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INSTITUTIONAL DYSFUNCTIONS AS A FACTOR OF CONVERGENT-DIVERGENT INSTITUTIONAL DEVELOPMENT OF POST-SOCIALIST COUNTRIES

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ABSTRACT

The article examines the causes, nature and consequences of institutional dysfunctions that arise in the process of market transformations of post-socialist economies, as well as how they affect the institutional development of these countries. A comparative analysis was conducted on the conceptual and methodological basis of modern economic transitology and new institutional economics using such statistical methods as comparison of averages, graphical, correlation analysis, and clustering. The results of the analysis revealed the convergent-divergent nature of the institutional dysfunctions impact on institutional development of post-socialist countries. In particular, the similarity of changes in averages of such development indicators was observed, which indicates the existence of a cluster (convergent-divergent) relationship between 19 analyzed post-socialist countries during the second decade of the XXI century. The convergence of institutional development trends is determined both by the general strategic orientation of systemic market reforms and by the geopolitical, territorial proximity of countries, their membership in regional associations. Clustering of countries through the use of Euclidean distance found that due to differences in institutional development rates of post-socialist economies over the past ten years, the number of clusters has increased, indicating the divergent institutional development of these countries. It is due to the degree of congruence of the prevailing informal institutional environment in countries with the implemented institutional modernizations, which creates various complicating, inhibitory and contradictory institutional dysfunctions or traps that should become an object of further institutional reform.

Keywords: market transformations of post-socialist countries, institutional changes, institutional dysfunctions, convergent-divergent institutional development.

JEL classification: B41, B52, C38, D02, E02, O43, O57

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1. INTRODUCTION

The general institutional orientation of development of post-socialist countries is determined by the joint strategy of systemic institutional changes in the direction of creating a modern developed and effective institutional structure of market economy, which would promote sustainable economic development, global competitiveness of national economies and social welfare. However, the similarity of the initial conditions at

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the beginning of transformation processes in post-socialist countries and the commonality of strategic goals did not lead to a general convergence of their institutional development and an achievement of the same socio-economic results. Particular countries (Latvia, Lithuania, Estonia, East Germany and others) have achieved sustainable and irreversible results of institutional reforms, which has had a positive impact on the pace and results of their economic development. In other countries, in particular the post-Soviet countries, the issue on forming rather than imitating a real and efficient market environment is still pressing.

At the same time, the experience of market reform in post-socialist countries has shown that institutional changes aimed at replacing inefficient weak institutions with new effective and strong ones, unfortunately, have not been fully implemented in a number of transformational economies. The divergence of institutional development of these countries was demonstrated by the fact that new market-entrepreneurial economic relations, formed in an imperfect institutional environment, acquired specific signs of quasi-market and took root as defective or deviant informal interactions associated with the shadow economy, corruption, evasion of tax and payments, other anomalies. The realization that persistent inefficient norms may emerge in the process of market transformation has drawn researchers' attention to the phenomenon of *institutional dysfunctions and traps*, as well as to studying the mechanisms of their emergence and overcoming.

These problems are especially relevant at the present stage of institutional modernization of post-socialist economies, the institutional environment of which is in a state of deep qualitative systemic transformations that have been going on since the early 1990s. Scientific understanding of causes of the emergence, rooting and reproduction of institutional dysfunctions and traps and accordingly developed required recommendations for the formation of effective institutional design of these economies have important theoretical and practical significance to ensure their sustainable economic development, improving the welfare of the population, increasing global competitiveness and full integration into the world economy.

Despite the available theoretical studies of institutional dysfunctions, currently, the uncertain aspects of the problem include the elucidation of preconditions, factors and cumulative consequences of institutional dysfunctions of market transformations of post-socialist economies in their complexity and variability, which cause convergent-divergent trajectories of institutional changes, differences in the institutional design of their economies and as a result, differences in economic growth and quality of socio-economic development. An in-depth theoretical study and practical solution to this problem will be important in overcoming the systemic institutional shortcomings that hinder the positive socio-economic dynamics of these countries and their further effective institutional modernization.

The purpose of the paper is to develop and test the hypothesis on the convergent-divergent institutional development of post-socialist countries due to the emergence and consolidation of institutional dysfunctions in the context of ongoing market transformations. The latter makes it possible to suggest practical recommendations for improving the priority areas of institutional reformation of these countries.



