EFFECTS OF EXCHANGE RATES AND OIL PRICES ON TURKISH FOREIGN TRADE[1] [2]

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Abstract

Exchange rate and oil prices play an important role in a country's trade performance. Whether determined by exogenous shocks or by a policy, the relative valuations of currencies and their volatility often have important impact on international trade, the balance of payments and overall economic performance. This study aims to analyze Turkey's foreign trade with Euro Area and USA separately between 2010-2016 time periods. We have estimated three different regressions. First one is for analyzing the effects of euro on Turkey-Euro area foreign trade, the second one is for determining the effects of US dollar on Turkey-USA foreign trade and the third one is for examining the effects of oil prices on oil trade between Turkey and Russia. For this study we use the panel regression techniques. As a result we can conclude that countries should monitor their exchange rate relative not only to that of their trading partners but also in relation to that of their competitors.

Keywords: Exchange Rate, Oil Prices, Foreign Trade, Panel Data, Panel Estimation Techniques

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Döviz Kurları ve Petrol Fiyatlarının Türk Dış Ticaretine Etkisi

Öz

Döviz kuru ve petrol fiyatları bir ülkenin ticaret performansında önemli bir rol oynar. İster dışsal bir şok, isterse de bir politika sonucunda belirlensin, yerli para biriminin nispi değeri ve dalgalanmaları uluslararası ticaret, ödemeler dengesi ve tüm ekonomik performans üzerinde önemli bir etki yaratmaktadır. Bu çalışma, Türkiye' nin dış ticaretinin 2010-2016 dönemi için Ameirka ve Euro Bölgesi için ayrı olarak analiz etmeyi amaçlamaktadır. Üç farklı regresyon tahmini yapılmıştır. Birincisi, Türkiye-Euro bölgesi dış ticareti üzerinde Euro' nun etkisini analiz etmek için, ikincisi, Türkiye-ABD dış ticareti üzerinde Amerikan dolarının etkisini belirlemek için ve üçüncüsü, Türkiye-Rusya arasındaki petrol icareti üzerine petrol fiyatlarının etkisini incelemek içindir. Bu çalışma için panel regresyon teknikleri kullanılmıştır. Sonuç olarak, ülkeler döviz kurlarını sadece ticari partnerleri içind değil, aynı zamanda rakipleri için de bir montirör olarak görmeleri gerektiği sonucuna varılmıştır.

Anahtar Kelimeler: Döviz Kuru, Petrol Fiyatları, Dış Ticaret, Panel Data, Panel Data Tahmin Teknikler

Introduction

Exchange rates and oil price movements remain the central issiue in international economics. They are both important compenents of international economics and trade. The volatility of exchange rate and oil price should affect terms of trade. Oil prices also have an impact on exchange rate and thus they may affect foreign trade indirectly. Below, there is the definition of exchange rates and oil prices and their effects on the international trade. Besides, there is an analysis of these effects using panel data tecniques.

Exchange Rates, Oil Prices and Their Relations with Trade

Exchange Rates

An exchange rate is the price of some foreign currency expressed in terms of a domestic currency (Feenstra and Taylor, 2014; p. 338). According to Friedman (1953) exchange rate can be divided into three types. The first type is fixed exchange rate where a currency's value is matched to the value of another single stable and strong currency. Its value is remained at a fixed conversion rate through government or central bank intervention. The second type of exchange rate is floating or flexible exchange rate where a currency's value is decided by the market force of demand and supply in the market without government intervention. The third type is pegged exchange rate which almost same as fixed exchange. The difference between them is, pegged rate is not free-market mechanisms for international payments, adversely it is base contains domestic and international components (Friedman, 1953). The fixed exchange rate can be used to avoid uncertainty and volatility. In general, developing countries choose to anchor their currencies to a key currency to have some benefits such as to stabilize the domestic currency prices of their imports and exports, to reduce inflation rates and to avoid from exchange rate volatility.

While flexible exchange rate regimes cause to increase the level of exchange rate uncertainty, the incentives to trade may reduce. Although Mundell's (1961) optimal currency area hypothesis suggests that where trade flows stabilize real exchange rate fluctuations and reduce real exchange rate volatility, the main quesiton remains in the literature as: is the correlation between trade and exchange rate volatility indicative of the effect of volatility on trade or vice versa? Most of the studies have focused on the effects of exchange rate volatility on trade by effectively assuming that the

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exchange rate process is driven by exogenous shocks and is unaffected by other endogenous variables. By definition this implies that the effect of trade on volatility is assumed inexistent rather than jointly estimated with the effect of volatility on trade (Broda and Romalis, 2003, p. 2).

