

EVALUATION OF INSTITUTIONAL QUALITY OF SELECTED EU TRANSITION ECONOMIES AND FORMER SOVIET REPUBLICS USING DEA APPROACH

Elena Fifeková

Universtity of Economics in Bratislava, Slovakia
fifekova@gmail.com

Andrea Vondrová

Universtity of Economics in Bratislava, Slovakia
andrea.vonrova@euba.sk

Abstract:

Quality of institutions belongs among the key factors, which affects the development of economy, because it cultivates social responsibility, business environment and frames conditions for business. At present it is still more respected that it is the institutional quality, which significantly determines economic development. Countries that have good institutional framework and their economic systems were connected with institutional quality in long-term, reach higher levels of economic performance today. The goal of the paper is to assess the impact of institutional quality on economic aspects of transition economies. The institutional quality is assessed by using the indicators of the World Economic Forum and Worldwide Governance. Relationship of the institutional quality economic performance is studied in this paper using non-parametric methods of DEA, which allowed to assess the extent to which the institutional quality reflected in the level of economic performance of evaluated countries and identify the potential for improvement in the quality of governance to enhance their economic level. The results show a relatively inefficient use of governance, especially in the transition economies of post-Soviet countries.

Keywords: institutions, governance, economic performance, data envelopment analysis

1. INTRODUCTION

Underestimation of institutional quality, lack of understanding of the importance of institutions, their development and the interconnectedness of all institutional components may lead to a negative impact on economic development of the country.

On the contrary, existence of quality institutions enables to formulate and implement such economic policy measures that will ensure long-term development.

Assessment of conditions of socio-economic development of the country's institutional optics therefore in addition to the analysis of economic processes focuses on the development and quality of political systems, evaluates the structure of interest, forms of enforcement and their impact on developing countries. Higher institutional quality so creates better conditions for economic growth and development (eg. Acemoglu et al. 2004 Acemoglu and Robinson, 2012).

The quality of the institutional environment depends mainly on the achieved level of institutional complementarity, i.e. interdependence of structure of formal institutions and their informal application, subjected so by historical development of the country, the evolution of traditions, customs, ethics and morale of society.

Pressure on the quality of formal institutions changes behaviour of society, reduces tolerance to negative social phenomena and positively affects the quality of the business environment. This retroactively provides greater informal acceptance of formal rules and helps to improve the conditions for economic development. If formal institutions operate in accordance with an informal environment, the country has better conditions to raise its economic level.

2. METHODOLOGY AND THE DATA

For assessing the quality of institutional environment we used data mainly from the World Bank and World Economic Forum. World Bank uses data from project The Worldwide Governance Indicators (WGI) which provides an opportunity to assess the quality of governance of 215 countries. The assumption is based on the fact that effective governance is founded on the interconnectivity of value system, rules and policies that create high-quality civil society and enhance the political accountability and create space for the efficient management of economic, social and political matters and a space for coordination of relations between the State, civil society and the private sector. It regards to the areas that constitute institutional quality of the country, since they link the formal and informal institutional environment. World economic forum (the Global Competitiveness Report) evaluates the quality of institutions through quality of legislative framework, transparency of the public sector and the private sector. Data on gross domestic product per capita we have obtained from the database of the International Monetary Fund. The analysis focuses on the countries of the European Union and post-soviets countries with an emphasis on Eastern Partnership countries.

Analytical tool used in this paper is a non-parametric approach. The purpose for using the method of DEA (data envelopment analysis) review is to assess to what extent is the achieved degree of governance quality in various countries reflected in their level of economic performance, respectively what is the potential for better "assessment" of governance quality to increase their economic level.

Classical DEA assesses efficiency of *Decision Making Units* (DMUs) which are viewed as transforming m inputs into s outputs. Mathematical expression of transformation function as the production set boundary representation is not being focused. Assuming out stochastic shocks, the data are treated deterministically to construct the *best practice* frontier, deviation from which ascribed to inefficient performance. Interpreting efficiency in Pareto-Koopmans sense, an efficient DMU cannot improve its performance, e.g. increasing its output or reducing any input without employing additional input or reducing output respectively. In DEA, approximation of efficient boundary is carried out by linear combination of efficient units which also presents a set of benchmarks for inefficient ones. Potential improvements are represented by *slack* variables (Cooper, Seiford, and Tone 2007).

