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How Does Economic Freedom and Governance Quality Affect Economic Growth: A Panel Data Analysis for 26 European Countries

Ekonomik Özgürlük ve Yönetişim Kalitesi Ekonomik Büyümeyi Nasıl Etkiler: 26 Avrupa Ülkesi İçin Panel Veri Analizi

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ÖZ

Bu çalışmanın amacı, ekonomik özgürlük ve yönetişim kalitesinin ekonomik büyüme üzerindeki etkisini incelemektir. Sürdürülebilir ekonomik büyüme ve refahı belirleyen faktörler uzun zamandır araştırmacıların ilgisini çekmektedir. Bu nedenle, ekonomik özgürlüklerin ve yönetişim kalitesinin ekonomik büyüme üzerindeki etkisinin analiz edilmesi büyük önem taşımaktadır. Bu, Avrupa Birliği gibi dünyanın en büyük ekonomik ağına sahip bir bölgede özellikle önemlidir. Bu amaçla Avrupa Birliği ülkelerinden yirmi altısı seçilmiştir. Bu ilişkiyi analiz etmek için Fraser Enstitüsü'nün ekonomik özgürlük düzeyi ve Dünya Bankası'nın yönetişim düzeyi kullanılmıştır. Çalışmanın temel hipotezi, kurumsal faktörlerin ekonomik genişlemeyi teşvik edeceğidir. Bu hipotezi incelemek için yatay kesit bağımlılığı, heterojenlik, birim kök, eşbütünleşme ve nedensellik testleri yapılmıştır. Sonuç olarak, bu faktörlerin dönem boyunca ekonomik büyümeye katkıda bulunduğu tespit edilmiştir. Ülkeler arasında farklılıklar olduğu tespit edilmiş olup, bu farklılıkların nedenleri tartışma bölümünde ele alınmıştır.

JEL Sınıflandırması: O10, O11, O43, C23.

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ABSTRACT

The purpose of this study is to examine the impact of economic freedom and governance quality on economic growth. Sustainable economic growth and the factors determining prosperity have long been of interest to researchers. Therefore, analyzing the impact of economic freedoms and governance quality on economic growth is crucial. This is particularly important in a region like the European Union, which has the world's largest economic network. The primary hypothesis of the study is that institutional factors will stimulate economic expansion. In order to examine this hypothesis, tests for cross-section dependency, heterogeneity, unit root, cointegration, and causality were conducted. Consequently, it has been determined that these factors contribute to economic growth throughout the period. It has been discovered that there are differences across nations, and the causes for these distinctions are discussed in the discussion section.

JEL Classifications: O10, O11, O43, C23.

1. INTRODUCTION

The macroeconomics literature is generally influenced by studies examining the relationship between direct economic indicators such as GDP, exchange rates, inflation, and unemployment. However, it has also been subject to criticism for being overly deterministic in its analysis of the human relationship network (De Haan & Sturm, 2000, p. 5). Therefore, it is necessary to take into account the factors that heavily influence human economic relationships. To address this gap, various studies have been conducted since the 1940's, and indexes based on these studies have been calculated (Jeroen, 2014, p. 2). The Economic Freedom Index and The Worldwide Governance Indicators are among these indexes. These indexes take into account political and ideological factors that heavily influence human relationships. Therefore, it is important to analyze their relationship with economic indicators.

The Economic Freedom Index is currently calculated by two institutions, namely the Heritage Foundation and the Fraser Institute. The index calculated by the Heritage Foundation uses 12 sub-indices (The Heritage Foundation, n.d.), namely "property rights, government integrity, judicial effectiveness, tax burden, government spending, fiscal health, business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, financial freedom." The index calculated by the Fraser Institute, on the other hand, consists of 5 sub-indices (Fraser Institute, 2016), namely "size of government, legal system & property rights, sound money, freedom to trade internationally, regulation." It is possible to see the use of both indexes in academic studies. This index's scale ranges from 0 to 10 and measures the level of economic freedom,

where higher scores represent increased economic freedom, while lower scores indicate decreased freedom in this regard.

The worldwide governance indicators were first introduced by Kaufmann et al. (1999). The index is currently displayed in the World Bank databases. It consists of six sub-indices, namely "Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption". The Worldwide Governance Indicators (WGI) index is a measure calculated to assess the quality of governance in countries. There are two types of representations in this index: In the first type of representation, a value is assigned within the range of -2.5 to +2.5. As this value approaches +2.5, the governance quality is considered to be at a high level, whereas as it approaches -2.5, governance inadequacy is considered.

