure the UK EPU index. For Germany and France EPU (for the European indices), two newspapers are used per country: *Corriere Della Sera* and *La Stampa* in Italy; *El Mundo* and *El Pais* in Spain; *Le Monde* and *Le Figaro* in France; *Handelblatt* and *Frankfurter Allgemeine Zeitung* in Germany; *The Times of London* and *Financial Times* in the United Kingdom. *Kommersant* was used as the newspaper to obtain Russian EPU data. The definitions and sources of Türkiye’s real effective exchange rate, the EPU variables, and control variables are indicated for five foreign countries in Table 1.

Table: 1
Variables, Definitions, and Data Sources

Variables	Definitions	Sources
Real Effective Exchange Rate	Real Broad Effective Exchange Rate for Türkiye; CPI-based; period averages; Index 2010 = 100; Monthly; Not Seasonally Adjusted (Logarithmic Form) (An increase indicates an appreciation of the economy’s currency against a broad basket of currencies).	Bank for International Settlements (FRED Economic Data)
Economic Policy Uncertainty (EPU)	Economic Policy Uncertainty (for USA, UK, Germany, France, and Russia) (As logarithmic Form)	www.policyuncertainty.com
Consumer Price Index (CPI) for Türkiye, Monthly Data	Index 2015=100, Not Seasonally Adjusted	Federal Reserve Economic Data (FRED)
Interest Rate for Türkiye, Monthly Data	Per cent per Annum, Not Seasonally Adjusted	Federal Reserve Economic Data (FRED)
Commodity Terms of Trade (TOT) of Türkiye, Monthly Data	The ratio of a country’s relative export price to its relative import price (net export price index)	IMF Data

The quantile regression of the study can be written with the following equation:

$$Q_{\tau}(REXR_i / EPU_i) = a_0^r + B^r EPU_i + \gamma^r X + \varepsilon^r$$

According to equation, $Q_{\tau}(REXR_i / EPU_i)$ represents a quantile function of reel effective exchange rate evaluated at τ^{th} quantile, where $\tau \in (0, 1)$. The model is examined in the 5%, 25%, 50%, 75%, and 95% quantiles.

Table: 2
Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
EPU of US	4.825391	0.4271762	3.801823	6.222504
EPU of UK	4.703297	0.5311821	3.17955	6.324759
EPU of Germany	4.893346	0.5291106	3.347585	6.393484
EPU of France	5.060402	0.6571988	2.808971	6.353732
EPU of Russia	4.817591	0.7492331	2.517596	6.676623
Real Effective Exchange Rate for Türkiye	4.367308	0.1952738	3.67402	4.643621
Consumer Price Index (CPI) for Türkiye	4.225786	0.6673135	2.503633	5.574502
Interest Rate for Türkiye	2.993706	0.6408347	2.169054	4.094345
Terms of Trades (TOT) of Türkiye	4.620461	0.0150843	4.595872	4.653657

REXR is the monthly real effective exchange rate. EPU_i represents EPU for each country (US, UK, Germany, France, and Russia). The vector of coefficient $\beta\tau$ quantifies the level of exchange rate volatility dependency at the τ^{th} quantile with respect to EPU_i , which is the primary focus of the study. A group of control variables is represented by X . γ^r will vary based on which quantile is being assessed. The control variables are successive: the

consumer price index (inflation) for Türkiye, the interest rate for Türkiye, and the terms of trade of Türkiye. Descriptive statistics and 264 observations for the 2000-2021 monthly data are presented in Table 2.