Exchage rate volatilities effect trade negatively (Öztürk and Acaravcı, 2003, p.3). Exchange rate uncertainty may tend to reduce international trade by reducing the willingness of international traders to enter into long-term contracts. Also, uncertainty may reduce trade in the long run by causing exporters to reduce or forego the long-term investment necessary for establishing or expanding foreign markets or export facilities (Abrams, 1980, p. 4). Rising exchange rates due to exchange rate volatilities mean profit fot exporters while falling exchange rates create exchange rate risk and mean loss for exporters (Öztürk, 2007, p. 54)

Oil Prices

In the literature there are some evidence for the variablity of the terms of trade is associated with extreme movements in oil prices. Oil price shocks should affect macroeconomic variables such as output, inflation and unemployment and trade. An increase in oil prices has a significant negative impact on GDP growth and contributes to a higher inflation rates. In general, high oil prices are caused by five factors: low supply, high demand, OPEC quotas and a drop in the dollar's value and expectations. In 1970s oil price schocks have occured and the nominal price of a barrel of crude oil jumped by over 300 percent. International Energy Agency (IEA) notes US oil production increased during 2014 by 1.2 million barrels per day due to increasing supply, decreasing demand, problems in OPEC and some monetary policies (Öztürk and Sancar, 2018, p.188). Many papers have previously suggested that oil prices may have an import. ant influence on also exchange rates. There is a strong relationship between the real U.S. oil prices and real effective exchange rates (Amano and Norden, 1998, p. 125). Thus, oil prices also affect trade in this indirect way.

The relationship between oil prices and trade depends on the reason of the rising prices of oil. Oil prices due to oil supply shocks discourages trade while the increase in oil prices due to oil-specific demand has positive impacts on trade (Chen and Hsu, 2012, p. 35). For Turkey, an increase of oil prices has negative effect on export in the long run (Şengönül, v.d. 2018, p. 348). The increased volatility in the terms of trade largeley due to the increased volatility in the relative price of oil rather than the increased volatility of exchange rates (Backus and Crucini, 1998, p. 23)

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Literature Review

While early studies found adverse effects of exchange rate volatility on trade (Ethier, 1973; Clark 1973; Baron, 1976; Cushman, 1983; Peree and Steinherr, 1989) subsequent studies report very small impacts (Franke, 1991; Sercu and Vanhulle, 1992). More recently, studies are more spectical about causality of short-term exchange rate volatility on international trade (Clark, Tamirisa and Wei, 2004; Teneyro, 2006). In summary, the relationship between the two variables is most likely driven by underlining long-term policy credibility rather than the short-term causality (Klein and Shambaugh, 2006; Qureshi and Tsangarides, 2010). In addition, any relation between volatility and international trade could be driven by reverse causality, in which trade flows help stabilize real exchange rate fluctuations, thus reducing exchange rate volatility (Broda and Romalis, 2010, p.54). In any case, there are several reasons why volatility is often not a critical issue for international trade. One particularly compelling argument is that the risks associated with volatile exchange rates are softened by the increasing number of financial instruments available (e.g. forward contract and currency options) that allow firms to hedge against these risks (Ethier, 1973). Another critique is related to the presence of sunk cost in exporting (Krugman, 1989; Franke 1991). The higher the fixed costs of exports are, the less responsive firms (and therefore international trade) are to exchange rate volatility. All this makes exchange rate volatility less of a critical issue for international trade. In modern cross-border transactions firms often decide to hedge against the risk in the exchange rate or to bear the cost associated with possible exchange rate fluctuations as part of their export strategy.

