Üçüncü Sektör Sosyal Ekonomi Dergisi
Third Sector Social Economic Review
57(2) 2022, 1345-1363
doi: 10.15659/3.sektor-sosyal-ekonomi.22.06.1833

Research Article

How Does Foreign Trade Volume Affect Youth Unemployment in G-8 Countries?

G-8 Ülkelerinde Dış Ticaret Hacmi Genç İşsizliği Nasıl Etkiler?

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31.03.2022	09.06.2022

Abstract

With the phenomenon of globalization in the world, and thus as a result of the increase in capital movements, significant effects have also come into play in the foreign trade sector as well as in many other sectors. While foreign trade volume expands, especially in developing countries, in countries with a low export-to-import ratio, foreign dependency has increased. Therefore, it negatively affected the macroeconomic indicators of countries with foreign trade deficit. One of most important of these indicators is unemployment. Unemployment is not only an economic problem, but also a social problem. The group that is most affected by the consequences of the unemployment phenomenon affecting the world economies is the youth who will shape the future. It is known that youth unemployment, which refers to unemployment in the 15-24 age range, is 2-3 times higher than adult unemployment in developed and developing countries. This situation negatively affects the lives of young people and causes important problems in the economic structure of countries and threatens the future of economies. The aim of this study is to examine the effects of foreign trade volume, which has increased especially with the effect of globalization, on youth unemployment in G-8 countries. For this purpose, annual data of the period 1996-2018 were used in the study. In the study, firstly, the cross-section dependency test was applied for the variables and according to the obtained result, CADF unit root test, which is one of the second-generation panel unit root tests, was used. Later, panel bootstrap cointegration test developed by Westerlund and Edgerton (2007) was used. Finally, as a result of determining the cointegration relationship, the long-term cointegration vector was estimated by the CCE estimator. According to the findings, it was concluded that for the panel in general, a %1 increase in the foreign trade volume in the G-8 countries decreased youth unemployment by 0.19 units.

Keywords: *Foreign Trade Volume, G-8 Countries, Youth Unemployment, Panel Data Analysis, CCE Estimator.*

JEL Classification: *A10, E24, F16*

Öz

Dünyada yaşanan küreselleşme olgusuyla birlikte sermaye hareketlerinin artması sonucu dış ticaret sektöründe de önemli etkiler ortaya çıkmıştır. Bu durum gelişmiş ve gelişmekte olan ülkelerde ayrı etkiler ortaya çıkarmıştır. Özellikle gelişmekte olan ülkelerde dış ticaret hacmi genişlerken, ihracatın ithalatı karşılama oranı düşük olan ülkelerde dışa bağımlılık artmıştır. Dolayısıyla dış ticaret açığı veren ülkelerin makroekonomik göstergelerini de olumsuz etkilemiştir. Bu göstergelerden birisi de işsizlik olarak karşımıza çıkmaktadır. İşsizlik ekonomik bir sorun olmasının yanında sosyal bir sorun olarak da kabul edilmektedir. Dünya ekonomilerini etkileyen işsizlik olgusunun sonuçlarından en çok etkilenen kesim ise gençlerdir. 15-24 yaş aralığındaki işsizliği ifade eden genç işsizliğin ise gelişmiş ve gelişmekte olan ülkelerde yetişkin işsizliğe göre 2-3 kat daha fazla olduğu bilinmektedir. Söz konusu bu durum, gençlerin hayatını olumsuz yönde etkilediği gibi ülkelerin ekonomik yapısında da önemli sorunlara neden olmaktadır. Bu çalışmanın amacı, G-8 ülkelerinde dış ticaret hacminin genç işsizlik üzerindeki etkilerini incelemektir. Bu amaçla çalışmada 1996-2018 dönemine ait yıllık veriler kullanılmıştır. Çalışmada öncelikle

Önerilen Atıf /Suggested Citation
Uğurlu, S., 2022 How Does Foreign Trade Volume Affect Youth Unemployment in G-8 Countries? *Üçüncü Sektör Sosyal Ekonomi Dergisi,* 57(2), 1345-1363.

değişkenler için yatay kesit bağımlılığı testi uygulanmış ve elde edilen sonuca göre ikinci nesil panel birim kök testlerinden CADF birim kök testi kullanılmıştır. Daha sonra Westerlund ve Edgerton (2007) tarafından geliştirilen panel bootstrap eşbütünleşme testinden yararlanılmıştır. Son olarak eşbütünleşme ilişkisinin tespit edilmesi sonucu uzun dönem eşbütünleşme vektörü CCE tahmincisi ile tahmin edilmiştir. Elde edilen bulgulara göre, panelin geneli için G-8 ülkelerinde dış ticaret hacmindeki %1'lik bir artışın genç işsizliği 0.19 birim kadar azalttığı sonucuna ulaşılmıştır.

Anahtar Kelimeler: *Dış Ticaret Hacmi, G-8 Ülkeleri, Genç İşsizlik, Panel Veri Analizi, CCE Tahmincisi.*

JEL Kodları: *A10, E24, F16*

1. Introduction

Labor market, having a very important place in the realization of economic activities, is also one of the main indicators of the economic performance of a country. The state of the labor market guides policy makers as it provides preliminary information on labor supply and demand. The issue of unemployment, which is strongly emphasized by policy makers, is a difficult problem to solve, with not only economic but also social dimensions. It is known that youth unemployment, which refers to unemployment in the 15-24 age range, is 2 to 3 times higher than adult unemployment in developed and developing countries. Based on World Bank data, the total national income of the G-8 countries (Germany, United States of America, France, England, Italy, Japan, Canada, Russia) as of 2018 is approximately 40 trillion dollars, whereas the total national income of all countries is approximately 83 trillion dollars. It is clearly seen that the macroeconomic performances of the G-8 countries, which make up about 47% of the world economy, can significantly affect the economic development of other countries. Therefore, these countries were selected as the sample in the study. The average youth unemployment in G-8 countries in the period 1996-2018, which is the time period covered in the present study, is 16,03%. At the bottom of this list is Japan with an average of 7,67%, followed by Germany with 9,64%. Italy, which has the highest average of 30,72% is followed by France with an average of 22,35%. The fact that these rates are so high even in developed countries shows how important and difficult the problem and its solution is.

Although youth unemployment is generally seen as a social problem, it is also considered an issue of industrial sociology as it relates to the supply and demand of labor. Unemployment of young individuals leads to various difficulties in shaping their social identity and respecting their selves and can also result in serious problems such as various health problems, feelings of guilt and uselessness, and economic independence (Hammarstroem, 1994; Okafor, 2011, p. 359; Bell and Blanchflower, 2015). Thus, it is crucial to pay attention to youth unemployment and its outcomes. Therefore, the types of policies to be implemented in solving the issue of youth unemployment are of socioeconomic importance.

