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INSTITUTIONS AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES: DYNAMIC PANEL DATA ANALYSIS*

Muharrem Akın DOĞANAY, Mustafa Kemal DEĞER*****

Abstract

There is an increasing emphasis on the role of institutions in explaining the economic growth of DLC. However, there is no consensus on which institutions and governance indicators are essential for growth. This study aims to examine the effects of institutions on economic growth in DLC empirically.

In this study, for the 62 Developing countries are examined and analyzed by the GMM in the 2002-2017 periods. Data obtained from the World Bank. Among the institutional quality indicators, regulatory quality seems to be an essential factor. Political stability and absence of violence, on the contrary, affect economic growth negatively and significantly in DLC. It has a positive but meaningless effect in the upper-middle income group. Moreover, according to the findings obtained from the two indices, all institutions positively affect economic growth. However, it is essential to note that only the quality of institutions cannot be sufficient for economic growth.

The findings of the study show that institutions are essential in economic growth. Therefore, for stable and permanent growth, DLC should give priority to institutional strengthening policies.

Keywords: *Institutions, Governance, Economic growth, GMM method.*

GELİŞMEKTE OLAN ÜLKELERDE KURUMLAR VE EKONOMİK BÜYÜME: DİNAMİK PANEL VERİ ANALİZİ

Özet

GOÜ'lerin ekonomik büyümesini açıklamada kurumların rolüne giderek daha fazla önem verilmektedir. Ancak, hangi kurumların ve yönetişim göstergelerinin daha önemli olduğu konusunda bir fikir birliği yoktur. Bu çalışmanın amacı GOÜ'lerde kurumların ekonomik büyüme üzerindeki etkilerini ampirik olarak incelemektir.

Bu çalışmada, Dünya Bankası'ndan 62 GOÜ için elde edilen veriler 2002-2017 döneminde incelenmiş ve GMM yöntemi ile analiz edilmiştir. Kurumsal kalite göstergeleri arasında idari kalite en önemli faktör olarak görünmektedir. Siyasi istikrar ve şiddetsizlik, aksine, GOÜ'lerde ekonomik büyümeyi olumsuz ve önemli ölçüde etkilemektedir. Üst-orta gelir grubunda ise pozitif fakat anlamsız bir etkiye sahiptir. Ayrıca oluşturulan iki endeksten elde edilen bulgulara göre, kurumların tümü ekonomik büyümeyi pozitif etkilemektedir. Ancak, ekonomik büyüme için yalnızca kurumların kalitesinin yeterli olamayacağına dikkat etmek gerekmektedir.

Çalışmanın bulguları kurumların ekonomik büyümede önemli olduğunu göstermektedir. Bu nedenle, istikrarlı ve kalıcı bir büyüme için GOÜ, kurumsal yapıyı güçlendirme politikalarına öncelik vermelidir.

Anahtar Sözcükler: *Kurumlar, Yönetişim, Ekonomik büyüme, GMM yöntemi.*

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** R.A. PhD., Karadeniz Technical University, Department of Economics, , TRABZON.
e-mail: makindoganay@gmail.com (http://orcid.org/0000-0002-3985-2222)
*** Prof., Karadeniz Technical University, Department of Economics, TRABZON.
e-mail: mkdeger@ktu.edu.tr (http://orcid.org/0000-0001-6425-9052)

1. INTRODUCTION

One of the most critical questions for today's economists is how to explain the significant and permanent differences observed in per capita income between countries. Sustainable high growth rates generally consider being a key element in improving a country's income and overall well-being. One of the main goals of all nations and economic systems increase the income and welfare level. For this reason, economic growth that can define as the increase in goods and services in a certain period is continuously discussed in the history of the world.

By the 1990s, it was observed that there were differences in the economic growth rate among countries with similar factor equipment and production technologies. As a result, different factors affecting economic growth have begun to be studied. Until this period, studies on factors affecting economic performance have focused on socio-economic factors such as savings, investment, human capital development and technological progress. However, economic performance differences between countries with similar socio-economic characteristics showed that socio-economic factors have some analytical deficiencies in explaining economic growth. Therefore, an increasing number of studies have begun to focus on institutional factors, primarily political and economic institutions.