In the specific application of the method in this study, the approach of Tone (2001) was adopted to assess n DMUs represented by activity $(\mathbf{x}_0, \mathbf{y}_0)$ where \mathbf{x} and \mathbf{y} stand for inputs and outputs vector

respectively, and DMU under assessment is indexed by 0. All inputs and outputs are arranged in matrices X and Y . Slack variables can be expressed as follows.

$$\begin{aligned} \mathbf{s}^- &= \mathbf{x}_0 - X\boldsymbol{\lambda} \\ \mathbf{s}^+ &= Y\boldsymbol{\lambda} - \mathbf{y}_0 \end{aligned} \quad (1)$$

As proposed in Cooper, Seiford, Tone (2007), input-oriented measure of efficiency can be constructed by excluding input slacks from the objective function assessing efficiency. The resulting optimization program takes the form

$$\min_{\boldsymbol{\lambda}, \mathbf{s}^+, \mathbf{s}^-} \quad \rho = \frac{1 - \frac{1}{m} \sum_{i=1}^m s_i^- / x_{i0}}{1 + \frac{1}{s} \sum_{r=1}^s s_r^+ / y_{r0}} \quad (2)$$

$$\begin{aligned} \text{s.t.} \quad \mathbf{x}_0 &= X\boldsymbol{\lambda} + \mathbf{s}^- \\ \mathbf{y}_0 &= Y\boldsymbol{\lambda} - \mathbf{s}^+ \\ \boldsymbol{\lambda} &\geq \mathbf{0} , \\ \mathbf{s}^- &\geq \mathbf{0} , \mathbf{s}^+ \geq \mathbf{0} , \end{aligned} \quad (3)$$

where in the objective function (2) measures the "distance", and its activity $DMU_0(\mathbf{x}, \mathbf{y})$ from the border by penalizing the relative divergence of the border. By successive substitutions we come to the optimization problem (4) solvable by standard techniques of linear programming:

$$t = \frac{1}{1 + \frac{1}{s} \sum_{r=1}^s s_r^+ / y_{r0}}, \quad t\mathbf{s}^- = \mathbf{S}^-, \quad t\mathbf{s}^+ = \mathbf{S}^+, \quad t\boldsymbol{\lambda} = \boldsymbol{\Lambda} \quad (4)$$

The formulation of efficient scale was used to design efficient scale for the countries of the European Union and Eastern Partnership.

3. THE ROLE OF INSTITUTIONS IN THE SOCIO-ECONOMIC DEVELOPMENT

The role of institutions in the socio-economic development is indisputable. The development of individual countries, as well as global development, are in addition to factor equipment are conditioned by the quality of institutions. Clearly, the predictive models of neoclassical approaches are not able to cover all of the current development of problems and in particular include the full range of its complexity. A major drawback of neoclassical analysis of economic performance in time is the assumption that institutions do not matter, and also that the time does not play a role (North, 1994). In its original form neoclassical theory provides a mathematical precision and elegance, model of a static world without conflicts. That is why in terms of institutional approaches neoclassical approach does not address the issue of selection decisions on particular policies, does not analyse the impact of these decision-making processes, does not address the motives that lead to specific doing of actors, their interests and so on.

Neoclassical approach lacks width of tools that would allow us to analyse and shape the rules that indicate development. Clarifying the current problems and looking for solutions by neoclassical view gets into even larger problems. The focus is therefore on the institutional environment and the interdependence of its individual aspects.

It is clear that the country's development is the result of not only current decisions but is also conditioned by the quality of path dependence. It is precisely the result in the form of the supply side of

the economy. Decisions determined the country's position in the economic and technological development, its current competitiveness, and determine the possibilities of its qualitative shift. Therefore it is usually enough if the country has a comparable economic resource as its successful model, because its success is conditional upon the full set of factors that shape the institutional environment and ensure its quality. Growth, development depends crucially on the currently valid institutions.

Institutions are settled patterns of thoughts and behaviour common to most people (Veblen, 1899). They are defined as widely entrenched and accepted norms of group behaviour (Berger, Luckmann (1999). They are generally defined as man-made limitations that bring structure to human behaviour (North 1991, 1993). They consist of formal limits (laws, constitution, and rules), informal constraints (norms of behaviour, traditions, customs, mentality, religion, conventions, and human instincts) and their method of enforcement (North 1991).