The currency misalignments also affect trade. The influence of currency misalignment on international trade is largely driven by its impact on relative import prices (Mussa, 1984; Dornbusch, 1996). An undervalued currency, whether determined by exogenous shocks or by policy, increases the competitiveness of the export- and import-competing sectors at the expense of consumers and the non-tradable sector. In this regard, the effects of misaligned currency on prices are similar to those of an export subsidy and import tax. The literature on the topic provides a great amount of evidence on how responsive trade flows are to changes in relative prices consequent to movements in exchange rates (Hooper and Marquez, 1995; Bernard and Jensen, 2004). Still, as in the case of volatility, there are a number of issues that greatly complicate the relationship between exchange rate misalignment and international trade (Staiger and Skyes, 2010). Of particular importance is the issue that part of the

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undervaluation or overvaluation of the exchange rate is often absorbed by firms that do not fully adjust their price in the destination country (Goldberg and Knetter, 1997). Related to this is the presence of irreversible sunken costs of entry which act as powerful incentives for firms to stay in the market even when there is substantial undervaluation of the importer currency (Baldwin, 1988; Froot and Kemperer, 1989). Finally, vertical integration and the role of production networks (the presence of a large share of imported inputs) make currency misalignment less important (Zhao and Xing, 2006)

Aim, Data and Empirical Strategy

In investigating the three aspects of the relationship between exchange rates and trade, the empirical strategy takes advantage of a detailed bilateral dataset comprising trade, trade policies, and exchange rate data. Bilateral trade data originate from the United Nations COMTRADE, while primary tariff data are from UNCTAD TRAINS. Data on anti-dumping are from the World Bank Temporary Trade Barriers Database (Bown, 2010, p. 15), while the data utilized for the construction of exchange rate indices originate from the Penn World Tables and OANDA. Also we have used 2010-2016 time period, the estimation results were obtained from Stata 18.0 MP package programme.

This study aims to analyze Turkey's foreign trade with Euro Area and USA separately between 2010-2016 time periods. We have estimated three different regressions. Frist one is for analyzing the effects of euro on Turkey-Euro area foreign trade, the second one is for determining the effects of US dollar on Turkey-USA foreign trade and the third one is for examining the effects of oil prices on oil trade between Turkey and Russia. For this study we use the panel regression techniques.

Both Turkey-Euro Area and Turkey-US relation, we have estimated pooled regression, fixed and random effect models. After specification tests, we have concluded that random effect model gave us more efficient parameters than the others. So, we have only interpreted random effect model parameters. As a result, we can generally say that, cyclical fluctuation in Euro have approximately 8% effect on foreign trade between Turkey and Euro Area countries, similarly cyclical fluctuation in US dollar, have approximately 9% effect on foreign trade between Turkey and USA. Cyclical fluctuation in oil prices has statistically significant effect on oil trade between Turkey and Russia. However this is the poor effect, approximately 4%.

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Method: Panel Models

Panel data (also known as longitudinal or cross-sectional time-series data) is a dataset in which the behavior of entities is observed across time. These entities could be states, companies, individuals, countries, etc. Panel data (also known as longitudinal or cross-sectional time-series data) is a dataset in which the behavior of entities is observed across time. These entities could be states, companies, individuals, countries, etc. With panel data, we can include variables at different levels of analysis (i.e. Students, schools, districts, states) suitable for mulitlevel or hierarchical modeling. In this study, we used these panel regression models:

- Pooled regression
- Fixed effects
- Random effects

In this study, we use these panel unit root tests for balanced panel data type:

- Levin-Lin-Chu (LLC) Panel Unit Root Test
- Harris-Tzavalis Unit Root Test
- Breitung Panel Unit Root Test

A special case of a balance panel is a fixed panel. An unbalanced panel is one where individuals are observed a different number of times, e.g. because of missing values. In general panel data models are more efficient than pooling cross-sections, since the observation of one individual for several periods reduces the variance compared to repeated Random selections of individals.

We consider T relatively large, N small.

$$y_{it}=\alpha+\beta x_{it}+u_{it}$$

In case of heteroscedastic errors, $\sigma_i^2 \neq \sigma^2 (=\sigma_u^2)$, individuals with large errors will dominate the fit. A correction is necessary. It is similar to a GLS and can be performed in 2 steps. First estimate under assumption of const variance for each individual i and calculate the individual residual variances, s_i^2

$$s_i^2 = \frac{1}{T-2}\sum_t (y_{it} - a - bx_{it})^2$$

Secondly, normalize the data with s_i and estimate

$$(y_{it}/s_i) = \alpha(1/s_i) + \beta(x_{it}/s_i) + \tilde{u}_{it}$$

In fixed effect models, α_i are individual intercepts (fixed for given N).

$$y_{it} = \alpha_i + x_{it}'\beta + u_{it}$$

No overall intercept is (usually) included in the model. Under fixed effect, consistency does not require, that the individal intercepts (whose coefficients are the α_i's) and x_{it} are uncorrelated. Only $E(x_{it}u_{it}) = 0$ must hold. There are N-1 additional parameters for capturing the individual heteroscedasticity.