4. Results

In the analysis, the variables' data utilised in the study were employed by taking their logarithm to overcome the variable variance problem and to create efficient and systematic results (Ashwin Kumar et al., 2016: 298-7; Wang & Dong, 2021; Bhat et al., 2022). Table 3 presents the regression results for both the Quantile and OLS models for comparison. According to the regression results, the model explains 71% of the variance (R-square: 0.7057). According to Table 3, the quantile regression results indicate that the EPU for the US has a negative sign for every quantile, and this relationship is also statistically significant (except for the 75% and 95% quantiles). The EPU for the UK has a positive sign, and almost all quantiles are statistically substantial (except the 5% quantile). Additionally, the OLS result for the UK EPU is statistically significant and positive. The EPU for Germany has a negative sign and is statistically significant, except for the 75th and 95th percentiles. It is also statistically significant for OLS. The EPU for France has a positive sign for the 5%, 25%, and 50% quantiles, where the quantile and OLS regression are statistically significant. However, for the 75% and 95% quantiles, they are not statistically significant and have a negative sign. The EPU for Russia has a generally negative sign (except for the 50th and 75th percentiles, which have a positive sign); however, this difference is not statistically significant, except for the highest quantile, at 95%.

The interpretation of the results reveals heterogeneity among countries in the magnitude and persistence of their EPU shocks' responses to the real exchange rate. When the economic policies of the USA, Germany, and Russia (only the 95th quantile) are uncertain, the Turkish currency tends to depreciate. On the other hand, when the economic policies of the UK and France are unsure, the Turkish currency tends to appreciate. The results show that policy uncertainty in the trading partner countries has led to the depreciation or appreciation of the national currency.

According to the results, the variables of Türkiye's inflation rate, consumer price index, interest rate, and terms of trade are statistically significant and have negative signs. As shown in Table 3, a 1% increase in trade volume during the relevant period results in a decrease in the REXR. The effect of the terms of trade is relatively consistent across all quantiles (5% to 95%). This shows that the terms of trade have a similar effect on the exchange rate at all levels (lowest, middle and highest). The coefficient value in the OLS estimate is -6.213733, indicating that a one-unit decrease in the terms of trade results in a reduction of approximately 6.2 units in the exchange rate. According to the definition of the Bank for International Settlements (BIS), the REXR is structured in a way that any rise (or loss) in value is considered appreciation (or depreciation) (Bank for International Settlements [BIS], n.d.). Terms of trade can benefit real exchange rates; when they improve, the real exchange rate of the exporting country should be appreciated. An improvement in

trade terms would lead to an appreciation of the real exchange rate. However, the results indicate that the terms of trade lead to a depreciation of the domestic real effective exchange rate.

Table: 3
Quantile vs. OLS Regression Results

Dependent Variable: Real Effective Exchange Rate (REXR) for Türkiye						
	Quantile Regression					OLS Regression
	5%	25%	50%	75%	95%	OLS
EPU of US	-.144268*** (.040219)	-.1355942*** (.0497065)	-.0997039*** (.0414082)	-.0244317 (.0308096)	-.0139153 (.0271663)	-.079831*** (.0276806)
EPU of UK	.0136549 (.0288075)	.0722991*** (.0356031)	.0710719*** (.0296593)	.0532059*** (.0220678)	.0574683*** (.0194583)	.0405704*** (.0198267)
EPU of Germany	-.1265309*** (.0330828)	-.1307144*** (.0408869)	-.0731009** (.034061)	-.0341404 (.0253429)	-.0319815 (.0223461)	-.1054195*** (.0227692)
EPU of France	.1895249*** (.0302729)	.1187725*** (.0374141)	.0647388** (.031168)	-.0078001 (.0231904)	-.0298897 (.0204481)	.0985177*** (.0208352)
EPU of Russia	-.0251014 (.0203715)	-.0069954 (.025177)	.0062136 (.0209738)	.0027714 (.0156055)	-.0251951* (.0137601)	-.0020883 (.0140206)
Consumer Price Index for Türkiye	-.4424548*** (.034431)	-.3337675*** (.042553)	-.383416*** (.035449)	-.4002457*** (.0263756)	-.4391689*** (.0232567)	-.357938*** (.023697)
Interest Rate for Türkiye	-.1972004*** (.0314275)	-.151156*** (.038841)	-.1611427*** (.0323567)	-.1880293*** (.0240748)	-.1820674*** (.0212279)	-.1689864*** (.0216299)
Terms of Trades of Türkiye	-.7.081781*** (.9235832)	-.7.155007*** (.1.141452)	-.6.006497*** (.9508917)	-.6.115098*** (.7075054)	-.4.763477*** (.6238416)	-.6.213733*** (.6356534)
_cons	39.5576*** (4.244548)	39.5966*** (5.245815)	34.38064*** (4.37005)	35.02018*** (3.25151)	-28.84075*** (2.867014)	35.31786*** (2.921297)
Prob>F = 0.0000 R-square= 0.7057						
The square brackets and parenthesis numbers represent p-values and standard errors, respectively. Significance levels: *10%, **5%, ***1%.						

