

# Eurasian Economies



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Edited by

Selahattin Sarı and E. Ayşen Hiç Gencer

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Eurasian Economies

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*For the memory of my father Mükerrerem Hiç,  
together with my mother Süreyya Hiç and my sister Özlen Hiç,  
with my husband Alp Gencer and our daughter Aylın and our son Alpin.  
– Ayşen*

*For my wife Naciye,  
and our grandchildren Mete and Batu Çallı.  
– Selahattin*

*Do what you can, with what you have, where you are...*  
– Theodore Roosevelt

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## PREFACE

We are delighted to announce that eleven of the International Conferences on Eurasian Economies (<http://www.avekon.org>) organized by the Eurasian Economists Association have so far been held at various Eurasian countries:

- November 4–5, 2010 – Istanbul, Turkey, in association with Beykent University
- October 12–14, 2011 – Bishkek, Kyrgyzstan, in association with Kyrgyz-Turkish Manas University
- October 11–13, 2012 – Almaty, Kazakhstan, in association with Turan University
- September 17–18, 2013 – St. Petersburg, Russia
- July 1–3, 2014 – Skopje, Macedonia, in association with Ss. Cyril and Methodius University
- September 9–11, 2015 – Kazan, Russia, in association with Kazan Federal University
- August 29–31, 2016 – Kaposvár, Hungary, in association with Kaposvár University
- July 10–12, 2017 – Istanbul, Turkey, in association with Beykent University
- October 5–7, 2017 – Bishkek, Kyrgyzstan, in association with Kyrgyz-Turkish Manas University
- June 18–20, 2018 – Tashkent, Uzbekistan, in association with Tashkent State University of Economics
- June 11–13, 2019 – Famagusta, Turkish Republic of Northern Cyprus, in association with Eastern Mediterranean University

We are proud to have published our first book with Cambridge Scholars Publishing, *Central Asian Economies in Transition*, edited by E. Ayşen Hiç Gencer and Cevat Gerni, in 2012. The first book consisted of selected papers from the first two conferences that specifically addressed six Central Asian countries (Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan, and Azerbaijan) and their economic ties with Turkey. In addition, we featured especially invited articles by prominent academicians working on Central Asian economies. All these articles were blended together to form a complete and coherent description of Central Asian economies, with their challenges and their integration into the world economy.

We are also proud to have published our second book with the Cambridge Scholars Publishing, *Eurasian Economies in Transition*, edited by E. Ayşen Hiç Gencer and İlyas Sözen and Selahattin Sarı, in 2016. The second book consisted of selected papers from the conferences in 2012, 2013, 2014, and 2015, where we broadened the region to encompass all transition economies of Eurasia.

For this third book in your hands we selected relevant papers from the 2016, 2017, 2018, and 2019 conferences. We further intend to publish books with Cambridge Scholars Publishing based on the relevant best papers from our future conferences.

This book consists of seven chapters. The first chapter discusses the effects of globalization as well as the regional economic integration of Eurasian countries. The second chapter investigates growth and development-related aspects of Eurasian transition economies. The third and fourth chapters look at the international trade and finance situations of several Eurasian economies, which typically suffer from foreign exchange shortages, as well as difficulties in establishing capital markets. The fifth chapter focuses on issues related to the money market and banking systems of Eurasian countries in an open-economy model. The sixth chapter elaborates on the labour market as well as internal and external migration issues among Eurasian countries. Finally, the seventh chapter details the energy, agricultural, and healthcare sectors and their impact on economic and political systems.