They construct political, economic and social interactions, create order, reduce uncertainty in the exchange (due to imperfect information and restricted rationality) and reduce transaction costs. They represent a set of rules that are used to identify entities, able to take decisions in particular areas of what activities are allowed or restricted, what rules will be used, what procedures should be followed, what information should or should not be provided and what rewards will individuals get, depending on their activities (Ostrom, 1990). Ways how to enforce political institutions promoting growth and development are limited by cultural character of contemporary society (North, 1990).

Which institutions are important and which are not, varies depending on the development of the country, its political ambitions and social attitudes of the population. There is no set of institutions that are suitable for all countries, but there is an agreement that it is necessary to have at least five major assumptions of institutional structures that support economic development. Where they are not developed, the development of country is not sufficient (Rodrik 2007). They are institutions that either create the conditions for the functioning of the market and to ensure its stability or solve a failure.

Framework they are focused on:

- protection of property rights and enforcement of law,
- ensuring a regulatory framework of the market
- ensuring macroeconomic stability,
- quality of social security,
- conflict resolution

The basic assumption of the positive impact of institutions on socio-economic development of the country is to achieve the highest possible degree of institutional complementarity, i.e. ensure coherence of economic and social system in the sense that changes in informal institutions do not lag behind the pace of formal changes (Amable, 2003), because success of formal rules depends on the success of their informal acceptance (Tridico, 2011). This means that the formal institutions will respect the need for gradual changes of informal institutions, since informal institutions are not able to adapt immediately and in short time to change of the formal rules. Informal institutions have encoded regional specificities in themselves, different ability to absorb changes in formal institutions. At the same time there is need to pay attention to the quality of formal rules because incorrectly set formal rules can significantly distort the informal behaviour of the company in terms of decrease of social responsibility, morale, tolerance, expansion of the unobserved economy and so on.

Williamson (2000) describes the linkage of formal and informal institutions by concept of anchoring, respectively, incorporation, pointing at the fact that the more institutions have an informal character, the deeper they are integrated into society and need longer time for their changes. This means that lower level institutions (customs, traditions, mentality, and religion) react to social changes much slower than institutions of higher degree, which set formal rules, affect the functioning of public administration and legal framework. Institutional quality of current period carries in itself the previous institutional equipment.

3.1. Evaluation of institutional quality

The basic framework for the assessment of institutional quality in this paper is the quality of governance.¹ World Bank evaluates within this concept six aggregate sub-indices - democracy, political stability, including the absence of violence / terrorism, government effectiveness, regulatory quality, law enforcement, and control of corruption. The resulting aggregate index of governance quality index is their arithmetic average. Access of this concept allows evaluating the level of quality of governance through formal and informal institutions, by which is applied in the country power. The basic intention of the concept is to monitor the process of creation and control of government's ability to effectively formulate and implement economic policies and the state of civil society and institutions that link economic and social interaction.

The quality of the political process of civil society is included in the indicators of democracy. Political instability and use of violence (including terrorism) examines the extent of participation of citizens in the selection of the government of the country, conditions for stable governance, freedom of expression, association and media freedom. Government's ability to effectively formulate and implement economic policies is contained in indicators of government effectiveness and regulatory burdens. The quality of institutional interaction is assessed by using quality of law and control of corruption.

The quality of public services and the civil service is assessed in particular, then the credibility of the government, its independence and also the government's ability with effective economic policy to promote private sector development. The quality of legal system assesses the ability of compliance in the company, the quality of contractual relations, protection of property rights, law enforcement, and the quality of police, judiciary and likelihood of crime. Control of corruption indicator reflects the level of perceived abuse of public power to obtain private benefit and the extent of penetration of private interests to the public sector.

Descriptive view of the quality of governance (Table 1) suggests that transition countries that are currently members of the EU achieve higher level, while in the surveyed period in several indicators occurred a positive shift. This fact is due to the fact that the EU has positively influenced shaping of the institutional environment of the newly admitted countries, both in the pre and after their accession of the EU.

