

## **DYNAMIC RELATIONSHIPS AMONG DIMENSIONS OF GLOBALIZATION: ECONOMETRIC ANALYSIS ON COUNTRY INCOME GROUPS**

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### **Abstract**

Globalization is a multidimensional phenomenon that includes economic, political, and cultural dimensions. The globalization process is shaped by the intertwined interactions of its dimensions. In this context, the main purpose of this study is to analyze the long-run relationships among economic, cultural, and political globalization according to country income groups worldwide and to investigate how they interact with each other. The study covers the period 1980–2020. Long-run relationships among the dimensions of globalization were analyzed with Johansen cointegration test. Long-run coefficients were estimated using FMOLS method. According to the findings obtained from the study, long-run relationships were determined among the dimensions of globalization. It was observed that the direction and degree of the relationships among the dimensions of globalization may differ depending on the income levels of countries. In all income groups, it was determined that political globalization and both economic and cultural globalization positive affect each other. It was determined that the interactions between economic and cultural globalization differed significantly according to country income groups. In general, the findings indicate that political integration promotes globalization processes, while economic and cultural integration processes support political integration.

### **Keywords**

Globalization, Dimensions of Globalization, Integration, Income Groups, Cointegration Analysis.

### **Resumo**

A globalização é um fenómeno multidimensional que inclui as dimensões económica, política e cultural. O processo de globalização é moldado pelas interações interligadas entre estas dimensões. Neste contexto, o principal objetivo deste estudo é analisar as relações de longo prazo entre a globalização económica, cultural e política, de acordo com os grupos de rendimento dos países a nível mundial, e investigar como estas interagem entre si. O estudo abrange o período de 1980 a 2020. As relações de longo prazo entre as dimensões da globalização foram analisadas com o teste de cointegração de Johansen. Os coeficientes de



longo prazo foram estimados utilizando o método FMOLS. De acordo com os resultados obtidos no estudo, foram determinadas relações de longo prazo entre as dimensões da globalização. Observou-se que a direção e o grau das relações entre as dimensões da globalização podem diferir dependendo dos níveis de rendimento dos países. Em todos os grupos de rendimento, verificou-se que a globalização política e tanto a globalização económica como a cultural se influenciam mutuamente de forma positiva. Verificou-se que as interações entre a globalização económica e a cultural diferiam significativamente de acordo com os grupos de rendimento dos países. Em geral, os resultados indicam que a integração política promove os processos de globalização, enquanto os processos de integração económica e cultural apoiam a integração política.

### **Palavras-chave**

Globalização, Dimensões da Globalização, Integração, Grupos de Rendimento, Análise de Cointegração.

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## **DYNAMIC RELATIONSHIPS AMONG DIMENSIONS OF GLOBALIZATION: ECONOMETRIC ANALYSIS ON COUNTRY INCOME GROUPS<sup>1</sup>**

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### **Introduction**

The phenomenon of globalization has been increasingly felt worldwide since the second half of the 20th century, and became the focus of academic and social debate in the 1980s. Since then, the concept of globalization has been the subject of extensive debate within academia and public opinion, and many studies have been carried out on the subject. The main reason for profound interest in the concept of globalization is its complexity, encompassing numerous cultural, social, political, and technological processes, rather than being solely an economic phenomenon. Globalization, with its multidimensional structure, can directly and/or indirectly affect almost every area of social life such as economy, cultural structure, politics, law, and health. It is widely discussed how these effects, which can also be called the results of globalization, emerge in different areas and whether they are positive or negative. Because it causes such wide-ranging effects, the phenomenon of globalization has been and continues to be the focus of many researchers from different disciplines.

The globalization process constantly involves change and transformation. Therefore, it should not be overlooked that the effects of globalization may change over time. Furthermore, the globalization process is not uniform but can differ according to different regions of the world and income levels of countries. This is also true for the processes related to the dimensions of globalization. In addition to all these, some dimensions of globalization may become much more important in terms of the globalization process over time. Therefore, the globalization process and the processes related to the dimensions may exhibit variations in different periods, geographies, and societies. All these require the concept of globalization to be evaluated continuously.

Following the global financial crisis, globalization slowed considerably, and in some areas, it reversed. The slowdown in globalization, fueled by populist and protectionist forces

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<sup>1</sup> This study is extracted from the PhD dissertation titled "The Dynamic Relationships between Economic, Cultural, and Political Globalization: Econometric Analysis" prepared by Can SAGLAM and supervised by Prof. Rahmi YAMAK at Karadeniz Technical University.



following the global financial crisis (Moffit, 2016; Steger, 2019), combined with the COVID-19 pandemic, has begun to pose a very serious threat to the globalization process (Irwin, 2020; McNamara & Newman, 2020; Steger, 2021). In the literature, these crises and their consequences related to the globalization process are evaluated from different perspectives. Some academics argue that deglobalization, also supported by the geo-economic rivalry between the US and China, signals a new historical conjuncture (Bergeijk, 2019; Irwin, 2020).

Another perspective on the current process of globalization is that these crises do not represent the end of globalization. The current situation represents a cyclical contraction. Although it may not be like the period before the global financial crisis, it is thought that the globalization process may enter a new golden age (Lund et al., 2019; James, 2021). Furthermore, it is argued that due to the increasing intensity and impact of digital globalization, the end of globalization is far from over (Steger & James, 2020). It is thought that the geo-economic and geopolitical rivalry between the US and China has created a bipolar world system (Acharya, 2017; Maher, 2018; Goldstein, 2020). It is stated that the bipolar world system has bifurcated globalization (Zhang, 2018; Xueting, 2020; Owen, 2021; Zhao, 2022). Therefore, significant transformations have been occurring in the form of globalization itself in recent years, and these transformations should not be ignored when evaluating the globalization process (McNamara & Newman, 2020; Steger & James, 2020).

