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The impact of institutional quality on economic growth: Evidence from post-Soviet countries

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Abstract. The paper investigates the long-run impact of the institutional environment on economic growth for the sample of post-Soviet countries in 1996-2021. Using the Autoregressive Distributive Lag Model, we found that a U-shaped link exists between institutional quality and economic growth. Regarding the institutional quality dimensions, a similar link was observed for four out of six factors (POLSTAB, GOVEFF, RULELAW, CONTCORR). In contrast, the other two dimensions (REGQUAL, VOACC) exhibited inverted U-shaped impact on the dependent variable. Moreover, findings provide insight into the impact of control variables such as inflation (INF), openness (OPE), and population growth rate (POPGROWTH) on economic growth. More precisely, openness was found to have positive impact on the dependent variable, while inflation and population growth rate both had negative effect on economic growth. Based on these results, the paper suggests some policy implications for post-Soviet countries in terms of achieving economic growth by improving the institutional quality environment.

Keywords: economic growth, institutional quality, post-Soviet countries, Autoregressive Distributed Lag model

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1. INTRODUCTION

The extent to which the determinants of economic growth play a role in different economies is an important issue for both scientific and practical research. Although economic growth is widely studied, traditional economic theories need a framework to explain the differences between economic systems in the sample countries beyond human capital, physical capital, labor, technology, and natural resources. A recent research strand in institutional economics has emerged as an attempt to create a framework that explores these residual differences. Many authors suggest that high institutional quality accelerates economic growth by stimulating economic activity, such as consumption and investment, increasing productivity, allocating resources more efficiently, protecting property rights, and promoting freedom of choice (Nguyen et al., 2018).

After the collapse of the Soviet Union in 1991, member countries with distinct economic characteristics regained their sovereignty. The first years of independence were accompanied by economic recession, high unemployment and inflation rates. The economies had declined about 25% and hyperinflation became the main socio-economic problem of several post-Soviet countries such as Azerbaijan (1662%), Armenia (3373%), Ukraine (4734%), Belarus (2221%), Kazakhstan (1877%), and Moldova (1613%) in 1993-1994. Against the backdrop of military conflicts, political instability, weak central government and economic ties, the socio-economic conditions in the countries worsened. Consequently, these countries faced high migration and brain drain (Mukhtarov & Jabiyev, 2017).

It has been 30 years since the collapse of the Soviet Union, which is quite a long time to successfully transform into a democratic system. However, the transformation process has been completed only in the Baltic states, while the rest of the countries are still on the way to democracy. This apparent gap is also evident in the economic indicators. New institutional economics can explain the significant difference in economic growth between the Baltic states and other ex-USSR-member countries (Náplava, 2018).

Investigation of the studies on the association between institutional quality and economic growth for post-Soviet countries indicates that the existing literature is quite limited. This fact is especially true for the studies investigating the impact of the institutional quality dimensions on economic growth. Therefore, this article aims to examine the relationship between institutional quality environment (voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, control of corruption) and economic growth empirically for post-Soviet countries in 1996-2021 by using Autoregressive Distributed Lag approach (ARDL).

The paper consists of five sections: introduction, literature review, data and methodology, empirical results, and conclusions. The latter summarize our findings and propose some relevant policy recommendations.

2. LITERATURE REVIEW

Well-developed and functioning institutions are critical factors in the economic growth of any country. As noted by North (1990), inadequate institutional quality can lead to low economic performance (North, 1990). Therefore, design of proper institutions by governments plays an essential role in development (Aron 2000). This section will concentrate on the studies discussing the theoretical and empirical analyses of the possible impacts of institutional quality on economic growth.

Institutions are generally classified into two categories: economic institutions and political institutions. Political system, election process, and political stability are included in political institutions while economic institutions focus on the laws regulating production of goods, services, and property rights (Knack and Keefer, 1995). For instance, well-defined property rights may increase the number of foreign investments in a country since each investor takes the safety of the investment as the main priority. Acemoglu (2005) defines economic institutions as the main components of long-run economic growth. Aron (2000) identifies the intercorrelation between institutions, market, and economic prosperity. He points out that higher institutional quality can affect the market positively and lead to higher economic growth, which might turn into an endless loop.