As has been a tradition since the 2015 conference, the keynote speaker of the first conference, Prof. Dr. Mükerrerem Hiç is remembered by doctoral studies awards given by his wife, Prof. Dr. Süreyya Hiç. Each year, the scientific committee chooses the best paper submitted to the conference by a PhD candidate in the fields of macroeconomics, growth and development,

monetary theory, finance, globalization, or international trade. So far, the recipients of this award have been:

- in 2015, Cüneyd Ebrar Levent and Burcu Baydar Sakız, both from Istanbul Aydın University, Turkey, shared the award with separate papers
- in 2016, Kadyrbek Sultakeev from Kyrgyzstan-Turkey Manas University, Kyrgyzstan won the award
- in 2017, Erhan Pişkin from Akdeniz University, Turkey, won the award
- in 2018, Nodirbek Tula from Plekhanov Russian University of Economics, Tashkent Branch, Uzbekistan and Asel Dzhailova from Kyrgyz University of Economics, Kyrgyzstan shared the award with separate papers
- in 2019, Duygu Serin Oktay from Çukurova University, Turkey and Fatih Yılmaz, Onur Şeker, Eren Pektaş, all from Beykent University, Turkey shared the award with two separate papers

Two of these papers, “Solving Social and Demographic Problems on the Way to Sustainable Development” by Nodirbek Tula and “The Asymmetric Impact of Inflation and Unemployment on Income Inequality: The Case of Turkey” by Duygu Serin Oktay are featured in this book.

We would hereby like to convey our sincere gratitude to all contributors who have submitted their valuable work for inclusion in this book. In addition, we would like to express our genuine gratefulness to the co-organizers of the International Conference on Eurasian Economies, namely Kyrgyz-Turkish Manas University, Kaposvár University, Tashkent State University of Economics, and Eastern Mediterranean University, as well as the organizing committee members from Beykent University, especially Zeynep Emir. We also like to give Graham Clarke from Brighter Corners Editing our deep appreciation for his diligent proof-reading the second, as well as this third book. Last but not least, we would love to gratefully mention our indebtedness to Alp H. Gencer for realizing this project in the technical sphere and Alpin Hiç Gencer for redesigning the conference website.

Prof. Dr. E. Ayşen Hiç Gencer  
Prof. Dr. Selahattin Sarı  
Istanbul, February 29, 2020



# **CHAPTER ONE**

## **GLOBALIZATION AND INTEGRATION**

# THE EFFECT OF GLOBALIZATION ON ECONOMIC GROWTH: A PANEL DATA ANALYSIS FOR ASEAN COUNTRIES

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## **Abstract**

Globalization is generally expressed as the integration of countries into the external world in economic, social, and political contexts. One of the most important indicators of the level of development of a country is the economic growth performance of the mentioned country. It is therefore important to examine whether the globalization process affects economic growth. Although both developed and developing countries are deeply affected by the globalization process, and it is clearly visible that developing South Asian economies utilize globalization better than many other regions of the world by implementing successful policy planning and policy implementations. In this framework, this study investigates the effect of globalization on the economic growth of the member countries of ASEAN. The data used in the study is obtained from the globalization index of the KOF Swiss Economic Institute and the national accounts database of UNCTAD. GDP and three dimensions of globalization variables of the ASEAN countries are evaluated using panel data analysis within the scope of study. The results of the analysis show that globalization has a significant effect on the economic growth of the member countries of the ASEAN.

## **1 Introduction**

Although many definitions are given to clarify the term of globalization, one of the most extensive defines it as an irrevocable power affecting the



world through the progressive free flow of capital, services, goods, people, and opinions which results in the unification of societies and economies (IMF 2002). The economic dimension of the concept refers to the expanding interdependence of countries all over the world due to the rapid and wide spread of technologies, the flow of international capital, and the increasing scale of the cross-border trade of services and commodities. It also demonstrates ongoing mutual unification and extension of market boundaries, which is an irrevocable flow for the economic development in the entire world (Shangquan 2000, 1).

Countries have become more and more open to forces arising from outside their borders in this era of rapid globalization, which lead to a distinct experience of economic growth. The fact that they have responded so individually is proof that national policy decisions are the ultimate determinants of economic growth. Meantime, the countries which have leveraged the impact of globalization to their benefit are the successful ones (Rodrik 2007, 2). The globalization process proposes that the challenges in accomplishing the forthcoming prosperity and growth, especially for the developing countries, will persist to intensify regardless of the size of countries. From this, although sometimes it is in opposition to the globalization concept, many countries try to get into regional trade agreements with neighbouring states to provide themselves some kind of strategic protection (Read 2004, 365).

