The Impact of Economic, Social And Political Globalization On Economic Growth: Evidence From BRICS-T Countries

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Abstract

The main purpose of this study is to analyze the long-term relationship between economic growth and economic, social and political globalization in BRICS-T countries by using panel data analysis methods for the period covering the period 1990-2014. According to the empirical results of the model based on the Cobb-Douglas production function, it is seen that capital accumulation and economic, social and political globalization have a positive effect on economic growth. Dumitrescu-Hurlin Panel Granger Causality test results show that there is a bidirectional causality relationship between capital accumulation and political globalization and economic growth. In addition, a one-way causality relationship from economic and social globalization to economic growth has been determined. Accordingly, it is considered that the BRICS-T countries' increasing their economic, social and political globalization levels may have a positive effect on their economic growth performances.

Keywords:
Economic Globalization,
Social and Political Globalization,
Economic Growth
Küreselleşme ülkeler ve topluluklar arasındaki ilişkiye yani yeniden şekillendiren dinamik bir süreç olarak değerlendirilmektedir. Küreselleşmenin ekonomik, sosyal ve politik açıdan oldukça etkisi olup, ekonomik büyüme ve gelişim üzerine etkisi güç collectorsinin aktarımıyla ilgili bir önemli rol oynamaktadır. Ekonomik küreselleşmenin içeriğindeki allık, teknolojik ve sosyal açıdan çok değişiklikler meydana gelmektedir.

Ikinci olarak olası uluslararası ticaret anlamlı derecede artmıştır. Bu artış, dünya ekonomisinde büyük bir ekonomik ve sosyal değişim olarak kabul edilmektedir. Bu değişim, üretimin küreselleşmesi olarak kabul edilmektedir. Üçüncü olarak ise finansal kaynaklar ve sermaye hareketleri küreselleşmektedir.

Küreselleşmenin konusunda uluslararası birçok ülke topluluğu ekonomik büyüme üzerinde etkisi olsa da, ekonomik büyüme ve çözümlü ekonomik büyüme yoluyla daha avantajlı olduğu kabul edilmektedir. KOF küreselleşme endeksi, BRICS ülkeleri ve Türkiye'nin ekonomik büyüme üzerindeki etkisini değerlendirmektedir.

Çalışma ve sonuçlar arasında BRICS ülkelerinin ekonomik büyüme üzerindeki etkisi, piyasagpsürlüğünün, finansal kaynakların ve sermaye hareketlerinin etkisi olarak değerlendirilmektedir. Kurumların ve toplulukların ekonomik büyüme üzerindeki etkisi, piyasagpsürlüğünün, finansal kaynakların ve sermaye hareketlerinin etkisi olarak değerlendirilmektedir.

Çalışma, BRICS ülkelerinin ekonomik büyüme üzerindeki etkisi ve piyasagpsürlüğünün, finansal kaynakların ve sermaye hareketlerinin etkisi olarak değerlendirilmektedir. Bu etkilerin, piyasagpsürlüğünün, finansal kaynakların ve sermaye hareketlerinin etkisi olarak değerlendirilmektedir. Bu etkilerin, piyasagpsürlüğünün, finansal kaynakların ve sermaye hareketlerinin etkisi olarak değerlendirilmektedir. Bu etkilerin, piyasagpsürlüğünün, finansal kaynakların ve sermaye hareketlerinin etkisi olarak değerlendirilmektedir.
Introduction

Globalization can be explained by two general definitions within the context of processes and structures that indicate relationships in a global sense. The first of these definitions is process globalization and it is explained that as a result of new developments in the fields of communication, transportation, technology and science, international, economic, commercial, financial and accelerating social relations it spread all over the world and thus the whole humanity is aware of each other faster and more affected by each other. The second is structural globalization, and it is defined as the global convergence that occurs as a result of the impact of these processes on the borders, politics, socio-cultural structures, legal processes and economic conditions of nation-states (Gözen, 2004, p. 14). In the process of global convergence, it is seen that globalization takes place in three dimensions and it is accepted that the systems formed on these dimensions together form the global system. Although it is not possible to distinguish these dimensions from each other with definite lines, they are evaluated separately in the general framework.