This approach, which emphasizes institutions, has begun to attract attention in the economic literature since the beginning of the 1990s. The awarding of the Nobel Prize to Ronald Coase in 1991 and Douglas North in 1993 for their studies on institutions led to the inclusion of institutions in the mainstream economic analysis. Institutions that neglected in the economic literature due to the difficulties of identification and measurements have started to be considered as one of the main determinants of economic growth with the developments in macroeconomics and econometric models.

According to North (1990: 9), the social, economic, legal and political structure of a society, namely institutions, is the primary determinant of economic performance. However, many other questions are waiting to answer. For example, how would a country's political and economic institutions affect its economic performance? What are the appropriate political and economic institutions for economic growth? These questions have been an interesting subject not only for economists and political scientists but also for policymakers in all countries. Knowing the relationship between political-economic institutions and economic growth will enable the development of political-economic institutions, which are favorable for their country's economic growth and efficiency.

Today, one of the main problems of the developing countries is the low growth rate and continuity. Therefore, researchers need to identify the determinants of economic growth. In this context, the primary purpose of the study is to examine the relationship between institutions and economic growth in the developing countries and to determine whether institutions are a determinant of economic growth.

2. INSTITUTIONS AND ECONOMIC GROWTH

Institutional Economics argues that institutions are essential in economic studies and even constitute one of the underlying structures. Throughout the 19th century, although the Classical School of Economics dealt with institutional structures such as property rights and law, this interest remained rather weak. German Historical School and American Institutional Economists, who opposed the Classical School of Economics, laid the foundations of Institutional economics. These schools, which reveal the effects of institutions on the economy, have had a broad impact both in academic and international fields.

Opinions about the role of institutions on the economy followed a different process in the 20th century. The situation is significantly different between the two world wars. In this period, ideas and theories about institutions for most economists were not seen as a separate phenomenon but as part of the economy. Many economists have followed both trends, emphasizing the familiar and different aspects between Institutional and Neoclassical Economics.

In the post-World War period, the relationship between Heterodox Institutional Economics and Orthodox Neoclassical economics has become more complicated. In this period, some Institutional economists have argued that the two schools are complementary and others are different. The existence of two different views in Institutional Economics, one starting from Thorstein Veblen and the other beginning from John R. Commons, continued to Clarence Ayres was affected in the emergence of such a result. The Commons approach sees technology as an imperative and defines institutions as a collective action body. Both methods suggest that economic performance depends on both technology and institutions. According to Samuels (2018: 6581),

institutional analysis has a common core that does not contain various formulations such as Neoclassical or Marxism.

Also, Neoclassical economists have designed a model based on economic balance, starting from the behavior of rational, calculating and utilitarian individuals since the 1950s. The hegemony established by neoclassical economists through this model in the economic literature has weakened Institutional Economics. Neoclassical Economics, which emphasizes how the market works, has rejected Institutional economics.

After the 1980s, the relations between economic theories began to change. In this period, Institutional economists used some of the assumptions of Neoclassical Economics. The main difference between them is that instead of a static balance in Neoclassical economics, New Institutional Economics offers a dynamic model that examines the preferences of actors in the market with the change of institutions. (Çetin, 2012:45).

It is possible to divide Institutional Economics into two as old and new Institutional Economics due to this relationship established with Neoclassical Economics. While both approaches deal with similar problems, they include differences in methods and terminology used. While this differentiation draws "New Institutional Economics" (also known as "Institutional and Organizational Economics") into Orthodox Economics, "Old Institutional Economics" remains close to the heterodox view.

The rise of the New Institutional Economics started with the study of North (1973), which emphasizes the importance of institutions in economic development and other studies that support North. These studies can be exemplified by Williamson (1975, 1979 and 1985), Olson (1982) and De Soto (1989). These studies drew attention to the roles of institutions that form the basis of countries in increasing growth. It is seen that institutions are intertwined with social actors, which are generally focused on the common interests of members and shaped by the hierarchical patterns of authority. An example of such an institution is the public sector, which includes the government bureaucracy, political parties, interest groups and non-governmental organizations.