The significance of the paper is in the implementation of a comparative analysis to study the specifics of institutional development within countries of the former socialist camp and identify the factors that lead convergent-divergent institutional changes in mentioned countries.

The conceptual and methodological basis of this paper includes scientific approaches developed within the framework of modern economic comparative studies, economic transitology and new institutional economics. The study was conducted using the comparative institutional analysis and following statistical methods: comparison of averages, graphical, correlation analysis and clustering.

2. LITERATURE REVIEW

The period of transition from a command-administrative centrally managed economy to a modern market economy in a number of countries in Eastern Europe and Asia over the past 30 years is of considerable interest to representatives of economic comparative studies, economic transitology and others. At the same time, the attention of many researchers is drawn to the problems of long-term stagnation of post-socialist economies due to the inefficiency of the institutional environment formed during the transition period.

As known, the conceptual and methodological foundations of the study of the institutional structure and dynamics of economic systems have been developed by leaders and representatives of modern institutional economic theory. However, in our opinion, the most prominent in this sense are the theoretical achievements of the leader of the institutional-evolutionary approach of the new institutional economics and the recipient of the Nobel Memorial Prize in Economic Sciences - D. North. In particular, D. North developed the theory of institutional change, had made a significant contribution to the categorical definition of the concept of “institution” as “humanly devised constraints that structure political, economic and social interactions”; introduced a division of institutions into informal and formal and their structuring; substantiated the methodological distinction between institutions (norms and rules of the game) and organizations (players) that function and interact under conditions of institutional constraints (North 2000).

Additionally, D. North introduced the concept of “lock-in effect”, caused by the ability of the institutional matrix to self-support and self-recovery. According to the researcher, this is due to the dependence of organizations on institutional constraints in which they were formed (North 2000, p. 23). Answering the question “Why are there relatively inefficient economies and what prevents them from adopting the institutions of efficient economies?”, the scientist relies on the fundamental assumption that “history matters”, because the historical path of a particular society largely determines the further trajectory of economic development and at the same time limits a variety of available alternatives. Thus, according to the scientist, “the sustainability of poorly functioning economies and the centuries-lasting divergent model of development have the same origin” (North 2000, p. 120). In this context, the undoubted scientific interest is carried out to the definition of divergent vectors of institutional historical development of socio-economic systems, according to D. North, based on the typology of institutional orders by the criterion of the dominant way of access to basic economic and political resources – “natural state” or “limited access orders”, that are



rent-seeking by their nature, and the alternative – “open access orders”, that are competitive. The formation of the latter is a strategic goal of the institutional transformation of post-socialist countries (North, Wallis, Weingast 2009; North, Wallis, Webb, Weingast 2013).

In the context of the problem under study, the works of the famous Icelandic institutionalist T. Eggertsson on the existence of imperfect institutions within the institutional environment of individual countries, that provoke their economic backwardness, should be emphasised. Based on a systematic analysis of the preconditions and factors of formation, long-term preservation and reproduction of institutional dysfunctions, which was conducted through empirical studies of institutional changes in many countries (from Africa to Iceland), the scientist substantiated the possibilities and limits of institutional reforming of emerging economies (Eggertsson 2005).

The category of “institutional trap” was introduced into scientific use by the Russian economist V. Polterovich, who defined it as a stable inefficient, self-sustaining norm (Polterovich 1999, p. 11). The researcher offered a detailed explanation of this phenomenon, theoretically described the universal mechanisms of both formation and counteraction to institutional traps, which are the main obstacle to the successful implementation of market reforming of economy (Polterovich 2004, p. 8). The inclusion of the concept of “institutional trap” in the respectable scientific publication “The New Palgrave Dictionary of Economics” in 2007 demonstrated its entry into the broad international scientific context (Polterovich 2007, pp. 1-16). Further institutional research has proven the demand for and analytical ability of this term, which is due to the fact that it is both a rigorous scientific concept and an eloquent metaphor. Existing publications have shown that in the transition to specific model constructions, the concept of institutional trap acquires mathematical rigor and applied operationality (Balatsky, 2020).