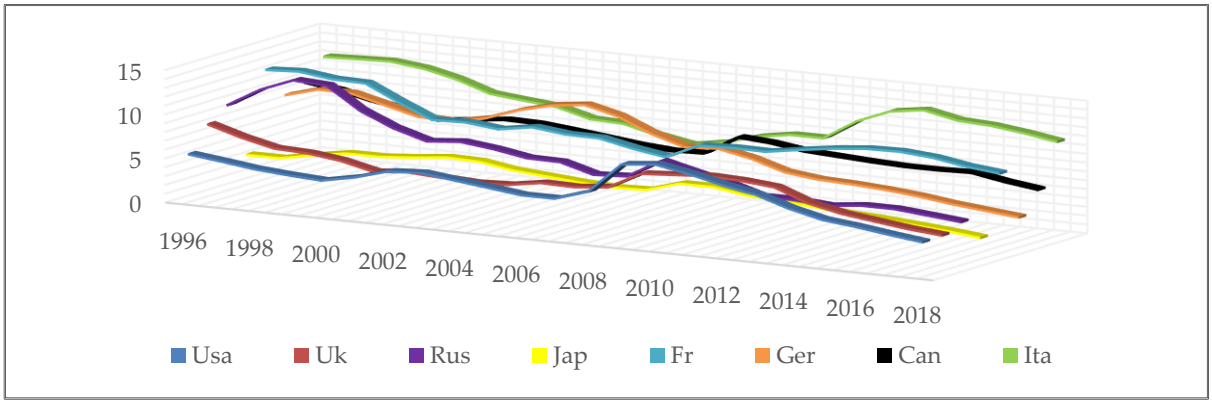


Figure 1. Youth Unemployment Rates in G-8 Countries (%)

Source: World Bank

Figure 1 above demonstrates the youth employment rates in G-8 countries, corresponding to the ratio of unemployed youth between the ages of 15-24 to the workforce within the same age range. Generally, it is seen that the youth unemployment rates in 2018, which is the final year, are lower than in 1996, which is the starting year. As seen in the graph, the serious fluctuation in youth unemployment rates in G-8 countries between 2008-2011 is thought to be a result of the economic stagnation caused by the

Mortgage Crisis.

Figure 2 below shows total unemployment rate in the G-8 countries, which express the ratio of the unemployed between the ages of 15-64 to the workforce within the same age range. The fluctuation that is believed to have been caused by the crisis in 2008 is clearly visible in this graph as well. Just as in the case for youth unemployment, the highest figures in the average total unemployment rate belong to Italy, while the lowest figures belong to Japan.

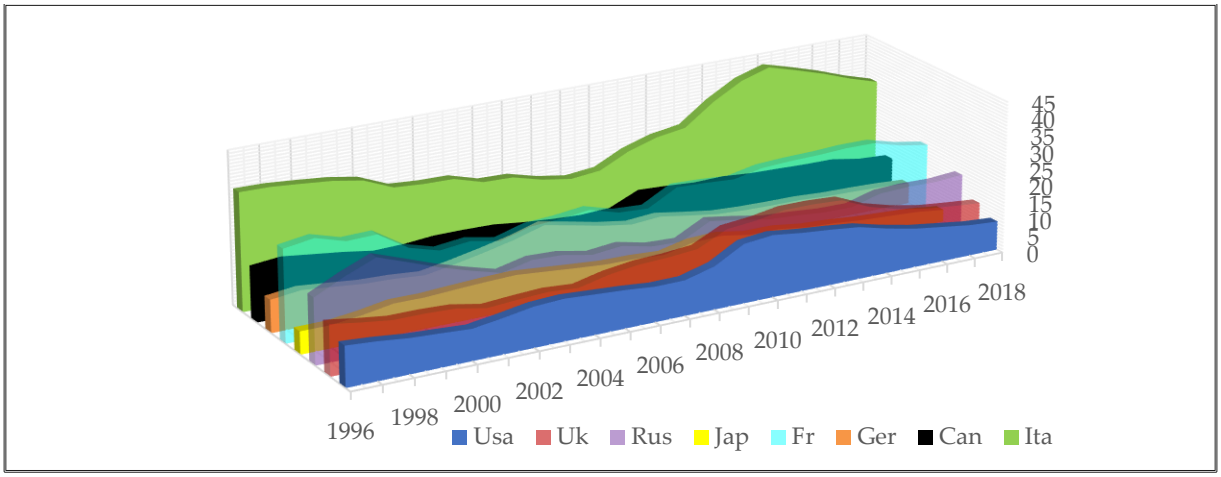


Figure 2. Total Unemployment Rates in G-8 Countries (%)

Source: World Bank

According to a study conducted by the World Economic Forum, youth unemployment was considered to be one of the biggest threats in 2014. Experts warn that the high rate of youth unemployment can lead to extremism and social unrest and exterminate prospect of sustainable economic growth. Furthermore, data from International Labour Organization (ILO) suggests that the world is facing a worsening youth employment crisis. Young people are three times more likely to be unemployed than adults and around 70 million young people are looking for work worldwide. ILO states that, in developed countries, a dangerously high level of unemployment, increasing inactivity and precarious work environment impairs young people and that there may be some massive developments (Rakauskiene and Ranceva, 2014, p. 166; Yeung and Yang, 2020).

Youth employment has many reasons. These are essentially the general state of the labor market, the structure of education and training systems, and the social stratification in the distribution of labor opportunities (Dietrich, 2012; Dhakal et al., 2018). When the subject is considered at micro and macro levels, young people who do not have work experience and want to take place in the employment market for the first time, the unemployed who are educated in theory but lack practice, and lastly, the mismatch in the working tendencies and qualifications of young people can be considered among micro causes of youth unemployment. As far as the macro level is concerned, the causes such as periodic economic crises and stagnation, active workforce, wage, and inadequate education and training policies (Curtain, 2001; Murat and Şahin, 2011, p. 21). In addition to these, among factors affecting youth employment are geographical location, insufficient demand, high inflation, the share of young people in the total population, as well as demographic factors such as gender, marital status and migration (Ahmad and Azim, 2010; Choudhry et al., 2012; Msigwa and Kipesha, 2013; Fidan and Şahin, 2013; Zulfiqar and Akhtar, 2016). Increasing production, ensuring growth and technological development, promoting the private sector and expanding foreign trade are among the policies generally put forward by governments in reducing youth unemployment. As a matter of fact, foreign trade covers the entire exchange of goods and services with other countries by both the public and private sectors in a country. Foreign trade is highly important in that a country not only gains income by marketing its excess supply to other countries but also provides the excess demand within the country that the country itself cannot meet. This trade helps to provide relatively cheaper and higher quality goods and services and to increase the welfare of countries (Kılıç and Beşer, 2017; Uğurlu, 2020, p. 113).

The opportunities offered by foreign trade can partially reverse the negative impact of certain shocks on

economic activities (growth, unemployment, inflation, efficiency etc.) (Basile and Benedictis, 2008, p. 181). In order to reduce such negative effects, it is important for governments to implement effective policies of employment and foreign trade.

