

INSTITUTIONAL QUALITY AND INCOME INEQUALITY: EVIDENCE FROM POST-SOVIET COUNTRIES

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ABSTRACT

This paper focuses on identifying the relationship between institutional quality and income inequality in chosen post-Soviet countries during the period 2002–2017. Using panel analysis is found a nonmonotonic relationship between institutional quality and income inequality. Increasing institutional quality is associated with growing income inequality, but only to a certain extent; from a certain level, higher institutional quality leads to a reduction in income inequality. The growing institutional quality leads to a deepening of income inequality between the richest social class compared to the poorest and middle class. Role in this process plays a particular regulatory quality, which – as it seems – favors the upper 20%.

KEY WORDS

institutional quality, income distribution, income inequality, middle class

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O15, P48

1 INTRODUCTION

Topic of income inequality is one of the biggest challenges in the field of labor market research, but also in the field of economic policy (Braconier et al., 2015). Disproportionate increase in income inequality can lead to a concentration of political and economic power, which can have negative consequences for economic growth and macroeconomic stability (Dabla-Norris et al., 2015). Income inequality is not only “evil”, but

may also be desirable as it incentives higher activity.

Empirical studies have shown that technological change and globalization have contributed not only to an increase in total wealth, but also to an increase in income inequality. In addition to technological change and globalization, attention was also paid to the influence of institutions, but this research was often reduced

only to selected labor market institutions such as minimum wages, social security, unionization and employment protection (Dabla-Norris et al., 2015). On the contrary, much less attention was paid to the relationship between institutional quality and income inequality. According to Engerman and Sokoloff (2002), the initial differences in the rate of income inequality correspond to differences in institutional quality, but as point Dobre et al. (2019), there are not many studies published in this area, so the solution to the relationship is not entirely clear. This provides motivation for research in this area.

Studies examine institutional quality primarily in relation to economic performance. It seems obvious that higher institutional quality, higher quality “rules of the game”, leads to higher economic performance (Acemoğlu et al., 2005; Acemoğlu, 2012; Rodrik, 2008). Institutional quality should therefore also influence the distribution of income within society (Acemoğlu and Robinson, 2002; Dobre et al., 2019). The aim of this paper is to find out how the

institutional quality affects income inequality and income distribution in chosen post-Soviet countries. Selected countries are Estonia, Latvia, Lithuania, Belarus, Russia and Ukraine during the period 2002–2017. In these countries has institutional quality a significant impact on economic performance (Náplava, 2017), but the impact on income inequality and income distribution is unknown. This paper fills this gap with the help of panel regression analysis.

This paper is structured as follows. Section 2 explains the relationship between institutional quality and income inequality. Section 3 briefly describes the data and the used methods. Section 4 presents the results of the regression analysis, including robustness check, where the main explanatory variable is replaced by another indicator of institutional quality and further examines whether the relationship between institutional quality and income inequality is monotonic or nonmonotonic. In the last section 5 are discussed achieved results and this section concludes paper.

2 LITERATURE OVERVIEW

Clark and Kavanagh (1996) argue from the perspective of institutionalism that income inequality does not have to arise solely as a result of labor market developments, but that they are the result of institutions and their development. The authors state that the distribution of property rights, the distribution of costs and the distribution of power in society play a role, because it is mainly these factors that determine the ways in which redistribution occurs in the economy. The factors mentioned by the authors can be summarized under the indicator of institutional quality.

Douglass C. North (1991, p. 97) defines institutions as “Institutions are the humanly devised constraints that structure political, economic and social interaction.” The worse the individual institutions play their role, the lower their perceived quality – the worse the allocation of resources in society and the more the achieved goals will differ from the expected

goals (Chong and Calderón, 2000). According to Acemoğlu and Robinson (2012), institutional quality is a determinant not only for economic performance but also for the level of poverty and inequality. Conversely, poor institutional quality (especially poor political institutions and corruption) can lead to only a handful of elites having access to key resources, which can then benefit more from the country’s financial development than the poor. Poor institutional quality is then reflected mainly in higher income inequality. Moreover, as pointed Chong and Gradstein (2007), in a country with poor institutional quality, there is a lack of judicial protection of the poor, thereby deepening social inequalities.