The data used in the study were obtained from three different sources. First, the data obtained from the Fraser Institute is the Economic Freedom Index (EFI). This index is calculated for the period 1970 to 2020. It is calculated with sub-indexes covering “the size of government, legal system and property rights, sound money, freedom to trade internationally and regulation”. Then, GDP per capita (GDPPC) was obtained from the World Bank World Development Indicators database. This data consists of current US $ values. Finally, governance quality indexes (WGI) were obtained from the World Bank's World Governance Indicators database. The index was calculated only in even years from 1996 to 2002. Therefore, we estimated the year 2001 by linear interpolation method in order to start the series from 2000.

Table 1. The Data Utilized in The Study and The Resources From Which The Data Was Obtained

Variable	Indicator	Data Type	Measurement	Source
Economic Freedom	EFI	Quantitative (Index Value)	Overall Index Value	Fraser Institute
Gross Domestic Product Per Capita	$GDPPC$	Quantitative (Real Value)	Current US$	World Development Indicators
Governance Quality	*WGI*	Quantitative (Index Value)	Percentile Rank (Continuous)	World Governance Indicators

2. LITRERATURE REVIEW

There is a vast literature that reveals the impact of economic freedom and governance quality on economic growth. Upon examining these studies, it is evident that both economic freedom and governance quality have a direct or indirect positive effect on economic growth, which is already anticipated by the majority of economic theorists. Criticisms of this approach also exist (Heckelman, 2000; Kurtz & Schrank, 2007). However, upon examining these studies, it is seen that the criticisms are not aimed at the variables not having an impact on economic growth, but rather that the measurements related to economic freedom and governance quality are subjective. However, conducting these types of measurements objectively is nearly impossible due to political and economic reasons. Additionally, these indexes are not calculated to reveal the standalone situation of a country but rather to determine their relative status compared to other countries. Another point is the degree of acceptance of these types of indexes. The economic freedom indexes calculated by both the Heritage Foundation and the Fraser Institute have been widely accepted by institutions and academics. When the World Governance Index was first calculated, it was the focus of criticisms, but after being included in the World Bank database, it too was widely accepted. In light of this information, the literature that demonstrates the relationship between these indexes and economic growth can be summarized.

There is a large literature on the effects of economic freedoms on economic growth. There are studies that show that economic growth is a direct result of economic freedom (Ali & Crain, 2002; Asandului et al., 2016; Ayal & Karras, 1998; Borović, 2014; Brkić et al., 2020; Bundă et al., 2012; De Haan & Sturm, 2000; Gagea, 2010; Heckelman, 2000; Heckelman & Stroup, 2000; Iacobuţă & Gagea, 2010; Mandić et al., 2017; Spindler, 1991; Wu & Davis, 1999). In addition to economic freedom, there are also studies that consider supporting factors such as education, population growth rate, foreign direct investment and trade openness (Baćović, 2006; Bayar, 2016; Caetano & Caleiro, 2009; De Vanssay & Spindler, 1994; Feruni et al., 2020; Sayari et al., 2018). As a result of these studies, it has been revealed that economic freedoms positively affect economic growth. In addition to these, there are also studies analyzing economic freedoms and economic growth according to the different types of group of countries (Farr et al., 1998; Rapsikevičius et al., 2021). As a result of these studies, the effects of economic freedoms in different country groups have been revealed with different severity. But in any case, economic freedoms affect economic growth positively according to these studies. There are also studies that find that economic freedoms cause negative effects such as budget deficit (Peev & Mueller, 2012). However, according to these studies, economic freedoms support economic growth. In conclusion, there is a widespread consensus in the literature that economic freedoms, which are considered from many perspectives, positively affect economic growth.