Trade openness, in the context of foreign trade, is considered to be an economic indicator that is defined based on capital flows in a country, increases and decreases in the value of the national currency or the current balance (Cavallo and Frankel, 2008; Mercado and Park, 2011). Although there are various studies where positive and negative effects of foreign trade on economic activities are identified, the dominant argument appears to be that reducing barriers to foreign trade can lead to productivity and expansion in relevant sectors by reallocating economic resources, especially in sectors where export goods are produced (Agénor and Aizenman, 1996, p. 265).

With globalization, while the increase in foreign trade has an influence on the economic growth levels of countries, the transfer of new technology as well as the trade of goods and services in foreign trade offers new areas and job opportunities, especially for young people. Thus, the development of foreign trade is of high importance in decreasing youth employment. The present study investigating the effects of foreign trade volume on youth unemployment in G-8 countries consists of 4 sections. Following the introductory section, studies in the literature on the subject are included in the second section. In section 3, the data set, methodology and the empirical findings relating to study are presented. The findings and policy implications obtained from the analysis results are discussed under results in section 4.

2. Literature Review

The effects of foreign trade on unemployment through the channel of employment, which is the subject of many international trade models, has been a topic of discussion since the mercantilism period. In the later years, the subject has been widely discussed by modern economists with reference to the Heckscher-Ohlin model and is still studied to this day. When the studies in economics literature aiming to determine the effects of foreign trade on unemployment/youth unemployment are examined, it appears that no such effect was clearly demonstrated to date. These studies generally fall into three groups, which suggest either a negative, positive or neutral effect of foreign trade on unemployment. Furthermore, it has been determined by us that the number of relevant studies is very limited with regards to youth unemployment and there are no studies which investigate G-8 countries alone concerning this issue. In this respect, the present study aims to fill a gap that appears in literature.

Matusz (1996) indicated that under the assumption of monopolistically competitive market, foreign trade will reduce unemployment in every country involved in the trade, through creating areas of employment. Moreover, it's been put forward that by enhancing division of labour and specialization, foreign trade will also lead to an increase in productivity in the economy as a whole.

Şener (2001) suggested that, following liberalization of foreign trade, unemployment will rise for unskilled labor, whereas the total effect of foreign trade on the entirety of the economy would not be clear.

Jenkins and Sen (2005) aimed to explain the effect of foreign trade gap on unemployment with reference to the production intensity of goods involved in foreign trade and based on the Heckscher-Ohlin model. Their findings suggested that as emerging market economies increasingly integrate with the world economy, the respective country's production activities will shift towards labor intensive goods. Thus, the production of labor intensive goods and their share in total production will increase, and as a result, total employment will increase and unemployment will decrease.

Moore and Ranjan (2005) drew attention to the unclarity of the effect of foreign trade on overall unemployment. Based on the findings, it is concluded that due to the development of foreign trade, unemployment will decrease in countries where the majority of the workforce consists of skilled workers, whereas it will increase in countries where the unskilled workers are in majority.

Janiak (2006) concluded in their study that there was a positive correlation between foreign trade and unemployment. It was suggested that with the increase in foreign trade, small companies with low productivity will be excluded from the sector as they cannot participate in export, the resulting unemployment will not be completely eliminated by exporting companies, and thus, unemployment will increase.

Dutt et al. (2009) investigated the relationship between trade openness as an indicator of foreign trade, and unemployment. The relationship in question was attempted to be determined based on the Hecksher-Ohlin (H-O) and Ricardian models. The least squares method was used in the empirical part of the study, in which data from 92 countries for the period 1990-2000 were considered. According to the empirical results, it was concluded that there was no significant relationship between trade openness and unemployment based on the H-O model, whereas, for the Ricardian model, it was concluded that trade openness lead to a decrease in unemployment in the short run.

Egger and Kreickemeier (2009) investigated the effects of firm heterogeneity and trade liberalization on the labor market by developing a model that incorporates workers' fair wage preferences into the general equilibrium framework within the scope of firm heterogeneity. Based on the findings, it appeared that increasing trade openness representing foreign trade lead to increases in unemployment and wage inequality.

Helpman et al., (2010) examined the transition from a closed economy to an open economy. The findings suggested that, with the transition to the open economy (i.e., the commence of foreign trade), companies that wish to export goods will prefer more qualified workers, which will lead to wage inequality and an increase in total unemployment due to the inability of many unskilled workers to find employment.

Kim (2011) used data of 20 OECD member countries covering the period 1961-2008. This study shows that the increase in trade leads to higher total unemployment due to interaction with rigid labor market institutions and that it could reduce total unemployment if the labor market flexibility is high. It is also stated that in a country with average labor market rigidity, the increase in trade does not have a significant effect on unemployment rates.

Felbermayr et al., (2011) investigated the relationship between trade openness and unemployment in the long run using data from 20 OECD countries for the period 1990-2006. According to findings from panel data analyses, an increase of 1% in the trade openness leads to a decrease of approximately 0.1% in the unemployment rate.

De Pinto (2012) investigated the relationship between international trade openness and unemployment based on the study by Melitz (2003) which considers companies and workers to be heterogeneous. Within this context, it is predicted that companies aiming to increase their competitive power in the international market will prefer to employ skilled workers. It is thus suggested that unskilled workers will have a long-term unemployment problem and which will lead to an increase in the total unemployment in the country.

Kamei (2014) researched the effect of the competitive environment that will occur with the transition to free trade on unemployment by developing a model. According to the findings of the study, while the actual wages will in increase with the transition to free trade, this increase will also result in an increase of the unemployment rate.

Fugazza et al. (2014) investigated the interaction between trade openness and unemployment for 97 countries using data from 1995-2009 in their analysis. Based on the findings, it was seen that the effect of trade liberalization on unemployment is generally uncertain, and that in countries with comparative advantage, trade liberalization will increase unemployment in sectors with high frictional unemployment, whereas it will reduce unemployment in sectors with low frictional unemployment.

Gözgör (2014) utilized panel data analysis to investigate the relationship between unemployment and trade openness in G-7 countries in the period 1960-2011 based on four different criteria. The findings suggested that foreign trade led to a decrease in unemployment in develop countries by all four criteria.

Cheema and Atta (2014) investigated the determinants of unemployment in Pakistan based on data covering the period 1973-2010. In the study utilizing the ARDL bounds test approach, unemployment was found to be negatively correlated gross fixed investment and trade openness, and positively correlated with economic uncertainty, output gap and productivity.

Nwaka et al., (2015) used time series analysis in their study of Nigeria in the period 1970-2010. Based on the findings, a positive correlation was found between unemployment rate and international trade openness used to represent foreign trade.

Gür (2015) investigated BRIC countries based on the period 2001-2012, and determined that foreign trade volume, GDP, total investment and industrial growth are the main economic factors that reduce unemployment.

Günaydın and Çetin (2015) aimed to determine the macroeconomic determinants of youth unemployment. Based on the findings of the study which covers the period 1988-2013 and uses the ARDL bounds test approach, it was found that in the short and long run, trade openness, foreign direct investment and real income have a negative impact on youth unemployment Moreover, a casual effect of per capita income, inflation and trade openness on youth unemployment in the long run was determined.