The first of the globalization dimensions constituting the global system is economic globalization (hereafter EG). The sub-factors that enable EG are realized in three different ways. The first sub-factor that provides EG is the globalization of trade. The globalization of trade, is to ensure that international trade is conducted freely within the framework of certain rules by abolishing protective measures such as tariffs, quotas, customs duties and import bans. With the globalization of production, which is the second sub-factor, mobility of production sub-factors is ensured and countries aim to produce more, more-cheaper and more profitable production. Multinational companies have been the ones that have led the globalization of production worldwide. Although multinational companies still have an important place in the world economy, they act as global companies by organizing their production, marketing and management in different countries. The third sub-factor that enables EG is the transfer of portfolio investments to the countries in need by the financially rich countries in the form of foreign direct investments. The applications made within the scope of these three sub-factors enable EG by providing trade, production and financial resources to move globally (Doğan, 2017, p. 22).

The second sub-factor that constitutes globalization is social globalization (hereafter SG) based on socio-cultural interaction of societies with each other. SG aims to unite societies around a common global culture without leaving their own cultures. In this sense, the interaction between societies has increased with the increasing communication opportunities as a result of technological developments. In addition, the widespread use of the Internet and international media elements has brought cultural rapprochement to higher levels. In this direction, a global social structure has been established in which countries have eliminated their differences in many subjects such as common language, common culture and common consumption habits (Dreher, 2006, p. 1093).

The third of the sub-elements of globalization is political globalization (hereafter PG) where political unity is aimed. PG is the practice of increasing the relations of countries with each other and acting in the framework of transnational organizations, establishments and unity in the international arena. With PG, it is aimed for countries to act together politically and benefit from each other mutually (Tekbaş, 2019, p. 136).

The effect of globalization on the economic growth of countries, in which we evaluate different dimensions, has been the subject of many studies in the economic literature after the 90s. Although it is seen that studies generally focus on developed countries that adapt to globalization more quickly, it is seen that the effect of globalization on developing country economies has been investigated since the 2000s. BRICS-T countries cover 65% of the world
population, which is 7.6 billion people (Word Bank). In addition, the 20% share of BRICS-T countries in world trade, which was approximately $ 19 trillion in 2019, shows that these countries are important countries for the world economy (WTO). Due to significant population owned in China and India have the highest production facility, South Africa, Russia and Brazil's plenty to have natural resources, resources owned by Russia and Brazil, engineering and balancing with advanced human resources from scientific maintenance, Turkey’s geopolitical position and logistical facilities show the development potential of these countries (Güney, 2017) It is evaluated that BRICS-T countries, which are more globalized compared to developed countries, can increase their production levels by using their production factors effectively and efficiently, and they can be successful globally thanks to globalization. In this direction, it is thought that examining the effect of economic, social and political globalization levels of BRICS-T countries, which have been developing economically since the 2000s, on economic growth can be a guide for countries to achieve their economic growth targets.

It is seen that EG, SG and PG levels of BRICS-T countries increased between 1970 and 2014 and economic growth increased significantly. However, there are different factors that affect the economic growth provided by countries along with globalization (Güney, 2017, p. 26). In this direction, the effect of economic, SG and PG on the economic growth of the countries will be examined in the period between 1990 and 2014, when common data of BRICS-T countries are available. The first part of the study, which is an introduction, will provide general information on EG, SG and PG. In the second part of the study, literature section will give brief information about the studies and results of globalization and economic growth. In the third section, data, model and methodology will be explained. In the fourth section, the stationarity of the series will be examined using panel unit root tests. After determining the stationarity of the series, the cointegration relationship between the variables will be investigated by Pedroni (1999-2004) and Kao (1999) cointegration tests. The direction and coefficient of the cointegration relationship between the variables will be analyzed with the FMOLS (2000) method. In addition, the causality relationship between the variables will be examined by panel causality test. In the last section, the results obtained will be evaluated and suggestions will be made about the policies that should be implemented.

**Literature review**

When the existence literature is reviewed, it is observed that there are many studies on the subject of globalization and economic growth. The variables used as indicators of globalization vary in the studies. In the studies, it is seen that the countries that are included in the globalization process are predominantly late, and the study periods cover the period between 1960 and 2016. In Table 1, brief information is given about the studies using trade openness, openness, financial development, import, export, foreign direct investment and economic freedom as indicators of globalization.