There is also a large literature on the effects of governance quality on economic growth. The majority of academic studies find that the quality of governance has a positive effect on economic growth either directly or indirectly (Absadykov, 2020; Han et al., 2014; Iheonu, 2019; Keser & Gökmen, 2018; Nikzad, 2021; Peev, 2015; Rusu & Roman, 2019; Setyastuti et al., 2018; Silve & Plekhanov, 2015; Silve & Plekhanov, 2018; Zubair & Khan, 2014). There are also studies that separately address the effects of the sub-indices of the World Governance Indicators, which measure the quality of governance. Mira and

Hammadache (2017) find that the sub-indices of the World Governance Indicators have different effects among country groups, indicating that it is not possible to confirm the notion that good governance accelerates economic development for all countries. According to Samarasinghe's (2018) research, it has been revealed that the most significant aspect in governance for economic growth is the prevention of corruption. While the other variables also contribute to accelerating economic development, the impact of combating corruption is stronger. According to Prasetyia (2020), only control of corruption and rule of law have a positive and significant impact on economic growth. According to Tiwari and Bharadwaj (2021), government effectiveness, regulatory quality, and control of corruption have a positive impact on economic growth. There are also studies suggesting that governance quality will increase as a result of growth (Kurtz & Schrank, 2007; Singh, 2019). Boţa-Avram et al. (2021) conclude that the quality of governance and economic growth mutually affect each other.

3. METHODOLOGY AND TEST FINDINGS

In this study, we aim to investigate the impact of governance quality and economic freedom variables on GDP per capita by employing various panel data econometric analysis methods. Upon reviewing the literature, it is observed that in such an analysis, the characteristics of the series are first determined through tests for cross-sectional dependence and homogeneity. Subsequently, depending on the obtained results, first or second-generation unit root, co-integration, and causality analyses are conducted. In the presence of cross-sectional dependence and heterogeneity, it is observed that second-generation unit root, second-generation co-integration, and heterogeneity-resistant causality analyses are performed. In our study, we have adhered to this sequence of analysis.

Firstly, the cross-sectional dependence among the variables was tested using the Pesaran Scaled LM, Pesaran CD, and Bias-Adjusted Test analysis methods. All of these tests can be applied to panel series with the property N>T (Pesaran, 2004, p. 1). The purpose of testing for cross-sectional dependence is to identify any potential bias issues that may arise in subsequent tests and to take necessary precautions.

Pesaran (2004) CD Test

$$CD = \sqrt{\frac{2T}{N(N-1)}}\left(\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\hat{\rho}_{ij}\right)$$

In his study conducted in 2004, Pesaran stated that this test statistic can be utilized in panel data analysis in the case of N>T (Pesaran, 2004, p. 1).

$T: Time$
$N: Number\ of\ observations$
$i: Index\ of\ observation$
$j: Starting\ point$
$\hat{\rho}: "pair-wise\ correlation\ coefficients\ of\ the\ residuals"$

Bias Adjusted LM Test (Pesaran et al., 2008)

$$\mathrm{LM}_{adj} = \sqrt{\frac{2}{N(N-1)}}\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\frac{(T-k)\hat{\rho}_{ij}^2 - \mu_{Tij}}{v_{Tij}}$$

In their study, Pesaran et al. (2008) expressed that an adjusted test statistic, similar to the one mentioned above, can be used in the case of N>T (Pesaran et al., 2008, p. 106).

$T: Time$
$N: Number\ of\ observations$
$i: Index\ of\ observation$
$j: Starting\ point$
$\hat{\rho}: "pair-wise\ correlation\ coefficients\ of\ the\ residuals"$
$\mu_{Tij}: Mean$
$v_{Tij}: Variance$

Following the assessment of cross-sectional dependence, a heterogeneity test was conducted on the series. For this purpose, the widely used Pesaran and Yamagata (2008) heterogeneity analysis method was employed. The aim of this test is to identify any heterogeneity issues that could lead to biases in subsequent tests.

Pesaran and Yamagata (2008) Homogeneity Analysis

$$\widehat{\Delta} = \sqrt{N}\left(\frac{N^{-1}\hat{S} - k}{\sqrt{2k}}\right)$$

$$\widetilde{\Delta} = \sqrt{N}\left(\frac{N^{-1}\tilde{S} - k}{\sqrt{2k}}\right)$$

$$\widehat{\Delta}_{\mathrm{adj}} = \sqrt{N}\left(\frac{N^{-1}\hat{S} - \mathrm{E}(\hat{z}_{iT})}{\sqrt{\mathrm{Var}(\hat{z}_{iT})}}\right)$$

$$\widetilde{\Delta}_{\mathrm{adj}} = \sqrt{N}\left(\frac{N^{-1}\tilde{S} - \mathrm{E}(\tilde{z}_{iT})}{\sqrt{\mathrm{Var}(\tilde{z}_{iT})}}\right)$$

$S: Swamy\ Test\ Statistic$
$N: Number\ of\ observations$
$k: Regressors$
$Var: Variance$
$E: Expected\ value$

The decision regarding which unit root test to conduct is determined based on the results of cross-section dependence and homogeneity tests. In the presence of these issues, a second-generation unit root test is expected to be applied. In our study, we employed the PANICCA test developed by Reese and Westerlund (2016).