As a result, most of the studies examined the relationship between institutions and economic performances in the period up to the 1990s were theoretical studies. These studies were mostly unrealistic due to insufficient data on variables that measure institutions. Recent developments in the measurement of institutions have led to a significant increase in empirical research focusing on institutions. Various alternative data are now available, in which both political and economic institutions can measure. These sources have allowed for a significant expansion in the types of questions. In the next part of the study, works prominent worldwide about the institutions will be evaluated.

3. EMPIRICAL LITERATURE

There is much empirical analysis of formal institutions. However, in this study, the most effective approaches to the subject were tried to be explained. Many studies demonstrate the economic successes of western industrialized countries with some institutional preconditions common that settled in these countries. Most of the studies dealing with the Least Developed Countries (LDC) and DLC carry out an analysis by focusing on the institutional deficiencies in these countries.

The definition of institutions and their effects on economic growth has begun to be handled systematically and productively with North's work. According to North (1990:3), institutions are "rules of the game" or "humanly designed restrictions that shape human interaction" in an economy.

North and Thomas (1973) argued that institutions are the driving force of long-term economic growth, and relative price changes can count as the reason for the evolution of institutions. North (1981), on the other hand, has moved away from the idea that efficiency requires for institutional change. Instead, he stated that the institutions are accepted by the administrators who took care of their interests, and this only increased the welfare of those who are in power and their supporters.

According to the new Institutional Economics School, institutions maximize the market efficiency of DLC and protect their private properties. Therefore, it concluded that any country should establish these institutions as necessary for economic growth and consider them as a prerequisite for increasing market efficiency for faster growth.

However, there has recently been a shift towards the governance role in the development paradigm. According to Khan (2012:21), governance can define as strengthening state abilities to implement institutional rules that are important for economic and social development. For this reason, various arrangements have

been made as to the necessary governance capabilities for a market-friendly state that an emerging country should adopt. These can be listed as the ability to protect stable property rights, ensure the rule of law, effectively implement anti-corruption policies, and fulfill the government's accountability. However, in the framework of good governance, these capabilities are not only desired to achieve some of the development goals.

On the contrary, good governance capabilities define as prerequisites for development. These capabilities enable markets more efficient and ensure fewer market failures. In Table 1, the main literature on institutions and economic growth is presented as a summary.

Table 1: Main Literature on the Relationship between Institutions and Economic Growth

Author Name and Year	Countries and Period	Method and Data Set	Findings
Barro (1991)	98 Selected Country (1960-1985)	Panel Data Regression Analysis – UN and WB	It reveals that regime instability is statistically significant and negatively related to growth rates and private investment share in GDP.
Mauro (1995)	58 Selected Country (1980-1985)	OLS Method	It reveals that the effect of corruption on economic growth is through investment efficiency.
Knack & Keefer (1995)	82 Selected Country (1960-1988)	Panel Data Regression Analysis – ICRG	They concluded that there was a positive relationship between private property rights and economic growth.
Alesina (1997)	Selected Country (1960-1990)	Panel OLS and Two-stage OLS Method – WB	He argued that bureaucratic efficiency, lack of corruption and the quality of governance are essential for economic growth.
Rodriguez & Rodrik (2000)	95 DLC (1975-1994)	Panel OLS Method – DB	Not all corruption will harm the economy. It suggests that types of corruption for growth are essential.
Gupta et al. (2002)	37 DLC (1980-1997)	OLS and IV Method – WB	It reveals that corruption affects the reduction of injustice and income distribution negatively.
Glaeser (2004)	DLC (1960-2000)	Panel OLS Method – ICRG, Polity IV	There is no clear causality from institutions to growth.
Acemoğlu & Johnson (2005)	31 British, 44 French Colony Country (1500-1900)	OLS and Two-stage OLS Method – Polity IV	It is determined that the per capita income of countries with secure property rights is significantly higher than the per capita income of some states that do not have these rights.
Rodrik & Subramanian (2009)	105 Selected Country (1970-2004)	Panel OLS Method - ICRG	Good governance reforms can prioritize binding constraints that delay economic growth.
Assiotis & Sylwester (2014)	171 Selected Country (1960-2010)	System GMM Method - FIW, IEF and WGI	It shows that growth under the control of corruption is more significant in authoritarian regimes.
Asongu (2016)	BRICS Countries (2001-2011)	GMM Method – WGI	Political governance and its components make a significant positive contribution to the increase in GDP.
Ftoreková & Mádr (2017)	Balkan Countries (2000-2015)	GMM Method – WGI and EFW	The improvement of the rule of law does not show a statistically significant effect on growth.