Especially, institutional quality indirectly influences human capital accumulation, physical capital, and investment (Rodrik, 2000). Several studies have revealed that institutional quality positively contributes to the inflow of foreign investments to a country; in other words, strong institutions attract more foreign capital to the country and stimulate higher economic growth (Aron, 2000; Ali, MacDonald, and Fiess, 2010; Hefeker & Busse, 2007; Stein and Daude, 2007). Institutions foster economic growth through a solid legal structure and a positive business environment. Furthermore, better institutions accumulate human and physical capital that encourages companies to operate for a more extended period, allocate some funds for knowledge creation, and increase the scale of production (Loayza et al., 2005). Overall, the studies support the view that the countries with a lower institutional quality perform inadequately whereas the countries with a higher institutional quality can achieve considerable success in all aspects. In addition, the positive impact of institutions was also observed at microeconomic level. From this point of view, a company's productivity depends on the efficient government policies in education (Misch & Kneller, 2012; Hamed & Bohari, 2022), transportation (Winston and Shirley, 2004), public health (Kuzior et al., 2022; Kadyan et al., 2022), and utilities (Svensson & Reinikka, 2002).

In addition, multiple studies have shown a causal relationship between political institutions and economic growth (Scully, 1988; Wittman, 1995; Wu & Davis, 1999). Development of new indicators, such as regulatory quality, voice and accountability, rule of law, and corruption index, allows researchers to address different dimensions of institutional quality (Butkiewicz & Yanikkaya, 2006; Kostevc et al. 2007; Brunt, 2011). According to Gwartney (1996), Adkins and Savvides (2002), and Dawson (2003), there is a positive correlation between economic performance and economic freedom. Moreover, political freedom fosters economic well-being and decreases income inequality as well. Income equality can be observed more in the countries where civil liberties are at the highest level (Muller, 1995; Barro, 1999; Bourguignon & Verdier, 2000; Sylwester, 2002; Gharaibeh & Kharabsheh, 2022).

Empirical analyses show that good institutions have a positive impact on the government's ability to conduct an adequate economic policy and achieve higher economic development (Easterly et al. 2004; Osman et al. 2012). By using the Ordinary Least Squares regression method Rodrik and Rigobon (2005) demonstrated a direct link between per capita income, political and economic institutions, and trade openness. According to their estimations, democracy positively influences the economic performance of a country and increases per capita income in the long run. Nevertheless, other authors claim that democracy has no substantial impact on per capita income, but it contributes to the decentralization of power and freedom of expression (Kraay & Dollar, 2000). Furthermore, ethnic and social conflicts are less likely to happen in the democratic societies than in the non-democratic ones since the governments can mitigate these problems with the rule of law (Rodrik, 1999; Collier, 2000).

Additionally, government effectiveness and political stability significantly impact economic growth (Gani, 2011; Kuznyetsova et al., 2022; Bukhtiarova et al., 2022; Zhuravka et al., 2023). Acemoglu et al. (2019) claim that in the long run, democratization will probably boost gross domestic product per capita approximately by 20 percent. Recently, Mollick and Vianna (2018) empirically analyzed institutional quality

and GDP per capita in 192 countries and postulated that when institutional quality raises 0.1 points, output per capita increases by 3.9 percent. However, Jaunky (2013) studied the effects of democracy on economic growth using DOLS, GMM, and VECM methods in African countries and concluded that in the short term, there is no relationship between democracy and economic growth.

Turcu and Marakbi (2016) examined the relationship of corruption and institutional quality on the economic growth of the selected developed countries from 1984 to 2012. They used a Smooth Transition Table regression model in the analyses, and concluded a non-linear correlation exists between economic growth and corruption. Corruption also negatively impacts resource allocation, technological development, investment, innovation, and economic productivity (Krusell & Rios-Rull, 1996). In contrast to Krusell and Rios-Rull, Tanzi (1998) argues that corruption can have a positive impact if extensive bureaucracy and red tape are prevalent in a country, as corruption may increase efficiency and growth.

Rodrik (2000) examined the link between economic growth and institutional quality by focusing on the notable roles of regulatory institutions and property rights. He evaluated the possible impacts of political regimes on economic growth and pinpointed the positive contribution of democracy in the long run. In addition, Ngo and Nguyen (2020) believe that institutional quality may promote the innovation process and lead to an innovative economy, which can be considered an important factor for sustainable development.