In Table 1, Yaprakli (2007), Kiran and Gumus (2011), Manva and Wijeweera (2016) and Kartal and Acaroğlu (2017) used trade openness and financial development as an indicator of globalization and they concluded that there is a positive connection between trade openness and economic activities. Ali and Imai (2015) and Gövdere and Can (2016) used the openness variable and found that openness increases economic growth. Kiran and Gümüş (2011) and Ali and Imai (2015) conducted studies using the financial development variable and concluded that financial development positively affected economic growth. In the study conducted by Afzal (2007) and Gövdere and Can (2016), it was observed that there was no significant relationship between financial development and economic growth. Neto and Viega (2013) concluded that foreign direct investment affected economic growth positively. In the study of Güney (2017), which used the variable of economic freedom as an indicator of globalization, it was found that economic freedom increased economic growth.
| Study                        | Term and Sample       | Method                        | Result |
|------------------------------|-----------------------|-------------------------------|--------|
| Afzal (2007)                 | 1960-2006 Pakistan    | VECM                          | Ø      |
| Yapraklı (2007)             | 1990-2006 Turkey      | Cointegration and Granger Causality. Test | +      |
| Kiran and Güriş (2011)      | 1992-2006 Turkey      | ARDL and Toda-Yamamoto Causality. Test | +      |
| Türedi and Berber (2010)    | 1970-2007 Turkey      | Cointegration and VAR Causality. Analysis | ↔ ↔ |
| Neto and Veiga (2013)       | 1970-2009 139 Countries | EKK-GMM                      | +      |
| Ali and Imai (2015)         | 1970-2009 41 Countries | GMM                          | +      |
| Topallı (2015)              | 1982-201 BRICS-Turkey | CADF Test, Emirmahmutoğlu and Köse Causality Test | ↔ ↔ |
| Ümit (2016)                 | 1989-2014 Turkey      | ARDL, Toda-Yamamoto Causality. Test | -      |
| Manwa and Wijeweera (2016)  | 1980-2011 Botswana, Lesotho, Namibia, South Africa and Swaziland | ARDL | +      |
| Gövdere and Can (2016)      | 1970-2011 Turkey      | ARDL                          | +      |
| Örgün and Pala (2017)       | 1996-2013 28 EU Countries | Panel VECM and Granger Causality. Test | ↔ ↔ |
| Alvarado, Inıguez and Ponce (2017) | 1980-2015 19 Latin American Countries | Panel Random Effects | +      |
| Kartal and Acaroğlu (2017)  | 1961-2013 Turkey      | EKK and Granger Causality. Test | +      |
| Güney (2017)                | 1990-2014 Turkey-BRICS | GEKK                          |       |
| Özcan et al. (2018)         | 1992-2015 18 Emerging Economy | Emirmahmutoğlu-Köse-Könya Causality test | →      |
| Eren and Ergin-Ünal (2019)  | 1960-2016 Turkey      | Toda-Yamamoto Causality Test  | ↔      |

TO : Trade Openness, OP: Openness, FD: Financial Development, IM: Import, EX: Export, FDI: Foreign Direct Investment, EF: Economic freedom,(Ø : Insignificant effect, +: Positive effect, -: Negative effect, ↔ : Two-Way Relationship,→: One-way relationship).

The KOF globalization index, which was first used by Axel Dreher (2006), evaluates the globalization level of countries with a holistic approach and evaluates globalization...
economically, socially and politically. Continuous updating of the index and its economic, social and political inclusion are seen as useful aspects for evaluating globalization. Starting from 2006, this index has been used as an indicator of globalization in many studies. The studies using the KOF index evaluate the globalization-economic growth nexus, as well as the globalization-many economic factors nexus. In addition, the effects of EG, SG and PG, the sub-dimensions of globalization, on economic growth can be examined separately. A summary of the studies examining the connection between the sub-dimensions of globalization and economic growth is presented in Table 2.

**Table 2: Globalization and Economic Growth Literature (KOF Index)**

| Study                  | Term and Sample                                      | Method            | Result |
|------------------------|------------------------------------------------------|-------------------|--------|
| Dreher (2006)          | 1970-200, 123 Countries                              | EKK-GMM           | +      |
| Chang and Lee (2010)   | 1970-2006, 23 OECD Countries                         | FMOLS, VECM       | ↔ ↔ ↔ |
| Chang and Lee (2011)   | 1990-2016, 10 Former Communist countries and 18 OECD Countries | FMOLS, DOLS       | +      |
| Sakyi (2011)           | 1980-2005, 31 African Countries                      | FMOLS, DOLS       | +      |
| Rao and Vadlamanti (2011) | 1970-2005, 21 Low Income African Countries            | EKK-GMM           | +      |
| Villaverde and Maza (2011) | 1970-2005, 101 Countries                          | GMM – EKK         | + + + + |
| Mutascu and Anne-Marie (2011) | 1972-2006, Romania                               | VAR analysis      | +      |
| Osterloh (2012)        | 197-2004, 23 OECD Countries                          | EKK-GMM           | Ø +    |
| Chang et al. (2013)    | 1990-2009, 101 Countries                             | EKK-GMM           | + + + + |
| Kılıç (2015)           | 1980-2011, 74 Developing Countries                   | EKK- Granger      | + - +  |
| Gözgör and Can (2016)  | 1970 – 2010, 139 Countries                          | Granger           | ↔      |
| Doğan and Can (2016)   | 1970-2012, South Korea                               | Causality,Test    | + + +  |
| Olimpia and Stela (2017) | 1990-2013, Romania                                  | EKK – Granger     | + - +  |
| Kılıçaslan and Durnur (2018) | 1980-2015, Turkey                               | Causality, Test   | + + -  |
| Midiyanti and Ming-Hung (2019) | 1980-2014, Indonesia                             | VECM              | +      |