A lot of developing countries have made the effort to stimulate their economic growth by following outward-oriented policies aiming to integrate them into the global economy. Although many studies covering economic growth have dealt with the topic from the technological knowledge, natural resources, human capital, and physical capital perspectives, regarding the influence of the globalization phenomenon on developing economies, the focus of this study is on examining the effect of globalization on economic growth.

In this context, whether political, social, and economic dimensions of globalization have an impact on economic growth within ASEAN countries between 1970 and 2015 is dealt with in the frame of the study. Firstly, globalization term and how it is related to economic growth is debated theoretically. In the second section of the study some information about the ASEAN is given as it is the sample of the study. In the last section the effect of globalization on economic growth is tested empirically. Globalization data used in the analysis of the study is extracted from the KOF Globalization Index and economic growth data is collected from the

national accounts database of UNCTAD. The results of the analysis proved a significant relationship between globalization and the economic growth of the member countries of the ASEAN.

## **2 Globalization and Economic Growth**

The process of globalization presented a fundamental transformation of economic life which resulted in capital, people, products, and the application of technical systems becoming more effective, an increase in production, the circulation of knowledge, and the generalization of market economy (Dăianu 2009, 211). In the global economy no countries are self-sufficient anymore and they participate in commercial relationships at various levels to sell their products to buy what they need. As mentioned by the traditional economic theory, the economies are more competently productive in some economic sectors than they are trade partners in them (Rodrigue et al. 2006, 144), and as a result international trade flourishes through widening globalization after the 1980s. Although some citizens of the United States cannot locate Beijing, China on the map, they consume devastating numbers of goods which were produced in that city. A report of the Federal Reserve Bank of San Francisco issued in 2010 presented that nearly 35% of all shoes and clothing sold in the United States were indeed produced in China, while the domestic amount was just 3.4%. Many economists admit that globalization is beneficial for individual economies around the world by limiting military clashes and increasing competition, making markets more effective and spreading wealth around the globe more uniformly. Nevertheless, the opinion of the general public is that, in the short-term, the risks that globalization exposes outweigh the benefits (Kuepper 2017). These benefits and risks associated with globalization can be summarized as shown in Fig. 1.

Fig. 1. *Benefits and risks of globalization*

**Source:** Kuepper (2017)

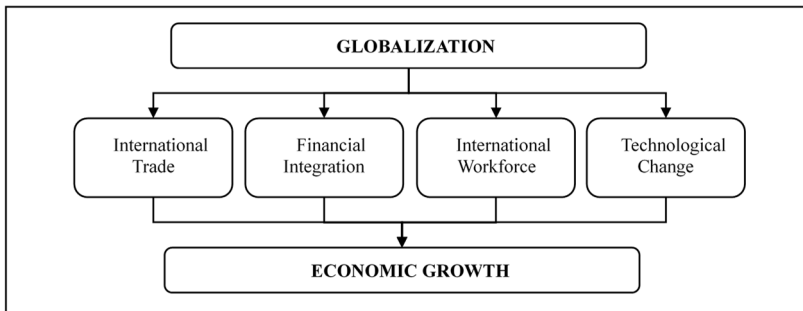
Although the opinions on the topic are divergent, as seen in Fig. 1, the risks of globalization are mostly related with social and political issues, while the benefits are linked with economic ones. In the context of economic effects, the relevant dimensions are reliance and interaction between countries and other economic mediums in the world economy and the rise in the degree of international integration. Accordingly, in the economic meaning, globalization constitutes many different but related aspects (Read 2004, 366), which can be summarized as follows:

- international trade is liberalized by the help of enhancing rules of GATT, turning into WTO by 1995
- the liberalization of exchange rate regimes and international capital flows, which leads to rising flows of international capital mobility to increase in both the short and long-terms
- the broadening basis of universal production due to the industrialization process of developing countries such as those in Southeast Asia

- developments in communications technology, such as the rapid advancements in services and goods and flows of information
- multinational enterprises turning into the essential operator of capital flows and international economic activities as a result of the liberalization of international trade and investment rules
- rise in the international competition intensity between both nations and enterprises
- the increase in the concentration of inter-firm competition in which lesser enterprises are taking part due to the growing entry barriers

Given that the economic aspect of globalization is moving to the forefront, many researchers are now of the opinion that its growth effects depend on the economic scheme of the economies in their globalization process (Samimi and Jenatabadi 2014). The connection between economic growth and globalization is argued about in the growth and development literature without resolution. For now, theoretical growth studies are addressing a conflicting and ambiguous discussion on the relationship between growth and globalization. While some of the studies claim globalization to be harmful to the economic growth of countries with political instability and weak institutions, others come up with positive effects through the augmentation of capital, the improvement in factor productivity, the diffusion of technology, and the efficient allocation of domestic resources (Gourdon et al. 2008). The optimistic aspect of the debate is presented in Fig. 2.

Fig. 2. *Globalization flow towards economic growth*



**Source:** Husain (2000, 2)

As mentioned in Fig. 2, although the globalization flow towards economic growth includes financial integration, an international workforce, international trade, and technological change, it is remarkable that the current movement of globalization is shaped by the increase in capital flows between developed countries and between developed and developing ones since the 1980s. Although its economic literature comprehensively states that these flows generally result in significant financial crises and collapse in growth rates in many developing countries, some of these countries, such as those in the South Asia region, obtained high growth rates thanks to this source (Prasad et al. 2005, 201). In this regard, the focus of the following section will be the countries in that geographical area.

### **3 ASEAN Economic Cooperation**

Southeast Asia presents one of the best examples of the positive effects of globalization on the economic growth of developing countries. New developing Southeast Asian countries revitalized the investments of domestic and foreign capital and input markets through positive state intervention in the market, orientation, coordination, and incentives, and have benefited from international economic activities. It has been the development strategy of some of these countries to rely on domestic firms to acquire skills in the workforce, technology, and new products. Thus, the developing production infrastructure has attracted foreign capital and international companies to the region (Atalay and Turhan 2002, 77–8).

Regional cooperation among ASEAN countries has been through three turbulent periods since 1945. The first, between the end of the Second World War and the mid-1950s, primarily concerned the type and nature of regional association for Southeast Asia which was governed by the ideological dominance of the UK and the US. Traditional colonial linkages and political realities within the region strained the organization of a unified Asia. The Singapore, Borneo, and Malaya territories were still British colonies, and Cambodia and Laos were under the control of France until 1954. During that time, while Burma was under the influence of India, Thailand and the Philippines were in favour of the US rather than Southeast Asia or the UK. On the other hand, Indonesia seemed to be uninvolved in the region. The Far East (ECAFE) and Economic Commission for Asia and the Colombo Plan could be established despite the dissociation in the region in this period, although they both were dependent on the two superpowers to a great extent (ASEAN Secretariat 1997, 15).

In the following period, the globalization process and their coordination efforts resulted in the establishment of sounding organizations in the region. One of the most striking is the Association of Southeast Asian Nations (ASEAN), which was set up in Thailand in 1967 with the ASEAN Declaration by the founders, namely Thailand, Singapore, Philippines, Malaysia, and Indonesia. These were joined in 1984 by Brunei Darussalam, in 1995 by Vietnam, in 1997 by Myanmar and Laos, and in 1999 by Cambodia, forming today's ASEAN of ten countries (The Association of Southeast Asian Nations 2017). The objectives of ASEAN are to advance cultural development, further social progress, promote regional stability and peace, and stimulate economic growth in the region (Ying et al. 2014, 25).