As can be seen from the general findings obtained from the theoretical and empirical literature in the study, it is not possible to talk about a direct universal relationship between institutions and economic growth. What makes this differentiation is the excess of countries, periods and variables that are considered.

4. DATA AND METHODOLOGY

In the following part of the study, with the help of institutional variables compiled from World Bank (WB) 's Worldwide Governance Indicators (WGI), the relationship between institutions and economic growth in DLC will be analyzed. In this way, it will try to contribute to the literature.

4.1. Data

The following six indicators for measuring the quality of institutions, compiled from the WGI data set that affect growth and conform to the institution definition are used:

- Voice and Accountability (VAPR)
- Political Stability and Absence of Violence (PSPR)
- Government Effectiveness (GEPR)
- Regulatory Quality (RQPR)
- Rule of Law (RLPR)
- Control of Corruption (CCPR)

Along with these indicators, Index-1 (END1) was created by taking the arithmetic average of the percentages of the six governance indicators. With the help of Index-2 (END2), which constitutes the original value of the study, the impact of all institutions on economic growth was aggregated. The weight of each variable coefficient in the total determined through the coefficient θ in the regression model obtained by the GMM method of the six governance indicators in the study. With this coefficient determined, a new series created by multiplying the indicator values. It was designed to give general information about institutions through these indices.

Although many indices measure institutions, some of these indices specialize in measuring some aspects of institutions, while a few try to address all issues of institutions comprehensively. Many authors accept WGI as "the most comprehensive set of public governance indicators" (Arndt and Oman, 2010; Andrews et al., 2010; Sekkat, 2018). Also, Kaufmann et al. (2009) argue that WGI creates a comprehensive set of indicators that combine the main elements of other indices into a single dataset. In this study, WGI will use as an institution's quality measure for various reasons. First, there are six indicators in the index. Each indicator measures one aspect of the institutions. Therefore, each indicator will use as a variable on its own to better understand the relationship between institutions and GDP.

4.2. Methodology

The selection of the appropriate estimation method is a crucial issue for making reasonable estimates. In this study, panel data analysis method uses to examine the effects of institutions on economic growth in DLC. Panel data analysis methods consider efficient analytical methods because they provide more reliable, valid and robust inferences.

The main purpose of static models called "Ordinary Least Squares" (OLS) is to minimize the sum of squares of errors. The OLS estimator, which provides the estimation of the model with minimum variance in a situation where errors are normally distributed, is the most suitable one among the non-deviation estimators. However, if the errors are not normally distributed in the applied model and there is a problem of heteroscedasticity in the term of error, the OLS method cannot provide appropriate and healthy results. For this reason, the estimation results obtained are likely to be incorrect. When faced with such a situation, it is necessary to resort to other panel regression methods.

In this study, a dynamic estimation method, GMM method, will be used to predict a growth model reinforced by institutional variables. This method has been introduced by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998) to address weaknesses in the OLS method.

In the Arellano-Bond Estimation called "Difference GMM", the model is usually started by taking the first difference and the generalized moments method (GMM) is used (Hansen, 2008). This estimator strengthens the method by assuming that the first differences of the variables are unrelated to the fixed effects. This can significantly increase the effectiveness of the method. A system consisting of two equations is created and this is called "system GMM".

However, there are conceptual and statistical deficiencies in the different prediction equations. Alonso-Borrego and Arellano (1999) and Blundell and Bond (1998) stated that the GMM estimator was insufficient

when the explanatory variables were permanent; the lagged variables in the model were many. The cross-sectional heterogeneity variance was more significant than the error term variance. In this case, the variation of coefficients increases asymptotically and in a small sample, weak tools can produce biased coefficients.

The difference was proposed by Arellano and Bover (1995) and Blundell and Bond (1998), combining regression at the level with regression in difference to reduce potential bias and sensitivity associated with the GMM estimator. The authors argue that the method can correct unobserved section heterogeneity, measurement error, and potential endogeneity that often affect

growth prediction.

