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Research Article/Araştırma Makalesi

Analysis of the Effects of the Economic Crises and Pandemic on Foreign Trade in 1994-2022 with RALS-LM Structural Break Unit Root Test Method: The Case of Türkiye

1994-2022 Yılları Arasında Yaşanan Ekonomik Krizlerin ve Pandeminin Dış Ticaret Üzerindeki Etkilerinin RALS-LM Yapısal Kırılmalı Birim Kök Testi Yöntemi ile Analizi: Türkiye Örneği

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Abstract

Türkiye commenced adopting export-led growth model by 1980. Via policies prioritizing the increase in export revenues, such as tax refunds, export credits, tax exemptions, and other subsidies, Türkiye targeted economic development by engaging in international trade and becoming a global economic agent. On the other hand, Türkiye gradually liberalized its financial markets starting in 1983 and completed the process of full liberalization of capital movements in 1989. However, adopting those liberal policies, Türkiye suffered many economic crises (1994, 2001, the 2008 global financial crises), paving the way to a sudden downturn in GDP, a decline in real income per capita, and employment. Also, the 2016 coup attempt, the 2018 Pastor Brunson crisis with the United States, and the COVID-19 pandemic in 2020, which created a severe global economic slowdown, negatively affected Türkiye's economy. In this respect, within this paper, we aim to evaluate the impacts of those financial crises and the COVID-19 pandemic between the years 1994-2022 on Türkiye's foreign trade and to find out if the effects of those crises on Türkiye's foreign trade are temporary or permanent.

For this reason, we utilized the RALS-LM Structural Break Unit Root Test Method. The results underline that the 2008 global financial crisis substantially affected Türkiye's exports and imports. However, the results also underline that the effects of the 2008 global financial crisis on Türkiye's foreign trade were temporary.

Jel Codes: *F14, F41, G01*
Keywords: *RALS-LM Structural Break Unit Root Test Method, Foreign Trade, Export, Import, Global Crisis*

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Öz

Türkiye 1980'den itibaren ihracata dayalı kalkınma modeli benimsemeye başlamıştır. Vergi iadeleri, ihracat kredileri, vergi muafiyetleri ve diğer sübvansiyonlar gibi ihracat gelirlerinin artırılmasını önceleyen politikalar aracılığıyla Türkiye, uluslararası ticarete eklemlenmek suretiyle; küresel bir ekonomik aktör haline gelmeyi, böylelikle ekonomik kalkınmayı hedeflemiştir. Öte yandan, Türkiye 1983 yılından itibaren finansal piyasalarını kademeli olarak serbestleştirmiş ve 1989 yılında sermaye hareketlerinin tam serbestleştirilmesi sürecini tamamlamıştır. Söz konusu liberal politikaları benimseyen Türkiye, birçok ekonomik kriz (1994, 2001, 2008 küresel finansal krizi) ile karşı karşıya kalmıştır. Öyle ki bahse konu krizler, Türkiye'nin ekonomik büyümesini olumsuz yönde etkilemiş; kişi başına düşen reel gelir ve istihdamda azalmaya yol açmıştır. 2016 yılındaki darbe girişimi, 2018 yılında ABD ile yaşanan Rahip Brunson krizi ve küresel çapta ciddi bir ekonomik yavaşlama yaratan 2020 yılındaki COVID-19 salgını da Türkiye ekonomisini olumsuz yönde etkilemişlerdir. Bu bağlamda, bu çalışmada, 1994-2022 yılları arasında yaşanan söz konusu ekonomik krizlerin ve COVID-19 salgınının Türkiye'nin dış ticareti üzerindeki etkilerinin değerlendirilmesi amaçlanmaktadır. Yine bu çalışmada bahse konu ekonomik krizlerin ve COVID-19 salgınının, Türkiye'nin dış ticareti üzerindeki etkilerinin kalıcı olup olmadığının ortaya konulması amaçlanmaktadır. Bu amaçla çalışmada, RALS-LM Yapısal Kırılmalı Birim Kök Yöntemi kullanılmıştır. Analiz sonuçları, 2008 küresel finansal krizinin, Türkiye'nin ihracat ve ithalat rakamlarını önemli ölçüde etkilediğini, ancak, bu etkilerin de geçici olduğunu ortaya koymaktadır.

Jel Kodları: *F14, F41, G01*
Anahtar Kelimeler: *RALS-LM Yapısal Kırılmalı Birim Kök Yöntemi, Dış Ticaret, İhracat, İthalat, Küresel Kriz*

1. Introduction

Türkiye, by adopting supply-side policies after 1980, aimed to encourage production for exporting and capital accumulation by motivating new investments in emerging domestic markets. In addition, the policies adopted aimed to increase growth and employment by fostering foreign trade, particularly exports, and liberalizing the financial and capital markets. In this respect, Türkiye, with the new economic program, gradually eliminated the exchange rate controls, liberalized the foreign trade regime, and adopted policies to appeal to foreign direct investment (FDI). Besides, Türkiye targeted liberalizing the market interest rates to encourage private savings and attract portfolio investments (Öniş, 1998). In this respect, Türkiye targeted to open its financial markets in the 1980s to increase integration with international capital markets and attract more foreign funds. Within this context, Türkiye started to liberalize its financial markets in 1983[3] and completed the process of full liberalization of capital movements in 1989[4]. The primary motivation for the full liberalization of financial markets seems to be the increasing need for external capital flows to finance public sector borrowing requirements (Demir, 2004: 853). The foreign exchange regime is also regulated by abandoning the fixed exchange rate system and implementing floating exchange rate policies.