The first empirical study to explicitly capture the relationship between institutional quality and income inequality is provided by Chong and Calderón (2000). Their results imply a quadratic relationship between them. Their

main results are based on observations from 70 countries. The authors use only cross-section analysis, so the dynamic relationship cannot be identified. Their article provides evidence that in poor countries, institutional quality is positively associated with income inequality, while in rich countries the relationship is negative. In other words, improvement of institutional quality should first lead to an increase in income inequality, but from a certain level it should decrease.

The dynamic relationship between institutional quality and income inequality examine Chong and Gradstein (2007, 2017), who find out the theory and empirical evidence between them. The growth of institutional quality leads to a reduction in income inequality in the long run, but the opposite relationship is stronger: the reduction of income inequality leads to an increase in institutional quality. Institutional reforms can be an effective tool for reducing inequalities if there is sufficient demand for higher redistributive policies (if political factors allow). The condition is the adaptability of the

institutional environment, which is also an important factor of institutional quality. Josifidis et al. (2017) examine the effects of changes in institutional quality in 21 OECD countries between 1990–2010. Their main finding is that institutional inertia is one of the factors behind the growth of income inequality. Slow changes in the institutional environment are not able to respond to rapid technological change and the deepening of globalization. The result is insufficient redistribution and growing income inequality.

Chong and Gradstein (2017) show that political institutions, which provide support for economic policy and protect economic and political rights, have a crucial influence on the relationship between institutional quality and income inequality. In addition, they have a major impact on redistribution. Therefore, as an indicator of the quality of the institutional environment, we use the “governance matters” (GM) indicator, which evaluates the institutional environment mainly from the perspective of political institutions.¹

3 METHODOLOGY AND DATA

To quantify the impact of institutional quality on income inequality and income distribution is employed a panel regression using an unbalanced panel of 6 countries (Estonia, Latvia, Lithuania, Belarus, Russia and Ukraine) during the period 2002–2017. All data are annual and come from the World Bank database (World Bank, 2020). Descriptive statistics of the main variables that occur in the regression analysis are given in Tab. 8 in the Annex. Pairwise correlation coefficients between institutional quality indicators and income distribution indicators are given in Tab. 9 in the Annex.

Empirical studies examining the effect of institutional quality and income inequality/income distribution have the common denominator: relatively small number of observations. Although the studies examine a large number of countries, but only primarily as a

cross-section – e.g. Chong and Calderón (2000) deal 95 countries and Chong and Gradstein (2007) deal 121 countries. Other studies that use panel analysis do not usually have an annual frequency of data, but use, for example, a five-year periodicity, see Kotschy and Sunde (2017) 96 countries, Dobre et al. (2019) 28 EU countries, Josifidis et al. (2017) 21 OECD countries. Due to the annual periodicity of the data, this paper has a similar number of observations as the above study, even though it examines only 6 countries.

Institutional quality is measured as in the case of Law et al. (2014) and Brown et al. (2011) using the Worldwide Governance Indicators (WGI) variable set from Kraay et al. (2010). More specifically, the institutional quality is assessed on the basis of six composite indicators: Voice and Accountability (GM1), Political

¹Through political institutions is distributed a political power that influences the choice of economic institutions (Acemoğlu et al., 2005).

Stability and Absence of Violence/Terrorism (GM2), Government Effectiveness (GM3), Regulatory Quality (GM4), Rule of Law (GM5), and Control of Corruption (GM6). The arithmetic mean of these components adds up the institutional quality index “governance matters” (GM), that takes values $[-2.5; 2.5]$, as well as its six components.

The model has the following form:

$$\begin{aligned} \text{gini}_{it} = & \alpha + \beta_1 \text{GM}_{it} + \beta_2 \text{GDP}_{it} + & (1) \\ & + \beta_3 \text{educ}_{it} + \beta_4 \text{inv}_{it} + \\ & + \beta_5 \text{open}_{it} + \beta_6 \text{gov}_{it} + \epsilon_{it}, \end{aligned}$$

where the dependent variable (gini) for income inequality is the Gini coefficient. The main explanatory variable is institutional quality (GM). Other explanatory variables are, in addition to real GDP growth (GDP), government education expenditure (educ), net investment in government nonfinancial assets (inv), country openness measures as the volume of imports and exports divided by GDP (open) and government final consumption expenditure (gov).