The method checks unobserved section effects and neglected variable bias and the component of the measurement error that does not change over time. It also corrects the internal bias of the explanatory variables (time-varying component). Tools for differentiated equations derive from the values (levels) of the explanatory variables, at least two lags.

The consistency of the GMM estimator depends on the validity of the tests to perform. The specific constraints of error terms can examine by looking at the degree of correlation of the series. Two specification tests use, as suggested by Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998). In the first group, the Sargan test (Sargan, 1958) and the Hansen test (1982) statistics include. These tests test the general validity of the variables. The general assumption of this test is that all variables as a group are external. The second test examines the null hypothesis, which indicates that the error terms of the different equations are not mainly related to the second-order (AR (2)). AR (2) hypothesis should not be rejected. Meanwhile, AR (1) must be rejected because the constraints are serially related to the AR (1) test.

In the study, the Two-Stage System Generalized Moment Estimator (TSGMM) method of Arellano and Bover / Blundell and Bond is applied. In the model, the dependent variable is used by GMM methods, institutional and other control variables are used with a period delay of the dependent variable.

When using moment conditions and considering the average stationary assumption of the dependent variable, it has been seen that it can produce consistent estimates of the effect of independent variables on growth (Bond et al., 2001). These moment conditions allow the delayed difference of the dependent variable to be used as a tool variable in the equation.

In the GMM method, general assumptions are made as follows: While the annual rate of increase in GDP per capita (GDP) is taken into account as a dependent variable, gross fixed capital (FIX), trade openness (TRD), inflation (INF), population growth rate (POP) and government expenditures (GOV) are accepted as potential internal variables. These data have been compiled from the WB's database named World Bank Development Indicators. Similarly, all institutional variables are assumed to be internal.

In this study, the first lag of the dependent variable as a tool for variables is added to the model. This addition is an essential assumption in the system GMM method to eliminate controversial internal bias. Similarly, to Mankiw et al. (1992) and Hall and Jones (1999), the effects of different institutions on economic growth will be estimated using the empirical model below. In the first model, the impact of independent variables on growth will be examined without using governance indicators.

$$\Delta GDP_{it} = \sigma_0 + \Delta GDP_{it-1} + \beta_3 FIX_{it} + \beta_4 TRD_{it} + \beta_5 INF_{it} + \beta_6 POP_{it} + \beta_7 GOV_{it} + \varepsilon_{it} \quad (1)$$

In the following models, each governance indicator is included in the model separately, as shown.

$$\Delta GDP_{it} = \sigma_0 + \Delta GDP_{it-1} + \beta_3 FIX_{it} + \beta_4 TRD_{it} + \beta_5 INF_{it} + \beta_6 POP_{it} + \beta_7 GOV_{it} + \theta_2 VA\mathrm{PR}_{it} + \varepsilon_{it} \quad (2)$$

Descriptive statistics of 62 DLC, whose data were accessed in, between 2002 and 2017 are presented in Table 2.

Table 2: Descriptive Statistics

Variables	Median	Mean	Maximum	Minimum	Standard Deviation	Probability	Number of Observation
GDP	3.326	3.167	33.030	-14.70	3.806	0.000	992
FIX	24.516	23.032	68.022	8.253	7.981	0.000	992
TRD	82.091	76.308	210.373	20.722	34.171	0.000	992
INF	6.696	5.121	108.897	-18.11	7.625	0.000	992
POP	1.314	1.340	7.786	-9.08	1.145	0.000	992
GOV	14.247	13.924	32.232	0.951	4.637	0.000	992
VAPR	37.190	36.717	86.206	2.487	19.166	0.000	992
PSPR	33.264	30.331	94.685	0.473	20.165	0.000	992
GEPR	42.453	44.096	85.853	5.825	18.144	0.000	992
RQPR	42.803	44.230	83.653	2.870	18.659	0.000	992
RLPR	36.536	36.057	83.663	2.970	17.950	0.000	992
CCPR	36.464	35.545	91.826	0.505	19.338	0.000	992
END1	38.118	37.123	77.479	7.795	15.264	0.000	992
END2	38.915	38.318	78.252	7.898	15.336	0.000	992

4.3. Empirical Results

The results of the analysis carried out by the TSGMM method for the DLC for 62 countries are presented in the following tables. Before interpreting the obtained coefficients, it will examine whether there is a problem of autocorrelation in the model, whether the used instrumental variables are valid, and whether the model is generally meaningful. According to the results of the autocorrelation test in the tables, there is a first-order autocorrelation (AR1), and there is no second-order autocorrelation (AR2). Therefore, it was concluded that all the models applied in the study did not contain autocorrelation problems.