Table 1: Quality of public administration of the transition economies (percentage position)

	Voice and Accountability		Political Stability and Absence of Violence/ Terrorism		Government Effectiveness		Regulatory Quality		Rule of Law		Control of Corruption	
	1996	2013*	1996	2013	1996	2013	1996	2013	1996	2013	1996	2013
Transitive countries of EU												
BG	61,54	58,29	39,90	54,50	43,90	59,33	48,53	67,94	34,93	51,18	35,85	79,76
CZ	76,72	76,78	84,62	84,36	77,71	75,12	82,84	81,82	77,51	82,46	76,59	62,68
EE	74,04	84,83	68,75	68,25	70,73	78,47	90,69	90,13	62,20	86,20	57,56	81,34
HR	46,15	63,30	40,38	66,35	58,54	70,81	46,57	66,03	31,10	60,19	23,90	61,24
HU	77,88	69,67	76,44	69,67	78,54	70,33	77,45	77,51	77,03	63,30	74,15	64,59
LT	66,35	70,14	59,13	65,40	60,98	78,08	79,90	80,38	52,15	72,99	23,10	64,11
LV	75,48	75,36	57,69	76,30	63,90	73,68	85,78	84,21	60,77	73,93	57,56	66,99
PL	78,37	78,20	70,19	78,67	76,59	71,29	70,59	80,26	66,03	73,46	72,68	70,81

¹ At present there is a wide variety of approaches, through which we are able to assess the institutional quality equipment of individual countries. Assessment of institutional quality makes for example the World Bank, World Economic Forum, OECD, UN DP, Legatum Institute, The Heritage Foundation, The Frazer Institute, EBRD, The Freedom House, Transparency International and other institutions.

RO	58,17	57,35	62,50	52,61	33,66	52,63	55,39	69,38	49,76	56,40	49,27	52,63
SI	89,42	78,67	91,83	72,51	79,51	78,95	83,33	71,77	83,73	80,57	86,83	73,68
SK	66,83	76,30	72,60	88,63	71,22	73,21	66,67	78,47	56,46	63,98	66,34	59,81
Eastern Partnership countries												
AR	25,96	29,38	28,37	49,76	40,00	57,89	37,75	58,85	34,45	45,02	36,10	37,71
AZ	14,42	10,60	18,75	33,18	16,59	38,76	37,75	58,85	34,45	45,02	36,10	37,71
BR	17,31	5,69	45,67	46,45	40,00	17,22	15,69	14,35	27,75	20,38	20,00	37,32
GR	36,06	54,5	6,73	30,80	28,80	69,38	18,40	73,40	8,13	53,55	4,88	66,51
MD	49,04	45,5	43,27	45,50	41,46	41,15	53,43	49,28	47,35	42,65	50,73	23,92
UA	34,62	36,97	37,02	21,33	25,85	30,14	38,24	28,71	19,62	23,22	13,17	11,96
Other Post-Soviet republics												
KZ	18,27	14,22	28,85	34,60	13,17	35,41	39,71	36,84	11,69	30,81	9,27	20,10
KR	22,60	26,89	35,10	19,43	40,00	28,71	40,20	41,63	26,32	12,80	36,10	11,48
RU	40,87	18,96	12,02	22,27	32,68	43,06	39,22	37,32	23,44	24,64	15,61	16,75
TJ	5,29	7,11	2,88	14,69	5,37	14,83	6,37	14,83	3,35	9,55	4,88	10,05
TU	7,69	0,95	56,73	54,03	11,22	9,57	6,86	1,44	8,61	6,64	36,10	4,31

Note: AR – Armenia, AZ – Azerbaijan, BG – Bulgaria, BR – Belarus, CZ – Czech Republic, EE – Estonia, GR - Georgia, HR – Croatia, HU – Hungary, KR - Kyrgyz Republic, KZ – Kazakhstan, LT – Lithuania, LV – Latvia, MD – Moldova, PL – Poland, RO – Romania, RU – Russian Federation, SI – Slovenia, SK – Slovak Republic, TJ – Tajikistan, TU – Turkmenistan, UA – Ukraine

*data of year 2013 are the latest available data in the database.

Source: The Worldwide Governance Indicators, World Bank (2014)

Those transition countries that realized greater cooperation with the Union in the current period, circumscribed by the projects of the Eastern Partnership (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) have some specifics in their quality of governance. They arise either from their geographical location and or from the level of continuing dependence on historical developments in the political, economic and cultural areas.

Institutional transformation of the above mentioned countries is largely marked by the fact that they could not fully cope with several elements of the previous development. The result was that the creation of formal institutions was carried out significantly in an inert informal environment. Institutional environment carries the regional specifics that are conditioned by historical development.