However, after adopting those liberal policies, Türkiye suffered many economic crises (1994, 2000, 2001, and 2008), paving the way to a sudden downturn in GDP growth (Figure 1[5]), a decline in real income per capita, and employment. The first was in 1994, during the post-liberalization financial crisis, following the effort to keep domestic interest rates low, which led to a sudden capital outflow where the real exchange rate depreciated on the order of 30-40 percent in 1994 (Rodrik, 2012: 44-46). In the 1990s, the Turkish government borrowed heavily from state-owned banks at high-interest rates and thus fell under a severe debt burden where the budget and current account deficits had risen significantly. Aiming to reduce the public debt burden, the government cancelled treasury borrowing bids and increased tax rates on the interest income from bonds and bills. To avoid the loss of revenue from these cancellations, the government intended to privatize Türk Telekom. However, this privatization was annulled by the Constitutional Court, and as a result, there was a severe outflow of capital from Türkiye, whose credit ratings were downgraded. Also, the Gulf War[6] and the rising political risk environment negatively affected Türkiye's economy in that period. The second was in 2000, when interest rates rose due to the banking sector's requirement for liquidity to settle open positions by the end of the year. The IMF program, a free interest rate and fixed exchange rate regime[7] applied at the time, aimed to reduce high inflation. The rise in interest

[3] The liberalization was initiated after 1980 by Decrees 28 and 30, which were implemented in December 1983 and July 1984, respectively.

[4] Decree No. 32, published on 11 August 1989, in the Official Gazette.

[5] The decrease in GDP growth in 1999 is mainly due to the 1997-1998 Asian crises and the Russian crisis of 1998, followed by the Marmara earthquake. The contagion effects of these crises generated a protracted crisis in Türkiye in 1998 and 1999 (Uygur, 2010: 1).

[6] Iraq's invasion of Kuwait on August 2, 1990.

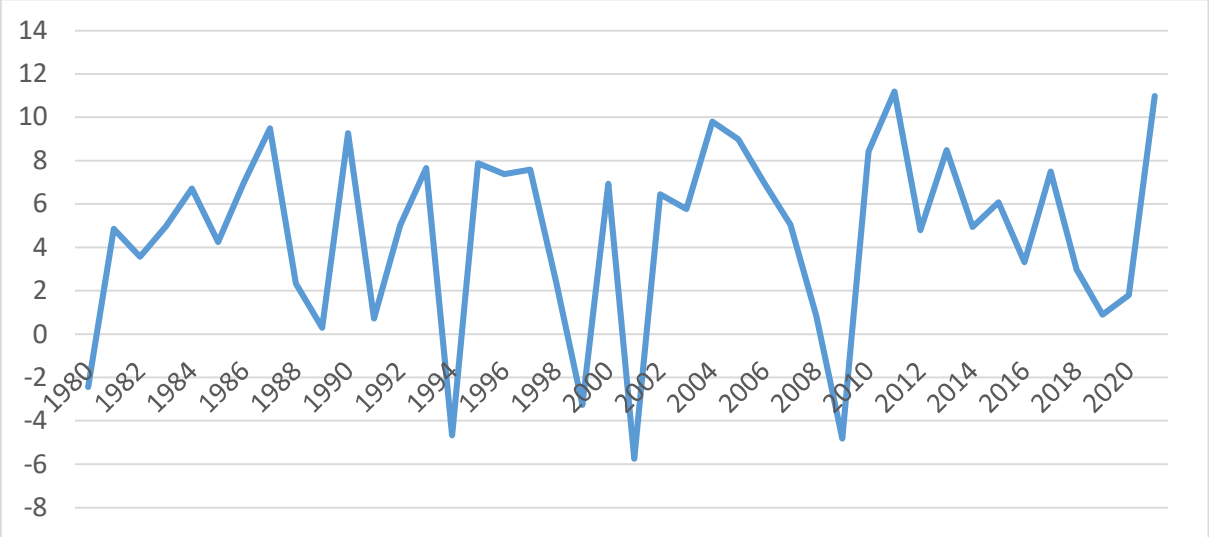
[7] The exchange rate was fixed at the rate announced by the Central Bank for each day, while the market-determined interest rates.