4.3.1. Empirical Results for Developing Countries

According to the Hansen test findings obtained from the study, the models have excessive identification restrictions. Hansen test statistics results show that the instrumental variables used in the models are valid. According to the Sargan test results applied in all models, the null hypothesis cannot be rejected. Therefore, excessive identification restrictions do not apply. According to the result of the Wald statistics obtained, all models are generally meaningful.

When the results of the institutions are evaluated in general, it can be seen that RQ, GE, VA are more critical for economic growth in Table 3. RL and the CC indicators also positively and significantly affect growth, but their weight is fewer. However, it was concluded that PS negatively affects economic growth in DLC. It is seen that the impact of all institutions on economic growth is positive and meaningful. On the other hand, most of all institutional quality criteria contribute significantly to economic growth in DLC.

Table 3: Analysis Results for DLC

Variables	Model-1	Model-2	Model-3	Model-4	Model-5	Model-6	Model-7	Model-8	Model-9
l.gdp	0.382***	0.392***	0.385***	0.400***	0.394***	0.393***	0.390***	0.389***	0.395***
	(0.005)	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)
fix	0.109***	0.102***	0.113***	0.096***	0.100***	0.102***	0.099***	0.094***	0.092***
	(0.004)	(0.005)	(0.004)	(0.003)	(0.004)	(0.006)	(0.004)	(0.003)	(0.003)
trd	0.013***	0.013***	0.014***	0.012***	0.013***	0.012***	0.014***	0.013***	0.013***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
inf	-0.039***	-0.040***	-0.039***	-0.040***	-0.038***	-0.040***	-0.039***	-0.040***	-0.040***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
pop	-0.371***	-0.358***	-0.379***	-0.300***	-0.261***	-0.346***	-0.316***	-0.250***	-0.262***
	(0.036)	(0.085)	(0.048)	(0.066)	(0.041)	(0.100)	(0.063)	(0.053)	(0.055)
gov	-0.081***	-0.093***	-0.076***	-0.097***	-0.093***	-0.104***	-0.100***	-0.104***	-0.099***
	(0.005)	(0.008)	(0.004)	(0.005)	(0.005)	(0.008)	(0.006)	(0.007)	(0.009)
vapr		0.010***							
		(0.002)							
pspr			-0.008***						
			(0.001)						
gepr				0.011***					
				(0.001)					
rlpr					0.007***				
					(0.001)				
rqpr						0.013***			
						(0.001)			
ccpr							0.009***		
							(0.002)		
end1								0.014***	
								(0.002)	
end2									0.014***
Number of Country	62	62	62	62	62	62	62	62	62
Number of Obs.	930	930	930	930	930	930	930	930	930
χ^2	17249	28055	21148	22052	43289	32444	67833	157048	38486
Sargan	288.1	289.9	286.9	289.3	289.2	291.7	288.3	289.9	290.3
Hansen	58.40	59.18	59.27	57.36	55.74	55.89	59.95	58.00	57.62
AR1	-5.125***	-5.185***	-5.144***	-5.151***	-5.150***	-5.157***	-5.145***	-5.126***	-5.151***
AR2	-0.848	-0.788	-0.852	-0.755	-0.807	-0.793	-0.805	-0.808	-0.785

Note: ***, **, ** indicate 1%, 5% and 10% significance levels, respectively. Values in parentheses give standard errors.

4.3.2. Estimation Results for Developing Countries in the Lower-Middle Income and Upper-Middle Income Groups

To examine the role of institutions on economic growth at various stages of economic growth, DLC is divided into two different groups as lower-middle (LMI) and upper-middle-income (UMI) according to their income levels. While making this distinction, the criteria of the WB are taken into consideration. Findings obtained by the TSGMM method are presented in Table 4 and Table 5.