In the related literature, there is no consensus on issues such as the definition and conceptualization of globalization, approaches to globalization, the effects of globalization, and globalization theories. However, most of the studies on the concept concur with similar perspectives on issues such as the multidimensional nature of globalization, its pervasive impact on diverse domains of social life, and the interconnectedness of its various dimensions (Ritzer, 2007; Robinson, 2007). Multidimensional and complex conceptualizations that consider globalization as a phenomenon that operates simultaneously and interrelatedly in economic, cultural, and political areas are widely accepted (Robertson, 1992; Appadurai, 1996; Tomlinson, 1999; Modelski, 2007). It is argued that the boundaries among the dimensions of globalization are not immutable; on the contrary, these dimensions are interconnected and interrelated (Dreher & Gaston, 2008). Therefore, it is thought that the dimensions of globalization consist of intertwined processes. The multidimensional and pluralistic approach to the concept enables the perception of globalization as a holistic and comprehensive process in which many dimensions emerge simultaneously and in interaction with different processes (Rennen & Martens, 2003). In the literature, single-cause explanations of globalization that are reduced to capitalism or market expansion are widely criticized. In this context, many studies emphasize that globalization emerges as a result of the complex relationships between many reasons or driving forces that encompass all dimensions and that provide more comprehensive explanations of globalization. It is thought that considering globalization as a multidimensional process that occurs with many dimensions is more effective in evaluating the form, dynamics, effects, and results of globalization (Appadurai, 1990; 1996; Giddens, 1990; Held, 1995; Rosenau, 1997; Held et al., 1999; Steger, 2003; Scholte, 2005; Ritzer, 2010).



Globalization is not only evaluated with its economic, cultural, or political dimensions, but it refers to a process that includes all of these dimensions. Globalization is shaped by the mutual interactions of these dimensions. In addition to all these, it is also noteworthy that globalization is discussed a lot with general concepts. However, such discussions do not make the multidimensional phenomenon of globalization understandable (Hoffman, 2002). For this reason, it is emphasized that the dimensions of globalization should be defined and the relationships among these dimensions should be revealed (Hoffman, 2002; Ritzer, 2010). When the related literature is examined, although there are theoretical discussions and inferences on this subject, no empirical study has been found on the relationships among the dimensions of globalization, and if there is, it is thought that the empirical literature on this subject is quite limited. Therefore, this study aims to contribute to filling this gap in the literature.

The study aims to analyze the long-run relationships among economic, cultural, and political globalization according to country income groups worldwide and to investigate how the dimensions of globalization interact. In the study, firstly, the conceptual framework regarding the phenomenon of globalization is presented, then the dimensions of globalization are explained, and the views on the interactions among these dimensions are given. Subsequently, the data set and econometric methodology are introduced, and the findings obtained from the econometric analyses are reported. In the conclusion section, the findings regarding the relationships among the dimensions of globalization are evaluated.

### **Globalization: Conceptual Framework**

Globalization is a very complex concept due to its many different definitions. In general, the concept of globalization refers to the increasing interaction and interdependence of people, companies, governments, and cultures around the world. The extent of this interaction and interdependence began to increase in many areas, especially trade, finance, technology, communication, culture, and politics, after the 1980s and has reached critical levels today. However, there are different views on what the concept of globalization means and how it is defined. Different views on the concept make it difficult for researchers to come up with a single definition of globalization.

Researchers from different disciplines have defined globalization, and these definitions include significant characteristics of the concept. Determining the common points of globalization definitions provides a better understanding of the concept. In some definitions, globalization is considered as the spread of Western values, institutions, and practices (Scholte, 2005), while in others, it is considered as the universalization of modernity. Most definitions of globalization emphasize time-space compression (Harvey, 1989; Giddens, 1990; Robertson, 1992). Furthermore, the multidimensional nature of the globalization is frequently expressed in definitions (Appadurai, 1990; 1996; Robertson, 1992; Held, 1995; Abu-Lughod, 1999; Tomlinson, 1999; Steger, 2003; Modelski, 2007; McGrew, 2008; Howard-Hassman, 2010; Ritzer, 2010).

Other common points of globalization definitions can be expressed as follows. The definitions draw attention to the fact that globalization brings about a process of change and transformation worldwide and in almost every area of social life. As a result of this



change and transformation, it is emphasized that the world has become a single place (McLuhan, 1962; Meyer, 1980; Ritzer, 2010). In the definitions of globalization, the integration of communities, governments, and people around the world is emphasized (Abu-Lughod, 1999; Stiglitz, 2002; Steger, 2003). In this direction, the concepts of interrelationship and complex interdependence are included in the definitions (Modelski, 1968; Wallerstein, 1974; Giddens, 1990; Abu-Lughod, 1999; Steger, 2003; Scholte, 2005; McGrew, 2008). In the emergence of these interrelationships and dependence, networks are emphasized (Meyer, 1980; Held et al., 1999; Ritzer, 2010). In definitions of globalization, the concept of flow, which refers to the cross-border and worldwide mobility of capital, goods, information, and people through existing networks, is frequently included (Held, 1995; Appadurai, 1996; Held et al., 1999; Stiglitz, 2002; Ritzer, 2010). Most definitions emphasize technological advances that facilitate faster, more efficient, and less costly economic, political, and sociocultural flows to remote locations around the world (Harvey, 1989; Stiglitz, 2002).

Globalization has been also defined based on a specific dimension such as economic (Wallerstein, 1974; Harvey, 1989; Friedman, 1999; Stiglitz, 2002; Bhagwati, 2004), political (Meyer, 1980; Held et al., 1999; Howard-Hassman, 2010), and socio-cultural (Appadurai, 1990; Robertson, 1992; Tomlinson, 1999; Ritzer, 2007). Definitions based on the economic perspective draw attention to capitalist system, international division of labor, transnational production, and financial system. Definitions of globalization from an economic perspective focus on the expansion of capitalism as the fundamental driving force of globalization processes. Definitions based on the political dimension of globalization generally focus on global governance and the international institutions, actors, and global practices that increase the tendency toward global governance. In definitions centered on political processes, attention is drawn to the creation of world society awareness in order to implement and increase global governance practices. In the socio-cultural definitions of globalization, the ideas of societies having a global consciousness together and the world society are included.