Overall, a unanimous conclusion regarding the potential effects of institutional quality on economic growth has not been reached by researchers due to its multifaceted nature. The researches focusing on the post-Soviet countries have not established a uniform conclusion as well. For instance, Javadov et al. (2022) investigated the impact of economic institutions on the economic growth of some former Union members from 1993 to 2019. According to their empirical analysis, each of the four variables examined (Human Development Index, Corruption control, Internet per user, and Political Globalization) affected economic growth differently. Another researcher, Moers (2002) evaluated the economic performance of 25 transition economies from 1990 to 1995 and demonstrated that institutions are crucial for economic growth.

Studying this geographic region, Náplava (2020) identified a nonmonotonic link between income inequality and institutional quality in the sample post-Soviet states from 2002 to 2017. According to the author, better institutional quality can lead to low income inequality. In another study, Shchegolev and Hayat (2018) pointed out a positive relationship between governance, institutional quality, and economic growth based on the data from five post-Soviet countries. The scarcity of the studies on the post-Soviet countries and the need for new approaches encouraged us to conduct this research. We hope that this study will assist in filling the existing gap and contribute to academia.

3. METHODOLOGY

3.1. Model

We examine the long-run impact of institutional quality and its six dimensions on economic growth for a sample of post-Soviet countries from 1996 to 2021 by using Autoregressive Distributive Lag (ARDL) model. The approach suggested by Pesaran et al. (2001) has several advantages compared to the alternatives. First, it allows estimating the short and long-run relationship in a single regression regardless whether variables are stationary at I(0), I(1), or both of them. Second, endogeneity issue is almost controlled by including lags of independent and dependent variables. In addition, the ARDL method is more efficient with small sample data (Alexiou, et al., 2014).

Application of ARDL model begins with the run of unrestricted EC as follows:

$$DY=a_0+\sum_{i=1}^{p} b_i DY_{t-1}+\sum_{i=0}^{p} c_i DX_{c-1}+\delta_1 Y_{t-1}+\delta_2 X_{t-1}+e_i \quad (a)$$

$$DX=a_0+\sum_{i=1}^{p} DX_{t-1}+\sum_{i=0}^{p} c_i DY_{t-1}+\delta_1 X_{t-1}+\delta_2 X_{t-1}+e_i \quad (b)$$

In the next step, a bound test is engaged for checking the long-run relationship among the variables. Afterward, F test will be employed with a null hypothesis that the variables are jointly equal to zero (Pesaran et al., 2001). Finally, the long-run coefficients of the models are estimated by using the ARDL approach. The lag structure of the ARDL model is determined by information criterions such as Akaike, Schwartz or Hannan-Quinn which also avoids the autocorrelation problem (Hasanov et al., 2016).

This research builds seven distinct regression models for estimating the impact of institutional quality environment on economic growth. In each model, institutional quality and its dimensions act as a main independent variable separately. Since authors such as Barro (1996), Chong (2020), Tran et al. (2021) found a nonlinear relationship between institutional quality and economic growth, we include quadratic institutional factors to the regression as well. To summarize, we obtain models as follows:

$$GDPGROWTH=B_0+B_1INSQUAL_{it}+B_2INSQUAL_{it}^2+B_3INF_{it}+B_4OPEN_{it}+B_5POPGROWTH_{it}+e_{it} \quad (1)$$
$$GDPGROWTH=B_0+B_1VOACC_{it}+B_2VOACC_{it}^2+B_3INF_{it}+B_4OPEN_{it}+B_5POPGROWTH_{it}+e_{it} \quad (2)$$
$$GDPGROWTH=B_0+B_1POLSTAB_{it}+B_2POLSTAB_{it}^2+B_3INF_{it}+B_4OPEN_{it}+B_5POPGROWTH_{it}+e_{it} \quad (3)$$
$$GDPGROWTH=B_0+B_1GOVEFF_{it}+B_2GOVEFF_{it}^2+B_3INF_{it}+B_4OPEN_{it}+B_5POPGROWTH_{it}+e_{it} \quad (4)$$
$$GDPGROWTH=B_0+B_1REGQUAL_{it}+B_2REGQUAL_{it}^2+B_3INF_{it}+B_4OPEN_{it}+B_5POPGROWTH_{it}+e_{it} \quad (5)$$
$$GDPGROWTH=B_0+B_1RULELAW_{it}+B_2RULELAW_{it}^2+B_3INF_{it}+B_4OPEN_{it}+B_5POPGROWTH_{it}+e_{it} \quad (6)$$
$$GDPGROWTH=B_0+B_1CONTCOR_{it}+B_2CONTCOR_{it}^2+B_3INF_{it}+B_4OPEN_{it}+B_5POPGROWTH_{it}+e_{it} \quad (7)$$

Where *i* and *t* subscript the country and time, respectively. e_{it} is the error term.