For random effect models:

$$\alpha_i \sim iid(0, \sigma_\alpha^2)$$
$$y_{it} = \beta_0 + x_{it}'\beta + \alpha_i + u_{it}, \quad u_{it} \sim iid(0, \sigma_u^2)$$

The α_i's are rvs with same variance. The value α's specific for individual i. The α's of different individuals are independent, have a mean zero and their distribution is assumed to be not too far away from normality. The overall mean is captured in . is time invariant and homoscedastic across individuals. There is only one additional parameter σ_α^2. Only α_i contributes to $\text{Corr}(\epsilon_{i,s}, \epsilon_{i,t})$..

In the Random effects model the individual specific effect is a Random variable that is uncorrelated with the explanatory variables. In the fixed effects model, the individual specific effect is a Random variable andit is allowed to be correlated with the explanatory variables.

Findings

First, we use panel unit root tests to determine the stationary of series. For this, data types must be mentioned. The data type results are given below.

Table 1
Panel DataType

Series	Panel Data Type
Exchange Rate (Euro)	Balanced Panel Data
Oil Prices	Balanced Panel Data
Exchange Rate (Dolar)	Balanced Panel Data

As can be seen in Table 1, all series are balanced, sowe can only use Levin-Lin-Chu, Harris Tzavalis and Breitng Panel Unit Root tests. Results can be given in Table 2:

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Table 2
Unit Root Test Results

LLC Unit Root Test

Foreign Trade	RHO-statistic: 0,3066 Z-statistic: -14,4454 P-value: 0,0000	Result: H_0 is rejected.
Exchange Rate	RHO-statistic: 0,7713 Z-statistic: -2,0920 P-value: 0,0182	Result: H_0 is rejected.
Oil Prices	RHO-statistic: 0,7785 Z-statistic: -1,8999 P-value: 0,0287	Result: H_0 is rejected.
GDP growth rate	RHO-statistic: 0,7785 Z-statistic: -1,8999 P-value: 0,0287	Result: H_0 is rejected.

Harris-Tzavalis Unit Root Test

Foreign Trade	RHO-statistic: 0,3066 Z-statistic: -14,4454 P-value: 0,0000	Result: H_0 is rejected.
Exchange Rate	RHO-statistic: 0,7713 Z-statistic: -2,0920 P-value: 0,0182	Result: H_0 is rejected.
Oil Prices	RHO-statistic: 0,7785 Z-statistic: -1,8999 P-value: 0,0287	Result: H_0 is rejected.
GDP growth rate	RHO-statistic: 0,7785 Z-statistic: -1,8999 P-value: 0,0287	Result: H_0 is rejected.

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Breitung Unit Root Test

Foreign Trade	RHO-statistic: 0,3066	Result: H_0 is rejected.
	Z-statistic: -14,4454	
	P-value: 0,0000	
Exchange Rate	RHO-statistic: 0,7713	Result: H_0 is rejected.
	Z-statistic: -2,0920	
	P-value: 0,0182	
Oil Prices	RHO-statistic: 0,7785	Result: H_0 is rejected.
	Z-statistic: -1,8999	
	P-value: 0,0287	
GDP growth rate	RHO-statistic: 0,7785	Result: H_0 is rejected.
	Z-statistic: -1,8999	
	P-value: 0,0287	

As can be seen Table 2, for all nit root tests, H_0 is rejected. H0 means series are stationary7there is no unit root in panel data. So, we have used first difference level of series to estimate panel models. Generally, as mentioned above, there are three diferent stationary panel models in the literatre. These are:

- Pooled regression (Estimate with Pooled OLS)
- Fied effect model (Estimate with using Generalized LS or Difference Lag Estimator)
- Random Effect Mode (Estimate with using Dmmy Variable OLS)

In this study, we estimate these three alternative models. After specification tests, Random effect model can be said the best one. The specification test results can be given below:

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Table 3
Hausman Test Results

HausmanTest			
H_0: $(E(\varepsilon_{it}, X_{kit})=0)$			
H_1: $(E(\varepsilon_{it}, X_{kit})\neq0)$			
Parameters			
	(b)	B	(b-B)	Sqrt(diag(V_b_V_B)
	Fe	re		S.E.
Log(exchrate)	0.5190	0.4532	0.0658	0.0460
Log(oi prices)	0.2522	0.3213	-0.0691	0.0107
Log(GDP growth)	0.1907	0.0221	0.1686	0.0032
χ^2 value: 25.32			
Prob (Chi2): 0.0001			
B=Inconsistent under H_0 ve H_1;			
b=Inconsistent under H_1, efficient under H_0.			