PANİCCA (Reese & Westerlund, 2016) unit root analysis (Panel Analysis of Nonstationarity in Idiosyncratic and Common Components on Cross-section Averages)

$$Y_{i,t} = \alpha_i' \mathrm{D}_{t,p} + \lambda_i' \mathrm{F}_t + e_{i,t}$$

$$X_{i,t} = \beta_i' D_{t,p} + \Lambda_i' F_t + u_{i,t}$$

$$Z_{i,t} = B_i' D_{t,p} + C_i' F_t + V_{i,t}$$

$$P_{a,0} = \frac{\sqrt{N}T(\hat{\rho}_0^+ - 1)}{\sqrt{2\hat{\phi}_\epsilon^4/\hat{\omega}_\epsilon^4}}$$

$$P_{b,0} = \frac{\sqrt{N}T(\hat{\rho}_0^+ - 1)}{\sqrt{\hat{\phi}_\epsilon^4/\left[\hat{\omega}_\epsilon^2 N^{-1}T^{-2}\sum_{i=1}^N \left(\hat{e}_{i,-1}^0\right)'\hat{e}_{i,-1}^0\right]}}$$

$$P_{a,1} = \frac{\sqrt{N}T(\hat{\rho}_1^+ - 1)}{\sqrt{36\hat{\sigma}_\epsilon^4\hat{\phi}_\epsilon^4/5\hat{\omega}_\epsilon^8}}$$

$$P_{b,1} = \frac{\sqrt{N}T(\hat{\rho}_1^+ - 1)}{\sqrt{6\hat{\phi}_\epsilon^4\hat{\sigma}_\epsilon^4/\left[5\hat{\omega}_\epsilon^6 N^{-1}T^{-2}\sum_{i=1}^N \left(\hat{e}_{i,-1}^1\right)'\hat{e}_{i,-1}^1\right]}}$$

$$\mathrm{PMSB}_0 = \frac{\sqrt{N}\left(N^{-1}T^{-2}\sum_{i=1}^N \left(\hat{e}_{i,-1}^0\right)'\hat{e}_{i,-1}^0 - \hat{\omega}_\epsilon^2/2\right)}{\sqrt{\hat{\phi}_\epsilon^4/3}}$$

$$\mathrm{PMSB}_1 = \frac{\sqrt{N}\left(N^{-1}T^{-2}\sum_{i=1}^N \left(\hat{e}_{i,-1}^1\right)'\hat{e}_{i,-1}^1 - \hat{\omega}_\epsilon^2/6\right)}{\sqrt{\hat{\phi}_\epsilon^4/45}}$$

$e_{i,t}$: Scalar idiosyncratic error
F_t: $Common\ factors'vector\ with\ \lambda_i'$
$D_{t,p}$: $Trends'vector$
$P_{a,0}$: $t\ statistic\ when\ a = 0$
$P_{a,1}$: $t\ statistic\ when\ a = 1$
$P_{b,0}$: $t\ statistic\ when\ b = 0$
$P_{b,1}$: $t\ statistic\ when\ b = 1$
$PMSB_0$: $Panel\ Modified\ Sargan - Bhargava\ test\ statistic\ when\ p = 0$
$PMSB_1$: $Panel\ Modified\ Sargan - Bhargava\ test\ statistic\ when\ p = 0$
N: $Number\ of\ observations$

The PANICCA unit root test is a second-generation unit root test. The null hypothesis suggests the presence of a unit root, while the alternative hypothesis suggests its absence, indicating that the series is stationary. In the analysis, the Pa, Pb, and PMSB values are examined.

3.1. Correlation Matrix

Table 2. Correlation Matrix

	lnGDP	WGI	EFI
lnGDP	1.000		
WGI	0.7699	1.000	
EFI	0.5780	0.5882	1.000

The correlation relationship between the variables is displayed in Table 2. A high correlation coefficient among regressors is known to result in multicollinearity problems. The coefficient of correlation between WGI and EFI variables is 0.5882. In the literature, 0.8 is typically used as a reference point. Compared to this number, 0.58 falls into the usually accepted range. The magnitude of the correlation coefficients between the dependent and independent variables indicates that further elaboration of the study is necessary. The correlation between WGI and lnGDP is 0.76. The coefficient between EFI and lnGDP is 0.57. The relatively high coefficient between the dependent variable and WGI, and the relatively low value of EFI appear to be interesting in terms of the research topic.