rates put additional pressure on state-owned banks with high overnight borrowing needs and private banks holding large amounts of bonds in their portfolios. As a result, there was a serious outflow of capital from Türkiye. The third was in 2001, when a sudden stop to capital inflows resulted from a political crisis that destroyed the exchange rate-based stabilization program's credibility (Rodrik, 2012: 42-44). There was a serious outflow of capital from Türkiye, which was already facing liquidity problems, and the economic program suffered a serious loss of confidence. The 2001 crisis caused the crawling peg to be ended and replaced by a floating exchange rate system in Türkiye (Uygur, 2010: 1). The fourth was brought on by the 2008 global financial crisis and a global capital flight to safe havens. The mortgage crisis, which commenced in the US in 2008, led to a contraction in world markets. Türkiye's economy was affected negatively, albeit indirectly, by reason of the crisis. Due to the 2008 crisis, Türkiye's imports and exports fell precipitously, which reduced the country's current account deficits beginning in the fourth quarter of 2008. After the first quarter of 2009, Türkiye's imports rose while exports remained stagnant, leading to a rise in the country's current account deficits (Uygur, 2010: 9-10). In this way, we have witnessed how the export performance of the 2008 crisis differed from those of its predecessors. A significant factor in the previous recovery was the quick rise in exports driven by the competitive currency. However, Türkiye's exports during the 2008 global financial crisis followed a completely opposite course, with the export volume declining until early 2009 and recovering much slower than in previous post-crisis periods. We have seen that as the Turkish lira began to appreciate in 2009, reducing the incentives for firms to export.

The fifth was due to a coup attempt in Türkiye in 2016, where a faction of the Turkish Armed Forces attempted to stage a coup in various cities (MFA, 2016). The sixth was due to the Pastor Brunson crisis in 2018. During that political crisis, the foreign capital flows financing the country's massive current account deficit reversed direction and turned outward, following the dispute between Trump and Erdogan about Brunson. As a result of the capital flight, Turkish Lira depreciated against many currencies, particularly the US dollar, leading to changes in Türkiye's foreign trade figures. Finally, the COVID-19 pandemic in 2020, which created a severe economic slowdown globally, also adversely impacted Türkiye's economy as well as foreign trade. As a result of the pandemic, there was a severe decrease in trade interconnectedness, connectivity, and size among countries (Vidya & Prabheesh, 2020: 2408). Moreover, the pandemic caused global crises that have the risk of leading to a change in policy regime-a political and economic retreat behind national borders- and a more significant role for the state in the economy (Borio, 2020: 190). Figure 1 shows the decline in the GDP growth in 1994, 1999, 2001, and 2009.[8]

[8] GDP growth rate given as a percentage per year at constant local currency pricing at the market. The aggregates are based on constant prices from 2015 and are given in US dollars (World Bank, 2022a).

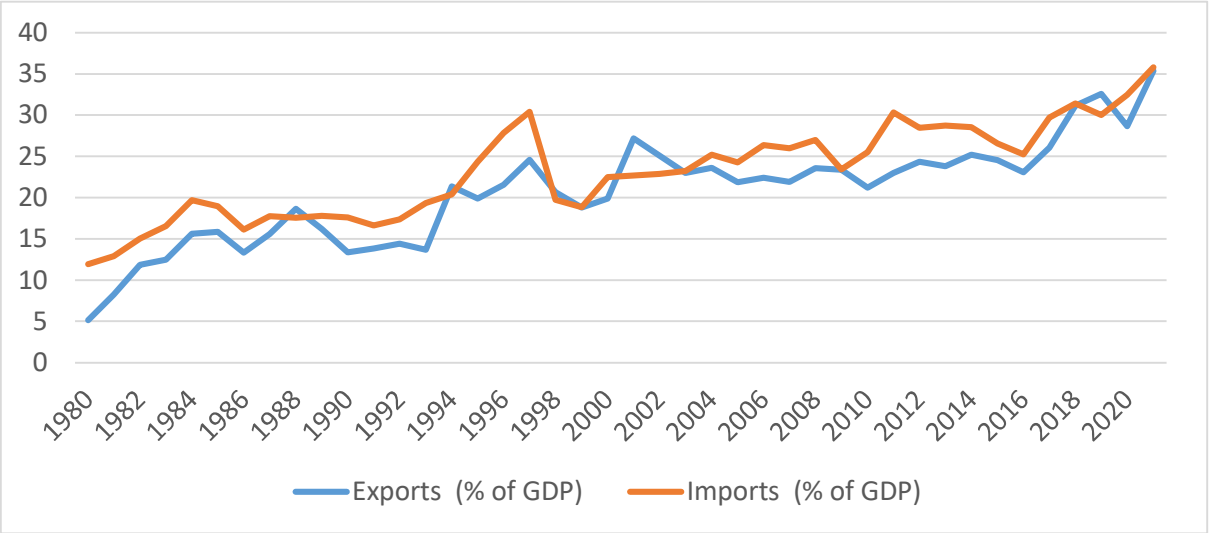
Figure 1: GDP Growth (Annual Percentage)



Source: World Bank, 2022a

Figure 2 shows that, except for a few years, imports have exceeded exports because of the imported input dependency of the Türkiye's manufacturing sector (Figure 2). Due to the production structure of Turkish exporting sectors, as the output of the exporting sectors rises, foreign input requirements rise, and thus, economic leakages rise (Erkök, 2023: 82).