In the last 30 years, economic and sociological institutional research has revealed the presence of so-called institutional isomorphism that is seen through differences in the implementation of institutional changes. At the same time, studies of systemic institutional transformations in post-socialist countries, which began in the 1990s and continue to this day, showed that the sources and factors of isomorphic changes can also cause divergent changes or divergences of economic development trajectories (Skott 1999). Thus, the divergence of institutional changes as an ontological and theoretical phenomenon was studied by K. Herrmann-Pillath (Herrmann-Pillath 2006, 2009). The theoretical problem of determining the conditions under which institutional changes push economies towards homogenization or divergence was raised (Beckert, 2010), additionally, common general patterns or convergent factors and growing differences or so-called signs of divergence of their development were identified (Nell, Signorelli 2015).

The outstanding scientific significance and practical importance are noted in the study on institutional content, specifics of implementation, problems and contradictions of economic reforms in general context of formation, functioning and development of emerging markets of transitive economies (Hartwell 2015). In this context its worth mentioning a comparative study conducted by the British scientist S. Hartwell on the



causes of divergence of implementation and economic results of transformation processes in Poland and Ukraine, based on the analysis of differences between political and economic institutions (Hartwell, 2015).

However, further scientific development requires the identification and specification of causal factors of insufficient social and economic effectiveness of institutional transformation of post-socialist countries, without which it is impossible to effectively correct its further strategy and tactics. Against this background, the research problem of convergent-divergent variability of institutional changes, in particular the impact of institutional dysfunctions, on the course of economic development of post-socialist countries becomes vital.

2.1. Theoretical Background

One of the prominent manifestations of institutional anomalies in the market reform can be identified as institutional traps – stable, self-sustaining, inefficient institutions that have a destructive effect on the interactions between economic entities within and outside the economic system. It should be noted, that institutional dysfunction is a more general phenomenon, that is associated with deviations and distortions, which emerge within any institutional environment (Börzel, 2016; Vashkiv, 2014). Although institutional changes can somehow reduce negative effects of institutional traps, they will not be able to fully flatten or overcome them due to the hysteresis effect. The point is that even after the complete elimination of causes of institutional traps, latter do not disappear immediately and entirely due to the heterogeneity, asynchrony and complexity of institutional change.

At the same time, the issue of determining the preconditions and factors leading to the formation of institutional dysfunctions in transformational economies is debatable. Regarding the main factors, modern researchers single out the lack of a clearly defined and well-founded long-term strategy for institutional change; unsystematic “mechanical” borrowing of elements of transformation models; imperfection and inefficiency of state regulation of the economy; making socio-economic decisions under the pressure of influence groups; transfer of transitional rent to private individuals; forcing formal institutional transformations without proper and balanced consideration of real informal restrictions; underestimation or even ignoring the complementarity of elements of the institutional environment; lack of proper preliminary assessment of the congruence degree of formal and informal institutions; lack of experience and developed algorithms for overcoming institutional inaccuracies and dysfunctions caused by them, etc. It is worth mentioning that one of the main reasons for emergence of institutional traps in transformational economies, which are undergoing radical institutional changes of the revolutionary type, is considered to be the predominance of informal institutions over formal ones.

With regard to post-socialist countries, it is about forming and consolidating of following institutional dysfunctions: sustainable shadowing of the economy; tax evasion; economic and political corruption; poor specification and insufficient level of institutional support for the protection of property rights, raiding; tolerance of corruption and other violations of the rule of law at the level of public consciousness; low intensity of competition, administrative barriers; bureaucratization and high status rent; low level of



economic freedom; the predominance of rent-seeking model of economic behaviour over entrepreneurial; insufficient innovation and investment activity of entrepreneurship; underdevelopment of small business; high transaction costs in the economy; brain drain and capital outflow; low institutional efficiency of power, “appropriation” of the state by pressure groups or special interests, imitation of market reforms; low economic and social return of transformation and modernization; the famous “poverty trap”: low incomes → low savings → low levels of investment → low levels of innovation → low productivity → low production efficiency → low primary and secondary incomes; low investment in human capital and low efficiency of the state socio-economic policy: healthcare, social protection, education, science and communal services etc.

As for the mechanism of institutional traps setting, it can be formalized as follows: the effect of coordination is manifested through the mass introduction of ineffective informal norms → it provokes the emergence of new norms due to the effect of learning → ineffective norms continue to be combined with other elements of the institutional environment or even with existing institutional traps as a result of the intensification of the combination effect → the lobbying effect associated with the selfish behaviour of certain stakeholders, formed by them resists any attempt to eliminate institutional anomalies → after a certain period of time, due to the effect of cultural inertia, society no longer sees alternatives to institutional dysfunction → hence the effect of hysteresis appears, according to which the institutional trap is fixed and reproduced in further reform.