5. Conclusion

EPU is a deterministic power that affects the real effective exchange rate. Türkiye can be positively or negatively affected by events in foreign countries. The study employs quantile regression analysis to investigate the relationship between Türkiye's real effective exchange rate and the EPU of various markets from 2000 to 2021, with a monthly frequency. Our main findings are as follows. The EPU of five countries have an asymmetric and heterogeneous effect on Türkiye's real effective exchange rate. If the US and Germany's EPU increases, the domestic real effective exchange rate increases, so it depreciates. However, if the UK and France's EPU rise, the domestic REXR will decrease, so it is appreciated. Moreover, only in the highest quantile does Russia's EPU increase, resulting in a depreciation of the real effective exchange rate. The inference is that the economic uncertainties in these five countries have asymmetric effects on Türkiye's real exchange rate. Thus, Türkiye is affected heterogeneously by the uncertainties of different countries. Intuitively, it can be said that the more a country has trade relations with another country, the more likely it is to be affected by that country's domestic issues.

The topic of EPU is an important indicator for understanding the dynamic of exchange rate changes. In a changing world, uncertainties are crucial in controlling the exchange rate, especially concerning policymakers. Therefore, this issue should be handled carefully to illustrate the connection between exchange rates and economic policy uncertainty. These findings offer policymakers valuable insights to inform their decisions on managing the exchange rate and maintaining economic stability. Since the EPU can

negatively affect the real effective exchange rate, countries have specific political implications and duties in this regard. Governments should establish a stable and coherent policy framework to minimise EPU. Setting long-term economic goals and policy guidelines can increase investor confidence and limit the effects of the EPU. Governments should communicate transparently and openly about economic policies and changes. Uncertainty can be reduced when investors and businesses have access to accurate and timely information about future policy decisions. Structural reforms are crucial for strengthening the economic framework and enhancing competitiveness. A stable and predictable economic environment supports investment decisions and can reduce the negative effects of the EPU. Governments can develop risk management tools against EPU. For example, financial derivatives or insurance mechanisms can be used to manage currency risk. Coordination and consensus among different policy actors, such as the central bank, Ministry of Finance, and government, are necessary. The compatibility and mutual support of other policy areas can reduce the effects of the EPU. Stability and cooperation in global economic relations may limit the effects of the EPU. Trade agreements, investment agreements, and international cooperation mechanisms can help reduce uncertainty. Economic policymakers need to be aware of economic issues and develop their analytical skills. Investments in education and research can inform accurate, data-driven decisions, enabling a deeper understanding of and more effective management of economic uncertainty.

The study supports that the effects of economic policy uncertainty (EPU) on a country's exchange rate are asymmetric and heterogeneous. This confirms that the impact of EPU on macroeconomic indicators is not static when evaluated in the international economy and may vary according to the country's context. In addition, the inference that a country's foreign trade and financial linkages increase its sensitivity to economic uncertainties in other countries provides an important contribution to the international trade theory.

States need to adopt a stable, transparent, and coordinated approach to limit the impact of uncertainty in economic policy on the real effective exchange rate. In this context, policymakers prioritise maintaining financial stability, enhancing investor confidence, and fostering economic growth. Finally, obtaining Türkiye's EPU data and examining its effect on our exchange rate is left to future studies. Furthermore, the potential divergence between the short-term and long-term impacts of economic uncertainty on exchange rates warrants further investigation and is, therefore, deferred to future research.

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