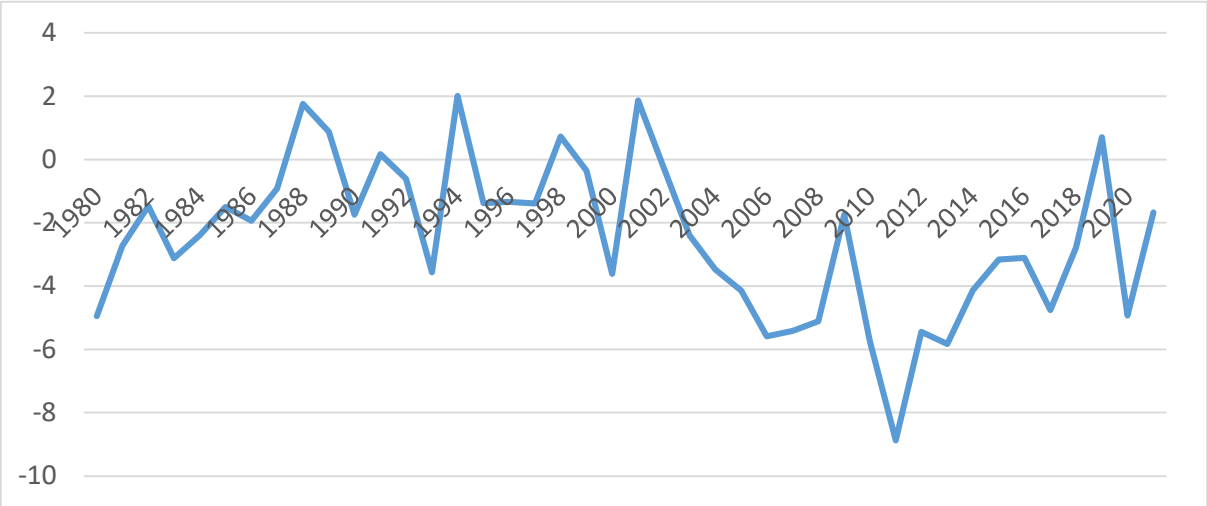
Figure 2: Exports & Imports of Goods and Services (Percent of GDP)



Source: World Bank, 2022b & World Bank, 2022c

On the other hand, all those crises led to recessions in the macro economy and a sudden stop in capital inflows, which caused the depreciation of the Turkish Lira. The sudden stop in capital inflows increased the need for external loans and triggered the deterioration of the current account deficit of Türkiye (Figure 3). Figure 3 shows that Türkiye is suffering from a substantial current account deficit, which is the essential vulnerability of the economy.

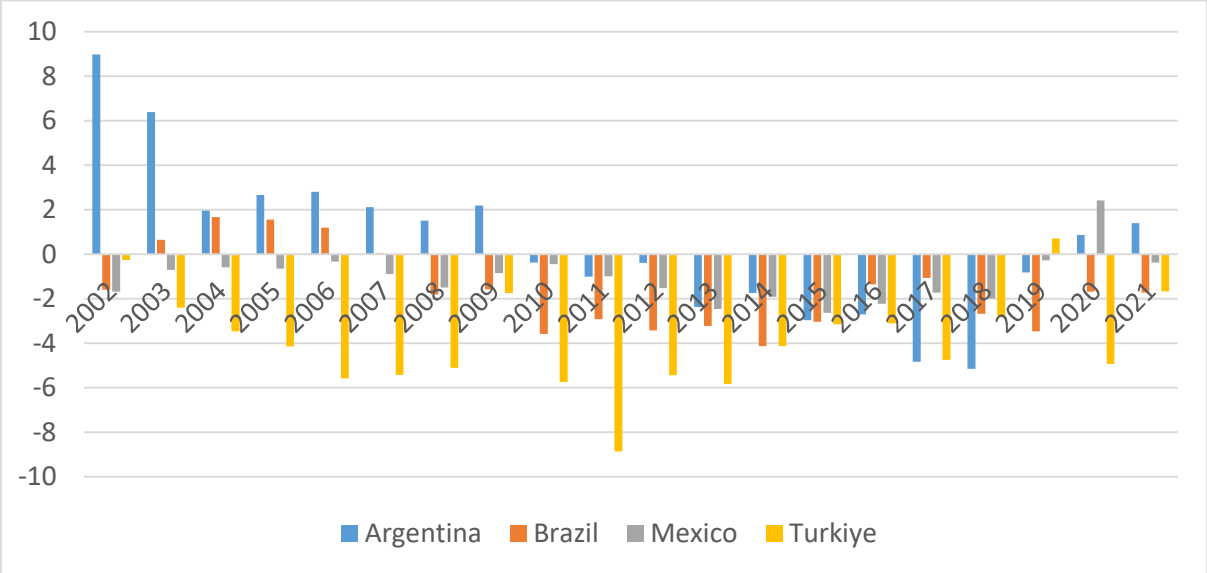
Figure 3: Current Account Balance (Türkiye, Percent of GDP)