It is seen that the impact of institutions on economic growth is positive for countries in both groups. However, the contribution of institutions to economic growth is higher in countries in the UMI group than in the LMI group. The value of the coefficient showing the effect of the END-2 index on economic growth is 0.32 for the countries in the UMI group and 0.30 for the countries in the LMI group. All institutional variables have a positive effect on economic growth in countries in the UMI group. Also, political stability has a negative impact on economic growth in countries in the LMI group. There may be several reasons for the low contribution of institutions to economic growth in countries in the LMI group. One reason for this is that the political system in these countries is weak. Politicians and public officials are subject to less control over their powers. If the government has been in power for a long time and this may cause rent-seeking. This inefficiency may cause a restriction in increasing the growth of institutions.

Table 4: Analysis Results for LMI Group

Variables	Model-1	Model-2	Model-3	Model-4	Model-5	Model-6	Model-7	Model-8	Model-9
l.gdp	0.366***	0.381***	0.347***	0.355***	0.339***	0.342***	0.348***	0.331***	0.336***
	(0.024)	(0.024)	(0.045)	(0.021)	(0.030)	(0.020)	(0.033)	(0.030)	(0.033)
fix	0.087***	0.063***	0.097***	0.065***	0.066***	0.080***	0.072***	0.070***	0.060***
	(0.008)	(0.007)	(0.021)	(0.014)	(0.011)	(0.010)	(0.012)	(0.015)	(0.012)
trd	0.012***	0.014***	0.013***	0.010***	0.013***	0.010***	0.013***	0.011***	0.012***
	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)
inf	-0.050***	-0.058***	-0.047***	-0.048***	-0.052***	-0.055***	-0.046***	-0.038***	-0.058***
	(0.005)	(0.006)	(0.008)	(0.005)	(0.005)	(0.007)	(0.005)	(0.007)	(0.004)
pop	0.007	0.090	-0.064	0.031	0.079	0.084	0.048	0.051	0.138
	(0.153)	(0.155)	(0.167)	(0.094)	(0.102)	(0.204)	(0.160)	(0.097)	(0.140)
gov	-0.052***	-0.082***	-0.055***	-0.071***	-0.079***	-0.099***	-0.074***	-0.093***	-0.092***
	(0.013)	(0.009)	(0.014)	(0.013)	(0.013)	(0.014)	(0.015)	(0.011)	(0.009)
vapr		0.023***							
		(0.004)							
pspr			-0.004						
			(0.007)						
gepr				0.024***					
				(0.004)					
rlpr					0.025***				
					(0.005)				
rqpr						0.026***			
						(0.004)			
ccpr							0.017***		
							(0.003)		
end1								0.031***	
								(0.004)	
end2									0.030***
Number of Country	29	29	29	29	29	29	29	29	29
Number of Obs.	435	435	435	435	435	435	435	435	435
χ^2	17544***	9414***	23998***	2896***	8609***	3387***	60860***	3825***	3720***
Sargan	153.6***	154.6***	154.0***	155.2***	154.9***	157.1***	154.4***	155.2***	155.6***
Hansen	26.58	27.05	26.77	23.24	26.73	26.11	26.08	21.55	26.48
AR1	-3.139***	-3.255***	-3.076***	-3.220***	-3.149***	-3.201***	-3.183***	-3.128***	-3.163***
AR2	0.438	0.501	0.392	0.396	0.353	0.386	0.404	0.334	0.369

Note: ***, **, ** indicate 1%, 5% and 10% significance levels, respectively. Values in parentheses give standard errors.