G: General Globalization, EG: Economic Globalization, SG: Social Globalization, PG: Political Globalization, (Ø: Insignificant effect, +: Positive Effect, -: Negative Effect, ↔: Two-Way Relationship)

In the studies using the KOF index, although different countries and groups of countries use different methods, Dreher (2006), Chang and Lee (2011), Sakyi (2011), Rao and Vadlamanti (2011), Mutascu and Anne-Marie (2011), Midiyanti and Ming-Hung (2019) concluded that general globalization rises economic growth. Villarre and Maza (2011), Chang
et al. (2013) found that EG, SG and PG positively affected economic growth. Kılıç (2015), Olimpia and Stela (2017) concluded that SG and Kılıçarslan and Dumrul (2018) concluded that PG negatively affected economic growth. In their study, Chang and Lee (2010) concluded that there is a bidirectional causal connection between EG, SG and PG and economic growth.

In most of the studies in the literature, trade openness, external openness, economic freedom, export and import variables have been used as globalization criteria. It is considered that the variables used do not measure the level of globalization comprehensively and focus on the economic dimension of globalization. The study differs from other studies in terms of using the KOF index, which comprehensively addresses the determination of the level of globalization with its economic, social and political dimensions, examines the BRICS-T countries that have an important development potential in the world economy, and evaluates the relationship between variables as a panel, as well as examining the relations between variables on a country basis.

Model

In this study, it is aimed to examine the effects of EG, SG and PG on real GDP of BRICS-T countries in the period 1990-2014. In this study, empirical models formed when transforming linear function formed on the basis of Cobb-Douglas production function are formed as follows:

Model 1:  
$$lnGDP_{it} = \delta_0 + \delta_1 lnC_{it} + \delta_2 lnEG_{it} + u_{it}$$  
(1)

Model 2:  
$$lnGDP_{it} = \gamma_0 + \gamma_1 lnC_{it} + \gamma_2 lnSG_{it} + u_{it}$$  
(2)

Model 3:  
$$lnGDP_{it} = \beta_0 + \beta_1 lnC_{it} + \beta_2 lnPG_{it} + u_{it}$$  
(3)

The labor variable (L) in the Cobb-Douglas production function was excluded from the models due to the use of per-person values. (GDP) per capita national income, (C) is per capita capital accumulation, (EG) is economic globalization, (SG) is social globalization, (PG) is political globalization and $u_{it}$ is the term error.

Data and Methodology

Per capita income (GDP) is calculated in 2010 via the fixed US dollar. Per capita National Income data are obtained from World Bank WDI database. Capital Accumulation Per Capita (C) is the gross capital accumulation values calculated in 2010 via fixed prices. Data were obtained from World Bank WDI database. The EG KOF index consists of two subheadings: current flows (Foreign trade, Foreign Direct Investments, Portfolio Investments, Income Payments to Foreigners) and restrictions (Hidden Import Barriers, Average Customs Tariffs, International Trade Taxes, Capital Account Restrictions). The SG index consists of a combination of three subsections: (SG) Personal Communication Data (Telephone traffic, Transfers, International Tourism, Foreign Population, International Letter), Information Flow (Internet Usage, Television, Newspaper Sales), Cultural Proximity Data (Number of McDonald Restaurants, Number of Ikea Stores, Book Sales). The PG index consists of the number of embassies in the country, membership in international organizations, participation in the UN Security Council and international agreements. Index values are evaluated over values between 0 and 100.

In this study, firstly the panel unit root tests are used to determine the stationarity levels of the variables. Secondly, panel cointegration tests are utilized to investigate the long-run relationship between the variables. Thirdly, panel coefficient estimator test is used to determine the direction and coefficient of the cointegration relationship of the variables. Lastly, The causality correlation between the variables is investigated by Dumitrescu-Hurlin (2012) causality test.
Empirical Results

In this part of the study, the findings of the models created to analyze the impact of EG, SG and PG on economic growth in BRICS-T countries are given.