3.2. Data

In our analysis GDP per capita growth rate (GDPGROWTH) is a response factor. It is also taken as a dependent variable in the papers by Butkiewicz and Yanikkaya (2006), Valeriani and Peluso (2011), Naplava (2018), etc. World Governance Indicators (WGI) are used separately as main independent variables in each regression. We calculate institutional quality as an arithmetic mean of the dimensions. According to WGI, each of the dimensions is defined as follows:

1. Voice and Accountability (VOACC) – "*Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.*"

2. Political Instability and Violence (POLSTAB) – "*Measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.*"

3. Government Effectiveness (GOVEFF) – "*Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.*"

4. Regulatory Quality (REGQUAL)– "*Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.*"

5. Rule of Law (RULELAW) – "*Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.*"

6. Control of Corruption (CONTCOR) – "*Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. (Kaufmann, et al. 2005).*"

The following table summarizes the descriptive stats on institutional indicators:

Table 1

Summary of institutional variables

	INSQUAL	CONTCOR	INFL	POLSTAB	REGQUAL	RULELAW	VOACC
Mean	-0.392160	-0.605856	9.687855	-0.312803	-0.188833	-0.468443	-0.513479
Median	-0.595000	-0.825528	6.680118	-0.316140	-0.320147	-0.751869	-0.582326
Maximum	1.170000	0.851240	168.6202	1.001643	1.695029	1.427688	1.214445
Minimum	-1.500000	-1.527264	-1.403608	-2.020833	-2.132286	-1.641042	-2.259164
Std. Dev.	0.671564	0.640359	13.81393	0.626375	0.934226	0.783851	0.965111
Skewness	0.691475	0.806773	6.117334	-0.100486	0.034018	0.846344	0.218626
Kurtosis	2.401468	2.424869	60.00480	2.507402	2.398399	2.551833	2.000062
Jarque-Bera	30.65568	39.61316	45889.66	3.821072	4.948455	41.39162	16.07938
Probability	0.000000	0.000000	0.000000	0.148001	0.084228	0.000000	0.000322
Sum	-127.0600	-196.2973	3138.865	-101.3480	-61.18204	-151.7755	-166.3673
Sum Sq. Dev.	145.6723	132.4491	61636.40	126.7278	281.9075	198.4584	300.8549
Observations	324	324	324	324	324	324	324

Note: Results obtained from Eviews estimations

Source: own calculation

In the vast majority of the literature, inflation is employed as one of the determinants of economic growth. Authors such as Kandil (2009), Tran (2021), Wandeda et al. (2021) benefited from this variable for explaining the dynamics of economic growth. In our case, consumer prices annual growth rate (INF) is used as a proxy for inflation.

Similarly to Butkiewicz and Yanikkaya (2006), Naplava (2018), Nnguyen et al. (2018), and Hayat (2019), we also included the share of trade in GDP as an openness indicator to the regression. Last control variable in the models is annual growth rate of the population (POPGROWTH). We obtain all the data from the database of World Bank.

Table 2 summarizes the descriptive stats on the dependent and control variables.

Table 2

Summary of dependent and control variables

	GDPGROWTH	INFL	OPEN	POPGROWTH
Mean	4.600457	9.757365	95.97835	0.115804
Median	4.852567	6.706578	94.17189	-0.213824
Maximum	33.03049	168.6202	157.9743	2.684016
Minimum	-14.75897	-1.403608	29.19230	-3.629546
Std. Dev.	5.548650	13.91004	29.41056	1.107841
Skewness	-0.067721	6.071374	0.054858	0.219431
Kurtosis	6.930209	59.16222	2.218927	2.388940
Jarque-Bera	205.5541	43884.31	8.268909	7.523000
Probability	0.000000	0.000000	0.016011	0.023249
Sum	1467.546	3112.599	30617.09	36.94136
Sum Sq. Dev.	9790.432	61529.55	275064.0	390.2851
Observations	319	319	319	319

Note: Results obtained from Eviews estimations

Source: own calculation

4. EMPIRICAL RESULTS AND DISCUSSION

4.1. Im, Pesaran, Shin test results

Estimating the ARDL model, standard procedure requires the variables to be stationary at I(0) or I(1). For this purpose, Im, Pesaran, Shin unit root test with a null hypothesis of unit root is applied. According to the results, variables such as GDPGROWTH, INSQUAL, POLSTAB, RULELAW, INF and POPGROWTH are strongly significant at I(0). The value of VOACC and REGQUAL are significant only at 10%, while OPENNESS is significant at 5%. Differently from the other variables GOVEFF value is statistically insignificant at I(0). However, the value of all the variables are strongly significant at I(1) which reveals the rejection of the null hypothesis for the unit root problem. Detailed information about the Im, Pesaran, Shin test results is given at Table 3.