3.2. Cross-Sectional Dependency Test

Table 3. Cross Sectional Dependency Analysis Results

	Pesaran CD	Bias-Adjusted Test
lnGDP	0.0000	0.0000
EFI	0.0000	0.0000
WGI	0.0041	0.0000

In an analysis of series with cross-section dependence, it is commonly assumed that an external shock will affect all countries simultaneously, rather than just a single one. Therefore, it is necessary to test for the existence of cross-section dependence and to use analysis methods that take this phenomenon into account when analyzing series with cross-section dependence. Table 3 shows the probability values of two different approaches that test for cross-sectional dependence. The probability values of all tests are less than 0.05. This indicates that the null hypothesis stating that there is no cross-section dependence will be rejected. In other words, there is a cross-sectional dependence between the series.

3.3. Homogeneity Test

Table 4. Pesaran and Yamagata (2008) Homogeneity Analysis Results

Test	Statistic	P Value
Δ	14.564	0.0000
Δ*adj*	16.187	0.0000

Table 4 displays the delta test values and probability values of these tests. The null hypothesis of this test says that the series are homogeneous. The null hypothesis is rejected due to the fact that both the delta and adjusted delta probability values are less than 0.05. As a result, it is said that the series exhibit a heterogeneous feature.

3.4. Unit Root Test

Table 5. PANICCA Unit Root Analysis Results

			Common Factors		Idiosyncractic Components		
	Deterministics	Variables	ADF Stat.	Asymptotic P Val.	Pa	Pb	PMSB
Level	Constant	*lnGDPPC*	-2.601	**0.0082**	2.39 (0.9916)	2.499 (0.9938)	0.893 (0.8142)
		EFI	-2.228	**0.0234**	1.028 (0.8479)	1.55 (0.9395)	4.242 (1.0000)
		WGI	-1.261	0.189	0.817 (0.7931)	0.95 (0.829)	1.658 (0.9514)
	Constant and Trend	*lnGDPPC*	-1.593	0.1002	-1.397 (0.811)	-1.207 (0.1138)	-0.943 (0.1728)
		EFI	-0.843	0.3506	1.18 (0.8811)	1.425 (0.9229)	1.703 (0.9557)
		WGI	-3.615	**0.0001**	-0.798 (0.2125)	-0.737 (0.2304)	-0.574 (0.2831)
First Difference	Constant	*lnGDPPC*	-3.981	**0.0001**	-13.283 **(0.0000)**	-5.702 **(0.0000)**	-2.517 **(0.0059)**
		EFI	-4.093	**0.0001**	-4.208 **(0.0000)**	-2.632 **(0.0042)**	-1.652 **(0.0492)**
		WGI	-4.152	**0.0001**	-31.552 **(0.0000)**	-10.305 **(0.0000)**	-3.007 **(0.0013)**
	Constant and Trend	*lnGDPPC*	-3.997	**0.0001**	-9.236 **(0.0000)**	-5.66 **(0.0000)**	-2.526 **(0.0058)**
		EFI	-4.003	**0.0001**	-10.166 **(0.0000)**	-6.287 **(0.0000)**	-2.687 **(0.0036)**
		WGI	-3.143	**0.0022**	-10.68 **(0.0000)**	-5.938 **(0.0000)**	-2.211 **(0.0135)**

The Akaike criterion was selected as the lag criteria in the PANICCA test. Table 5 shows the results of the PANICCA unit root test, with the values in parentheses representing probability values. Values in bold and underlined indicate the absence of a unit root. According to the test results, all three variables have unit roots at the level level in both the constant model and the constant and trend model. It is stated that the series is stationary when these values are less than 0.05. Upon conducting a unit root analysis after taking the first difference of the series, it was observed that the series becomes stationary in both the constant and constant-trend models. Since all the series are I(1), cointegration analysis can be conducted.