Changes in income inequality are also explained with the help of individual components of the institutional quality indicator, see the following equations:

$$\begin{aligned} \text{gini}_{it} = & \alpha + \beta_1 \text{GM1}_{it} + \beta_2 \text{GM2}_{it} + & (2) \\ & + \beta_3 \text{GM3}_{it} + \beta_4 \text{GM4}_{it} + \\ & + \beta_5 \text{GM5}_{it} + \beta_6 \text{GM6}_{it} + \epsilon_{it}, \end{aligned}$$

where the dependent variable (gini) is explained with Voice and Accountability (GM1), Political Stability and Absence of Violence/Terrorism (GM2), Government Effectiveness (GM3), Regulatory Quality (GM4), Rule of Law (GM5) and Control of Corruption (GM6). The arithmetic mean of the GM1–GM6 components together form the GM indicator.

In addition to income inequality, we also observe how institutional quality and other

selected variables affect changes in income distribution. Specifically, we observe how institutional quality and other selected variables affect the class of the rich (5th quintile), the poor (1st quintile) and the middle class (the share of the 2nd–4th quintile in total income). The same division (“rich”, “middle class”, “poor”) is also used by Hurley et al. (2013), Barro (1999), Atkinson and Brandolini (2013) and others; this is a standard division. The middle class is the widest and expresses the middle between the poor or at risk of poverty (lower 20%) and the upper 20% (who express “rich”).

The model has the following form:

$$\begin{aligned} \text{id}_{it} = & \alpha + \beta_1 \text{GM}_{it} + \beta_2 \text{GDP}_{it} + & (3) \\ & + \beta_3 \text{educ}_{it} + \beta_4 \text{inv}_{it} + \\ & + \beta_5 \text{open}_{it} + \beta_6 \text{gov}_{it} + \epsilon_{it}, \end{aligned}$$

where income distribution (id) represents either the rich (5th quintil), the poor (1st quintil) or the middle class (2nd–4th quintil). We also explain changes in income distribution (id) using the components of the institutional quality indicator, see the following equations:

$$\begin{aligned} \text{id}_{it} = & \alpha + \beta_1 \text{GM1}_{it} + \beta_2 \text{GM2}_{it} + & (4) \\ & + \beta_3 \text{GM3}_{it} + \beta_4 \text{GM4}_{it} + \\ & + \beta_5 \text{GM5}_{it} + \beta_6 \text{GM6}_{it} + \epsilon_{it}. \end{aligned}$$

To provide the robust results, we estimate all models with robust standard errors clustered by country. Since we are working with an unbalanced panel, according to Brown et al. (2011) we can take into account unmeasured heterogeneity with this approach. Like Chong and Calderón (2000), in addition to pooled OLS², we also use two-stages least squares (2SLS) due to possible endogeneity, where the lagged explanatory variables serve as instrumental variables. After the presentation of the main results, a robustness check is presented, where the main explanatory variable changes (another institutional variable is employed).

²The choice of Pooled OLS is based on the results of the LM test (between OLS and RE), the test of intercepts (between OLS and FE) and the Hausman test (choice between FE and RE).

4 RESULTS

4.1 Regression Analysis

The results of the regression analysis in Tab. 1 imply a positive statistically significant relationship between the improvement of institutional quality (GM) and the growth of income inequality (gini), which is a similar conclusion as in Chong and Calderón (2000). Income inequality is also increased by other variables involved in the model, namely net investment in government nonfinancial assets, while rising government spending on education (educ) reduces income inequality, which is consistent with Acemoglu and Robinson (2000). The growth in the share of exports and imports in GDP (open) also has a negative effect, implying that greater international trade due to deepening globalization does not necessarily mean widening inequalities (versus Dabla-Norris et al., 2015). In addition to the price of factors of production in a given country, international trade is influenced by the institutional environment, the setting of which may be biased in favor of certain groups of workers. This is confirmed in Tab. 3, where we see that international trade favors the middle class and the 1st quintile (poor), while disadvantage the 5th quintil (rich).

Tab. 2 presents the various channels through which institutional quality affects income inequality. Improving the “Regulatory quality” (GM4), which aims to develop the private sector, and increasing political stability (GM2) seems to have the greatest weight. Voice and Accountability (GM1), in other words “quality of democracy”, has a negative effect, which implies that improving the quality of democratic processes would lead to a reduction in income inequality, which is consistent with Acemoglu et al. (2015), who explain that higher quality democratic processes are usually associated with a greater tendency to redistribute and reduce income inequality in society.