In panel data, it is important that the series be stationary as in the time series. Since the non-stationary series revealed false regression problems in the analyzes, first of all, it should be tested whether the series are stationary or not in order to obtain reliable results in panel data analysis. Levin, Lin and Chu (2002), Im, Pesaran and Shin (2003) and Breitung (2000) tests were used to test whether the variables were stationary or not. Unit root tests were applied for both level and first differences. The maximum latency lengths that resolve the autocorrelation problem between errors were determined by the Schwarz information criterion. In addition, the Newey-West bandwidth selection and the Bartlett Kernel method were used to calculate the LLC test.

Table 3: Panel Unit Root Test Results

| Level  | LLC     | Probability | IPS     | Probability | Breitung | Probability |
|--------|---------|-------------|---------|-------------|----------|-------------|
| lnGDP  | -2.113** | 0.017       | -2.314*** | 0.010       | 1.298    | 0.902       |
| lnC    | -1.861** | 0.031       | -1.804** | 0.03        | -0.166   | 0.433       |
| lnEG   | -2.564*** | 0.005       | -1.341** | 0.089       | 0.201    | 0.579       |
| lnSG   | -6.470*** | 0.000       | -2.026** | 0.021       | 0.789    | 0.785       |
| lnPG   | -3.941*** | 0.000       | -3.656*** | 0.001       | 1.315    | 0.905       |

| Difference Values  | LLC | Probability | IPS | Probability | Breitung | Probability |
|--------------------|-----|-------------|-----|-------------|----------|-------------|
| ∆lnGDP            | -4.860*** | 0.000       | -3.953*** | 0.000       | -3.003*** | 0.001       |
| ∆lnC             | -6.653*** | 0.000       | -4.813*** | 0.000       | -3.806*** | 0.000       |
| lnEG             | -6.151*** | 0.000       | -6.799*** | 0.000       | -4.970*** | 0.000       |
| lnSG             | -7.711*** | 0.000       | -5.567*** | 0.000       | -6.979*** | 0.000       |
| lnPG             | -9.229*** | 0.000       | -9.987*** | 0.000       | -2.926*** | 0.001       |

Note: ∆: It shows the first difference of the series. (***): Significant at 1% level, (**)5% significant, (*)10% significant.

Table 3 shows the results of the unit root test of the level and first differences of the variables. Of the three unit root tests used to determine the stationarity of the variables, LLC and IPS unit root tests showed that the variables were stationary at the level. However, in the Breitung unit root test, the variables were unit rooted. It is aimed to determine the same level of stationarity in all unit root tests used to continue the analysis. Therefore, it is seen that the variables whose differences are taken are stationary at 1% significance level according to the panel unit root tests.

When panel LM Unit Root Test with Structural Breaks results are examined in Table 4, the H0 hypothesis, which states that the series is unit rooted, is accepted for the level values of the variables. Differences of the variables were taken due to lack of series. As a result of the
difference procedure, the hypothesis H0, which states that the series is unit rooted, was rejected and the series were found to be stationary.

**Table 4:** The Results of Panel LM Unit Root Test with Structural Breaks

| Countries  | lnGDP | lnC  | lnEG | lnSG | lnPG |
|------------|-------|------|------|------|------|
| Brazil     | 2002  | 2002 | 2000 | 1997 | 1993 |
| Russia     | 1997  | 1999 | 2004 | 1999 | 1995 |
| India      | 2004  | 2003 | 1994 | 1995 | 1993 |
| China      | 2006  | 1993 | 2007 | 1997 | 2006 |
| South Africa | 2008 | 2007 | 1998 | 1994 | 1998 |
| Turkey     | 1999  | 1999 | 1995 | 2004 | 1995 |

**Level**

| Variables | LM ist | Probability | Variables | LM ist | Probability |
|-----------|--------|-------------|-----------|--------|-------------|
| lnGDP     | 0.438  | 0.669       | ΔlnGDP   | -5.313*** | 0.000       |
| lnC       | 0.621  | 0.733       | ΔlnC     | -7.551*** | 0.000       |
| lnEG      | -1.032 | 0.151       | ΔlnEG    | -5.501*** | 0.000       |
| lnSG      | 2.669  | 0.996       | ΔlnSG    | -3.673*** | 0.000       |
| lnPG      | -1.468 | 0.071       | ΔlnPG    | -8.461*** | 0.000       |