## **The Dimensions of Globalization and the Relationships among Dimensions of Globalization**

### **The Dimensions of Globalization**

The concept of globalization includes three main dimensions: economic, cultural, and political (Ritzer, 2010; Heywood, 2011). When the globalization process is considered together with its dimensions, it is seen that these dimensions interact with each other and that these dimensions have an intertwined structure. In this context, it would be both wrong and misleading to evaluate the phenomenon of globalization only as an economic, cultural, or political development and analyze the process. If the globalization process is discussed by ignoring its various dimensions, the complex interrelationships of this process that shapes societies and the world will be overlooked (Giddens, 1990; Friedman, 1999; Held et al., 1999). In many studies, it is stated that the globalization process emerges as a result of the relationships among all its dimensions. However, it should not be forgotten that the dimensions of globalization include different processes and components. Therefore, economic, cultural, or political globalization processes do



not work in the same way. Undoubtedly, when expressing the phenomenon of globalization, it should not be ignored that the processes related to the dimensions of globalization interact with each other and that the globalization process emerges as a result of these relationships (Appadurai, 1990; 1996; Giddens, 1990; Held, 1995; Ohmae, 1995; Castells, 1996; Held & McGrew, 2000; Steger, 2003; Scholte, 2005; Robinson; 2007; Ritzer, 2010).

The globalization process consists of various processes, institutions, and actors. Economic globalization includes trade and financial globalization, transnational corporations (TNCs), and global economic governance institutions. Cultural globalization is shaped by the change in consumer behaviors and ideologies, the cultural convergence of societies, and media organizations. Political globalization encompasses the erosion of nation-states, the emergence of global governance, intergovernmental organizations (IGOs), and non-governmental organizations (NGOs). Each of these can directly and indirectly affect the other. Therefore, globalization refers to comprehensive and holistic process.

Although globalization is related to all areas of social life, it is thought to be more closely related to economic processes. Some globalization theorists focus directly on economic globalization when conceptualizing globalization and argue that economic globalization is the fundamental dynamic of the globalization process (Ritzer, 2010). Economic globalization is a concept related to the increase in foreign direct investments as well as foreign trade and the complex connections of financial transactions. The economic dimension of globalization is shaped by many phenomena such as economic integration, global economy, foreign direct investment, foreign trade, international capital, and free trade (Steger, 2003; Ritzer, 2010; Heywood, 2011). With economic globalization, global economic interrelations are intensifying (Steger, 2003) and national economies are being drawn into a single global economy (Heywood, 2011).

The political dimension is very important in terms of the globalization process. It is necessary not to reduce the phenomenon of globalization to just economic globalization or technological developments (Ritzer, 2010). The political dimension maintains its importance in the globalization process, as governments have regulatory and/or restrictive effects in many areas. The political globalization process includes critical political issues such as the increasing effectiveness of IGOs and NGOs and the global governance mechanism. These issues related to the political globalization process are associated with the replacement of the nation-state by a new form of global governance (Keohane, 1995; Steger, 2003). In this context, with the political globalization process, political relations around the world are intensifying and expanding (Steger, 2003), and the responsibility for policymaking is passing from national governments to international organizations (Heywood, 2011).

The cultural dimension of globalization is as important as its other dimensions. When globalization is evaluated from a historical perspective, it is thought that cultural and social processes date back to ancient times. It is noteworthy that the cultural dimension makes significant contributions to the globalization process. In the literature, it is thought that both cultural globalization shapes the globalization process and the globalization process shapes cultural practices (Appadurai, 1996; Tomlinson, 1999). The social and cultural transformations that started especially in the 1950s gradually accelerated after



the late 1960s. In this process of change and transformation, Marshall McLuhan's (1962) expression of the existence of globalization with the "global village" metaphor actually constitutes an important turning point. Cultural globalization refers to the global flows of information, goods, and images produced anywhere in the world, which tend to eliminate cultural differences that exist both internationally and interpersonally (Heywood, 2011).

Among the theories of globalization, there are theories that directly address the cultural dimension of globalization. These theories, also referred to as theories of global culture, focus on globalizing cultural structures and flows. Cultural theories of globalization discuss such issues as the globalization of religions, communication and information, and the relationship between globalization and consumption, migration, and tourism (Robinson, 2007). Theories of global culture are addressed from different perspectives such as homogenization (Ritzer, 2010), heterogenization (Friedman, 1995), hybridization (Pieterse, 1995; Hannerz, 1996), and glocalization (Robertson, 1992). The debate on cultural homogenization and heterogenization is shaped around the question, "Does globalization make people and societies similar or different from each other?"

### **The Relationships among Dimensions of Globalization**

It is necessary to express how the dimensions of globalization affect each other. The disappearance of borders and the formation of a more flexible structure with the globalization process benefit capital and accelerate economic globalization. If the basis of globalization is the removal of trade barriers and the integration of national economies (Stiglitz, 2002; Bhagwati, 2004), the economic globalization process cannot be considered independently of other dimensions of globalization. In this context, it is stated that other integration processes support economic globalization.

The rise of the global economy threatens sovereignty of nation-states. However, economic integration occurs as a result of nation-states increasing their political integration by becoming involved in global governance networks within the scope of their policies (Ohmae, 1995; Friedman, 1999). While economic globalization is realized through the integration of national economies, this process needs to be supported by political regulations (Rodrik, 2011). Economic integration processes are supported by political integration through international organizations, agreements and norms (Keohane & Nye, 2000). In addition, economic integration creates strategic partnerships in the world economy and paves the way for the political integration process. Therefore, it is stated that economic and political processes are in a complex and intertwined relationship with globalization (Held, 1999; Held & McGrew, 2000).