Source: World Bank, 2022d

The current account deficit is a crucial issue because it leads to weaknesses in reliability in the local currency, a reduction in foreign reserves, and an expansion in external loans. Nearly all countries that have gone through financial crises had experienced increasing current account deficits before the crises took place. Therefore, current account deficits are essential in financial crises (Ma & Cheng, 2005: 253). Moreover, a large current account deficit, financed by foreign capital inflows or more external borrowings, increases vulnerability, which leaves the economy at the mercy of incidents in foreign financial markets (Rodrik, 2012: 42). Besides, a large current account deficit is often a primary indicator of an economic and currency crisis. This was the case in many crises in Mexico, Brazil, Argentina, and Türkiye (See Figure 4), including the global financial crisis that commenced in 2008 (Labonte, 2010: 7).

Figure 4: Current Account Balance (Percent of GDP)



Source: World Bank, 2022e

Likewise, Türkiye's economy entered all three crises of 1994, 2001, and 2009 with a large current account deficit. Thus, when external financing decreases, the current account deficit must quickly be lowered and removed (Rodrik, 2012: 45).

Standard theoretical models expect that economic crises can pave the way for higher exports due to the depreciation of the domestic currency, a decline in domestic demand, and lesser imports due to the fall in the income of the importers. However, the effect of the crises might be quite the opposite, decreasing the exports due to a reduction in total output and hence increasing the need for imports. However, the emerging Asian countries' crisis of 1997-1998, accompanied by a severe exchange rate of devaluations, has been followed by a fall in or a stagnation of exports (Berman, 2009: 1). Thus, whether economic crises lead to an increase or decrease in imports and exports and whether the effects are permanent or temporary require further clarification. Within this context, this paper aims to evaluate the above-mentioned crises' effect on Türkiye's foreign trade and determine whether the effects are temporary or permanent. To this end, we used the RALS-LM structural break unit root test method. Besides, with this paper, we aim to fill a literature gap by evaluating this subject using the RALS-LM structural break unit root test method and provide a theoretical framework for exposing the effect of economic crises on foreign trade.

Our results indicate that the 2008 global financial crisis significantly affected the export and imports of Türkiye. However, we have seen that the effects were temporary. This paper contributes to the literature by examining the effects of shocks in seasonally adjusted imports and exports and the changes in the series by RALS-LM unit root tests. Within this context, our paper follows this format: the next section introduces the related literature; Section 3 presents data and the methodology; Section 4 states the empirical results. Finally, section 5 concludes by discussing the implications of the findings and policy recommendations.

2. Literature Review

The world altered vastly since Smith and Ricardo suggested the law of absolute and comparative advantage. Today, international trade is dominated by the enlargement of supply chains, and nearly all (Western[9]) economists, considering in favor of free trade policies, believe that international trade played a crucial role in achieving rapid growth of the neo-mercantilist countries (Krist, 2023).

In this context, Campa (2002) examined the trade performance of Latin American countries that experience exchange rate crises and showed that while bilateral import flows do not exhibit many responses to changes in bilateral exchange rates, exports to industrialized nations are particularly sensitive to changes in the real exchange rate. On the other hand, analyzing the effects of the banking crises on foreign trade, Ma & Cheng (2005) estimated the bilateral trade model for 19 years for 50 countries with real-world data where they detected

[9] International organizations like the World Bank, the International Monetary Fund, and the World Trade Organization (WTO) support this philosophy.

that the effects of currency crises differ from the banking crises on foreign trade. They determined that the impacts of crises on foreign trade are different in the short and long run. Also, Berman (2009) found that a currency crisis increases firms' exports due to the competitiveness effect and decreases the number of exporters due to the balance sheet effect. Further, Berman & Berthou (2009) have shown that if exporting enterprises borrow in foreign currency and these firms are credit-constrained, the impact of the home currency depreciation on exports is less favorable for a country since the majority of the industries in which they work require greater outside funding.

Additionally, Berman & Martin (2012) analyzed the effect of past banking crises (1976-2002) on trade with a focus on African exporters, where they showed that African exporters are particularly vulnerable to banking crises in their exporting partners. They also emphasized how vulnerable African nations are to banking crises in partner nations, primarily due to their reliance on trade finance. On the other hand, Chor & Manova (2012) investigated how international trade collapsed during the global financial crisis. They demonstrated how a tightening of credit had a role in the decline in trade volumes. Additionally, they have noted that during the height of the crisis, exports from nations with higher capital costs decreased, particularly from financially fragile industries. Moreover, Liu et al. (2013) have underlined that the global financial crisis has negatively affected China's exports. By drawing attention to China's trade dependency on the US, Japan, and the EU, Liu et al. (2013) highlighted that, in order to lessen its vulnerability to shocks like the global financial crisis, China needs to increase the size of its export markets and the variety of goods it exports.