Tab. 1: Institutional quality (GM) and income inequality

Variables	Pooled OLS	2SLS
	(1) gini	(2) gini
GM	3.928*** (0.440)	3.609*** (0.536)
GDP	0.090 (0.082)	0.154 (0.120)
educ	-2.987** (0.744)	-4.008*** (0.550)
inv	0.448** (0.171)	0.487** (0.194)
open	-0.077*** (0.016)	-0.065*** (0.014)
gov	0.204 (0.218)	0.338 (0.320)
Constant	51.680*** (4.809)	52.893*** (5.095)
Observations	78	73
R-squared	0.810	0.770

Note: Robust standard errors in parentheses;
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Tab. 2: Components of institutional quality (GM) and income inequality

Variables	Pooled OLS	2SLS
	(1) gini	(2) gini
GM1	-8.792*** (1.442)	-10.644*** (0.592)
GM2	1.477** (0.474)	1.702*** (0.550)
GM3	4.540 (2.716)	2.724 (3.096)
GM4	17.468*** (4.046)	22.513*** (2.849)
GM5	-7.644** (2.915)	-8.785*** (2.383)
GM6	-6.448*** (1.457)	-7.582*** (1.456)
Constant	27.399*** (0.736)	26.213*** (0.525)
Observations	91	88
R-squared	0.757	0.764

Note: Robust standard errors in parentheses;
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Tab. 3: Institutional quality (GH) and income distribution

	Pooled OLS	2SLS	Pooled OLS	2SLS	Pooled OLS	2SLS
Variables	(1) quintil 5	(2) quintil 5	(3) quintil 2–4	(4) quintil 2–4	(5) quintil 1	(6) quintil 1
GM	2.786*** (0.268)	2.577*** (0.396)	-1.427*** (0.162)	-1.306*** (0.260)	-1.363*** (0.209)	-1.265*** (0.185)
GDP	0.067 (0.056)	0.125 (0.083)	-0.039 (0.032)	-0.086* (0.050)	-0.027 (0.024)	-0.039 (0.036)
educ	-2.325*** (0.541)	-3.099*** (0.426)	1.579*** (0.322)	2.095*** (0.330)	0.750** (0.245)	1.018*** (0.167)
inv	0.299* (0.127)	0.251* (0.130)	-0.170 (0.094)	-0.054 (0.099)	-0.129 (0.070)	-0.191*** (0.062)
open	-0.065*** (0.012)	-0.057*** (0.011)	0.048*** (0.008)	0.044*** (0.010)	0.017** (0.005)	0.013*** (0.004)
gov	0.138 (0.156)	0.210 (0.240)	-0.070 (0.093)	-0.084 (0.172)	-0.068 (0.071)	-0.128 (0.095)
Constant	56.522*** (3.405)	58.249*** (3.810)	39.926*** (2.022)	37.967*** (2.598)	3.527* (1.488)	3.795** (1.499)
Observations	78	73	78	73	78	73
R-squared	0.810	0.768	0.801	0.746	0.781	0.749

Note: Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Tab. 4: Components of institutional quality (GM) and income distribution

	Pooled OLS	2SLS	Pooled OLS	2SLS	Pooled OLS	2SLS
Variables	(1) quintil 5	(2) quintil 5	(3) quintil 2–4	(4) quintil 2–4	(5) quintil 1	(6) quintil 1
GM1	-6.829*** (1.170)	-8.169*** (0.548)	4.585*** (0.887)	5.379*** (0.544)	2.245*** (0.400)	2.815*** (0.243)
GM2	0.968** (0.372)	1.186*** (0.378)	-0.370 (0.323)	-0.543* (0.293)	-0.606** (0.168)	-0.635*** (0.236)
GM3	3.885 (2.036)	2.691 (2.398)	-2.740* (1.229)	-2.195 (1.596)	-1.102 (0.823)	-0.418 (0.896)
GM4	13.804*** (3.016)	17.750*** (2.207)	-9.561*** (1.927)	-12.186*** (1.587)	-4.306** (1.120)	-5.637*** (0.659)
GM5	-6.832** (1.797)	-8.208*** (1.582)	5.507*** (1.003)	6.921*** (1.178)	1.352 (1.112)	1.248 (1.042)
GM6	-4.888*** (1.005)	-5.596*** (1.002)	3.051*** (0.740)	3.320*** (0.719)	1.846** (0.575)	2.300*** (0.587)
Constant	36.543*** (0.524)	35.617*** (0.386)	54.451*** (0.329)	55.065*** (0.277)	9.017*** (0.219)	9.328*** (0.148)
Observations	91	88	91	88	91	88
R-squared	0.761	0.766	0.751	0.753	0.759	0.768