Economic globalization can significantly affect government policies and cause governments to be included in the global governance mechanism. This situation is also reflected in the discourses of political leaders. It is seen that governments use globalization discourses to integrate into the global economy and governance (Held & McGrew, 2000). At this point, it is noteworthy that developing countries want to ensure capital flow to their countries by supporting neoliberal policies and aim for a better position for themselves in global governance institutions. Thus, it is thought that they are trying to integrate into the global economy by increasing their level of political globalization. Developed countries can implement this strategy to maintain their positions



in the global economy and governance. Therefore, countries are increasing their political integration to benefit from the positive effects of economic globalization (Rosenau, 1997). In addition, with the globalization process, developing countries aim to position themselves in the global economy better. In this direction, the balance of power may change (Amin, 2006). Developing countries can be effective in the global economy by increasing their level of economic integration. By supporting this with political integration, they increase their power in global governance and try to strengthen their hierarchical position in the global economy (Wallerstein, 1974; Ritzer, 2010).

As a result of the increase in economic integration, processes related to the global economy cannot be determined by nation-states alone. Global governance structures have a critical role in the sustainability of economic activities (Held & McGrew, 2002; Steger, 2003). Institutions such as the International Monetary Fund (IMF), the World Bank (WB), and the World Trade Organization (WTO) have become important actors in the governance of the global economy. These institutions have an intergovernmental nature. Therefore, these institutions are formed by the coming together of nation-states. International economic organizations support global economic integration through political arrangements. These organizations pave the way for political globalization by creating cooperation in the world economy. Nation-states are at the center of these and similar organizations, unions, and agreements. Becoming a member of such institutions, joining unions, and being a party to agreements causes the globalization processes to become intertwined (Ruggie, 1998; Steger, 2003; Ritzer, 2010; Heywood, 2011).

With economic globalization, consumer ideology is spreading globally. This situation causes changes and transformations in the traditional cultural structures and lifestyles of societies (Sklair, 2000). As a result of the global spread of brands such as McDonald's and Starbucks, the eating and drinking habits of societies are affected. This effect can cause the acceleration of cultural integration, standardization, and cultural homogenization (Pieterse, 1995; Ritzer, 2010). In addition, with commercial globalization, the consumption cultures of societies are changing due to international trade in cultural products and services (Sklair, 2000). In this regard, TNCs trigger various social and cultural transformations in the countries where they operate, thus affecting cultural integration.

The spread of universal values such as human rights, freedom, and democracy on a global scale shapes international political arrangements and global governance and leads to increased political integration (Held, 1995; Held & McGrew, 2002). Therefore, cultural globalization can shape political structures by supporting the spread of international norms and values (Robertson, 1992; Ruggie, 1998). Political integration also has significant impacts on cultural processes. Political globalization both increases the spread of TNCs and leads to the adoption of global values and norms through NGOs. Finally, nation-states become determinants of cultural processes as well as economic processes by increasing their political integration through their participation in international organizations and their cooperation (Keohane & Nye, 2000).



## Data and Econometric Process

### Data

The aim of the study is to empirically analyze the long-run relationships among economic, cultural, and political globalization. In the literature, many indicators and indices are suggested regarding globalization and its dimensions. Among the globalization indices, the KOF Globalization Index is measured to cover 203 countries and the period 1970–2020. In addition, 43 variables are used in measuring the KOF Globalization Index and it takes more variables into consideration than other globalization indices. The KOF Globalization Index measures the dimensions of globalization used in the econometric analysis of the study. Additionally, the KOF Globalization Index measures globalization by grouping countries according to income levels. For these reasons, the KOF Globalization Index has become the most widely used globalization index in the literature (Potrafke, 2015; Gygli et al., 2019). The globalization index variables used in the analysis of the study were obtained from the KOF Swiss Economics Institute.

The data used in the study are annual and cover the period of 1980–2020. The main reason why the study period began in 1980 is that there is a consensus in the literature that contemporary globalization fully emerged after this period. In the study, the relationships among the dimensions of globalization are analyzed separately according to the income group classifications of countries worldwide. The country income groups considered in the study are high income, upper-middle income, lower-middle income, and low income. All of the variables were used in logarithmic form. Abbreviations and definitions of all variables are presented in Table 1.

**Table 1.** Abbreviations and Definitions of Variables

Variable Abbreviation	Variable Definition
LECO	Logarithm of Economic Globalization Index
LCUL	Logarithm of Cultural Globalization Index
LPOL	Logarithm of Political Globalization Index

**Note:** The initial letter "L" in the variable abbreviations indicates that the logarithm of the relevant series is taken.

### Econometric Methodology and Models

The econometric methodology used in this study is as follows: First of all, the Augmented Dickey–Fuller (ADF) unit root test developed by Dickey & Fuller (1981) and the Phillips–Perron (PP) unit root test developed by Phillips & Perron (1988) were applied to all three variables. After that, long-run relationships among variables were investigated with cointegration methods. The Johansen cointegration test (Johansen, 1988; Johansen & Juselius, 1990) was used. Subsequently, long-run elasticity coefficients were obtained to determine the direction and degree of long-run relationships among the dimensions of globalization. If the series are stationary in their first differences and there is a long-run relationship among the series, the coefficients as a result of the estimates made with the Ordinary Least Squares (OLS) method can be biased and inconsistent. In this case,



hypothesis tests lose their validity, endogeneity problems arise, and estimates are not efficient. Fully Modified Ordinary Least Squares (FMOLS) method developed by Phillips & Hansen (1990), correct possible asymptotic bias and endogeneity problems that may arise in OLS estimates and ensure that efficient estimators are obtained. Moreover, these model provides more reliable results in small samples. In this study, long-run elasticity coefficients were estimated using FMOLS method.<sup>2</sup> The econometric process was applied to each country income group in line with the purpose and main arguments of the study. There are three different econometric models in the study. In these models, each dimension of globalization is considered separately as a dependent variable and the other two dimensions as explanatory variables. Econometric models are expressed below.