In 1992, The ASEAN Free Trade Area (AFTA) was established, which included a Common Effective Preferential Tariff (CEPT) to improve the free flow of goods within the member states. Although the newcomers could not fully meet the obligations of AFTA, they are officially regarded as part of the Trade Area as they needed to sign the agreement at entry into ASEAN. Therefore, longer time frames were given to them, so they could meet the tariff reduction obligations of AFTA (The Association of Southeast Asian Nations 2011). The eleventh ASEAN Summit held in Kuala Lumpur in 2005 constituted an important stage in the development of the organization. During the summit, the Kuala Lumpur Declaration for the Preparation of the ASEAN Charter was signed, providing a legal and institutional framework for achieving ASEAN goals and objectives and the establishment of the ASEAN Community based on three pillars: the ASEAN Socio-Cultural Community, the ASEAN Political-Security Community, and the ASEAN Economic Community (Turkish Ministry of Foreign Affairs 2011).

If ASEAN were viewed as a single economic body, it would rank among the top ten economies in the world by means of GDP. Member countries achieved an average economic growth between 3.8% and 7% between 1989 and 2009, and the annual GDP growth in the top five member states was predicted by the IMF to be 6.4% in 2010. More recently, by the end of 2015, ASEAN formed a common market by creating the AEC with the intention of establishing economic integration in the region. As an organization accommodating a population formed of six hundred million hardworking people, the growth possibility of the integration is great (Panennungi 2011).

## 4 Literature Review

Ying et al. (2004) examined both short and long-term relationships between globalization and the growth in ASEAN countries using the data covering the 1970–2008 period. They investigated the effect of three categories of globalization using panel cointegration tests, and the global determinants of economic growth were also considered within the scope of study. They analysed the data using panel fully modified OLS to determine the elasticity of economic growth. The results of their study show that, although economic globalization has a positive and significant impact on economic growth, political globalization has non-significant and negative effect, and finally that social globalization has a negative impact on economic growth.

In his study, Dreher (2006) developed a globalization index incorporating economic, social, and political integration as the three main dimensions of globalization. He analysed the data of 123 countries covering the years 1970 to 2000 using panel data. He tried to measure the effect of both the overall index globalization and its dimensions on economic growth. The results of his analysis indicate that while the overall globalization index promotes economic growth, economic flows are the most effective for growth in developing countries, and political integration is not significantly effective.

Samimi and Jenatabadi (2014) carried out a study to examine the impact of economic globalization on economic growth in the countries of the Organization of Islamic Cooperation. They also asked if the mentioned impact varies according to the income level of countries. They employed a generalized method of moments estimator as part of a dynamic panel data approach. The results of the study present statistical evidence showing that economic globalization has a significant impact on economic growth in Organization of Islamic Cooperation countries. They also prove that this impact is related with the income level of the country due to the rise in the development level of financial systems and workers' education.

Açıkğöz and Mert (2011) examined whether globalization had an effect on Turkey's economic growth process. In the study, they not only focused on the economic dimension of globalization, but also took the social and political dimension into account. In the study, the globalization indices developed in Dreher (2006) were used to investigate the effects of globalization on economic growth in terms of political, social, and economic dimensions in the context of a causality analysis. The period 1970–2008 and long-standing relationships between the series were investigated with the boundary test based on the autoregressive distributed

delay model (ARDL). Causality tests did not show any causal relationship from economic globalization with economic growth for the examined period in Turkey. Nevertheless, there is a causality relation of social globalization with growth.

Kılıç (2015) tested the impacts of the political, social, and economic dimensions of globalization on the economic growth of developing countries. He analysed the mentioned effect using the causality relationship with fixed effects least squares and Granger causality tests. He used the data of seventy-four developing countries in the study covering 1981 to 2011. The results reveal that while the economic and political globalization has a positive impact on the economic growth levels of the developing countries, social globalization produces a negative effect. Furthermore, the results causality test presents a one-way causality relationship between social globalization and economic growth and a two-way causality relationship between social globalization, political globalization, and economic growth.