Besides, Göçer & Elmas (2013) investigated the relationship between the real exchange rate and Türkiye's external trade balance using the unit root test and cointegration methods with multiple structural breaks. They discovered that the extended Marshall-Lerner Condition holds for all of Türkiye’s production groups. On the other hand, Ertuğrul et al. (2010) examined how the global financial crisis affected Türkiye’s economy using a variety of indicators, including export, economic growth, unemployment rate, capacity utilization rate, and index of industrial production. They discovered that the crisis increased uncertainty and lowered confidence levels. Also, Öcal (2011) examined how the global economic crisis affected Türkiye's foreign commerce and discovered that the slowdown in economic growth resulting from lower production, a drop in the amount of trade, and a loss in employment rates was the most significant influence on the reel sector. Moreover, Özmen (2015) stated that Türkiye is more susceptible to external shocks than Brazil, India, Indonesia, and South Africa after examining the reasons for and effects of the country's recent current account deficits, foreign trade, and financial vulnerabilities. Özmen (2015) emphasized that the current account deficit, the state of the world economy, the high relative disadvantage in medium- and high-tech products, and the waning credibility of monetary policy are the main factors influencing Türkiye's growth. With a one-way gravity model, using panel data on Turkish exports to 135 World Trade Organization (WTO) member countries between 1981 and 2015, Karacan & Korkmaz (2022) investigated the impacts of the 2001 crisis and the structural changes on Turkish exports. They noted that while the weak Turkish Lira during the crisis in 2001 had a short-term favorable impact on exports, this effect reversed the following year. Furthermore,

they discovered that structural changes to the economy have an essential effect on exports and assist in reducing the trade-distorting impacts of the 2008 global financial crisis. Additionally, Türkmen & Erturgut (2022) examined how the trade-related pandemic measures affect Türkiye's export performance with Türkiye's top export destinations (Germany, Iraq, Italy, the UK, and the USA). They revealed that in the initial months of COVID-19, Türkiye's exports to the top five nations declined; however, by June 2020, exports had recovered. Nonetheless, exports appear to have recovered at the same rate as before COVID-19.

3. Data and Methodology

Unit root tests are nonstationarity (or stationarity) tests that have become widely popular over the past several decades. Unit root tests are frequently used in analyzing the duration of the effects of shocks on economic variables, which would possibly change their statistical properties. A time series is stationary if its mean and variance do not vary systematically over time. The effects of shocks in stationary series disappear in the short term, but shocks in non-stationary series create long-lasting (possibly permanent) effects (Gujarati & Porter, 2009; Mucuk et al., 2019: 4). Many different unit root tests are performed to determine whether the series is stationary. These tests vary in assumptions, null hypotheses, and approaches (some in time, some in the frequency domain). One of the many difficulties in identifying non-stationarity is the existence of structural breaks, as these breaks are difficult to distinguish from big permanent shocks. As economic crises lead to structural (sometimes transitory and at other times permanent), detecting non-stationarity becomes particularly challenging. There have been many advances in incorporating structural breaks into unit root tests. That is why - when economic crises are possible- a proper analysis of the permanence of economic shocks requires unit root tests. Because unit root tests have structural breaks in the null (Damar et al., 2021; 665-666). Our research mainly focuses on the effects of the crises (including Covid-19) in Türkiye between 1994-2022 on Türkiye's imports and exports. Given the non-stationary nature of these economic variables, we choose to progress with unit root tests, which integrate structural breaks into the analysis. The methodology we use is the Residual Augmented Least Squares-Lagrange multiplier (RALS-LM). The seasonal data used in this paper (limsa and lexsa) were obtained from TURKSTAT. We used logarithmic values of the variables, and the series was adjusted for the seasonality effect. The data set consists of quarterly data covering the 1st quarter 1994 to the 1st quarter 2022. We used exports and imports. The information about those variables is shown in Table 1.

Table 1: Data Set

Variables	Symbol	Data Sources	Data Periods
Export	Lexsa	TURKSTAT	January,1994-January, 2022
Import	Limsa	TURKSTAT	January,1994-January, 2022

Concerning the unit root test, Im (1996) showed that non-normal errors might lead to inefficiency of the standard least square results. Instead, he suggests using residual augmented least squares to ameliorate the problem. Later on, Im & Schmidt (2008) showed that using higher-order moments of the residuals will further increase efficiency, especially

when the errors are not normally distributed. Im et al. (2014: 315-316) showed that applying the same idea and using the two-stage RALS-DF unit root test will increase the power of unit root tests. Later on, Meng et al. (2014) extended the work of Im et al. (2014) and suggested a Lagrange multipliers (LM) version of the RALS unit root tests.