**Model 1:**  $LECO = f(LCUL, LPOL)$

**Model 2:**  $LCUL = f(LECO, LPOL)$

**Model 3:**  $LPOL = f(LECO, LCUL)$

### Empirical Findings

Graphs 1, 2, 3, and 4 show the time course of economic, cultural, and political globalization indices for country income groups from 1980 to 2020. Non-logarithmic raw data were used in the graphs. Graph 1 shows the index values for high income countries. The graph shows that cultural globalization had the highest index values, while political globalization had the lowest index values during the period. The economic globalization index showed an increasing trend. Although the cultural globalization index increased between 1980 and 2000, it decreased in 2001 and 2002. In high income countries, the political globalization index declined in most periods between 1980 and 1990 and experienced a break in 1990.

In the following period, political globalization increased rapidly. Index values for upper-middle income countries are presented in Graph 2. In this graph, it is seen that the globalization indices had close values from 1980 to 1992. During this period, the globalization indices remained horizontal and experienced a common break in 1991. The political globalization index rose remarkably after 1991. Economic globalization increased in upper-middle income countries until 2007 and remained stable in the following period. Although cultural globalization remained at a low level compared to economic and political globalization, it continued its increasing trend from 1994 to 2020. Graph 3 shows the globalization indices for the lower-middle income group. Throughout the period, political globalization reached higher values than economic and cultural globalization. Although the values of the political and economic globalization indices were close to each other in the period 1980–1990, political globalization increased further in the following years and a separation occurred between the indices. It can be stated that the increasing trend of economic globalization in lower-middle income countries slowed down and remained

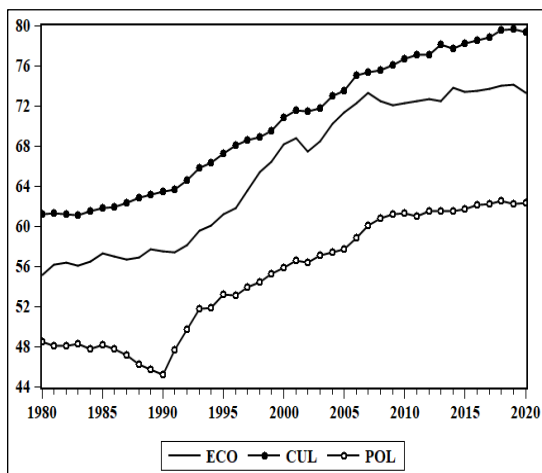
<sup>2</sup> Long-run elasticity coefficients were also estimated by the Dynamic Least Squares (DOLS) method developed by Stock & Watson (1993) and the Canonical Cointegration Regression (CCR) method developed by Park (1992). However, the findings obtained from the DOLS and CCR methods were not reported because they were parallel to the FMOLS findings.



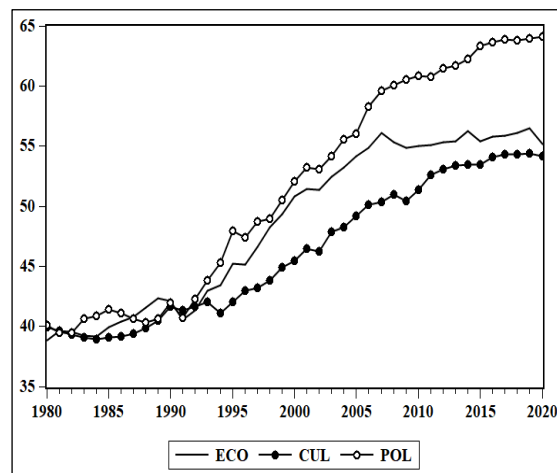
stable after 2007. In Graph 4, the indices are presented for the low income group. In low income countries, political globalization was higher than economic and cultural globalization between 1980 and 2020. The difference between political globalization and other dimensions of globalization has increased, especially since the early 2000s. In this income group, cultural globalization had the lowest level of globalization compared to other dimensions.

ADF and PP unit root test results for stationary analysis are presented in Table 2. According to the ADF and PP unit root test results, it was found that the economic, cultural, and political globalization series were not stationary at their levels, but all three series were stationary at the first difference in all country income groups.

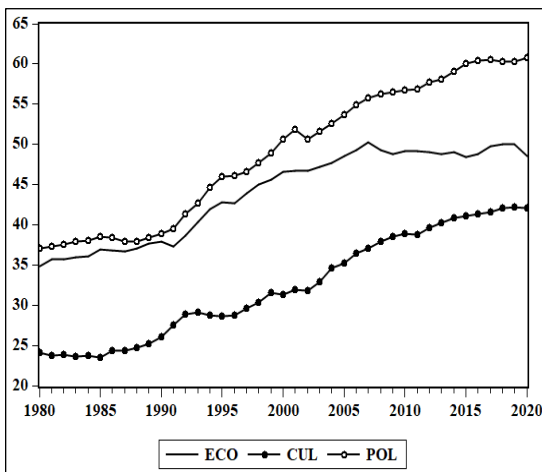
**Graph 1.** Globalization Indices for High Income Group



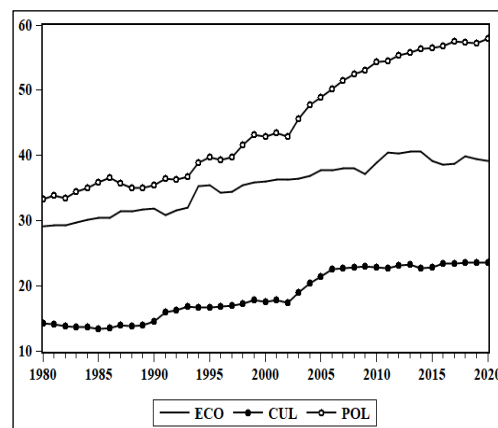
**Graph 2.** Globalization Indices for Upper-Middle Income Group