Table 3

Im, Pesaran, Shin test results

Variables	**I(0)**	**I(1)**
GDPGROWTH	-5.42176***	-12.6005***
INSQUAL	-2.49609***	-9.45312***
VOACC	-1.48438*	-7.59784***
POLSTAB	-3.28377***	-11.1745***
GOVEFF	0.00450	-8.39100***
REGQUAL	-1.57631*	-10.4393***
RULELAW	-2.48302***	-10.2185***
CONTCOR	1.22170	-6.38086***
INF	-5.88764***	-11.8127***
OPENNESS	-1.73159**	-9.72608***
POPGROWTH	-5.48005***	-11.0121***

Note 1: ***, ** and * denote significance levels 0.01, 0.05 and 0.1 respectively
Note 2: Results obtained from Eviews estimations
Source: own calculation

4.2. Pedroni cointegration test results

In the next step, a Pedroni cointegration test with the null hypothesis of no cointegration is engaged. This test aims to check for the existence of the long-run relationship between economic growth and the explanatory variables. According to the results, null hypothesis is rejected for all the models which reveal the existence of a long-run relationship between the dependent and independent variables in the long-run. Detailed information about the results of Pedroni test is given at table 4.

Table 4

Pedroni test results

	Statistic	Prob.	Weighted Statistic	Prob.
Series: GDPGROWTH, INSQUAL, INSQUAL2				
Panel v	-0.423735	0.6641	-1.452800	0.9269
Panel rho	-3.494528	0.0002	-3.976930	0.0000
Panel PP	-6.253909	0.0000	-6.861911	0.0000
Panel ADF	-4.594787	0.0000	-4.813284	0.0000
Group rho	-2.480193	0.0066		
Group PP	-8.238182	0.0000		
Group ADF	-5.328897	0.0000		
Series: GDPGROWTH, VOACC, VOACC2				
Panel v	0.290841	0.3856	-0.785803	0.7840
Panel rho	-3.693655	0.0001	-3.817511	0.0001
Panel PP	-7.379649	0.0000	-7.195164	0.0000
Panel ADF	-4.948593	0.0000	-5.120161	0.0000
Group rho	-2.718732	0.0033		
Group PP	-10.03413	0.0000		
Group ADF	-5.102430	0.0000		
Series: GDPGROWTH, POLSTAB, POLSTAB2				
Panel v	-0.201334	0.5798	-1.864193	0.9689
Panel rho	-3.456091	0.0003	-3.662417	0.0001
Panel PP	-6.721920	0.0000	-7.429326	0.0000
Panel ADF	-4.716784	0.0000	-5.411033	0.0000
Group rho	-2.179830	0.0146		
Group PP	-8.571700	0.0000		
Group ADF	-5.350553	0.0000		
Series: GDPGROWTH, GOVEFF, GOVEFF2				
Panel v	-0.270512	0.6066	-1.601127	0.9453
Panel rho	-3.389826	0.0003	-3.212368	0.0007
Panel PP	-6.059586	0.0000	-5.868171	0.0000
Panel ADF	-4.378290	0.0000	-4.862631	0.0000
Group rho	-2.423867	0.0077		
Group PP	-7.669665	0.0000		
Group ADF	-4.664003	0.0000		
Series: GDPGROWTH, REGQUAL, REGQUAL2				
Panel v	-0.242548	0.5958	-1.521610	0.9359
Panel rho	-3.490255	0.0002	-3.791870	0.0001
Panel PP	-6.393070	0.0000	-6.811839	0.0000
Panel ADF	-4.574754	0.0000	-5.200337	0.0000
Group rho	-2.786990	0.0027		
Group PP	-8.744351	0.0000		
Group ADF	-5.319597	0.0000		
Series: GDPGROWTH, RULELAW, RULELAW2				
Panel v	-1.218270	0.8884	-2.073670	0.9809
Panel rho	-2.976325	0.0015	-4.152044	0.0000
Panel PP	-5.890964	0.0000	-7.617291	0.0000
Panel ADF	-4.753936	0.0000	-5.414942	0.0000
Group rho	-1.988485	0.0234		
Group PP	-7.983142	0.0000		
Group ADF	-6.155417	0.0000		
Series: GDPGROWTH, CONTCOR, CONTCOR2				
Panel v	0.151489	0.4398	-1.464393	0.9285
Panel rho	-3.521940	0.0002	-3.686592	0.0001
Panel PP	-6.431906	0.0000	-6.355813	0.0000
Panel ADF	-4.343731	0.0000	-4.767273	0.0000
Group rho	-2.435173	0.0074		
Group PP	-8.504830	0.0000		
Group ADF	-5.148430	0.0000		