The two-break LM unit root test statistic can be estimated by regression according to the LM procedure as follows:

$$\Delta y_t=\delta'\Delta Z_t+\phi\hat{S}_{t-1}+e_t \quad (1)$$

$$\text{Where, } \hat{S}_t=y_t-\hat{\psi}-Z_t\hat{\delta}, \qquad t=2, 3, \ldots, T;$$

$\hat{\delta}$ is the vector of coefficients in the regression of Δy_t on ΔZ_t and $\hat{\psi}$ is obtained from $y_1-Z_1\hat{\delta}$. Moreover, y_1 and Z_1 denote the first observation of y_t and Z_t, respectively. The unit root null hypothesis is described by ϕ=0, and the LM test statistics are given by $\tilde{\tau}$=t-statistics testing the null hypothesis ϕ=0 (Lee & Strazicich, 2003: 1083).

The points where the LM test statistic obtained by $\tilde{\tau}$, which tests the unit root basic hypothesis, is minimum, are determined as the structural break date (Konat, 2021: 185). In RALS procedures are used second and third-moment information for a random sample y_i, i=1,2,...,N with mean μ and variance σ^2. Define μ_j= E$(y-\mu)^j$, j=2,3,...., and assume that μ_j is finite for all j (Im & Schmidt, 2008: 219). Im et al. (2014: 315-316) have express that using information about non-normally distributed errors will increase the power of unit root tests and this result would be useful. Therefore, Meng et al. (2014) and Meng et al. (2016) introduced the RALS-LM test to the literature by adding RALS terms to equation (1). To improve the power of the LM test, Meng et al. (2016) adopt the procedure to utilize the information on non-normal errors. Moreover Meng et al. (2016) adopt the "residual augmented least squares" (RALS) method as in Im et al. (2014). The RALS procedure augments the following term $\widehat{w}_t$ to testing regression (1), Meng et al. (2016);

$$\hat{w}_t=h(\hat{e}_t)-\widehat{K}-\hat{e}_t\widehat{D}_2, \qquad t=1,2,\ldots,T \quad (2)$$

where $\hat{e}_t$ is the ordinary least square (OLS) residual from regression (1),

where $\widehat{K}=(1/T)\sum_{t=1}^{T} h(\hat{e}_t)$ and $\widehat{D}_2=(1/T)\sum_{t=1}^{T} h'(\hat{e}_t)$

$h(\hat{e}_t)$ is the second and third moment of $\hat{e}_t$ to utilize the information of non-normal errors and is expressed as $h(\hat{e}_t)=[\hat{e}_t^2, \hat{e}_t^3]'$

After that, when we let $\widehat{m}_j=T^{-1}\sum_{t=1}^{T}\hat{e}_t^j$ j=2,3 the augmented term can be defined as

$$\widehat{W}_t=[\hat{e}_t^2-\widehat{m}_2, \hat{e}_t^3-\widehat{m}_3-3\widehat{m}_2\hat{e}_t]' \quad (3)$$

The RALS-LM test is acquired by adding the $\hat{w}_t$ term obtained in equation (3) to equation (1) and is shown as follows;

$$\Delta y_t=\delta'\Delta Z_t+\phi\hat{S}^*_{t-1}+w_t'\gamma+e_t \quad (4)$$

By including dummy variables in equation (4), we obtain the RALS-LM test procedure with one structural break, RALS-LM with two structural breaks or RALS-LM without structural breaks if dummy variables are not included. Equation (4) tests the alternative hypothesis ϕ<0 against

the null hypothesis ϕ=0 (Konat, 2021: 186). Then, under the null, the limiting distribution of the RALS-LM t-statistic τ_{RALS-} can be derived as:

$$\tau_{RALS-LM} \rightarrow \rho\tau_{LM} + \sqrt{1-\rho^2}Z \qquad (0, 1) \qquad (5)$$

where τ_{LM} denotes the limiting distribution of the t-statistic for the usual LM estimator in regression and ρ is the correlation between e_t and ψ(et) Meng et al. (2014: 348). Depending on the correlation coefficient ρ2 and the number of observations T, critical values for comparing the results of the without-a-break, single or two-break test are presented by Meng et al. (2014) and Meng (2016) (Konat, 2021: 186).

The researchers underline that the RALS-LM unit root test generally had more robust features than the RALS-DF test; however, they also state that the advantage does not always hold.

The RALS-LM unit root test method provides researchers with a three-step unit root test method. This method detects breaks as in the two-stage LM unit root test; then, the unit root hypothesis is tested with exogenous breaks. In addition, a transformation (RALS phase) is also carried out for non-normal residuals (Kalabak et al., 2021: 83).

The hypotheses of the RALS-LM test are established as follows:

H_0: Series is non-stationary with a structural break.

H_1: Series are stationary with structural breaks.

The stationarity of the series, i.e., rejection of the null, implies that the shocks have transitory effects.

4. Results

The findings obtained from unit root tests are revealed in this section. The findings from the structural breaks unit root tests are shown in Table 2.