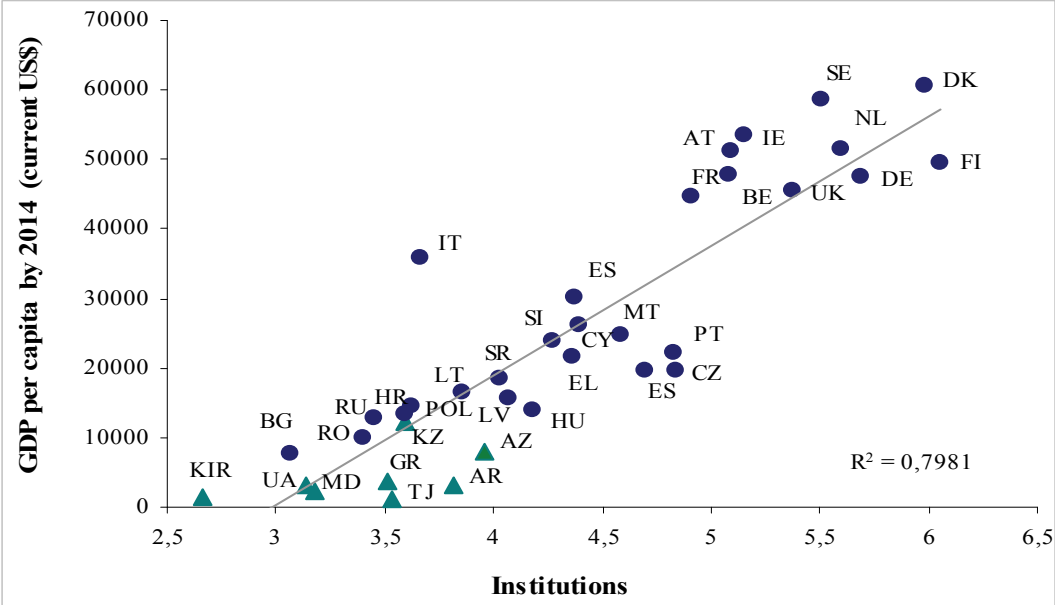
The most significant are the regional economic system and character of institutional equipment, which are influenced by prevailing social norms, the mentality of the population and cultural traditions that were created by the generations in the totalitarian period in Central Asian countries.

Extensively they are relatively rigid informal institutions that cause persistence or only slow change in formal institutions. This ultimately enables the persistence of inefficient governance and limits the scope for their socio-economic development.

World Economic Forum which assesses institutions in its Global Competitiveness Report as one of the pillars which determines the competitiveness and economic development. When evaluating the achieved level of institutional quality (scores measured on a 1-to-7 (best) scale) it is in particular taken into account the level of protection of property rights and intellectual property rights, the effectiveness of government spending and state aid, transparency in public procurement, the level of independence of courts and law enforcement, the effectiveness of the fight against terrorism and organized crime, the quality of policing services, the level of ethical behaviour, the degree of protection of the interests of minority shareholders, investors and so on.

Thus widely understood definition of institutions allows us to evaluate the impact of institutional quality on the economic performance.

Picture 1: The relationship between economic performance and institutional quality



Source: IMF Database, the Global Competitiveness Report 2014–2015.

Picture 1 confirms the correlation between the quality of institutions and economic performance. We are aware of the fact that causation is not one-way. The quality of institutions may be the result of economic growth and are not only the cause. Higher economic level can adjust moral values of society, making it more free, open, reliable and accountable, which affects the growth of the institutional quality.

In many, countries that has achieved a high degree of institutional complementarity and their institutional framework is a high quality, achieve in the current period high GDP per capita. These include mainly the original EU member states whose economic system was built in a long-term and qualitative institutional environment.

In most countries that became EU members occur problems in the recent period in the quality of institutions, which resulted in a slow real convergence. Higher degree of quality of institutions positively affects the economic level, especially in the countries of Central Europe.

Their institutional environment, despite several persistent problems quickly converges to the institutional environment of the old Member States. Persistent pressure from the EU to improve the institutional environment in these countries, as well as geographical and cultural proximity to the old Member States, changes the behaviour of a reduced tolerance on the negative social phenomena.

Initiatives that paved the way for deeper cooperation with economies in transition post-Soviet space (eg. Eastern Partnership) failed to develop sufficiently strong pressure to accelerate the institutional convergence of each country towards the EU institutional framework.