Anjum and Perviz (2016) investigated the effect of trade openness on unemployment in terms of capital and labor intensive countries. They used data from 44 capital intensive and 75 labor intensive countries for the period 1990-2012. In the application part of the study, it is concluded that in labor intensive countries, trade openness affects unemployment strongly and negatively, whereas in capital intensive countries, it affects unemployment strongly but positively.

Isaev and Masih (2017) explored the relationship between ratio of private sector in external debt, trade openness as representative of foreign trade, and unemployment. In the study focusing on Australia based on the data from the period 1988:Q4-2016:Q4, the ARDL bounds test approach was utilized. The findings suggested no statistically significant relationship between the variables in the long term.

Ekinci et al., (2017) investigated the relationship between foreign trade and unemployment in Turkey and selected EU countries using data of the period 2001:Q1-2015:Q4. As a result, they determined that trade openness used in representation of foreign trade bears a deterministic characteristic over unemployment rate for Turkey and the selected EU countries.

Cütcü and Cenger (2017) investigated the relationship between unemployment and export and import in Turkey covering the period 2005:Q1-2017:Q3. As a result, no long-term correlation was found between the respective variables.

Tarı and Bakkal (2017) aimed to explore the determinants of unemployment in Turkey based on data from 1980-2017. Based on the analysis results, it was found that led to the highest increase in unemployment was trade openness, which was described as the ratio of foreign trade volume to GDP.

Abugamea (2018) investigated how unemployment relates to foreign trade, domestic income, labor force, inflation and limitations in workforce mobility in Palestine based on data from the period 1994-2017. The findings suggested macroeconomic variables such as foreign trade, domestic income, inflation and labor force, and institutional variables such as limitations in workforce mobility as the main determinants of unemployment in Palestine. Moreover, it was found that labor force and limitations in mobility led to an increase in unemployment and a decrease in domestic income, whereas there was no significant effect of foreign trade.

In their study of Turkey based on the period 2000:Q1-2015:Q3, Akcan and Ener (2018) suggested that the variable that best accounted for unemployment was real exchange rates and moreover, export, growth and inflation also reduce unemployment.

Ercan and Kılıç (2019) investigated the effect of regional trade openness on unemployment in Turkey based on data covering the period 2004-2014. As a result, a negative correlation was found between indices of regional trade openness and unemployment in the respective period, whereby an increase in regional trade openness was observed in parallel to a decrease in unemployment.

Şimşek and Hepaktan (2019) explored how trade openness relates to macro-variables such as inflation and unemployment in Turkey during the period 2005:Q1-2018:Q1. The findings suggested that trade openness standing for foreign trade was negatively correlated with inflation and positively correlated with unemployment. Furthermore, a bidirectional causation was determined between trade openness and unemployment.

3. Empirical Analysis

3.1. Period of the Study and Data Set

In the present study, annual data covering the period 1996-2018 were used to examine the effect of foreign trade volume on youth unemployment in G-8 countries. The variables used in the application and the sources from which the variables were obtained are shown in Table 1. Variables of "cohort" and "foreign trade volume" used in the study were included in the analysis by taking the logarithm of the variable.

It can be preferred for parameter estimations of models with different behavior structures such as logarithmic transformations, marginal effects in the economy, elasticities, proportional changes (Gökmen and Dağalp, 2020, p. 212). Because of that, the model in this study is in semi-logarithmic form.

Semi-logarithmic forms are often preferred because they cause minimal problems in preparing data (Sheppard, 1999, p. 1619). In the semi-logarithmic model, the dependent variable can be linear, and the independent variables can be logarithmic. $Y = \beta 1 + \beta 2\ ln\ X$. On the other hand, the slope of the regression equation $\beta 2$ is used to calculate elasticity. The amount of absolute change in the independent variable results in the percentage change in the argument (Çiftçi and Arı, 2019).

Table 1. Descriptions of Used Variables

Variables	Variable Description	Source of Data
Youth Unemployment	Youth unemployment (% of total labor force ages 15-24)	World Bank
Foreign Trade Volume	Total import and export of goods and services (million $, Constant)	World Bank
Cohort	Youth workforce (ages 15-24) / Total workforce (ages 15-64)	World Bank

In the study, the dependent variable was youth unemployment (YU), and independent variables were foreign trade volume (LNTR) and cohort (LNCOH). In the study, the cohort variable was obtained by dividing the youth workforce by the total workforce. Following the study by Didin, Sönmez and Özerkek (2018), cohort size was defined as the share of youth labor force (aged 15-24) within total labor force. All variables were obtained from the World Bank. Prior to presenting the findings of the analysis, the usage and the descriptive statistics of the variables are given in Table 2.

Table 2. Descriptive Statistics

Variables	Number of Observations	Mean	Standard Deviation	Min	Max
YU	184	16.031	7.770	3.6	42.681
LNTR	184	27.953	0.594	26.379	29.336
LNCOH	184	-13.735	0.694	-14.975	-12.402

Examining the correlation matrix prior to the econometric analysis is important in preventing the multiple linear correlation problem. Correlation coefficients are calculated in order to determine the multiple linear correlation between the independent variables. If the absolute values of the correlation coefficients among the variables considered approach 1, it is suggested that there is a multiple linear correlation (Topal et al., 2010).

Table 3. Correlation Matrix

	YU	LNTR	LNCOH
YU	1	-	-
LNTR	-0.374	1	-
LNCOH	0.132	-0.346	1

If the correlation coefficient is between |0.30|-|0.70|, it is said that there is a moderate relationship

between the two variables (Büyüköztürk et al., 2014). A correlation of 0.80 or more between independent variables indicates a multicollinearity problem (Çankaya, 2020). Table 3 displays the correlation coefficients between the variables used in the analysis. The correlation coefficient value between LNTR and LNCOH variables, which are independent variables in the model, is less than 1, suggesting that there is no problem of multiple linear regression.

3.2. Methods and Findings

In the present study, initially, a cross-sectional dependence test was applied for the variables. Upon determining the cross sectional dependence, CADF unit root test, a second generation unit root test, was applied which showed that all variables were stationary at the first difference. Following this, a cross-sectional dependence test and homogeneity test were applied for the entirety of the panel, and it was determined that the constant and slope coefficients in the model were not homogeneous, i.e. heterogeneous. This test is essential in choosing the cointegration test to be applied. The panel bootstrap cointegration test developed by Westerlund and Edgerton (2007), which is one of the cointegration tests assuming heterogeneity and cross section dependency, is used in the study. Upon detecting cross-sectional dependence and cointegration in the model, the long-term cointegration vector was estimated by the CCE estimator developed by Pesaran (2006).

3.2.1. Cross-Sectional Dependence Test

LM_{BP} test statistics by Breusch & Pagan (1980) were utilized in testing cross-sectional dependence. LM_{BP} test statistics are calculated based on the following regression:

$$y_{it} = \alpha_i + \beta_i'.x_{it} + \mu_{it} \quad i=1,2,\ldots,N;\ t=1,2,\ldots,T \tag{1}$$

The null and the alternative hypotheses of the cross-sectional dependence test are as follows:

H_0: Cross-sectional dependence is not present.

H_1: Cross-sectional dependence is present.