3.5. Cointegration Analysis

Table 6. Westerlund (2008) Durbin - Hausman Cointegration Analysis Results

	Statistic	P Value
Group	5.446	**0.0000**
Panel	9.378	**0.0000**

Table 6 presents the results of the cointegration test. Probability values less than 0.05 indicate rejection of the null hypothesis, which states no cointegration. The probability values that are bold and underlined indicate rejection of the null hypothesis, suggesting the presence of a cointegration relationship.

Table 7. Pesaran (2006) Common Correlated Effects Mean Group Results for Panel

Regressors	Coefficient	Standart Error	P Value
WGI	0.0079309	0.0026668	**0.003**
EFI	0.1462707	0.0499658	**0.003**
Constant	0.0945159	1.123028	0.933
Chi-Square	24.35	Probability	**0.0000**

After the presence of cointegration was established, cointegration coefficients were estimated using the common correlated effect (CCE) analysis developed by Pesaran (2006). Table 7 presents the results for the panel series. The values in bold and underlined indicate the statistically significant series, i.e., those with probability values less than 0.05. The significance of the chi-square test statistic indicates the significance of the model. Both governance quality and economic freedoms have a positive effect on economic growth. The constant term is statistically insignificant.

Table 8. Pesaran (2006) Common Correlated Effects Mean Group Results for Each Cross Section

Countries		Coef.	Std. Err.	P Val.	*Countries*	Coef.	Std. Err.	P Val.
	WGI	0.009	0.005	**0.09**		-.002	.0263	0.93
Austria	*EFI*	0.278	0.077	**0.00**	***Italy***	.6700	.4204	0.11
	Cons.	3.607	1.259	**0.00**		-8.58	4.851	**0.07**
	WGI	0.007	0.004	**0.08**		-.004	.0081	0.58
Belgium	*EFI*	.1723	.0722	**0.01**	***Latvia***	.8671	.2521	**0.00**
	Cons.	1.103	1.126	0.32		6.247	3.685	**0.09**
	WGI	-.0030	.0087	0.73		.0165	.0100	0.10
Bulgaria	*EFI*	.2780	.0844	**0.00**	***Lithuania***	.1121	.1790	0.53
	Cons.	10.33	3.343	**0.00**		2.791	3.621	0.44
	WGI	-.0041	.0070	0.55		.0136	.0161	0.39
Croatia	*EFI*	-.1278	.0512	**0.01**	***Luxemburg***	-.104	.0799	0.19
	Cons.	-5.403	1.717	**0.00**		2.399	2.830	0.39
	WGI	.0087	.0061	0.15		-.014	.0073	**0.05**
Czechia	*EFI*	.1031	.1169	0.37	***Malta***	-.087	.0943	0.35
	Cons.	-.5659	1.893	0.76		11.25	3.270	**0.00**
	WGI	.0147	.0112	0.19		.0119	.0062	**0.05**
Denmark	*EFI*	-.0327	.0823	0.69	***Netherlands***	.1205	.1120	0.28
	Cons.	2.437	1.476	**0.09**		-3.13	2.192	0.15
	WGI	.0372	.0076	**0.00**		.0087	.0046	**0.05**
Estonia	*EFI*	-.2348	.1500	0.11	***Poland***	.1847	.2281	0.41
	Cons.	-6.188	2.313	**0.00**		5.653	3.273	0.08
	WGI	.0206	.0044	**0.00**		.0023	.0036	0.52
Finland	*EFI*	.1113	.0513	**0.03**	***Portugal***	-.119	.0942	0.20
	Cons.	-.6574	.7442	0.37		-.480	1.905	0.80
	WGI	.0106	.0063	**0.09**		.0318	.0111	**0.00**
France	*EFI*	.1453	.1111	0.19	***Romania***	.0193	.1182	0.87
	Cons.	.2516	1.697	0.88		2.658	4.238	0.53
	WGI	-.0004	.0040	0.92		.0153	.0055	**0.00**
Germany	*EFI*	.2738	.1074	**0.01**	***Slovakia***	-.062	.0407	0.12
	Cons.	2.645	1.533	**0.08**		-1.17	1.039	0.25
	WGI	-.0035	.0125	0.77		.0098	.0046	**0.03**
Greece	*EFI*	.3638	.2337	0.11	***Slovenia***	.0114	.0745	0.87
	Cons.	-13.18	6.385	**0.03**		-.219	.9786	0.82
	WGI	.0010	.0078	0.89		-.004	.0155	0.78
Hungary	*EFI*	-.1356	.1242	0.27	***Spain***	.2170	.1999	0.27
	Const.	-7.099	3.496	**0.04**		-7.12	3.593	**0.04**
	WGI	-.0144	.0368	0.69		.0371	.0122	**0.00**
Ireland	*EFI*	.3674	.4941	0.45	***Sweden***	.4124	.1286	**0.00**
	Cons.	6.1486	7.0821	0.385		-1.24	2.1617	0.564