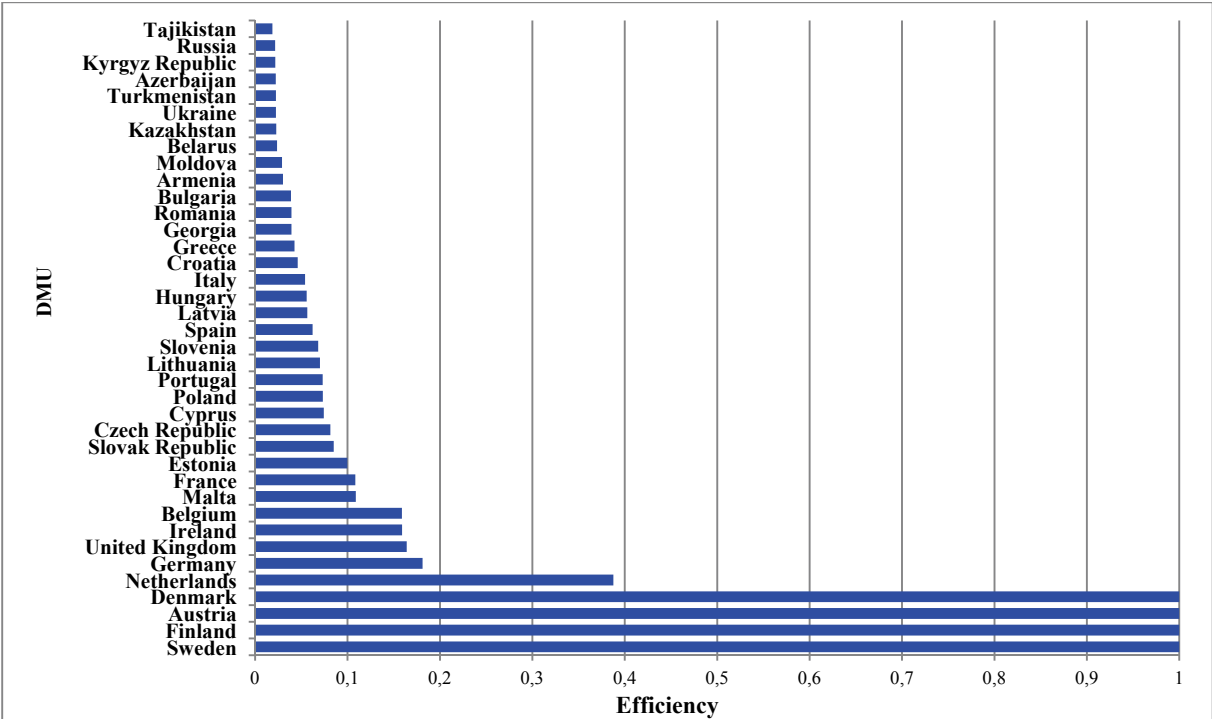
3.2. The Influence of governance on the economic level: a non-parametric approach to evaluation

The aim of the analysis is to evaluate through DEA method to what extent the level of achieved governance of the countries of the European Union and post-Soviet republics reflected in their level of economic performance, respectively what is the potential for better 'recovery' of governance for enhancing their economic level.

Nonparametric approach provides a relative measure that considering the selected set of DMU, which represents 36 countries included in the analysis. Inputs to the model are individual indicators of governance (the Worldwide Governance Indicators) and output is gross domestic product per head (IMF database).

Efficient scale is composed of countries that have managed to fully transform the achieved level of effective governance to its economic performance. This means that countries located on the border of efficiency (according to Pareto-Koopmans interpretation) can increase their economic performance only by reducing low quality of governance (the data is transformed to that provided).

Picture 2: Effectiveness of transformation of governance to the economic performance



Source: IMF Database, World Bank; own calculation

Efficient scale consists of countries that have managed to transform the achieved quality of governance into their economic performance - Austria, Denmark, Finland and Sweden (Picture 2). If other countries would want to achieve the levels of efficiency frontier they would have to reduce the low quality of governance. In the case of countries which are below the level of efficiency it is possible to identify the potential for improvement. The potential for improvement of the quality of governance is the percentage that is captured in Table 2.