Note: Results obtained from Eviews estimations

Source: own calculation

4.3. ARDL estimation results

After testing the existence of the cointegration relationship, the ARDL model long-run coefficients can be estimated. The detailed information is presented at table 5.

Table 5

ARDL model results

Model 1			
Independent variables	**Coefficients**	**t-statistic**	**P-value**
INSQUAL	-3.742176	-4.387835	0.0000
$INSQUAL^2$	3.250983	4.540486	0.0000
INF	-0.178457	-2.956621	0.0034
OPE	0.023841	4.680722	0.0000
POPGROWTH	-1.892928	-4.233033	0.0000
Model 2			
VOACC	-9.814081	-3.194252	0.0016
$VOACC^2$	-14.73091	-5.236389	0.0000
INF	-0.459736	-5.009332	0.0000
OPE	0.123427	4.655180	0.0000
POPGROWTH	-2.149211	-2.572536	0.0108
Model 3			
$POLSTAB^2$	0.726395	2.173131	0.0168
OPE	0.038388	8.028560	0.0000
POPGROWTH	-0.569702	-2.127953	0.0010
Model 4			
$GOVEFF^2$	3.024015	4.537977	0.0000
OPE	0.022929	4.489702	0.0000
Model 5			
REGQUAL	-4.117311	-3.327817	0.0010
$REGQUAL^2$	-2.867146	-2.002957	0.0465
INF	-0.466343	-5.591373	0.0000
OPE	0.126990	6.165583	0.0000
POPGROWTH	-2.187489	-3.600002	0.0004
Model 6			
RULELAW	-3.643250	-5.650811	0.0000
$RULELAW^2$	1.117737	2.153698	0.0323
INF	-0.239522	-3.361326	0.0009
OPE	0.043039	6.591026	0.0000
POPGROWTH	-1.243708	-3.072120	0.0024
Model 7			
CONTCOR	-2.341359	-2.684330	0.0078
$CONTCOR^2$	4.973373	6.461154	0.0000
INF	-0.332163	-8.872969	0.0000
OPE	0.025914	4.429799	0.0000
POPGROWTH	-1.768232	-4.639284	0.0000

Note: Results obtained from Eviews estimations

Source: own calculation

The results of the ARDL model in Table 5 reveal A nonlinear and statistically significant long-run relationship between institutional quality and economic growth for the sample of post-Soviet countries. The obtained results show the existence of an institutional threshold for economic growth. In the case of institutional quality, we calculated this number as (-0.57) which means that after this point the explanatory variable has positive impact on economic growth. There is a strong and statistically significant evidence about a similar type of link between POLSTAB and the dependent variable as well. For case of this association, the threshold level is 0.02. The correlation between GOVEFF and the dependent variable is also found to be nonlinear. The results suggest that from (-0.29) government effectiveness has a positive and statistically significant impact on economic growth. For case of RULELOW, the threshold level was calculated as (-1.63). Regarding CONTCOR, this number is found to be (-0.24). In other words, the positive impact of this variable on economic growth begins from this point.

Unlike to the abovementioned variables, there is a negative nonlinear impact of REGQUAL and VOACC on economic growth. According to the results, the impact of these variables on economic growth turns out to be negative after (-0.72) and (-0.67) respectively.

The expectations are also satisfied in the case of control variables. In all models, there is a positive and strongly significant relationship between openness and economic growth. Negative, but highly significant association was found between POPGROWTH and dependent variable in all models, excluding the regression 4. Regarding the inflation, there is a negative and significant impact on economic growth in 5 of 7 models. However, this negative impact in the models 4 and 5 is not significant even at 10%.

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