Table 5: Analysis Results for UMI Group

Variables	Model-1	Model-2	Model-3	Model-4	Model-5	Model-6	Model-7	Model-8	Model-9
l.gdp	0.450***	0.440***	0.445***	0.460***	0.447***	0.411***	0.442***	0.428***	0.447***
	(0.022)	(0.022)	(0.017)	(0.022)	(0.020)	(0.018)	(0.015)	(0.023)	(0.023)
fix	0.134***	0.127***	0.118***	0.112***	0.123***	0.124***	0.126***	0.118***	0.116***
	(0.007)	(0.016)	(0.014)	(0.012)	(0.013)	(0.012)	(0.009)	(0.012)	(0.013)
trd	0.013***	0.014***	0.015***	0.017***	0.017***	0.014***	0.013***	0.011***	0.016***
	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
inf	-0.045***	-0.044***	-0.040***	-0.038***	-0.036***	-0.032***	-0.039***	-0.043***	-0.034***
	(0.006)	(0.008)	(0.010)	(0.009)	(0.011)	(0.009)	(0.010)	(0.008)	(0.009)
pop	-1.046***	-1.281***	-1.161***	-1.051***	-0.963***	-1.039***	-0.890***	-1.242***	-1.009***
	(0.086)	(0.251)	(0.287)	(0.285)	(0.161)	(0.206)	(0.139)	(0.291)	(0.290)
gov	-0.099***	-0.111***	-0.083***	-0.153***	-0.141***	-0.147***	-0.175***	-0.109***	-0.173***
	(0.016)	(0.037)	(0.024)	(0.019)	(0.023)	(0.023)	(0.020)	(0.031)	(0.023)
vapr		0.013***							
		(0.004)							
pspr			0.001						
			(0.004)						
gepr				0.022***					
				(0.007)					
rlpr					0.012				
					(0.008)				
rqpr						0.018***			
						(0.004)			
ccpr							0.025***		
							(0.006)		
end1								0.021***	
								(0.007)	
end2									0.032***
Number of Country	31	31	31	31	31	31	31	31	31
Number of Obs.	465	465	465	465	465	465	465	465	465
χ^2	7035***	6644***	5052***	22352***	29463***	9965***	6500***	3652***	23928***
Sargan	179.1***	179.4***	178.7***	181.2***	180.6***	182.5***	179.8***	181.2***	181.4***
Hansen	28.10	27.68	28.01	28.74	29.17	25.12	25.45	24.35	28.10
AR1	-3.944***	-3.910***	-3.947***	-3.937***	-3.951***	-3.801***	-3.915***	-3.806***	-3.923***
AR2	-1.563	-1.587	-1.596	-1.569	-1.609	-1.756	-1.628	-1.646	-1.621

Note: ***, **, ** indicate 1%, 5% and 10% significance levels, respectively. Values in parentheses give standard errors.

5. CONCLUSION

Various studies have shown that institutions under weak democracy may not work effectively. RQPR is the most important and positive institutional variable in the economic growth of DLC. Regularity quality is an essential factor in minimizing risk in the governance process and the event of a future crisis. Besides, DLC (especially transition economies) relies heavily on regularity quality to increase economic growth. Therefore, regularity quality plays an essential role in increasing growth for developing countries.

According to the findings obtained from the study, PSPR has a negative and meaningful effect on the increase of GDP per capita, contrary to theoretical expectations. In general, political systems are stable in Developed countries. Even if governments change frequently, the economic structure is not affected negatively. On the other hand, governments that have been in power for a long time in DLC can increase problems such as corruption and bribery. Also, the government's long stay in power brings authoritarianism. In this case, political stability may adversely affect economic growth.

CCPR among all indicators is the lowest weighting institutional variable. The reason for this is that some forms of corruption, such as black market activities and bribery can positively contribute to economic growth, especially in countries that do not have a free market or the rule of law. However, even in these countries, there is a point where too much corruption can destroy the economy. This turning point depends on the structure of the economy and the level of the country's development and institutional quality. Accordingly, there is no significant positive relationship between corruption control and GDP. This result supports the idea that corruption in developing countries is not always bad for economic growth and may be good or bad for growth depending on the country's level of development.

When the LMI and UMI groups are analyzed, findings similar to the results obtained from all analyzed were obtained. However, there are specific differences. While all institutional variables positively affect economic growth in countries in the UMI group, political instability in the LMI group has a negative effect. Also, the population growth rate positively affects economic growth in some countries in the LMI group.

According to all these findings, the effects of all institutional indicators on GDP per capita are consistent with the Institutional Economics literature. Most studies agree that the institutional quality of a country has a significant impact on that country's level of development. According to these results, it is possible to claim that institutions in DLC have a positive effect on economic growth. Therefore, for the DLC to have sustainable human and economic development, they should continue to improve their governance quality in line with high economic growth. Policies aimed at increasing the economic performance of DLC should be shaped based on institutions. In this context, quality institutions to be built as a prerequisite for growth will be an essential factor in achieving and sustaining economic growth.

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