Note: Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Institutional quality (GM) is also statistically significant in explaining the development of income distribution (see Tab. 3). Better institutions seem to favor the richest in society (the share of the 5th quintile in total income), while they disadvantage (have a negative effect) the poorest and middle class. The current trend

in income distribution in developed countries (especially in the US and Western Europe, see Acemoglu and Autor, 2011 and Fonseca et al., 2018) is its polarization, where the share of the middle class in total income decreases, while the share of 1st and the 5th quintile grows. Our results do not indicate polarization of income

distribution. Expenditure on education (educ) reduces the gap between the rich on the one hand and the middle class and the poorest on the other and the similar effect has also international trade (open).

Tab. 4 presents influence of the individual components of institutional quality on the income distribution. It seems that regulatory quality (GM4) and political stability (GM5) in particular create an environment that allows the richest (5th quintile) to get the most rich, while negatively affecting the middle class and the poorest, which is probably the reason for the positive relationship between growth of institutional quality (GM) and the growth of income inequality (gini coefficient) showed in Tab. 1.

4.2 Robustness Check

Following the same approach as Kotschy and Sunde (2017), we will use a different indicator of institutional quality to determine the robustness of the results. Instead of the Governance matters (GM), we will use the indicator of Economic Freedom index developer by Heritage Foundation “HERI” (Heritage Foundation, 2020). Similar as GM consists of six components, HERI consists of 11 components.³ GM took values $[-2.5; 2.5]$, while HERI $[0; 100]$; in both cases, the higher the value of the coefficient, the higher the quality of the institutional environment. While the GM indicator assessed the institutional quality rather from the perspective of political institutions, HERI and its components also include the evaluation of economic institutions (especially the definition of property rights and institutions related to the markets).

The results obtained by changing the main explanatory variable to HERI are similar to those of GM. The same variables as were statistically significant for the GM model are significant now; the signs of statistically significant parameters remained the same. What is different is the value of the coefficient for the in-

stitutional variable. Here, too, the results imply that a higher institutional quality (HERI) leads to an increase in income inequality (Tab. 5) and favors the richest population over the middle class and the poorest (Tab. 6).

Tab. 5: Institutional quality (HERI) and income inequality

Variables	Pooled OLS	2SLS
	(1) gini	(2) gini
HERI	0.275*** (0.040)	0.254*** (0.043)
GDP	0.080 (0.078)	0.106 (0.098)
educ	-2.571** (0.794)	-3.495*** (0.666)
inv	0.550** (0.148)	0.607*** (0.216)
open	-0.078*** (0.017)	-0.067*** (0.015)
gov	0.170 (0.232)	0.335 (0.277)
Constant	33.681*** (3.925)	35.258*** (3.275)
Observations	78	73
R-squared	0.824	0.794

Note: Robust standard errors in parentheses;

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Our results imply a positive statistically significant relationship between institutional quality and income inequality. Given that the quality of the institutional environment has been examined above in a linear form, the relationship appears to be monotonic. However, the studies Law et al. (2014) and Chong and Calderón (2000) imply a nonmonotonic relationship between institutional quality and income inequality. Therefore, we add the square of the institutional quality indicator to the model explaining income inequality, see Tab. 7 and Fig. 1 (and Fig. 2 in the Annex). The results imply a quadratic relationship between institutional quality and income inequality. After reaching a certain level of institutional quality, income inequality seems to be declining. This implies an inverted-U curve between

³More specifically, HERI “Overall Score” consists from: Property Rights, Judicial Effectiveness, Government Integrity, Tax Burden, Government Spending, Fiscal Health, Business Freedom, Labor Freedom, Monetary Freedom, Trade Freedom, Investment Freedom and Financial Freedom.