**Difference Values**

| Variables | LM ist | Probability | Variables | LM ist | Probability |
|-----------|--------|-------------|-----------|--------|-------------|
| lnGDP     | 0.438  | 0.669       | ΔlnGDP   | -5.313*** | 0.000       |
| lnC       | 0.621  | 0.733       | ΔlnC     | -7.551*** | 0.000       |
| lnEG      | -1.032 | 0.151       | ΔlnEG    | -5.501*** | 0.000       |
| lnSG      | 2.669  | 0.996       | ΔlnSG    | -3.673*** | 0.000       |
| lnPG      | -1.468 | 0.071       | ΔlnPG    | -8.461*** | 0.000       |

**Note:** Δ : It shows the first difference of the series. ***Significant at 1% level, **5% significant, *10% significant.

When the breakdowns in variables are evaluated separately for countries, it is considered that Brazil’s financial responsibility arrangements made in 2000 may cause breakdowns in national income per capita and capital accumulation per capita. It is thought that the breakdown in EG in 2000 may be caused by the Asian crisis that occurred in 1997, the breaks in SG in 1997 and in PG in 1993 may be caused by economic and political instability for the country that started in 1991.

It is considered that the breaks in Russia’s PG variable in 1995 and per capita national income variable in 1997 could be due to the failure to achieve the desired success in the process of transition from the socialist system to the liberal system and the breaks in the capital accumulation per capita and the breaks in the SG variables in 1999 may be the reflection of the Asian Crisis in 1997. When the years of India’s breakdown are analyzed, it is seen that there was a break in SG variable in 1995, in EG variable in 1994 and in PG in 1993. These breaks are thought to be caused by the stability and structural policies implemented after the economic crisis in 1991. It is considered that the breaks in the national income variable per capita in 2004 and the capital accumulation per capita in 2003 may be due to the increase in foreign direct investments as a result of the regulations made after 1991 together with the import and export legislation applied since 2002. When China’s Panel LM Unit Root Test with Structural Breaks results are analyzed, it is thought that the SG variable was broken in 1997 and the reason was caused by the cooperation with Russia in various fields (education, health). It is considered that the break in the PG variable in 2006 is caused by reduced pressure exerted by the USA on the country and USA’s bilateral agreements with non-member countries such as EU countries. It is thought that the economic crisis in 2007 caused the break in EG in the same year. It is thought that the break in the national income variable per capita in 2006 was caused by the growth strategy implemented after 2000, and the break in the capital accumulation variable per capita in 1993 could be caused by the increase in savings in the country since 1991. The break in the SG variable in South Africa in 1994 is thought to be due to the abandonment of democratic elections and racism policies in the country. On the other hand, the breakdown in political and EG in 1998 is attributed to the policies implemented by Mandela in the second period, and the breaks in national income and capital accumulation per capita may be caused by the global crisis of 2007. When Turkey examined along with the BRICS countries, it is thought that events such as the membership of the Organization of Black Sea Economic Cooperation in 1992, the
initiation of customs union negotiations in 1993 and the economic crisis in 1994 were effective in the breakdowns in EG and PG in 1995. In addition, the Asian crisis occurred in 1997 is thought to be the source of the breakage occurred in 1999 in national income per capita in Turkey and in capital accumulation variable.

**Table 5: Panel Cointegration Test Results**

| Pedroni Cointegration Test | Model I | Model II | Model III |
|----------------------------|---------|----------|-----------|
| Panel v-statistics         | 1.804** | 2.036**  | 1.341*    |
| Panel rho-statistics       | -0.760  | -0.771   | -0.538    |
| Panel PP-statistics        | -1.418* | -1.203   | -0.993    |
| Panel ADF statistics       | -2.106**| -2.187** | -1.664**  |
| Group rho-statistic        | 0.188   | 0.647    | 0.825     |
| Group PP statistic         | -0.987**| -0.092   | 0.018     |
| Group ADF statistics       | -3.434***| -1.595*  | -0.990    |

| Kao Cointegration Test     | Model I | Model II | Model III |
|----------------------------|---------|----------|-----------|
| Kao ADF                    | -3.905*** | -3.804***| -3.588*** |

Note: *** 1%, ** 5%, * It shows a significant level of 10%.

Panel unit roots were applied to the series and the stability of the series was tested and it was observed that the series were unit rooted at the first level and they were stationary. After finding that the series were stable, the long-term cointegration relationship of the series was investigated with the panel cointegration tests. Table 5 shows the results of panel cointegration tests. Although some of the seven statistics found to be significant according to the Pedroni cointegration test showed that there was a cointegration relationship between the series, Kao cointegration test was used as an alternative to support the results. The results of the Kao cointegration test showed that there was a 1% significance level of cointegration between the variables in the long run.