The test statistics of Breusch and Pagan (1980), which has a standard normal distribution, are calculated as follows:

$$LM_{BP} = T.\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\hat{\rho}_{ij}^2 \sim \chi^2_{N.(N-1)/2} \tag{2}$$

Following the application of the test, in the case the probability values are less than 0.05, the H_0 hypothesis is rejected and it is decided that there is cross section dependence (Pesaran et al., 2008). Based on findings obtained from the test applied, the presence of cross-sectional dependence between variables is demonstrated below in Table 4.

Table 4. Cross-Sectional Dependence Test Results

Variables	$CDLM_1$	$CDLM_2$	CDLM	LM_{adj}
YU	27.736 (0.478)	-0.035 (0.486)	-2.757(0.003)***	12.811 (0.000***)
LNTR	69.991 (0.000***)	5.611 (0.000***)	-2.257 (0.012)**	1.880 (0.003***)
LNCOH	54.766 (0.002***)	3.577 (0.000***)	-1.817 (0.035)**	3.216 (0.001***)

Note: *** and *** refer to statistical significance at levels of 0.05 and 0.01 respectively.*

As seen in the cross-sectional dependency test results given in Table 4, based on the fact that the probability values for CDLM and LM_{adj} test statistics for each variable is less than 0.05, the null hypothesis suggesting that there is no cross-sectional dependence is rejected. In other words, there is cross-sectional dependence between series.

3.2.2. Panel Unit Root Test

In the present study, cross-sectional dependence was identified in all series; and thus the CADF unit root test, which is a second generation unit root test taking into account cross-sectional dependence was

applied. The CADF test by Pesaran (2007) CADF test is an extended version of the ADF regression with the first differences of individual series and cross-sectional averages of lag levels. An important feature of this test is that the CADF statistics reveal the individual results of the cross section, while it also provides results regarding the whole of the panel with the CIPS statistics. Another reason this test is substantial is because it provides consistent results even in cases where the sizes of the cross section (N) and time (T) are relatively small (Pesaran, 2007).

The CADF was developed by Pesaran (2007) and is based on the panel unit root test regression model known as the extended Dickey Fuller test and is shown as follows:

$$\Delta y_{it} = a_i + b_i y_{i,t-1} + c_i \bar{y}_{t-1} + d_i \Delta \bar{y}_t + e_{it} \quad (3)$$

$$t_i(N,T) = \frac{\Delta y'_i \bar{M}_w y_{i,-1}}{\hat{\sigma}_i (y'_{i,-1} \bar{M}_w y_{i,-1})^{1/2}} \quad (4)$$

The CIPS statistic, which is the average of the t statistics values calculated for each cross section, is as follows:

$$\text{CIPS (N,T)} = N^{-1} \sum_{i=1}^{N} t_i (N,T) \quad (5)$$

In Equation (5) (N, T), $i.$ becomes CADF statistics for the cross section unit. Thus, the equation (5) can be composed as follows (Pesaran, 2007, p. 276):

$$\text{CIPS (N,T)} = N^{-1} \sum_{i=1}^{N} t_i \; CADF_i \quad (6)$$

The hypotheses of the test are given below:

H_0:$\beta_i = 0$ series is not stationary.

H_1: $\beta_i < 0$ series is stationary.

As a result of the cross-section dependency test, CADF unit root test, which is one of the second generation unit root tests, was applied to the variables. The results of the CADF unit root test are shown separately for each country in Table 5.

Table 5. CADF Unit Root Test

Constant and Trend						
Countries	**YU**		**LNTR**		**LNCOH**	
	CADF Stat.	**Lag**	**CADF Stat.**	**Lag**	**CADF Stat.**	**Lag**
USA	-2.115	1	-4.328	1	-0.217	1
UK	-1.039	1	-1.715	1	-1.819	1
Canada	-3.590	1	-3.548	1	-2.562	1
France	-2.259	1	-3.575	1	-1.306	1
Germany	-2.583	1	-3.079	1	-1.173	1
Italy	-3.029	1	-1.781	1	-1.818	1
Japan	-3.854	1	-3.976	1	0.493	1
Russia	-1.703	1	-2.992	1	-0.648	1
CIPS	**-2.521**		**-3.01**		**-1.131**	

Note: *CIPS Critical Values 1% (-3.15), 5% (-2.88), 10% (-2.74); CADF Critical Values 1% (-4.97), 5% (-3.99), 10% (-3.55)*

Based on the findings displayed in Table 5, it is seen that the CADF test statistic values calculated separately for YU, LNTR and LNCOH variables are less than -4.97 at 1% and the CIPS values are less than -3.15 at 1% as displayed in the critical values tables by Pesaran (2007). In this case, the H_0 hypothesis is accepted and the H_1 hypothesis is rejected. When the results given in Table 5 are evaluated, it is determined that the series which constitute the panel have unit roots. As a result, it was concluded that the YU variable representing youth unemployment and the LNTR and LNCOH variables referring to foreign trade were not stationary. Therefore, it is concluded that the series possess the I(1) property.

3.2.3. Testing Homogeneity of Cointegration Coefficients

Homogeneity studies are first discussed by Swamy (1970) and demonstrated as follows:

$$\widehat{S} = \sum_{i=1}^{N}(\hat{\beta}_i - \hat{\beta}_{WFE})\frac{X_i' M_\tau X_i}{\sigma_i^2}(\hat{\beta}_i - \hat{\beta}_{WFE}) \quad (7)$$

Based on the test developed by Pesaran and Yamagata (2008) and is also referred to as the delta (Δ) test, in a cointegration equation such as $Y_{it} = \alpha + \beta_{it}X_{it} + \varepsilon_{it}$, $\beta_i$refers to a slope coefficient. Hypotheses regarding this test are as follows:

H_0:$\beta_i = \beta$ slope coefficients are homogeneous.

H_1: $\beta \neq \beta_j$ slope coefficients are not homogeneous.

Table 6. Homogeneity Tests

Regression Model: $YU_{it} = \alpha_{it} + \beta_{1i}LNTR_{it} + \beta_{2i}LNCOH_{it} + \varepsilon_{it}$		
Homogeneity test:		
$\tilde{\Delta}$	6.891	0.000***
$\tilde{\Delta}_{adj}$	7.390	0.000***

Note: **** refers to statistical significance at the level of 0.01.*

Table 6 shows the results of the homogeneity test for the entirety of the panel. As seen in the table, since the probability values of the tests applied were less than 0.05, the H_0 hypothesis was rejected and it was concluded that the constant and slope coefficients were heterogeneous.

3.2.4. Panel Cointegration Test

As a result of the unit root tests applied, it is seen that all variables have the I(1) property and the slope coefficients are heterogeneous. Thus, cointegration between series was investigated using panel bootstrap cointegration test developed by Westerlund and Edgerton (2007). This test is based on the Lagrange multiplier test proposed by McCoskey and Kao (1998) and is used in the presence of cross-sectional dependence (Westerlund and Edgerton, 2007).