Tab. 6: Institutional quality (HERI) and income distribution

	Pooled OLS	2SLS	Pooled OLS	2SLS	Pooled OLS	2SLS
Variables	(1) quintil 5	(2) quintil 5	(3) quintil 2-4	(4) quintil 2-4	(5) quintil 1	(6) quintil 1
HERI	0.196*** (0.026)	0.181*** (0.032)	-0.102*** (0.014)	-0.091*** (0.021)	-0.095*** (0.017)	-0.089*** (0.014)
GDP	0.060 (0.054)	0.091 (0.067)	-0.035 (0.031)	-0.069* (0.041)	-0.023 (0.023)	-0.023 (0.028)
educ	-2.027** (0.584)	-2.735*** (0.516)	1.419** (0.355)	1.913*** (0.379)	0.611* (0.250)	0.835*** (0.192)
inv	0.372** (0.099)	0.337** (0.144)	-0.207** (0.077)	-0.098 (0.100)	-0.164* (0.066)	-0.233*** (0.070)
open	-0.066*** (0.013)	-0.058*** (0.012)	0.049*** (0.009)	0.044*** (0.011)	0.017** (0.005)	0.014*** (0.004)
gov	0.112 (0.170)	0.208 (0.211)	-0.054 (0.103)	-0.084 (0.157)	-0.059 (0.073)	-0.126 (0.082)
Constant	43.748*** (3.009)	45.665*** (2.731)	46.487*** (2.242)	44.333*** (2.484)	9.758*** (1.057)	9.983*** (0.887)
Observations	78	73	78	73	78	73
R-squared	0.823	0.792	0.811	0.766	0.795	0.771

Note: Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

institutional quality and income inequality. We get the same result even if we use HERI variable for institutional quality. This pattern seems to be consistent.

Tab. 7: Quadratic relationship between institutional quality and income inequality

	2SLS	2SLS
Variables	(1) gini	(2) gini
GM	3.287*** (0.575)	
GMSquared	-4.347*** (0.843)	
HERI		2.274*** (0.340)
HERISquared		-0.017*** (0.003)
GDP	0.164 (0.126)	0.117 (0.108)
educ	-4.861*** (0.467)	-3.726*** (0.511)
inv	0.508** (0.232)	0.288 (0.189)
open	-0.026 (0.017)	-0.045*** (0.016)
gov	0.564 (0.362)	0.404 (0.278)
Constant	51.559*** (6.957)	-25.125** (10.387)
Observations	73	73
R-squared	0.718	0.814

Note: Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

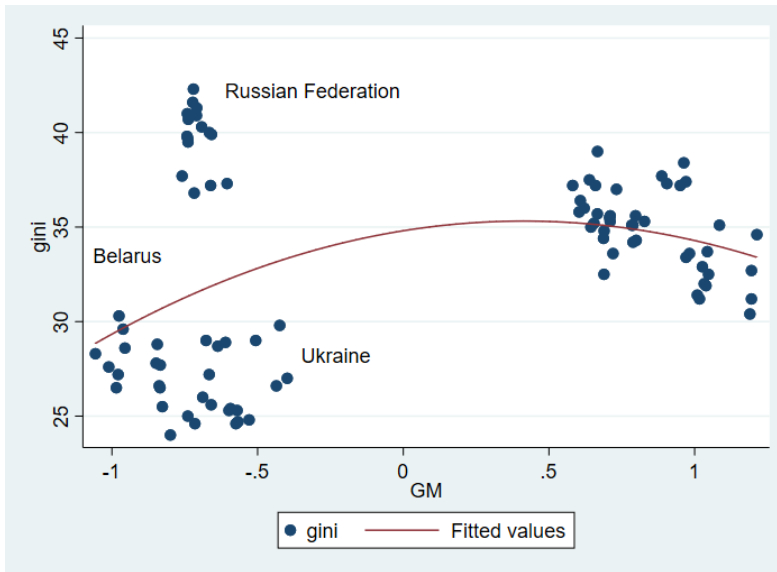


Fig. 1: Institutional quality (GM) and income inequality

Note: The x -axis represents the institutional quality (indicator GM) – the higher the number, the higher the institutional quality. The y -axis represents income inequality – the higher the number, the higher the income inequality.