Table 2: Decomposition of inefficiency

	Score	Voice and Accountability (%)	Political Stability and Absence of Violence / Terrorism (%)	Government Effectiveness (%)	Regulatory Quality (%)	Rule of Law (%)	Control of Corruption (%)
The Eastern Partnership countries							
Armenia	0,030	16,5	16,2	17,2	16,6	16,9	16,6
Azerbaijan	0,022	16,5	16,3	17,0	16,7	16,8	16,6

Belarus	0,024	16,6	16,2	17,1	16,8	16,9	16,6
Georgia	0,039	16,3	16,6	17,3	16,4	17,0	16,4
Moldova	0,029	16,3	16,3	17,2	16,7	16,9	16,7
Ukraine	0,023	16,3	16,4	17,1	16,7	16,8	16,7
Other Post-Soviet republics							
Kazakhstan	0,023	16,5	16,3	17,1	16,7	16,8	16,6
Kyrgyz Republic	0,022	16,4	16,4	17,0	16,6	16,9	16,7
Russia	0,022	16,4	16,4	17,0	16,6	16,8	16,6
Tajikistan	0,019	16,5	16,4	17,0	16,7	16,8	16,6
Turkmenistan	0,023	16,6	16,0	17,1	16,8	16,9	16,7
The European Union countries							
Belgium	0,159	11,9	17,5	19,8	17,5	18,1	15,2
Bulgaria	0,039	16,2	16,3	17,3	16,6	17,0	16,7
Croatia	0,046	16,1	16,0	17,5	16,7	17,1	16,6
Cyprus	0,074	15,7	16,5	18,0	16,8	17,1	15,8
Czech Republic	0,081	15,9	14,8	18,1	16,7	17,2	17,2
Estonia	0,100	15,0	16,9	18,5	15,7	17,2	16,6
France	0,109	17,1	14,1	16,1	17,5	17,9	17,2
Georgia	0,039	16,3	16,6	17,3	16,4	17,0	16,4
Germany	0,181	17,2	12,0	17,0	17,6	19,2	17,0
Greece	0,043	15,9	16,6	17,4	16,5	17,0	16,7
Hungary	0,056	16,0	16,0	17,7	16,5	17,1	16,7
Ireland	0,159	17,5	12,6	17,2	16,8	18,2	17,7
Italy	0,054	15,5	16,2	17,6	16,6	17,2	16,8
Latvia	0,057	16,0	16,2	17,7	16,4	17,0	16,7
Lithuania	0,070	15,9	15,8	17,9	16,3	17,3	16,9
Malta	0,109	14,8	15,7	18,7	16,6	17,3	16,8
Netherlands	0,388	19,4	2,5	15,6	19,4	22,7	20,4
Poland	0,073	15,6	15,6	18,0	16,6	17,3	16,8
Portugal	0,073	15,4	16,3	18,0	16,9	17,0	16,3
Romania	0,039	16,2	16,3	17,3	16,5	17,0	16,6
Slovak Republic	0,085	16,0	13,7	18,2	17,0	17,7	17,3
Slovenia	0,068	15,5	16,0	17,9	17,0	17,0	16,6
Spain	0,062	15,6	16,8	17,8	16,6	16,9	16,4
United Kingdom	0,164	17,4	14,8	17,1	15,0	18,6	17,1

Source: IMF Database, World Bank; own calculation

As we can see in Table 2, a strong need for improvements in governance can be mainly seen in the post-Soviet countries, but also in Bulgaria and Romania. Decomposition of inefficiency indicates that despite the differences in the achieved quality of governance in the surveyed economies, the potential for enhancement of various areas of governance is relatively equally distributed.

This means that improvements in the quality of governance must be understood comprehensively, since the change of only one indicator of quality does not lead to the improvement of the institutional environment to an extent which would positively affect the economic performance of a country.

4. CONCLUSION

Different economic performance of countries reflects not only the differences in factorial amenities of countries but also of institutional quality. In the present period is still more respected the matter of fact that the institutional quality significantly determines the economic development.

The quality of the institutional environment depends mainly on the achieved level of institutional complementarity, i.e. interconnection between construction of procedural institutions and their informal

application, and these interconnections are conditional upon historical development of the country, as well as the evolution of traditions, customs, ethics and morale of society.

The pressure of the EU institutions to improve the institutional environment of economies gradually changes the behaviour of society, reduces tolerance to negative social phenomena and positively affects the quality of business environment. This in return provides greater acceptance of informal and formal rules to help to improve the conditions for economic development. If the formal institutions operate in accordance with an informal environment, the country has better conditions to increase their economic level.