It is important to note that the exit problem of transition economies from institutional traps is also debatable. According to many researchers, this solution is usually not associated with the complete removal of the institutional trap, but rather minimizes the level of its destructive impact on the institutional environment, because according to the hysteresis effect even after eradicating the causes of the institutional trap, its complete elimination is impossible (Polterovich, 1999, p. 12). For example, such an institutional trap as corruption is found in almost every economy, but some countries feel almost no negative impact of it, while others suffer significant economic and social losses from it.

An analysis of the theory and practice of systemic market transformations in post-socialist economies shows that overcoming of institutional traps involves processes of institutional change that can be implemented in two ways. Firstly – *evolutionary way*, which does not require active actions on the part of economic actors, because inefficient institution and all associated negative effects disappear due to cyclical processes or the gradual emergence and rooting of new more progressive values of society in the process of generational change. This mechanism of institutional change is inherent in the evolutionary-genetic formation and development of the institutional system. The determining factor is the lower level of costs associated with the adaptation of the new institution, compared with the costs of operating the old inefficient norm.

Secondly, institutional changes can be *revolutionized*, involving a complete revision and replacement of ineffective norms as a result of radical institutional reforms based on the reproduction or borrowing (importation) of desired institutional patterns. In the case of transitive post-socialist economies, it is about



rapid intensive or radical institutional changes, which are usually implemented through institutional innovations following the patterns of economically developed countries.

However, this version of institutional change is much more complex and objectively more controversial. *First*, it does not imitate, but changes the previous trajectory of development. *Second*, it involves the complex interaction of old informal institutions, bearing the hallmarks of past economic experience, with the newly created formal institutional framework. *Third*, this version of institutional change emphasizes the role of the state, because it fixes many crucial functions, namely: authorizing the choice of the optimal institutional model; organizational and legal support and implementation of this process; tracking its effectiveness; making the necessary adjustments and eliminating the negative consequences. It is about a rather fast centralized breaking of “old” institutions by the state or on its behalf by separate groups with simultaneous disappearing of relevant institutional traps (Vashkiv ,2014, p. 122-123). Thus, the evolutionary scenario of overcoming the institutional trap assumes passive long-term counteraction through the gradual institutional development, while the revolutionary scenario is based on the active application of institutional reforms by stakeholders in order to transform the existing institutional environment.

The complexity and contradiction of the process of so-called revolutionary institutional change are embodied in a wide range of new theoretical problems: *institutional risks, institutional dysfunctions and traps, institutional adaptation, institutional trade-offs, the market for institutional innovation and borrowing, rational selection of the most effective institutional borrowing* and others. This determines the orientation of researchers to find more organic (non-mechanical) ways of institutional design. In view of this, scholars do not raise the issue of borrowing (importing) institutions, but of their cultivation on their own ethno-national and socio-cultural grounds.

As the experience of practical implementation of post-socialist market transformations of the last three decades shows, the task of adapting the new institutional framework to national-historical and socio-economic features of the national economic system is extremely difficult. The effectiveness of institutional reform is determined by the degree of correspondence or congruence of the existing and prevailing in the country informal institutional environment with the implemented institutional innovations.

Mentioned above is the most important and complex aspect that should be considered in more detail. The fact is that the institutional structure of the transitive economy is formed by a set of old (inherited from previous stages of historical development) and new (produced at the result of institutional reforms) formal and informal institutions. The latter are traditions, established customs, unwritten codes of conduct, religious cults, moral and ethical norms, economic ethics, cultural heritage, mentality, etc. According to J. Hodgson, they define a social organization, “which through tradition, custom ... forms long-term routine patterns of behaviour” (Hodgson, 2003, p. 37). In this context, routine means stability, inertia, immobility in historical time, the constant reproducibility of elements of the institutional environment. It is important to mention that in particular informal institutions provide these qualities to the institutional environment, ensuring the genetic continuity of the historical and national-cultural development of social communities.



It is clear that the mutual congruence of the informal institutional environment, that left after the command-and-control system and the newly created formal institutions is rather low. The mentioned above had led to the comparative complexity and contradiction of institutional innovation in post-socialist countries. The problem is exacerbated by the more conservative nature of informal restrictions, such as customs or norms of behaviour that cannot be changed immediately. As noted by T. Veblen, “the usual way of thinking of people ... tends to prolong its own existence indefinitely” (Veblen, 1984, p. 202).