The following equation generates the panel cointegration equation.

$$y_{it} = \alpha_i + x_{it}'\beta_{it} + z_{it} \quad (8)$$

$$z_{it} = u_{it} + v_{it} \quad (9)$$

$$v_{it} = \sum_{j=1}^{t}\eta_{ij} \quad (10)$$

η_{ij} is an error term with a mean of 0 and variance of σ_i^2.

$\sigma_i^2 = 0$ There is cointegration between series.

$\sigma_i^2 > 0$ There is no cointegration between series.

LM statistics developed by Westerlund are displayed as follows:

$$LM_N^+ = \frac{1}{NT^2}\sum_{i=1}^{N}\sum_{t=1}^{t}\widehat{\omega}_i^{-2}S_{it}^2 \quad (11)$$

In LM statistics, $\omega_{it} = (u_{it}, \Delta x_{it}')'$ ve S_{it} is the partial sum of the $\hat{z}_{it}$ error terms in the model estimated with FMOLS (Westerlund and Edgerton, 2007).

Table 7. LM Bootstrap Cointegration Test

In level	**Statistics**	**Bootstrap p-value**	**Asymp. p-value**
LMN+	0.785	0.876	0.216

The results of the LM bootstrap panel cointegration test developed by Westerlund and Edgerton (2007)

are presented in Table 7. Since the probability result displayed in the table is greater than 0.05 in the constant model, it is suggested that there is a cointegration relationship.

3.2.5. Estimating Cointegration Coefficients

In the present study, cointegration coefficients were estimated through the CCE method. This estimation method was developed by Pesaran (2006). In addition to taking into account the cross-sectional dependence, it is an estimator which can produce results that provide consistent and asymptotic normal distribution whether the size of time or cross-section is large or small.

Table 8. Panel CCE Long Term Parameter Estimation Results

Dependent Variable (YU)	Coefficient	Standard Error	Probability
LNTR	-18.9803	8.6685	0.029**
LNCOH	-22.5520	12.4852	0.071*

In Table 8, the cointegration coefficients estimated by CCE, where the long-term coefficients are calculated for the panel in general, are given. Based on the results given in Table 8, it is seen that, for the whole of the panel, a 1% increase in foreign trade volume decreases youth unemployment by 0.19 units and a 1% increase in cohort variable decreases youth unemployment by 0.23 units. The results acquired from the study appear to be in parallel to those in literature. Matusz (1996) suggested that foreign trade would reduce unemployment by creating employment in each country that participates in the trade. Jenkins and Sen (2005) argue that the share of trade openness in total production will increase with the production of labor-intensive goods, and as a result, total employment will increase and unemployment will decrease. Felbermayr et al., (2011) found in their study of 20 OECD countries that a 1% increase in trade openness resulted in a 0.1% decrease in the rate of unemployment. Moreover, the result obtained for the cohort variable appears to parallel the study by Didin Sönmez and Özerkek (2018).

4. Discussion and Conclusion

The increase in capital movements together with the phenomenon of globalization has resulted in significant effects in the foreign trade sector. While this situation led to increases in exports and imports especially in developed countries, it led to increased foreign dependency in less developed countries. While developed countries benefited from the advantages of globalization, less developed countries were adversely affected by it. The most significant of these adverse effects is the issue of unemployment, which is a problem not only with economic but also social dimensions. In particular, youth unemployment referring to the 15-24 age range is at a higher rate compared to adult unemployment. Increasing production, ensuring growth and technological development, promoting the private sector and expanding foreign trade can be listed as ways of reducing youth unemployment, which is an important problem for developed countries as well as developing countries.

There are many studies examining the relationship between foreign trade and unemployment. However, there are a limited number of studies looking into the relationship between foreign trade and youth unemployment in developed countries. The results obtained from these studies vary based on the econometric methods and the time period considered. The present study investigated the effects of foreign trade volume on youth unemployment in G-8 countries using annual data from the period 1996-2018. Initially, a cross-sectional dependence test was applied, following which, a cross-sectional dependence was determined between series. After obtaining this result, CADF unit root test, a second generation panel unit root test, was used. As a result of the variables being stationary in the first difference, the panel bootstrap cointegration test by Westerlund and Edgerton (2007) was applied. Finally, upon determining cointegration, the long-term cointegration vector was estimated with the CCE estimator. Based on the findings, it was concluded that for the whole of the panel, a 1% increase in foreign trade volume decreased youth unemployment by 0.19 units in G-8 countries. As stated by Basile and Benedictis (2008), along with the opportunities created through foreign trade, the impact of negative shocks in economic activities is changing, albeit partially. Thus, it is believed that foreign trade will also reduce unemployment, which is one of, and perhaps the most important of such economic activities.

The main reason for the analysis of the effects of foreign trade volume on youth unemployment is the expectation that trade will reduce unemployment. The results indicate a decrease in youth unemployment following an increase in foreign trade volume. Therefore, policy makers should focus on practices especially for youth employment while planning their foreign trade policies.

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Araştırma Makalesi

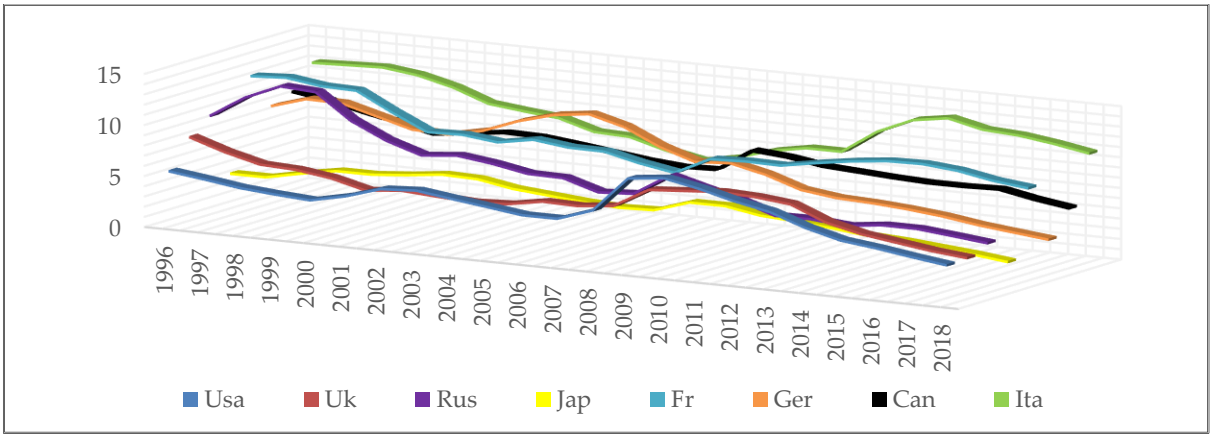
How Does Foreign Trade Volume Affect Youth Unemployment in G-8 Countries?

G-8 Ülkelerinde Dış Ticaret Hacmi Genç İşsizliği Nasıl Etkiler?