Doğan and Can (2016) investigated the relationship between globalization and economic growth using the Engel-Granger cointegration test. The data analysed in the study covers the KOF overall globalization, social globalization, and economic globalization indices of South Korea for 1970 to 2012. The results show that economic, social, and overall globalization have positive effects on growth.

## **5 Model**

The aim of this study is to analyse both with cross-section and time dimensions of different countries. Because the data set covered by the study has cross-section and time dimensions together, it is eligible to use a panel regression analysis for the study.

### **5.1 Data set**

In the literature, many different measures are seen to be used to evaluate the effects of globalization on economic growth. The capital account openness index, foreign direct investment, openness to trade, and actual trade flows can be counted as some of these popular measures (Dreher 2006, 1091). However, The KOF Index of Globalization introduced in 2002, which covers economic, social, and political facets of the theme, provides a more comprehensive way of measuring globalization by allowing the evaluation



of more complex relations. In the KOF Index, the dimensions of globalization are highlighted in Table 1 (Dreher et al. 2009).

**Table 1. Dimensions of globalization**

<b>Economic Globalization</b>	<b>Political Globalization</b>	<b>Social Globalization</b>
Long-distance flows of services, capital, and goods as well as perceptions and information that attend market exchanges	Spread of government policies	Expansion of information, ideas, people, and images

In this regard, the annual globalization indices of the KOF Swiss Institute, including economic, political, and social dimensions, are used as the globalization variables in the analysis of this study. Annual GDP per capita (constant, 2005) data collected from the national accounts database of UNCTAD is used as an indicator of economic growth. The collected data encloses all ten ASEAN countries in the 1970–2015 period.

## 5.2 Method

The variables used in the study have to be stationary to prevent spurious relationships between the variables. Therefore, at the very beginning of the analysis, variables are tested for stationarity using the common unit root process developed by Levin, Lin, and Chu (LLC) (2002), and assuming the individual unit root process developed by Im, Pesaran, and Shin (IPS) (2003). The results of the tests are presented in Table 2.

**Table 2. Panel unit root test**

<b>Method</b>	<b>Variable</b>	<b>GDP</b>	<b>EGLB</b>	<b>SGLB</b>	<b>PGLB</b>
Levin, Lin, Chu	stat	-1.78019	-14.4816	-14.7409	-20.5453
	p-value	0.0375	0.0000	0.0000	0.0000
Im, Pesaran, Shin	stat	-3.82840	-14.9505	-13.6014	-18.4121
	p-value	0.0001	0.0000	0.0000	0.0000

The LLC and IPS test results display that while the GDP variable is stationary at 5% significance level, EGLB, SGLB, and PGLB variables are identified as stationary at 1% significance level in their first difference and are applicable for use in the panel data analysis. While years are the period dimension, the countries manifest the cross-section dimension in the analysis. The individual effects of both years and countries have been estimated, and these effects are outlined in equation 1 in Table 3, in which “*i*” units are individuals and “*t*”s are the periods.

**Table 3. Estimation tests**

**Equation (1)**  $GDP_{it} = \beta_1 EGLB_{it} + \beta_2 SGLB_{it} + \beta_3 PGLB_{it}$

Test	Statistic	Degrees of	Probability
Redundant Fixed	41.236496	(8, 349)	0.0000
Hausman Test	11.452609	3	0.0095

The equation is estimated with Redundant Fixed Effects and Hausman tests, respectively for determining the suitable panel model. As the results of the tests show in Table 2, the probability value of the fixed effect test is below 0.5 value, and the next estimation test is chosen as the Hausman test. As the Hausman test also yielded a  $p > 0.5$  value, the use of fixed effects model is suitable for the current data set, so that it is analysed with the Panel EGLS Fixed Effects test in the following phase.