The analysis showed the existence of a relationship between institutional quality and economic performance of the surveyed countries. Countries with a high institutional complementarity achieved a high level of economic performance and lower economic performance is conditioned by a lower level of institutional quality.

Transitive countries of EU, particularly countries of Central Europe, achieved a higher quality of governance in comparison with other surveyed transition economies, which positively influenced the current level of their economic performance. Formation of the institutional environment of the listed countries positively affected the permanent upward pressure on institutional quality by the EU.

Post-Soviet transitive countries perform low level of institutional quality due to rigid informal institutions, what limits their economic development.

Countries that did not achieve the efficiency frontier and would like to reach this level must reduce the poor quality of all segments of governance.

ACKNOWLEDGMENT

This article is a part of research project VEGA 1/0313/14: Relation between efficiency and equity – implications for economic policy.

This article is a part of research project VEGA 1/0431/16: Economic growth and social and environmental impacts.

REFERENCE LIST

1. Acemoglu, D., Johnson, S., Robinson, J. (2004). Institutions as a Fundamental Cause of Long-Run Growth. *NBER Working Paper*, 10481. Retrieved from <http://www.nber.org/papers/w10481.pdf>.
2. Acemoglu, D. and Robinson, J. (2012). *Why Nations Fail: The Origins of Power, Prosperity and Poverty*, London: Profile Books.
3. Amable (2003). *The Diversity of Modern Capitalism*. Oxford: Oxford University Press. Retrieved from <http://digamo.free.fr/amable2003.pdf>.
4. Berger, P. L., Luckmann, T. (1999). *Sociální konstrukce reality: pojednání o sociologii věděni*. Brno, Centrum pro studium demokracie a kultury.
5. Cooper, W. – Seiford, L. M. – Tone, K. (2007). *Data Envelopment Analysis. A Comprehensive Text with Models, Applications, References and DEA-Solver Software*. 2.vyd. Springer, 2007. ISBN: 978-0-387-45281-4.
6. North, D. C. (1990). *Institutions, institutional change, and economic performance*. Cambridge University Press, Cambridge; New York. ISBN 978-05-2139-734-6.
7. North, D.C. (1991). Institutions. *The Journal of Economic Perspectives*, Vol. 5, No. 1. (Winter, 1991), pp. 97-112.
8. North, D. C. (1993). The new institutional economics and development. *Economic History Paper Series 9309002*, EconWPA. Retrieved from <http://129.3.20.41/eps/eh/papers/9309/9309002.pdf>
9. North, D. C. (1994). Economic Performance through Time. *The American Economic Review*, 3, s. 359-368. Retrieved from file:///F:/SINGAPOUR/north%20(1)%20Economic%20Performance%20Through%20Time%5E.pdf.

10. North, D. C. (2003). The Role of Institutions in Economic Development. *UNECE Discussion paper series*, No. 2003.2. Retrieved from http://www.unece.org/fileadmin/DAM/oes/disc_papers/ECE_DP_2003-2.pdf.
11. Ostrom, E. (1990). *Governing the commons: the evolution of institutions for collective action*. Cambridge University Press, Cambridge; New York. Retrieved from http://www.kuhlen.name/MATERIALIEN/eDok/governing_the_commons1.pdf.
12. Rodrik, D (2007): *One Economics: Many Recipes*. Princeton University Press, 2007. ISBN 978-06-9114-117-6.
13. Tridico, P. (2011). *Institutions, Human Development and Economic Growth in Transition Economies*. UK: Palgrave Macmillan.
14. Tone, K. 2001. A slack-based measure of efficiency in data envelopment analysis. *European Journal of Operational Research*, vol. 130, pp. 498–509.
15. IMF (2015): World Economic Outlook Database April 2015. Retrieved from <https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/index.aspx>.
16. Veblen, T.B. (1899) *The Theory of the Leisure Class: An Economic Study of Institutions* (London: Unwin Books, 1970)
17. Williamson, O. E. (2000, September). The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature* 38 (3), 595–613.
18. World Bank. 2015: *The Worldwide Governance Indicators*. Retrieved from www.govindicators.org.
19. World Economic Forum. 2015. *The Global Competitiveness Report 2014 – 2015*. Retrieved from <http://www.weforum.org/issues/global-competitiveness>.
20. Williamson, O. E. (2000, September). The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature* 38 (3), 595–6