**Graph 3.** Globalization Indices for Lower-Middle Income Group



**Graph 4.** Globalization Indices for Low Income Group





**Table 2.** Unit Root Test Results

	ADF		PP	
	Intercept	Trend- Intercept	Intercept	Trend- Intercept
<b>High Income Group</b>				
LECO	-1.238 (0)	-0.300 (0)	-1.148 [3]	-0.735 [3]
$\Delta$ LECO	-4.442*** (0)	-4.478*** (0)	-4.423*** [2]	-4.456*** [2]
LCUL	-0.420 (0)	-1.144 (0)	-0.423 [3]	-1.484 [3]
$\Delta$ LCUL	-5.170*** (0)	-5.104*** (0)	-5.140*** [2]	-5.062*** [2]
LPOL	-1.287 (6)	-2.391 (6)	-0.464 [2]	-2.086 [3]
$\Delta$ LPOL	-3.488** (2)	-3.841** (0)	-3.912*** [4]	-3.840** [4]
<b>Upper-Middle Income Group</b>				
LECO	-1.372 (0)	-0.168 (0)	-1.310 [2]	-0.422 [2]
$\Delta$ LECO	-4.776*** (0)	-4.886*** (0)	-4.803*** [2]	-4.897*** [1]
LCUL	0.203 (0)	-2.760 (0)	0.097 [3]	-2.818 [3]
$\Delta$ LCUL	-5.889*** (0)	-5.785*** (0)	-5.908*** [3]	-5.816*** [3]
LPOL	-0.343 (0)	-1.510 (0)	-0.374 [3]	-1.782 [3]
$\Delta$ LPOL	-6.110*** (0)	-6.038*** (0)	-6.129*** [3]	-6.058*** [3]
<b>Lower-Middle Income Group</b>				
LECO	-1.981 (0)	0.127 (0)	-1.857 [1]	-0.053 [3]
$\Delta$ LECO	-4.085*** (0)	-4.049** (1)	-4.026*** [3]	-4.324*** [5]
LCUL	-0.880 (3)	-2.272 (1)	-0.146 [0]	-2.429 [1]
$\Delta$ LCUL	-3.199** (1)	-4.341*** (0)	-4.274*** [6]	-4.139** [7]
LPOL	-0.754 (0)	-0.672 (0)	-0.705 [3]	-1.315 [3]
$\Delta$ LPOL	-3.766*** (0)	-3.768** (0)	-3.766*** [0]	-3.768** [0]
<b>Low Income Group</b>				
LECO	-1.377 (0)	-2.005 (0)	-2.101 [36]	-1.818 [5]
$\Delta$ LECO	-5.469*** (1)	-5.638*** (1)	-6.491*** [28]	-11.15*** [38]
LCUL	-0.315 (0)	-2.275 (1)	-0.435 [2]	-2.268 [3]
$\Delta$ LCUL	-4.499*** (0)	-4.430*** (0)	-4.499*** [0]	-4.430*** [0]
LPOL	-0.269 (0)	-1.613 (0)	-0.282 [3]	-1.765 [1]
$\Delta$ LPOL	-4.723** (1)	-4.644** (1)	-5.059*** [6]	-4.986** [6]

**Note:** \*\*\*, \*\*, and \* represent %1, %5, and %10 significance levels, respectively.  $\Delta$  is the first difference operator. The maximum lag length is taken 9. The values in parentheses indicate the optimal lag lengths. The values in square brackets indicate the bandwidths.

The results of the Johansen cointegration test are presented in Table 3. For the high income group, the trace statistic was obtained as 44.298 and was found to be greater than the 5% critical value. The maximum eigenvalue statistic was calculated as 26.501. This value is greater than the critical value at the 5% level. Therefore, the null hypothesis that the rank is equal to zero was rejected and one cointegration equation was determined for the high income group. The values of the trace and maximum eigenvalue statistics for the upper-middle income group were found to be greater than the 5% critical value. Thus, the null hypothesis expressed as  $r \leq 1$  was rejected according to both test results. As seen in Table 3, the trace statistic and the maximum eigenvalue statistic for the lower-middle income group were calculated as 32.817 and 22.845, respectively. These values were greater than the critical value at the 5% level. The trace statistic and maximum eigenvalue statistic for the low income group were determined to be greater than the 5% critical values. According to the Johansen cointegration test results, there is long-run relationship among globalization variables for all income groups.



**Table 3.** Johansen Cointegration Test Results

<b>High Income Group</b>			
H <sub>0</sub>	Trace Statistic	0.05 Critical Value	Prob.
r=0	44.298	35.192	0.004
r≤1	17.796	20.261	0.105
r≤2	2.383	9.164	0.700
H <sub>0</sub>	Max. Eigen Statistic	0.05 Critical Value	Prob.
r=0	26.501	22.299	0.012
r≤1	15.413	15.892	0.059
r≤2	2.383	9.164	0.700
<b>Upper-Middle Income Group</b>			
H <sub>0</sub>	Trace Statistic	0.05 Critical Value	Prob.
r=0	45.397	35.192	0.002
r≤1	22.883	20.261	0.021
r≤2	4.957	9.164	0.288
H <sub>0</sub>	Max. Eigen Statistic	0.05 Critical Value	Prob.
r=0	22.514	22.299	0.046
r≤1	17.926	15.892	0.023
r≤2	4.957	9.164	0.288
<b>Lower-Middle Income Group</b>			
H <sub>0</sub>	Trace Statistic	0.05 Critical Value	Prob.
r=0	37.817	35.192	0.025
r≤1	18.649	20.261	0.082
r≤2	5.429	9.164	0.239
H <sub>0</sub>	Max. Eigen Statistic	0.05 Critical Value	Prob.
r=0	22.845	22.299	0.041
r≤1	13.219	15.892	0.125
r≤2	5.429	9.164	0.239
<b>Low Income Group</b>			
H <sub>0</sub>	Trace Statistic	0.05 Critical Value	Prob.
r=0	46.680	35.192	0.001
r≤1	19.345	20.261	0.066
r≤2	5.981	9.164	0.192
H <sub>0</sub>	Max. Eigen Statistic	0.05 Critical Value	Prob.
r=0	27.335	22.299	0.009
r≤1	13.363	15.892	0.119
r≤2	5.981	9.164	0.192