**Table 4. Panel EGLS (Fixed effects)**

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-2136.160	670.7262	-3.184846	0.0016
EGLB	-525.9172	111.6459	-4.710584	0.0000
PGLB	-11.52430	56.28155	-0.204762	0.8379
SGLB	163.7139	17.34437	9.439022	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.487513	Mean dependent variable	3535.615	
Adjusted R-squared	0.473168	S. D. dependent variable	5408.304	
Standard error of	3925.520	Akaike info criterion	19.41757	
Sum of squared	6.06E+09	Schwarz criterion	19.53620	
Log likelihood	-3920.057	Hannan-Quinn criterion	19.46452	
F-Statistic	33.98618	Durbin-Watson Statistic	1.223123	
Prob (F-Statistic)	0.000000			

The results of the Panel EGLS (Fixed Effects) test presented in Table 4 demonstrate that the overall results produced by the analysis are significant. However, when the variables are examined individually, while the relation between economic growth and economic and social dimensions of globalization are positive and significant, political globalization is found to have an insignificant relation. Finally, the reliability of the results has been tested.

**Table 5. Autocorrelation and Heteroskedasticity tests**

Wooldridge test for autocorrelation	F (1, 8)	Prob > F
	0.310	0.5927
Modified Wald test for heteroskedasticity	Chi2 (10)	Prob > Chi2
	7.6	0.6679

The Wooldridge test for autocorrelation and the modified Wald test for heteroskedasticity were performed to check variance and autocorrelation problems. The tests rejected both heteroskedasticity and autocorrelation problems concluding that the results produced by the analyses are reliable.

## 6 Conclusion

The term globalization is explained with developments such as the deployment of nationalistic and local outlooks to a broader perspective of an interdependent and interconnected world with a free transfer of services, goods, and capital across national boundaries. It includes the development of political, social, and economic relations between countries, better recognition of the beliefs and expectations of different societies and cultures, and interrelated issues such as the intensification of international relations.

Globalization is not a new concept, however its influences on the individual countries had expanded its sphere rationally by the 1980s. The economic consequences of globalization led to a rise in the interdependence of economies, and a proportion of the cross-border trade of services and commodities increased exceptionally. Nevertheless, these developments do not affect all economies of the world in the same way. While globalization enhances the industrialized economies with developed economic bases well enough, the status of developing countries and less developed countries in this course changes for the worse.

In this context, whether globalization is effective on economic growth in developing countries is a heated topic of interest. Regarding the fact that the countries in the South Asia region obtained high growth rates because they benefited from globalization, the effect of the political, social, and economic dimensions of globalization on the economic growth values of the ASEAN countries for 1970–2015 is dealt with within the frame of study, wherein GDP and three dimensions of globalization variables of the ASEAN countries are evaluated using panel data analysis. The results of the analysis show that, although overall globalization proved to have a positive and significant impact on the economic growth of the member countries of the ASEAN when the variables are examined individually, while the relation between economic growth and the economic and social dimensions of globalization is significant and positive, political globalization has an insignificant relation with economic growth.