As can be seen in Table 3, Chi-square test statistic says that, H_0 hypothesis is rejected. This means that, fixed effect model estimators are inconsistent and random effect parameters are consistent. So, we can select random effect model for foreign trade.

And, finally we have used random effect model. Random effect regression estimation results can be given below:

Table 4

The Effects of Dolar on Turkey-Abd, Euro Area and Russia Foreign Trade Random Effect Model

			Observation		167	
İteration 0: log-likelihood=-145,567			Grup Sayısı		1	
İteration 1: log-likelihood=-145,567			Wald Chi-square		10,88	
			Prob>Chi-square		0,0041	
Farkforeigntrade$_{it}$	Parameter	Std. error	z	P > |z|	95% conf. interval	
Farklogexchrate$_{it}$	0,08025	0,02157	2,77	0,027	0,02044	0,04118
Farklogoilprices$_{it}$	-0,00234	0,03243	-3,37	0,001	0,04572	0,17285
FarklogGDPgrowth$_{it}$	0,00349	0,51601	3,50	0,000	-0,75311	1,26962
Constant	7,1509	0,63340	11,29	0,000	5,90950	8,39239
Random effect parameters		Estimation	Std. error		95% conf. interval	
_all idendity						
	sd(countries)	1,18308	0,25034		0,78144	1,79116
_all idendity						
	sd(years)	0,30063	0,06787		0,19314	0,46793
	sd(errors)	0,52788	0,02859		0,47472	0,58699

These reslts are given above are the Random effect estimations. It can generally be said that, Exchange rate and GDP growth rate have positive effect on foreign trade. So, the parameters are the marginal effects of explanatory variables on foreign trade. After this estimation procedure, we have to test the atocorrelation for Random effect model. The test results can be given below.

Table 5

Bhargava, Franzini ve Narendranathan Random Effect Model Atocorrelation Test

R^2 within=0,0593			Observation		167	
R^2 between=0,0550			Grup Sayısı		11	
R^2 overall=0,1809			F(3,176)		18,66	
			Prob>F		0,0009	
foreigntrade$_{it}$	Parameter	Std. error	z	P > |z|	95% conf. interval	
logexchrate$_{it}$	0,02802	0,01353	2,07	0,038	0,00150	0,05454
logoilprices$_{it}$	0,12677	0,03619	3,50	0,000	0,05583	0,19770
logGDPgrowth$_{it}$	0,43448	0,27263	1,59	0,111	-0,09986	0,96882
Kesme terimi	5,47718	0,51202	10,70	0,000	4,47364	6,48072
Rho-ar	0,90456					
Sigma_u	0,97432					
Sigma_e	0,24567					
Rho_fov	0,93467					
Bhargava, Franzini ve Narendranathan DW test statistic =2,34578						
Baltagi-Wu LBI test istatistiği=2,52456						

As can be seen in Table 4, test statistics are higher than 2, so in this situation, autocorrelation problem şs not essential for this random effect model.

Table 6

The Effects of Dolar on Turkey-ABD Foreign Trade Model 1

Foreign Trade = f(Exchange Rate)

	Sum Squared Resid	Degrees of freedom	Mean Squared	Observation	
	375,6850	3	1,8685	476	
	Parameter value	Std. Error	T	P>t	95% confidence interval
Log (Exchange rate-Euro)	0,0802	0,01352	1,84	0,052	0,075-0,098

Table 7

The Effects of Dolar on Turkey-Euro Area Foreign Trade Model 2

Foreign Trade = f(Exchange Rate)

	Sum Squared Resid	Degrees of freedom	Mean Squared	Observation	
	375,6850	3	1,8685	476	
	Parameter value	Std. Error	T	P>t	95% confidence interval
Log (Exchange rate-Euro)	-0,07485	0,01236-	1,84	0,052	-0,044-0,08214

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Table 8

The Effects of Dolar on Turkey-Russia Foreign Trade Model 3

	Sum Squared Resid	Degrees of freedom	Mean Squared	Observation	
	375,6850	3	1,8685	476	
	Parameter value	Std. Error	T	P>t	95% confidence interval
Log (Oil Prices)	-0,0023	0,00256	1,84	0,047	-0,0036-0,00025