Table 2: RALS-LM Structural Break Unit Root Test Results

Variables	RALS-LM	Rho^2	Number of Breaks	Trimming Rate (%)	Critical Values			History of Structural Breaks	Consequent
					%1	%5	%10		
limsa	-10.028	0.716	2	10	-4.414	-3.886	-3.599	2008 year 3. Quarter	Temporary
lexsa	-7.364	0.708	2	10	-4.406	-3.876	-3.589	2009 year 1. Quarter	Temporary

According to the RALS LM test results, test statistic values of both series are at the significance level of 1%, 5%, and 10% as absolute values. Therefore, both series are stationary. According to the results of the RALS-LM test, the structural break is in Q3 2008 and Q1 2009. In both series, H0 was rejected, meaning the effects are not permanent. In other words, the RALS results of the regressions using seasonally adjusted and the logarithmic values of import data revealed the break in 2008Q3. This shows that the effects of the 2008 crisis on imports are temporary. We find the break in 2009Q1 with a similarly transformed export variable. This implies that the effects of the 2008 crisis on exports are temporary. In line with the results,

we conclude that economic shocks stemming from exports and imports and their harmful effects can be eliminated with appropriate policies. In other words, it is possible to say that the shocks arising from exports and imports do not cause a severe economic crisis in Türkiye; in this context, we can also state that the impact of exports and imports on the economy in Türkiye is limited, and therefore, we believe that the Turkish economy has much more significant economic problems than exports and imports.

In this regard, we can also state that our findings are consistent with those of Liu et al. (2013), who highlighted that China's exports have been negatively affected by the global financial crisis; Chor & Manova (2012) who underlined the downfall of international trade throughout the global financial crisis and Campa (2002) who revealed that exports to industrialized countries are sensitive to changes in the real exchange rate. Our findings also support Berman (2009), who revealed that a currency crisis increases firms' exports due to the competitiveness effect and decreases the number of exporters due to the balance sheet effect, and Berman & Martin (2012), who showed that African exporters are particularly vulnerable to a banking crisis in their export countries and Ma & Cheng (2005) who found out that the impacts of the crises on foreign trade are different between the short and long terms. In this regard, the reader should note that our paper aimed to evaluate the effect of these crises on Türkiye's foreign trade and primarily focused on finding out whether the effects of the crises that Türkiye's economy experienced are temporary or permanent by the RALS-LM structural break unit root test method.

5. Conclusion

We have had a new world order since the days of Smith and Ricardo, who suggested the law of absolute and comparative advantage, respectively. Today, international trade is dominated by the enlargement of supply chains, and nearly all (Western) economists, considering in favor of free trade policies, believe that international trade played a crucial role in improving the economic well-being of the neo-mercantilist countries. Within this context, Türkiye, supported by the IMF and the World Bank, adopted an export-led growth model and targeted export promotion and import liberalization since the 1980s. Thus, Türkiye aimed to increase export revenues, foster domestic savings, develop economic and financial efficiency, and attract foreign capital. With the policies adopted, Türkiye targeted economic development by engaging in international trade and becoming a global economic agent. On the other hand, Türkiye gradually liberalized its financial markets starting in 1983 and fully liberalized capital movements in 1989. However, adopting those liberal policies, Türkiye suffered many economic and political crises (1994, 2001, the 2008 global financial crises), triggering a sudden downturn in GDP, a decline in real income per capita, and employment.

In this respect, within this paper, we evaluated the impacts of those economic crises between the years 1994-2022 on Türkiye's foreign trade and to reveal if the effects of those crises on Türkiye's foreign trade are temporary or permanent via RALS-LM Structural Break Unit Root Test Method. The results underline that the 2008 global financial crisis substantially affected

Türkiye's exports and imports. However, we also identify that the effects of the 2008 global financial crisis on foreign trade in Türkiye were temporary.

We have seen the difference between the crisis of 2008 and the others linked to exports. A significant factor in the last crisis' recovery was a sharp export surge thanks to the competitive currency. Nevertheless, with the global financial crises, Türkiye's exports followed an unusual route during the crisis of 2008, where the export size fell till early 2009 and recovered slowly. In other words, we observed that the global crisis 2008 affected Türkiye's foreign trade figures. This is because the global crisis 2008 affected Türkiye's export markets, whereas the domestic ones did not affect Türkiye's export markets. Namely, Türkiye's exports have decreased due to the fall in global demand during the 2008 crisis, resulting in a worldwide trade downfall. In this respect, we see that the global crises affect the foreign trade performance of Türkiye rather than domestic economic and political crises. However, we have to underline that those effects were temporary.

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Çıkar Beyanı: Yazarlar arasında çıkar çatışması yoktur.

Etik Beyanı: Bu çalışmanın tüm hazırlanma süreçlerinde etik kurallara uyulduğunu yazarlar beyan eder. Aksi bir durumun tespiti halinde Fiscaoeconomia Dergisinin hiçbir sorumluluğu olmayıp, tüm sorumluluk çalışmanın yazarlarına aittir.

Yazar Katkısı: Yazarların katkısı aşağıdaki gibidir;

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