## References

- Açıkğöz, Şenay, and Merter Mert (2011). “Küreselleşme İktisadi Büyüme yi Etkiliyor mu? Türkiye Örneği.” *12. Uluslararası Ekonometri, Yöneylem Araştırması ve İstatistik Sempozyumu*, Pamukkale University, Denizli, 701-16.
- ASEAN Secretariat. (1997). *ASEAN Economic Cooperation: Transition and Transformation*. Chong Moh Offset Printing Pte. Ltd., Singapore.
- Atalay, Mehmet, and Mustafa Turhan (2002). “Küreselleşme, Gelişmekte Olan Ülkeler ve Türk İmalat Sanayi.” *Planlama Dergisi*, Özel 42. Kuruluş Sayısı.
- Dăianu, Dana-Codruța Dudă (2009). “The Impact of Globalization through International Trade.” *Anale Seria Ştiințe Economice Timișoara* 15, 211-15.
- Doğan, Buhari, and Muhlis Can (2016). “Küreselleşmenin Büyüme ye Etkisi: Güney Kore Örnekleminde Eşbütünleşme Analizi.” *Çankırı Karatekin University Journal of The Faculty of Economics and Administrative Sciences* 6(2), 197-220.
- Dreher, Axel (2006). “Does Globalization Affect Growth? Evidence from a New Index of Globalization.” *Applied Economics* 38, 1091-110.
- Dreher, Axel, Noel Gaston, and Pim Martens (2009). “Measuring Globalization: Gauging its Consequences.” *Economica* 76(304), 779-80.
- Gourdon, Julien, Nicolas Maystre, and Jaime de Melo (2008). “Openness, Inequality and Poverty: Endowments Matter.” *Policy Research Working Papers* No. 3981. The World Bank.

- Husain, Ishrat (2000). "Making Globalization Work for the Poor: Case Study of Pakistan." *EMP-CIDA Globalization Project, Lahore University of Management Sciences*, 1-8.
- IMF (2002). "Globalization: A Framework for IMF Involvement." *Issues Brief* No. 02/01.  
<https://www.imf.org/external/np/exr/ib/2002/031502.htm>
- Kılıç, Cüneyt (2015). "Effects of Globalization on Economic Growth: Panel Data Analysis for Developing Countries." *Economic Insights – Trends and Challenges* 4(67), 1-11.
- Kuepper, Justin (2017). "Globalization and its Impact on Economic Growth." <http://www.thebalance.com/globalization-and-its-impact-on-economic-growth-1978843>
- Levin, A., C.F. Lin, and C.S.J. Chu (2002). "Unit Root Tests in Panel Data: Asymptotic and Finite-Sample Properties." *Journal of Econometrics* 108, 1-24.
- Panennungi, Maddaremmeng A. (2011). "ASEAN Economies Past and Future." *The Jakarta Post*.  
<http://www.thejakartapost.com/news/2011/05/11/asean-economies-past-and-future.html>
- Pesaran, M.H. (2007). "A Simple Panel Unit Root Test in the Presence of Cross-Section Dependence." *Journal of Applied Econometrics* 27, 265-312.
- Prasad, Eswar, Kenneth Rogoff, Shang-Jin Wei, M. Ayhan Kose (2005). *Effects of Financial Globalization on Developing Countries: Some Empirical Evidence*, Palgrave Macmillan.
- Read, Robert (2004). "The Implications of Increasing Globalization and Regionalism for the Economic Growth of Small Island States." *World Development* 32(2), 365-378.
- Rodrigue, Jean-Paul, Claude Comtois and Brian Slack (2006). *The Geography of Transport Systems*, Routledge.
- Rodrik, Dani (2007). *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth*, Princeton University Press.
- Samimi, Parisa and Hashem Salarzadeh Jenatabadi (2014). "Globalization and Economic Growth: Empirical Evidence on the Role of Complementarities." *PLoS One*, 9(4), e87824.
- Shangquan, Gao (2000). "Economic Globalization: Trends, Risks and Risk Prevention." *Economic and Social Affairs CDP Background Paper* No. 1, ST/ESA/2000/CDP/1, United Nations.
- The Association of Southeast Asian Nations (2011). "The ASEAN Free Trade Area (AFTA)." <http://www.asean.org/12021.htm>
- . (2017). "About ASEAN." <http://asean.org/asean/about-asean>

Turkish Ministry of Foreign Affairs (2011). “Güneydoğu Asya Ülkeleri Birliği (ASEAN).” <http://www.mfa.gov.tr/guneydogu-asya-ulkeleri-birligi.tr.mfa>

Ying, Yung-Hsiang, Koyin Chang and Chen-Hsun Lee (2014). The Impact of Globalization on Economic Growth, Romanian Journal of Economic Forecasting, No. 17/2, 25-34.