Result and Discussion

In this study we analyze the foreign trade relation of Turkey with Euro Area, USA and Russia. To analyze these relations, we use Exchange Rates (Euro and US Dollar) and Oil Prices (for Russia) As a result; generally we can say that, the fluctuations in Euro, especcialy an increas, effects Turkey foreign trade with Euro Countries negatively. Similarly, positive fluctuations in dollar effects USA, Turkey foreign trade relations negatively. But this effect is less than Europe. Cyclical fluctuations in oil prices are not so much effective on trade relation between Russia. Because Turkey's approximately 90% oil export is from Russia. More generally, this research carries three broader policy implications. First, whether determined by exogenous shocks or by policy, policymakers need to pay attention to exchange rates of their countries and those of other countries as the effect of currency misalignments on international trade is considerable. This implies that countries should monitor their exchange rate relative not only to that of their trading partners but also in relation to that of their competitors.

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Özet

Döviz kuru, yabancı paranın yerli para cinsinden fiyatı anlamına gelmektedir. Firedman'a göre döviz kurunun sabit, esnek ve çapalı olarak üç çeşit rejimi vardır. Bunlardan biri, Merkez Bankası ya da hükümet tarafından belirlenen ve piyasa şartlarında serbestçe oluşmayan sabit döviz kuru rejimidir. Yerli paranın değeri, yabancı bir para değerine göre sabitlenir. İkinci çeşit rejim, döviz kurunun piyasa koşullarında arz ve talebe göre serbest bir şekilde belirlendiği serbest ya da esnek döviz kuru rejimidir. Burada Merkez Bankası ya da hükümetin bir müdahalesi yoktur. Üçüncü çeşit döviz kuru rejimi ise, sabit döviz kuruna oldukça yakın bir sistem olan çapalı döviz kuru rejimidir. Aralarındaki temel fark, çapalı döviz kuru rejiminde döviz kurunun piyasa koşullarına gore belirlenmesine ragmen değeri düştüğünde ya da fazla yükseldiğinde hükümet ya da Merkez Bnkasının müdahale ettiği rejim olmasıdır. Çapalı döviz kuru ve özellikle sabit döviz kuru rejimleri, ekonominin ve dış ticaretin en çok etkilendiği belirsizlik ve volatiliteden kaçınmak için kullanılmaktadır. Genel olarak gelişmekte olan ülkeler, ihracat ve ithalat fyatlarını stabilize etmek, enflasyon oranlarını düşürmek ve genel anlamda döviz kuru oynaklığından kaçınmak için çapa yöntemini kullanmaktadır. Döviz kuru belirsizliği uluslararası ticaret yapanları uzun sureli sözleşme yapma isteklerini azalttığı için uluslararası ticaretin de azalmasına neden olur. Aynı zamanda belirsizlik uzun vadede ihracatçıların yatırımlarını azaltmalarına neden olacağı için ticaretin de azalmasına neden olur.

Petro fiyatları ise, döviz kurları gibi dış ticareti etkileyen bir başka faktördür. Petrol fiyatlarında yaşanan şoklar, daha once pek çok çalışmanın da ortaya koyduğu gibi, milli gelir, enflasyon, işsilzik ve ticaret gibi makroekonomik değişkenler üzerinde etkilidir. Petrol fiyatlarındaki bir artış, milli gelirdeki büyüme üzerinde önemli derecede bir azalışa sebep olurken, daha yüksek bir enflasyon oranının ortaya çıkmasına vesile olur. Genel olarak, yüksek petrol fiyatlarının beş ana nedeni vardır. Bunlar: düşük arz, yüksek talep, OPEC in kotaları, dolardaki düşüş ve beklentilerdir. Petrol fiyatlarıyla ticaret arasındaki ilişki, petrol fiyatındaki yükselişin sebebine bağlıdır. Sebep arz şoku ise ticaret azalır, eğer petrole olan talep ise ticaret artar. Türkiye için yapılan çalışmalar, uzun dönemde petrol fiyatlarındaki artışın ihracatı pozitif yönde etlediğini ortaya koymaktadır. Petrol fiyatları aynı zamanda döviz kurlarını da etkilediği için dış ticaret üzerinde dolaylı etkisi de bulunmaktadır.