The long-run elasticity coefficients obtained from FMOLS method for the high income group are reported in Table 4. For Model 1, the long-run coefficients of the cultural and political globalization variables were found to be positive and statistically significant. According to findings of Model 2, the coefficients of the economic and political globalization variables were also found positive and statistically significant. According to the findings obtained from Models 1 and 2, there is a positive long-run relationship between economic and cultural globalization variables. As in findings of Model 1, the long-run effect of political globalization on cultural globalization is also positive. According to findings of Model 3, it was concluded that the long-run coefficients of economic and cultural globalization variables were positive and statistically significant. The findings from Model 3 are similar to the results of Models 1 and 2 in terms of the long-run effects of economic and cultural globalization.



**Table 4.** Long-Run Coefficients: High Income Group

Variable	Coefficient	Standard Error	t-statistic
<i>Model 1</i>			
Constant Term	-0.360	0.280	-1.286
LCUL	0.679***	0.244	2.778
LPOL	0.412*	0.207	1.987
<i>Model 2</i>			
Constant Term	0.737***	0.162	4.535
LECO	0.411**	0.186	2.206
LPOL	0.447**	0.184	2.423
<i>Model 3</i>			
Constant Term	-0.557***	0.106	-5.228
LECO	0.429***	0.098	4.365
LCUL	0.651***	0.114	5.672

**Note:** \*\*\*, \*\*, and \* represent %1, %5, and %10 significance levels, respectively.

The long-run coefficients and t-statistics calculated for the upper-middle income group are presented in Table 5. For Model 1, the long-run elasticity coefficient of the cultural globalization variable was found to be negative and statistically significant. In Model 1, the elasticity coefficient of the political globalization variable were found to be positive and statistically significant at least at the 1% level. Findings indicate that political globalization affects economic globalization more than cultural globalization. The results of Model 2, economic globalization has a negative effect on cultural globalization, whereas political globalization has a positive effect. In Model 2, the positive effect of political globalization is greater than the negative effect of economic globalization in the long-run. Models indicate that the long-run relationship between economic and cultural globalization is negative in the upper-middle income group. According to findings of Model 3, the long-run coefficients of the economic and cultural globalization variables were found to be positive and statistically significant at least at the 1% level. FMOLS findings indicate that the long-run effect of the cultural globalization variable on the dependent variable is greater than economic globalization.

**Table 5.** Long-Run Coefficients: Upper-Middle Income Group

Variable	Coefficient	Standard Error	t-statistic
<i>Model 1</i>			
Constant Term	1.696***	0.386	4.386
LCUL	-0.641**	0.305	-2.099
LPOL	1.177***	0.209	5.636
<i>Model 2</i>			
Constant Term	1.458***	0.120	12.148
LECO	-0.245**	0.116	-2.115
LPOL	0.845***	0.089	9.437
<i>Model 3</i>			
Constant Term	-1.555***	0.143	-10.826
LECO	0.630***	0.127	4.942
LCUL	0.795***	0.144	5.524

**Note:** \*\*\*, \*\*, and \* represent %1, %5, and %10 significance levels, respectively.



The long-run elasticity coefficients for the lower-middle income group are given in Table 6. The results of Model 1, long-run coefficient of the cultural globalization variable was found to be negative. The coefficient of the political globalization variable obtained from the FMOLS method was calculated as 1.386 and was found to be statistically significant at least at the 1% level. The findings of Model 1 indicate that political globalization affects economic globalization more than cultural globalization in the lower-middle income group. The findings obtained from Models 1 and 2 show that the long-run effects of economic and cultural globalization on each other are negative in the lower-middle income group, as well as in the upper-middle income group. In addition to all these findings, political globalization is a more important determinant of both economic and cultural globalization in the lower-middle income group. As seen in findings of Model 3, the long-run coefficients of the economic and cultural globalization variables are positive and statistically significant at least at the 1% level. When these findings are evaluated together with the findings of Models 1 and 2, there is a positive long-run relationship between the political globalization variable and other globalization variables.

**Table 6.** Long-Run Coefficients: Lower-Middle Income Group

Variable	Coefficient	Standard Error	t-statistic
<i>Model 1</i>			
Constant Term	0.423	0.269	1.574
LCUL	-0.588**	0.221	-2.658
LPOL	1.386***	0.254	5.446
<i>Model 2</i>			
Constant Term	-0.106	0.382	-0.278
LECO	-0.684**	0.312	-2.189
LPOL	1.585***	0.221	7.159
<i>Model 3</i>			
Constant Term	-0.189	0.184	-1.028
LECO	0.616***	0.098	6.288
LCUL	0.504***	0.060	8.365

**Note:** \*\*\*, \*\*, and \* represent %1, %5, and %10 significance levels, respectively.

The long-run findings for the low income group are presented in Table 7. According to findings of Model 1, the long-run elasticity coefficients of cultural and political globalization variables are positive and statistically significant. In Model 2, the long-run coefficient of economic globalization was found to be positive and statistically significant. Therefore, the long-run effects of economic and cultural globalization on each other are positive. In this respect, the findings are similar to the findings obtained from the high income group, while they differ from the findings obtained from the upper-middle and lower-middle income groups. In Model 2, the coefficient of political globalization was calculated as 0.732 and was found to be statistically significant at least at the 1% level. Based on these findings, political globalization has a greater long-run effect on cultural globalization than economic globalization in the low income group. The long-run effects of economic and cultural globalization on political globalization are positive. Findings indicate that the long-run effect of cultural globalization on political globalization is greater than economic globalization in the low income group.