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Genişletilmiş Özet

İşgücü piyasası, iktisadi faaliyetlerin gerçekleştirilebilmesinde çok önemli bir yere sahip olmakla birlikte, bir ülkenin ekonomik performansını yansıtan genel göstergelerden biridir. İşgücü piyasasının durumu, işgücü arz ve talebi hakkında ön bilgi sunduğu için politika yapıcıları yönlendirmektedir. Politika yapıcıların önemle üzerinde durduğu işsizlik konusu sadece ekonomik değil, aynı zamanda sosyal boyutları da olan çözülmesi zor bir sorundur. 15-24 yaş aralığındaki işsizliği ifade eden genç işsizliğin ise gelişmiş ve gelişmekte olan ülkelerde yetişkin işsizliğe göre 2-3 kat daha fazla olduğu bilinmektedir. Dünya Bankası verilerine göre G-8 ülkelerinin (Almanya, Amerika Birleşik Devletleri, Fransa, İngiltere, İtalya, Japonya, Kanada, Rusya) 2018 yılı itibariyle milli gelirlerinin toplamı yaklaşık 40 trilyon dolarken, tüm dünyanın milli gelir toplamı ise yaklaşık 83 trilyon dolardır. Dünya ekonomisinin yaklaşık %47'sini meydana getiren G-8 ülkelerinin makroekonomik performanslarının, diğer ülkelerin ekonomik gelişimlerini önemli ölçüde etkileyebilme potansiyelleri açıkça görülmektedir. Dolayısıyla çalışmada bu ülke örneklemi seçilmiştir. Çalışmanın yıllarını kapsayan 1996-2018 sürecinde G-8 ülkelerinde genç işsizliğin ortalaması %16,03'tür. Bu ortalamanın en altında %7,67 ile Japonya olurken, onu %9,64 ile Almanya takip etmektedir. %30,72 ile en yüksek orana sahip İtalya'yı ise %22,35 ile Fransa izlemektedir. Gelişmiş ülkelerde bile bu oranların bu kadar yüksek oluşu, sorunun ve çözümün ne kadar önemli ve güç olduğunu göstermektedir.



Şekil 1. G-8 Ülkelerinde Genç İşsizlik Oranları (%)

Kaynak: Dünya Bankası

Yukarıdaki Şekil 1'de G-8 ülkelerinde 15-24 yaş arasında bulunan işsiz gençlerin, yine 15-24 yaş arasındaki işgücüne oranını ifade eden genç işsizlik oranları gösterilmiştir. Genellikle sonuç yılı olan 2018'deki genç işsizlik oranlarının, başlangıç yılı olan 1996'ya göre daha düşük olduğu görülmektedir.

Şekilde görüldüğü üzere 2008-2011 yılları arasında G-8 ülkelerindeki genç işsizlik oranlarında yaşanan ciddi dalgalanmanın nedeninin Mortgage Krizi'nin meydana getirdiği ekonomik durgunluk olduğu düşünülmektedir.

Dünya Ekonomik Forumu tarafından yapılan bir araştırmaya göre genç işsizlik 2014'teki en büyük tehditlerden biri olarak nitelendirilmektedir. Uzmanlar, genç işsizliğin yüksek oranlı oluşunun aşırılıkçılığa ve toplumsal huzursuzluğa yol açabileceği ve sürdürülebilir ekonomik büyüme umudunu yok edebileceği konusunda uyarmaktadırlar. Ayrıca Uluslararası Çalışma Örgütü (ILO) verilerine göre, dünya kötüleşen bir genç istihdam kriziyle karşı karşıyadır. Gençlerin işsiz olma durumu yetişkinlerden üç kat daha fazla ve dünya çapında yaklaşık 73 milyon genç iş aramaktadır. ILO, gelişmiş ülkelerde tehlikeli bir yüksek işsizlik, artan hareketsizlik ve güvencesiz çalışma ortamının gençleri yaraladığını ve kitlesel birtakım gelişmelerin olabileceğini belirtmektedir (Rakauskiene ve Ranceva, 2014, s. 166; Yeung ve Yang, 2020).

Genç işsizliğin birçok nedeni bulunmaktadır. Bunlar temelde işgücü piyasasının genel durumu, eğitim ve öğretim sistemlerinin yapısı ve işgücü fırsatlarının dağılımındaki toplumsal tabakalaşmadır (Dietrich, 2012). Konuyu mikro ve makro düzeyde ele aldığımızda genç işsizliğe sebep olabilecek mikro nedenler olarak; iş deneyimine sahip olmayan ve ilk defa istihdam piyasasında yer edinmek isteyen gençler, teoride eğitimli fakat pratiği olmayan işsizler ve son olarak gençlerin çalışma eğilimleri ve niteliklerindeki uyumsuzluklar sayılabilir. Makro düzeyde ele alındığında ise; belirli aralıklarla yaşanan ekonomik krizler ve durgunluk, aktif işgücü, ücret, eğitim ve öğretim politikalarının yeterli seviyede olmaması gibi nedenler sıralanabilir (Murat ve Şahin, 2011, s. 21). Bunların yanı sıra gençlerin istihdamını etkileyen etkenler arasında coğrafik konum, talep yetersizliği, yüksek enflasyon, gençlerin toplam nüfustaki payı, cinsiyet, medeni durum ve göç gibi demografik faktörler de sayılabilir (Ahmad ve Azim, 2010; Choudhry ve ark., 2012; Msigwa ve Kipesha, 2013; Fidan ve Şahin, 2013; Zulfiqar ve Akhtar, 2016). Birçok nedeni bulunan genç işsizliğin azaltılmasında ise genellikle hükümetler tarafından öne çıkarılan politikalar arasında üretimin artırılması, büyümenin ve teknolojik gelişmenin sağlanması, özel sektörün teşvik edilmesi ve dış ticaretin genişletilmesi yer almaktadır.

Dış ticaretin ekonomik aktiviteler üzerindeki olumlu ve olumsuz sonuçlarının tespit edildiği birçok çalışma mevcut olmakla birlikte, dış ticaret üzerindeki engellerin azaltılmasının özellikle ihraç mallarının üretildiği sektörlerde ekonomik kaynakların yeniden tahsisinin sağlanarak, ilgili sektörlerde verimlilik ve genişlemeye neden olabildiği, ağırlıklı bir görüş olarak karşımıza çıkmaktadır (Agénor ve Aizenman, 1996, s. 265).

Küreselleşmeyle birlikte dış ticaretin artması ülkelerin ekonomik büyüme seviyelerini etkilerken, dış ticarette mal ve hizmet ticaretinin yanında yeni teknoloji transferlerinin de yapılması, özellikle gençler için yeni alanlar ve iş imkanları fırsatı sunmaktadır.

İktisat yazınında dış ticaretin işsizlik/genç işsizlik üzerindeki etkilerini tespit etmeyi amaçlayan çalışmalar incelendiğinde, bu etkinin net bir şekilde ortaya koyulamadığı görülmektedir. Bu çalışmalar, dış ticaretin işsizlik üzerinde negatif, pozitif ve nötr etki yaptığı yönünde üç farklı gruba ayrılmaktadır. Ayrıca ilgili çalışmaların genç işsizlik özelinde oldukça kısıtlı sayıda oldukları ve bu konuda salt olarak G-8 ülkelerini inceleyen bir çalışma olmadığı tarafımızca belirlenmiştir. Bu yönüyle çalışmamızın literatürde tespit edilen bir eksikliği görece gidermeye çalıştığı düşünülmektedir.