After determining the long-run cointegration relationship between the variables, the FMOLS (Edited Least Squares) method developed by Pedroni was used to determine the direction and degree of the long-term relationship. FMOLS estimation results for BRICS-T countries are shown in Table 6.

**Table 6: FMOLS Estimation Results for BRICS-T Countries**

| Variables | Model I                          | Model II                         | Model III                        |
|-----------|----------------------------------|----------------------------------|----------------------------------|
| lnC       | 0.716*** [0.000]                 | 0.676*** [0.000]                 | 0.726*** [0.000]                 |
| lnEG      | 0.139*** [0.000]                 | -                                | -                                |
| lnSG      | -                                | 0.151*** [0.000]                 | -                                |
| lnPG      | -                                | -                                | 0.068*** [0.018]                 |

Note: *** 1%, ** 5%, * It shows a significant level of 10%. Values in parentheses represent probability values.

According to panel FMOLS estimation results, it is observed that lnEG for Model I, lnSG for Model II and lnPG for Model III increase economic growth at a level of 1% significance. Although different dimensions of globalization rise economic growth, it is seen
that SG has the highest effect and PG has the lowest effect. In addition, although the coefficients are different, per capita capital accumulation (lnC) enhances economic activities in all models.

The connection between independent variables and dependent variable is calculated by FMOLS coefficient estimation method in terms of the countries.

**Table 7: BRICS-T Countries FMOLS Estimated Results**

| Country  | Model I          | Model II         | Model III         |
|----------|------------------|------------------|-------------------|
| Brazil   | lnC: 0.647*** [0.000] | lnC: 0.585*** [0.000] | lnC: 0.385*** [0.004] |
|          | lnEG: 0.556*** [0.000] | lnEG: -          | lnEG: -           |
|          | lnSG: -          | lnSG: 0.323*** [0.003] | lnSG: -           |
|          | lnPG: -          | lnPG: -          | lnPG: 1.551*** [0.004] |
| Russia   | lnC: 0.678*** [0.000] | lnC: 0.668*** [0.000] | lnC: 0.728*** [0.000] |
|          | lnEG: 0.267*** [0.000] | lnEG: -          | lnEG: -           |
|          | lnSG: -          | lnSG: 0.365*** [0.000] | lnSG: -           |
|          | lnPG: -          | lnPG: -          | lnPG: 0.567*** [0.031] |
| India    | lnC: 0.772*** [0.000] | lnC: 0.714*** [0.000] | lnC: 0.664*** [0.000] |
|          | lnEG: -0.074 [0.828] | lnEG: -          | lnEG: -           |
|          | lnSG: -          | lnSG: 0.044 [0.415] | lnSG: -           |
|          | lnPG: -          | lnPG: -          | lnPG: 0.647 [0.332] |
| China    | lnC: 0.087*** [0.000] | lnC: 0.792*** [0.000] | lnC: 0.793*** [0.000] |
|          | lnEG: 0.091 [0.685] | lnEG: -          | lnEG: -           |
|          | lnSG: -          | lnSG: 0.075 [0.231] | lnSG: -           |
|          | lnPG: -          | lnPG: -          | lnPG: 0.172 [0.710] |
| South Africa | lnC: 0.442*** [0.000] | lnC: 0.480*** [0.000] | lnC: 0.419*** [0.000] |
|          | lnEG: 0.304*** [0.001] | lnEG: -          | lnEG: -           |
|          | lnSG: -          | lnSG: 0.144** [0.030] | lnSG: -           |
|          | lnPG: -          | lnPG: -          | lnPG: 0.100*** [0.000] |
| Turkey   | lnC: 0.636*** [0.000] | lnC: 0.367*** [0.000] | lnC: 0.554*** [0.000] |
|          | lnEG: 0.177 [0.299] | lnEG: -          | lnEG: -           |
|          | lnSG: -          | lnSG: 0.469*** [0.000] | lnSG: -           |
|          | lnPG: -          | lnPG: -          | lnPG: 0.958** [0.011] |