**Table 7.** Long-Run Coefficients: Low Income Group

Variable	Coefficient	Standard Error	t-statistic
<i>Model 1</i>			
Constant Term	1.719***	0.113	15.189
LCUL	0.326***	0.083	3.911
LPOL	0.232**	0.089	2.602
<i>Model 2</i>			
Constant Term	-1.994***	0.442	-4.504
LECO	0.596**	0.258	2.308
LPOL	0.732***	0.140	5.206
<i>Model 3</i>			
Constant Term	0.497*	0.287	1.733
LECO	0.413***	0.130	3.178
LCUL	0.630***	0.066	9.517

**Note:** \*\*\*, \*\*, and \* represent %1, %5, and %10 significance levels, respectively.

The long-run relationship among economic, cultural, and political globalization variables was investigated for all country income groups. The long-run effects of the dimensions of globalization on each other are positive in high and low income countries. Unlike these findings, the long-run relationships between economic and cultural globalization are negative in upper-middle and lower-middle income countries. Cultural globalization is the determinant of the economic globalization process in high and low income countries. Findings indicate that political globalization affects economic globalization more than cultural globalization in upper-middle and lower-middle income countries. The long-run effects of economic and political globalization on cultural globalization are similar in high income countries. For other country income groups, political integration is the determinant of cultural integration processes. Economic globalization affects the political globalization process more than cultural globalization in lower-middle income countries. In all remaining country income groups, cultural globalization is the determinant of the political globalization process. Cultural globalization is the dimension at the center of the globalization process, and economic and political processes contribute to other processes in high income countries. The globalization process is essentially determined by political processes in upper-middle and lower-middle income countries. Furthermore, economic and cultural processes significantly support political integration in these country groups. There is no dominant dimension in the globalization process in low income countries and all dimensions of globalization promote each other to a certain extent.

## Conclusion

This study attempts to empirically determine the degree and direction of long-run relationships among economic, cultural, and political globalization. The study covers the period 1980–2020 and four different country income groups. Globalization variables used in econometric analyses were obtained from the KOF Swiss Economic Institute. The long-run relationships among the dimensions of globalization were analyzed using Johansen cointegration test. Long-run elasticity coefficients were calculated using FMOLS method. According to the findings obtained from Johansen cointegration test, there is long-run relationship among economic, cultural, and political globalization for all income groups. According to the long-run elasticity coefficient findings, the long-run effects of the



dimensions of globalization on each other are positive in high and low income countries. Unlike these findings, the long-run relationships between economic and cultural globalization are negative in upper-middle and lower-middle income countries.

Findings regarding the interrelationships of economic and political globalization processes indicate that these processes support each other and are intertwined (Held, 1999; Held & McGrew, 2000). Political integration processes are supported by economic integration and the fact that countries are party to international organizations that are active in the governance of the global economy. As countries increase their trade openness, political communication between countries increases and political globalization processes are promoted. In addition, economic integration occurs as a result of countries being included in the global governance mechanism within the context of the policies they implement and increasing their level of political integration (Ohmae, 1995; Friedman, 1999). Therefore, economic globalization occurs with the integration of countries into the international global economy, but this process needs to be supported by political regulations (Keohane & Nye, 2000; Rodrik, 2011). International economic organizations, regional unions, and trade agreements support global economic integration through political arrangements (Ruggie, 1998; Steger, 2003; Heywood, 2011). As a result, the findings that economic and political globalization processes positively affect each other indicate that these processes promote each other and support the views in this direction.

The long-run effects of economic and cultural globalization processes on each other were found to be positive in high and low income countries. These findings are in line with expectations, considering that processes such as the increase in international trade, the production, consumption, and spread of cultural products and services on a global scale, the change in consumer behavior, and standardization encourage each other (Steger, 2003; Ritzer, 2010). Moreover, findings indicate that increased economic integration may lead to cultural homogenization (Ritzer, 2010) or hybridization (Pieterse, 1995) in high and low income countries. Especially the abundance of cultural capital and the easier adoption of global consumption patterns in high income countries (Ritzer, 2010) may cause cultural and economic integration to positively affect each other. On the other hand, the long-run effects of economic and cultural globalization on each other were determined to be negative in upper-middle and lower-middle income countries. This finding indicates that global economic integration may create pressure on the preservation of local cultural identities in relevant country groups (Pieterse, 1995) and may cause cultural heterogeneity rather than homogeneity (Friedman, 1995). It is thought that increasing economic globalization may lead to strong reactions towards the preservation of cultural identities in these country groups. In this regard, it can be stated that cultural processes are much more resistant to economic processes in lower-middle income countries. There is a positive relationship between cultural and political globalization in all income groups in the long-run. These findings imply that increased cultural integration positively affects global political structures and processes. As a result of the spread of global norms and values, cultural globalization can be expected to increase its influence on political processes (Robertson, 1992; Ruggie, 1998). The findings are in line with expectations, considering that the spread of universal values such as human rights, freedom, and democracy on a global scale can shape international political arrangements and global governance (Held, 1995; Held & McGrew, 2002).



According to the statistical findings, cultural globalization is the dimension at the center of the globalization process, and economic and political processes contribute to other processes in high income countries. The determining effect of the cultural dimension on globalization processes in high income countries can be explained by the effect of high education levels, cultural diversity, and advanced communication technologies. The globalization mechanism operates similarly in upper-middle and lower-middle income countries, and the globalization process is essentially determined by political processes. Moreover, economic and cultural processes significantly support political integration in these country groups. In particular, the decisive role played by foreign investments and international trade on political stability may increase this effect. It may increase the impact of political processes on economic and cultural integration due to countries that aim to strengthen or maintain their place in the global economy or are economically dependent on foreign countries. In low income countries, there is no dominant dimension in the globalization process. All dimensions of globalization promote each other. This study empirically supports the view that the globalization process represents a holistic process that emerges as a result of the interactions of the dimensions it contains. The findings demonstrate that the degree and direction of the relationships among the dimensions of globalization may differ according to the income levels of the countries. In general, the findings indicate that political integration promotes globalization processes, while economic and cultural integration processes support political integration.

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