Bu çalışmada G-8 ülkeleri için dış ticaret hacminin genç işsizlik üzerindeki etkisinin incelenmesi üzerine 1996-2018 dönemini kapsayan yıllık veriler kullanılmıştır. Çalışmada bağımlı değişken genç işsizlik (YU), bağımsız değişkenler ise dış ticaret hacmi (LNTR) ve kohort değişkeni (LNCOH) olarak kullanılmıştır. Didin Sönmez ve Özerkek (2018) çalışmasını takiben analizde kohort büyüklüğü genç işgücünün (15-24 yaş arası) toplam işgücü içindeki payı olarak tanımlanmıştır. Çalışmada kullanılan değişkenlerden kohort ve dış ticaret hacmi değişkenlerinin logaritmaları alınarak analize dahil edilmiştir. Değişkenlerin tamamı Dünya Bankası'ndan elde edilmiştir.

Tablo 4. Yatay Kesit Bağımlılığı Testi Sonuçları

Değişkenler	$CDLM_1$	$CDLM_2$	CDLM	LM_{adj}
YU	27.736 (0.478)	-0.035 (0.486)	-2.757(0.003)***	12.811 (0.000***)
LNTR	69.991 (0.000***)	5.611 (0.000***)	-2.257 (0.012)**	1.880 (0.003***)
LNCOH	54.766 (0.002***)	3.577 (0.000***)	-1.817 (0.035)**	3.216 (0.001***)

Tablo 4'te yer alan yatay kesit bağımlılık testi sonuçları incelendiğinde, her bir değişken için CDLM ve LM_{adj} test istatistiklerine ait olasılık değerlerinin 0,05'ten küçük olmasına dayanarak, yatay kesit bağımlılık olmadığını ifade eden sıfır hipotezi reddedilmektedir. Bir başka ifadeyle, seriler arasında yatay kesit bağımlılığı söz konusudur.

CADF Birim Kök Testi sonuçlara göre, YU, LNTR ve LNCOH değişkenleri için ayrı ayrı hesaplanan CADF test istatistik değerlerinin Pesaran (2007) makalesinde yer alan kritik değer tablosundaki %1'de -4.97 değerinden ve CIPS değerlerinin de tablo değeri %1'de -3.15 olan CIPS değerinden küçük olduğu görülmektedir. Bu durumda H0 hipotezi kabul edilmekte ve H1 hipotezi reddedilmektedir. Bir diğer ifadeyle paneli oluşturan serilerin birim kök içerdiği tespit edilmiştir. Sonuç olarak genç işsizliği ifade eden YU, dış ticaret hacmini ifade eden LNTR ve LNCOH değişkenlerinin durağan olmadığına karar verilmiştir. Dolayısıyla serilerin I(1) özelliği gösterdiği sonucuna varılmıştır.

Tablo 6. Homojenlik Testleri

Regresyon Modeli : $YU_{it} = \alpha_{it} + \beta_{1i}LNTR_{it} + \beta_{2i}LNCOH_{it} + \varepsilon_{it}$		
Homojenlik Testi:		
$\tilde{\Delta}$	6.891	0.000***
$\tilde{\Delta}_{adj}$	7.390	0.000***

Tablo 6'da panelin geneli için homojenlik testi sonuçları gösterilmektedir. Tabloda görüldüğü gibi uygulanan testlerin olasılık değerleri 0,05'ten küçük olduğu için H_0 hipotezi reddedilerek sabit ve eğim katsayılarının heterojen olduğu sonucu ortaya çıkmıştır.

Tablo 7. LM Bootstrap Eşbütünleşme Testi

Seviyede	İstatistik	Bootstrap p-değeri	Asymp.p-değeri
LMN+	0.785	0.876	0.216

Westerlund ve Edgerton (2007) tarafından geliştirilen LM bootstrap panel eşbütünleşme testi sonuçları Tablo 7'de sunulmaktadır. Tablodan elde edilen olasılık sonucu sabitli modelde 0.05'ten büyük olduğundan dolayı eşbütünleşme ilişkisinin olduğu kabul edilmektedir.

Tablo 8. CCE Tahmincisi Test Sonuçları

Bağımlı Değişken (YU)	Katsayı	Standart Hata	Olasılık Değeri
LNTR	-18.9803	8.6685	0.029**
LNCOH	-22.5520	12.4852	0.071*

Tablo 8'den elde edilen sonuçlara göre panelin geneli için dış ticaret hacmindeki %1'lik bir artışın genç işsizliği 0.19 birim, kohort değişkenindeki %1'lik bir artışın ise genç işsizliği 0.23 birim azalttığı görülmektedir. Çalışmadan elde edilen sonuçlar literatürdeki çalışmaların sonuçlarıyla paralellik göstermektedir. Matusz (1996), dış ticaretin, ticarete dahil olan her ülkede istihdam meydana getirerek işsizliği azaltacağını belirtmiştir. Jenkins ve Sen (2005), ticari dış açıklığın emek yoğun malların üretimiyle toplam üretim içindeki payının artacağını ve bunun sonucunda toplam istihdamın artıp işsizliğin azalacağını savunmaktadır. Felbermayr ve ark., (2011), çalışmalarında 20 OECD ülkesinde ticari açıklıktaki %1'lik bir artışın işsizlik oranında %0.1'lik bir azalışa neden olacağını bulmuşlardır. Kohort değişkeni için ortaya çıkan sonuç ise Didin Sönmez ve Özerkek (2018) çalışmasıyla paralellik göstermektedir.

Bu çalışmada 1996-2018 dönemi yıllık veriler kullanılarak G-8 ülkelerinde dış ticaret hacminin genç işsizlik üzerindeki etkileri incelenmiştir. Elde edilen bulgulara göre, panelin geneli için G-8 ülkelerinde dış ticaret hacmindeki %1'lik bir artışın genç işsizliği 0.19 birim kadar azalttığı sonucuna ulaşılmıştır. Basile ve Benedictis (2008) makalesinde belirtildiği gibi dış ticaretin ortaya çıkardığı fırsatlarla ekonomik aktivitelerde meydana gelen olumsuz şokların etkisi kısmen de olsa değişmektedir. Bu ekonomik aktivitelerden birisi ve görece olarak en önemlisi olan işsizlik sorununu azaltacağı düşünülmektedir. Analizde dış ticaret hacminin özellikle genç işsizlik üzerindeki etkilerinin incelenmesinin temel nedeni ticaretin işsizliği azaltacağı yönündeki beklentidir. Ortaya çıkan sonuçlar göstermektedir ki dış ticaret hacminin artmasıyla birlikte genç işsizlikte bir azalma meydana gelmektedir. Dolayısıyla politika yapıcılar dış ticaret politikalarını planlarken, özellikle gençlerin istihdamına yönelik uygulamalara ağırlık vermelidirler.