Table 8 displays the country-specific situation of cointegration coefficients. There are four countries (Austria, Belgium, Finland, Sweden) where both economic freedoms and governance quality are significant. In these four countries, the relationship of both variables with economic growth is positive. There are only four countries (Bulgaria, Croatia, Germany, Latvia) where only economic freedoms are significant. In Bulgaria, Germany, and Latvia, the effect of economic freedoms on economic growth is positive, while in Croatia, it is negative. There are only eight countries (Estonia, France, Malta, Netherlands, Poland, Romania, Slovakia, Slovenia) where only governance quality is significant. Except for Malta, the relationship is positive in all of these countries.

3.6. Granger Non-Causality Analysis

Table 9. Dumitrescu and Hurlin (2012) Granger Non-Causality Result for Main Indicators

	ΔWGI → ΔlnGDP		
	Test Statistic	**Critical Value**	**P Value**
Wbar	1.8548	-	-
Zbar	3.0819	3.1384	**0.0526**
Zbar Tilde	2.0088	2.0720	**0.0576**
Optimal Number of Lags	1		
Lags Tested	1 to 4		
Bootstrap	799		

ΔlnGDP → ΔWGI			
	Test Statistic	**Critical Value**	**P Value**
Wbar	1.2127	-	-
Zbar	0.7668	4.4041	0.6220
Zbar Tilde	0.1970	3.0436	0.8961
Optimal Number of Lags	1		
Lags Tested	1 to 4		
Bootstrap	799		
ΔEFI → ΔlnGDP			
	Test Statistic	**Critical Value**	**P Value**
Wbar	1.0205	-	-
Zbar	0.0741	4.0833	0.9499
Zbar Tilde	-0.3451	2.7926	0.8123
Optimal Number of Lags	1		
Lags Tested	1 to 4		
Bootstrap	799		
ΔlnGDP → ΔEFI			
	Test Statistic	**Critical Value**	**P Value**
Wbar	0.6451	-	-
Zbar	-1.2797	6.4852	0.5519
Zbar Tilde	-1.4046	4.6724	0.4543
Optimal Number of Lags	1		
Lags Tested	1 to 4		
Bootstrap	799		

Table 9 displays the results of the Dumitrescu and Hurlin (2012) causality analysis. The values in bold and underlined indicate statistically significant relationships. According to the table, a Granger causality relationship is found only from governance quality to economic growth. There is no other causality relationship observed.

4. CONCLUSION

Issues such as economic freedom, quality of governance and economic growth have always attracted the attention of economists. They claimed that these issues are closely related to economic welfare and conducted studies in these areas on both developed and developing countries. It is a fact that is often mentioned in the literature that economic freedoms affect economic growth through important factors such as encouraging entrepreneurship and strengthening the profit motive. It is accepted that the quality of governance strengthens economic growth with factors such as preventing corruption and providing a democratic environment. The reason for this parallel relationship can be attributed to the optimistic expectations of the country's citizens and foreign investors for the future, as well as the effective influence of highly motivated work and investment psychology.

The analysis conducted in this study resulted in the conclusion that both economic freedoms and governance quality are cointegrated with economic growth. This confirms empirically the expectation stated above. When analyzing the causal relationship between explanatory variables and economic growth, it can be observed that there is Granger causality from the governance quality index to economic growth. However, no causality was found between economic freedoms and economic growth, economic growth and economic freedoms, or economic growth and governance quality. Although similar trends were observed among the series in the long run, the causality relationship was only identified from governance quality to economic growth.

Based on the statistical findings of this study, it can be concluded that economic freedom and governance quality promote economic growth in the countries analyzed. Although direct causality from economic freedom to growth could not be established, the co-integration analysis indicates that these two series move together in some way. Economic theorists suggest that this relationship operates through the channel of promoting economic growth from economic freedom. This view is widely accepted in the economics literature and is supported by the historical experiences of major economies such as France, England, and Germany. Considering all these facts, it can be said that increasing economic freedom and governance quality in the countries analyzed would promote their economic growth.

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