Literatürde döviz kurlarının ve petrol fiyatlarının dış ticaret ile ilişkisi ile ilgili gerek birbirini tamamlayan, gerekse birbirini eleştiren çalışmalar

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mevcuttur. Ancak genel kanı, dış ticaretin, özellikle ihracatın döviz kurları ve petrol fiyatlarındaki dalgalanmalardan etkilendiği yönündedir. Özellikle, döviz kurlarındaki artışın ihracatı artırıcı etkisi olduğu yönünde çalışmalar oldukça fazladır. Ancak, döviz kuru oynaklıklarının kur riskini beraberinde getirmesi nedeniyle olumsuz etkiden bahsedilmektedir. Petrol fiyatlarındaki oynaklıkların ise dış ticaret üzerindeki etkileri sebeplere bağlı olmakla birlikte petrol ihracatçısı ve ithalatçısı ülkelerin dış ticaret hacimlerini etkileyebilmektedir.

Bu çalışma dış ticaret üzerinde etkili olan faktörlerden döviz kurunu ve petrol fiyatlarını ele alarak, bu iki etkenin Türkiye' nin dış ticareti üzerindeki etkilerini 2010-2016 yılları arasındaki dönem itibariyle araştırmaktadır. Döviz kurlarının, petrol fiyatlarının ve ayrıca bunların oynaklıklarının dış ticaret üzerinde etkili oldukları, çalışmamızın literatür taraması kısmında da ele alındığı üzere daha önce pek çok çalışmada ileri sürülmüştür.

Bu çalışmayı diğer çalışmalardan ayıran temel özellik ise, döviz kurları ve petrol fiyatlarının Türkiye' nin dış ticaretinde etkili olan Avrupa, Amerika Birleşik Devletleri ve Rusya ile dış ticaretinde 2010-2016 dönemindeki etkilerinin incelenmesidir. Avrupa ülkeleri ile dış ticaret için Euro' nun, Amerika Birleşik Devletleri ile dış ticaret için doların ve Rusya ile dış ticaret için petrol fiyatlarının etkileri ayrı ayrı analiz edilmiştir. Bu analiz yapılırken üç farklı regrasyon tahmini panel regresyon modelleri kullanılarak yapılmıştır.

Türkiye-Euro bölgesi ile Türkiye-ABD ilişkisinde birleştirilmiş regresyon, sabit ve tesadüfi modeler tahmin edilmiştir. Spesifikasyon testi yapıldıktan sonra, tesadüfi etkiler modelinin diğerlerine göre daha etkili sonuçlar verdiği tespit edilmiştir. Yapılan analiz ile Euro' daki dalgalanmaların Türkiye- Avrupa arasındaki dış ticareti yaklaşık olarak %8 etkilediği, Amerikan dolarındaki dalgalanmaların, Amerika Birleşik Devletleri ve Türkiye arasındaki ticareti yaklaşık olarak %9 etkilediği sonucuna varılmıştır. Buna karşılık petrol fiyatlarındaki dalgalanmaların Rusya ve Türkiye arasındaki petrol ürünleri ticaretini üzerindeki etkisi zayıf bir etki olarak değerlendirilebilecek bir seviyede, yaklaşık olarak %4 olarak ölçülmüştür.

Çalışmanın genel sonucu, Euro' daki dalgalanmaların, özellikle artışların Türkiye' nin Avrupa ülkeleri ile yaptığı dış ticareti negatif etkilediği, benzer şekilde dolardaki yukarı doğru dalgalanmaların Amerika Birleşik Devletleri ile yapılan dış ticareti Avrupa ülkleri ile yapılan dış ticarete

nazaran daha az olsa da yine olumsuz etkilediğidir. Buna karşılık petrol fiyatlarındaki konjonktürel dalgalanmaların Rusya ile dış ticareti pek de etkilemediği görülmüştür. İster bir politika sonucu olsun, isterse dışsal bir şok sonucu oluşsun döviz kurları ve petrol fiyatları dış ticaret için önemlidir. Kurdaki ve fiyatlardaki oynaklığın düzletilebilmesi de ülkenin dış ticaret, büyüme, enflasyon gibi temel makroekonomik değişkenleri açısından önem arz etmektedir. Dolayısıyla, politika yapıcıların yapacakları müdahalelerin yerinde ve doğru yapılması ülke ekonomisi açısından büyük önem taşımaktadır.