Thus, it is important for the transitive economy to what extent the new institutional framework is compatible with existing informal institutions. Different variants of their interaction are possible: first, convergence of old and new institutional norms, which determines *the positive evolutionary convergence of post-socialist economies*, caused by the capacity of new imported institutions; secondly, the partial institutional incompatibility of old and new institutional norms, which results in *the negative evolutionary convergence of post-socialist economies* based on the establishment of inefficient and incapable institutions; third, divergence - that is, *differences, incompatibilities of institutional development trajectories of former socialist countries*. Since, unfortunately, the manifestations of such divergence are observed in a number of post-socialist countries, they should be the subject of further institutional research.

The contradiction of the consequences of market transformation in these countries is fundamentally rooted in the incongruence of the informal institutional background and borrowed or imported formal market institutions. A significant complicating and inhibiting factor in this regard is the interaction of new market-type institutional formations with the traditions, customs, norms of economic ethics, features of economic mentality, which were formed in the command-administrative system.

Manifestation of contradictory interaction of formal and informal institutions is the emergence of signs of “intermediate” type of market economy on the ruins of the command-administrative system - the one that has formal market attributes (institutional imitation), but does not really function according to market laws and principles (lack of competition as the main regulator of market processes, equal access to the industry and economic resources, full openness of market information, equal distancing from government structures, true business motivation, etc.). Institutional defects appear in the dominance of regional and sectoral oligarchic groups, excessive concentration of power and property; merging financial-industrial with state-bureaucratic elites. These phenomena and ways to overcome them should be the subject of careful and impartial study in positive and normative economic theory.

Defective institutional structure does not allow to use the advantages and incentives inherent in the market system, as it is characterized by the strong government regulation, dependence of the state on elite groups, their competition for privileges in the form of subsidies and other benefits, etc. Such an economy, while retaining the characteristics of both market and command, is neither one nor the other, and its economic efficiency is much lower compared to market or planned economic systems. Therefore, the consistent weakening and eventual elimination of the existing negative signs will contribute to the creation of conditions for effective economic development.



3. RESEARCH METHODOLOGY AND RESULTS

To achieve the goal of the theoretical study, a hypothesis was developed on the existence of a divergent impact of institutional dysfunctions on the dynamics of economic development of post-socialist countries. In order to prove or reject the hypothesis, it was decided to apply a comparative analysis of the indicators of the institutional environment quality of 19 post-socialist countries.

The following indicators were selected for comparative analysis:

- Index of Economic Freedom (IoEF) as an indicator of control over economic activity in accordance with the established institutional constraints, published by the Wall Street Journal and the Heritage Foundation. This figure varies from 0 to 100. The zero value corresponds to despotism, and 100 - to countries with free economies. In the context of the study, the low value of this indicator is evidence of institutional dysfunctions, such as low intensity of competition, administrative barriers, the predominance of a rent-seeking model of economic behaviour over entrepreneurial etc.;

- Fragile States Index (FSI) as an indicator of institutional efficiency of the government and security in the country according to the data provided by the Fund for Peace. This indicator varies from 0 to 120. Accordingly, the zero value is typical for very stable states, and 120 - for very anxious. In the context of the analysis, the high value of this indicator proves the existence of such institutional dysfunctions as low institutional efficiency of the government, “appropriation” of the state by pressure groups or special interests etc.;

- Property Rights Index (PRI) as an indicator of institutional support for the protection of property rights of economic entities according to the data of the Property Rights Alliance. This indicator varies from 0 to 10. A value of zero describes the lack of institutional support for the protection of property rights, and 10 – indicates proper institutional support. In the context of this paper, the low value of this indicator demonstrates insufficient specification and protection of property rights of economic entities, the spread of raiding;

- Corruption Perceptions Index (CPI) as an indicator that comprehensively characterizes both the informal institutional environment, which determines the level of tolerance of society to corruption, and the state's anti-corruption policy and its effectiveness according to the Transparency International. This indicator varies from 0 to 100. Therefore, the zero value is typical for highly corrupted countries, and 100 - for countries where it is absent. In the context of the analysis, the low value of this indicator is evidence of persistent and rooted economic and political corruption.