5 DISCUSSION AND CONCLUSIONS

In this paper, we focused on identifying the relationship between institutional quality and income inequality (and income distribution) in selected post-Soviet countries. Technological change and globalization in particular are considered to be the main causes of growing income inequality in developed countries (Braconier et al., 2015; Dabla-Norris et al., 2015). On the other hand, the institutional environment can significantly influence the distribution of wealth in society (Acemoğlu and Robinson, 2002). The results of this paper show that the quality (and setting) of the institutional environment plays an important role in this process.

The relationship between institutional quality and income inequality seems to be non-monotonic in light of the achieved results. The growing quality of institutions leads to an increase in income inequality, but only until a certain point in time. From a certain point in time, the growth of institutional quality will start to stimulate a decline in income inequality. This relationship can be characterized as an inverted U-shape. A similar conclusion was reached by Chong and Calderón

(2000), who, however, used measures from the International Country Risk Guide (ICRG) and the Business Environmental Risk Intelligence (BERI) as an indicators of institutional quality. Both indicators have a similar character to the indicators used in this article – both consist of sub-components and the average value of sub-components forms the main index that assesses institutional quality.

In connection with this result, an analogy is offered to the Kuznets curve, or to its modification by Acemoğlu and Robinson (2000). The authors confuse the original relationship between income inequality and income per capita with the relationship between income inequality and democratization, and thus offer a convincing explanation for developments within Western countries. The increase in income inequality in Western countries was usually associated with industrialization, which aroused social unrest in society. Political elites responded by expanding the right to vote (deepening democratization) to prevent deeper social unrest. Deepening democratization is associated with higher taxation and redistribution, which leads to a reduction

in income inequality (Acemoglu and Robinson, 2000). The finding of the relationship (inverted U-curve) can thus have a similar telling power.

Furthermore, the results of this paper imply, similarly to Chong and Calderón (2000) and Chong and Gradstein (2017), that the growing institutional quality in selected post-Soviet countries favors the richest social class over the poorest and middle class. Chong and Calderón (2000) argue that the growing quality of the institutional environment favors the richest in society at an early stage of institutional reform; after a while, a better institutional environment will start to generate a more equal environment. Institutional quality as a factor favoring “rich” over other social classes is consistent with Sonin (2003), who found that in Russia the rich benefit from the ability to shape economic institutions for their profit. His findings were based on observations of transformation and oligarchism during the “wild” 1990s; some trends seem to persist.

Currently, the main trend in developed countries is the polarization of income distribution (Dabla-Norris et al., 2015), which is caused by the polarization of employment, see especially Goos et al. (2009) and Acemoglu and Autor (2011). The above results do not indicate this phenomenon. This may be due to the fact that, according to empirical evidence, employment polarization does not appear to occur in these countries, see Hurley et al. (2013) focus on the Baltic countries between 1997–2010 and Gimpelson and Kapeliushnikov (2016) examining Russia between 2000–2012.

After the collapse of the Soviet Union, the post-Soviet economies began to transform; during the period 2002–2017, the post-Soviet countries had a substantial part of the economic transformation behind them. Some of them (Baltic countries) have taken the “Western route” (democratization, growth of institutional quality and, as a result, higher economic performance), some of them seem to have returned to the idea of the Soviet Union (especially

Belarus and Russian Federation). The result is a relatively low institutional quality, which, however, as in the case of Belarus and Ukraine, does not yet put upward pressure on growing income inequality. Conversely, in the case of Russia, we can observe a relatively high level of income inequality, however, due to poor institutional quality, the downward pressure through higher redistribution is not as great as in Estonia, where gini changed from 37.2 in 2003 to 30.4 in 2017; in Russia, gini changed from 37.3 (2003) to 37.2 (2017). The example of Russia confirms that income inequality is more permanent in countries with extract institutions (Dobre et al., 2019), which are institutions that favor elites (Acemoglu and Robinson, 2012).

The potential for further research lies in the identification of channels through which institutional quality influences the development of income inequality. The results of this paper imply that the channels are mainly the “regulatory quality” and “political stability”. Are the channels through which institutional quality affects income inequality in the former post-Soviet countries different from those in other (for example Central Europe) countries? There is also space for determining the right direction of the relationship. Chong and Gradstein (2007, 2017) have shown that the link income inequality – institutional quality is stronger than the link institutional quality – income inequality. Institutional quality then forms a channel through which other influences act. De Haan and Sturm (2017) report the effects of financial variables – financial development, financial liberalization or the banking crisis – all stimulate an increase in income inequality through institutional quality. Law et al. (2014), on the other hand, add that there is threshold effect of the institutional quality – from a certain level of institutional quality, financial indicators affect to a more even distribution of income. However, there is a lack of greater empirical evidence in this area, which may be a motivation for further research.