**Note:** *** 1%, ** 5%, * 10% level of significance. Values in parentheses represent probability values.

The relationship between PG and economic growth has been examined within the scope of Model III and the results are given in Table 6. In Model III, capital accumulation per capita in all countries has a positive effect on economic growth. In Brazil, Russia, South Africa and Turkey, PG is seen to have a positive effect on economic growth. PG of the countries with the highest coefficient are Brazil (1.551) and Turkey (0.958). Although these countries have made great progress in terms of political relations in recent years, China’s problems with some countries such as the US and India’s conflicts with various countries such as Pakistan, may lead to negative consequences for the impact of PG.
Table 8: Dumitrescu-Hurlin Granger Causality Test Results

| Zero Hypothesis       | Wald statistics | Z-bar statistics | Probability |
|-----------------------|-----------------|-----------------|-------------|
| \( \ln C \rightarrow \ln GDP \) | 5.086           | 2.723           | 0.006***    |
| \( \ln GDP \rightarrow \ln C \) | 14.655          | 11.910          | 0.000***    |
| \( \ln EG \rightarrow \ln GDP \) | 9.402           | 6.867           | 0.000***    |
| \( \ln GDP \rightarrow \ln EG \) | 1.657           | -0.569          | 0.569       |
| \( \ln SG \rightarrow \ln GDP \) | 4.615           | 2.271           | 0.023**     |
| \( \ln GDP \rightarrow \ln SG \) | 3.162           | 0.876           | 0.380       |
| \( \ln PG \rightarrow \ln GDP \) | 5.637           | 3.252           | 0.001***    |
| \( \ln GDP \rightarrow \ln PG \) | 5.077           | 2.714           | 0.006***    |

Note: The delay length (K) 2 is taken. *** 1%, **5%, *It shows a significant level of 10%.

The results of the panel causality test are presented in Table 7. According to Table 7, it is seen that there is a bidirectional causality relationship between \( \ln C \) and \( \ln GDP \) at 1% significance level. In addition, there are one-way causalities from \( \ln EG \) and \( \ln SG \) to \( \ln GDP \) variables. Furthermore, there is a two-way causality relationship between \( \ln PG \) and \( \ln GDP \).

Conclusions

The effects of globalization are generally evaluated in economic term with ignoring the socially and politically impacts. However, undoubtedly, while the economy is the most affected by globalization, it also leads to many changes in the social and political spheres. In addition to the benefits provided to countries of different sizes, these changes may have some negative effects. Within the scope of our research, the effects of the sub-dimensions of globalization on economic growth in the countries studied were investigated.

The analyzes conducted in this study aim to reveal the effects of EG, SG and PG on economic growth for the period between 1990 and 2014 in BRICS-T countries. The findings of the analysis show that EG, SG and PG has a positive effect on economic growth in BRICS-T countries. When we compare the relative effects of globalization with sub-dimensions, it seen that the SG has the highest positive impact on growth, while the PG has lowest impact. Since the model established in the study was based on the Cobb-Douglas production function, it was obtained that the capital accumulation per capita in the model has a positive effect on economic growth. It is seen that the findings obtained in the study are compatible with the studies of Villarde and Maza (2011), Osterloh (2012), Chang et al and Doğan and Can (2016). The results of our study are not consistent with the studies of Kılıç (2015) and Olimpia and Stela (2017), who concluded that the impact of SG on economic growth was negative, and Kılıçarslan and Dumrul (2018), which concluded that the impact of PG on economic growth was negative. This situation is considered to be caused by differences in the countries studied or by the different methods used. Because the FMOLS coefficient estimation results of the countries examined within the scope of our study confirm this situation.

When the FMOLS coefficient estimation results examined according to countries, EG, SG and PG did not have a statistically significant effect on the economic growth of China and India. It is considered that the reason for the results of this country to be insignificant may be the evaluation of liberalization and restrictions together in the content of the KOF index used. In addition, the lack of expected economic freedom in these countries, the non-tariff barriers and import bans applied are considered to have a negative impact on the globalization of countries. When the analysis results of other countries are evaluated, it is seen that the effect of EG, SG and PG on economic growth is positive in Brazil, Russia and South Africa. According to Turkey's analysis, EG statistically insignificant in terms of the impact on economic growth while the effect of PG is seen as positive and high.
When evaluating the results of the analysis, the concentration of Turkey’s social and political dimensions of globalization is seen to provide a positive impact on country's economic growth. In China and India, social and economic rights within the country should be regulated, freedoms should be increased and domestic laws should be transformed in line with international norms. Moreover, it is considered that following an inclusive and solution-oriented strategy in international politics will be positive in terms of PG. According to the analysis results of Brazil, Russia and South Africa, EG, SG and PG have positive effects on economic growth, albeit at different levels. In this respect, it is seen that Brazil's concentration on PG, Russia's concentration on SG and the concentration of South Africa on EG may have more impact on the economic growth of countries.

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