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8 ANNEX

Tab. 8: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
gini	91	32.92747	5.133573	24	42.3
5th quintil	91	40.92637	3.971813	34.6	48.9
2nd–4th quintil	91	51.45055	2.702442	45.3	55
1st quintil	91	7.621978	1.453486	5.7	10.5
GM	96	0.0553791	0.8001192	–1.0566	1.21377
GM1	96	0.032116	0.9992681	–1.77032	1.21328
GM2	96	0.0972846	0.7510905	–1.9618	1.01276
GM3	96	0.1203478	0.786467	–1.17045	1.18493
GM4	96	0.2456136	0.9978477	–1.63846	1.69814
GM5	96	–0.015453	0.8964147	–1.28912	1.36466
GM6	96	–0.147634	0.7317866	–1.09242	1.29365
HERI	96	60.60729	12.01734	39	79.1
GDP	96	3.563034	5.479402	–14.8	12.1
educ	85	5.133266	0.8082579	3.54787	7.31364
inv	90	1.769273	1.545836	0.135798	8.12587
open	96	110.3234	33.31385	46.5181	170.428
gov	96	18.24571	1.714696	13.4298	21.3793

Note: gini = gini coefficient; 5th quintil / 2nd–4th quintil / 1st quintil = “rich” / “middle class” / “poor”; GM/HERI = institutional quality; GDP = real GDP growth; educ = government expenditure on education; inv = net investment in government nonfinancial assets; open = openness of the country; gov = government final consumption expenditure

Tab. 9: Pairwise correlation

	gini	Upper20	Middle-class	Lowest20
GM	0.3205*	0.2427*	-0.0785	-0.5170*
GM1	0.2684**	0.2021*	-0.0612	-0.4397***
GM2	0.0345	-0.0469	0.2050*	-0.2521**
GM3	0.4482***	0.3809***	-0.2303**	-0.6121***
GM4	0.4473***	0.3802***	-0.2319**	-0.6086***
GM5	0.3291***	0.2514**	-0.0879	-0.5232***
GM6	0.1997*	0.1223	0.0343	-0.3965***
HERI	0.3792*	0.3064*	-0.1505	-0.5572*

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

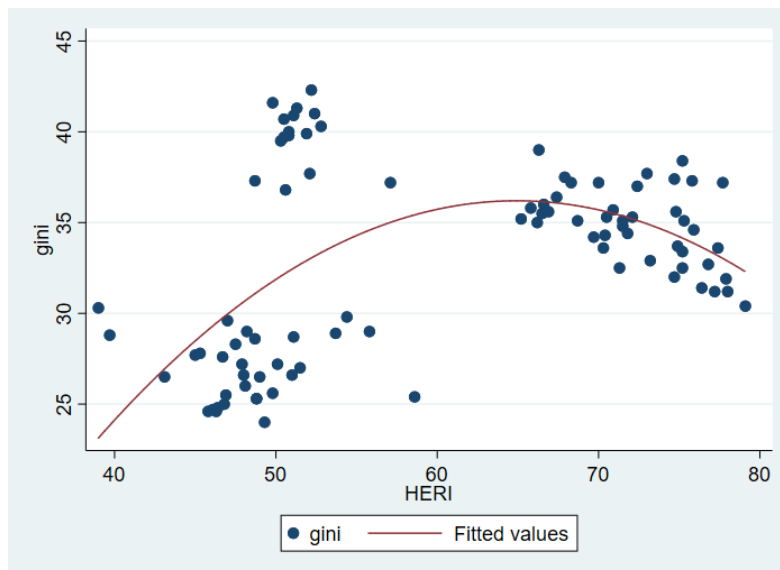


Fig. 2: Institutional quality (HERI) and income inequality

Note: The x -axis represents the institutional quality (indicator HERI) – the higher the number, the higher the institutional quality. The y -axis represents income inequality – the higher the number, the higher the income inequality.

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