The selected institutional indicators, *on the one hand*, characterize the quality of the institutional environment formed in the transformational economies of post-socialist countries. Therefore, they can be projections of the presence or absence of significant institutional dysfunctions in the studied economies. *On the other hand*, these indicators are important in the context of defining the determinants of the institutional changes trajectories in the economies of these countries, as well as drivers of their economic development.



In order to provide a significant contribution to the current scientific literature and obtain practically important results, time interval: 2010 and 2019 was chosen for the study. The authors' choice of this time interval can be supported by the following reasons and considerations. *First*, the institutional environments of post-socialist countries underwent through significant restructuring during the 1990s, and during the first decade of the new millennium they were generally formed on the basis of their own immanent and endogenous trajectories of institutional development, which in turn was accompanied by further active deployment of convergent-divergent processes. *Secondly*, the choice of 2010 and 2019 to characterize the institutional development of these countries is due to the fact that in 2010 national economies began to stabilize their functioning after the global financial crisis, and 2019 is the last year of stable development before the global Covid-19 pandemic and the following global Covid-19 crisis of the world economy. The latter is a specific exogenous factor that has negatively affected the economic development of the world, the impact of which should be eliminated in the proposed study.

Thus, it is about the adequacy and reality of the obtained results, that describe the institutional factors of economic development of 19 analysed post-socialist countries during the second decade of the XXI century (table 1).

Table 1. Statistical Sample of Analyzed Indicators

Country	2010				2019			
	IoEF	FSI	PRI	CPI	IoEF	FSI	PRI	CPI
Albania	66	66,1	3,799	33	66,9	58,8	4,546	35
Armenia	69,2	72,3	3,839	26	70,6	64,2	4,812	42
Azerbaijan	58,8	81,9	3,983	24	69,3	71,3	5,12	30
Bulgaria	62,3	59	5,239	36	70,2	49,2	5,569	43
Croatia	59,2	57,3	4,901	41	62,2	46,1	5,168	47
Czech Republic	69,8	42,4	6,231	46	74,8	35,7	7,029	56
Estonia	74,7	49,3	6,665	65	77,7	38,5	7,173	74
Georgia	70,4	86,4	3,75	38	77,1	71,2	5,247	56
Hungary	66,1	48,7	6,461	47	66,4	47,6	6,218	44
Kazakhstan	61,3	70,2	4,311	29	69,6	59,8	4,855	34
Latvia	66,2	54,2	5,448	43	71,9	42,3	5,936	56
Lithuania	70,3	45,3	6,165	50	76,7	36,5	6,46	60
Moldova	53,7	81,2	3,841	25	62	66	4,221	32
Poland	64,2	46,8	5,549	53	69,1	41	5,996	58
Romania	63,2	59,8	5,378	37	69,7	46,7	6,028	44
Russian Federation	50,3	77,7	4,299	21	61	72,6	4,989	28
Slovak Republic	69,7	47,1	6,373	43	66,8	38,2	6,386	50
Slovenia	64,7	35,5	5,579	64	67,8	25,8	6,102	60
Ukraine	46,4	69	4,149	24	54,9	69	4,432	30

Source: Corruption Perceptions Index Data, Fragile State Index Data, Index of Economic Freedom Data, International Property Rights Index Data

It should be noted that the selected indicators are calculated in index values. In this case, 3 out of 4 indicators are stimulants, meaning that with a quantitative increase their result improves, and for the Fragile States Index - on the contrary, the result progresses with a decrease in its value, so it is a destimulant. This necessitates the standardization of data (table 2).



Table 2. Standardized Data

Country	2010				2019			
	IoEF	FSI	PRI	CPI	IoEF	FSI	PRI	CPI
Albania	1,039	0,916	0,752	0,842	0,974	0,878	0,813	0,757
Armenia	1,09	0,837	0,76	0,663	1,028	0,804	0,860	0,908
Azerbaijan	0,926	0,739	0,789	0,612	1,009	0,724	0,915	0,648
Bulgaria	0,981	1,026	1,037	0,918	1,022	1,049	0,996	0,929
Croatia	0,932	1,056	0,97	1,046	0,906	1,119	0,924	1,016
Czech Republic	1,099	1,428	1,234	1,173	1,089	1,446	1,257	1,210
Estonia	1,176	1,228	1,32	1,658	1,132	1,340	1,282	1,600
Georgia	1,109	0,701	0,742	0,969	1,123	0,725	0,938	1,210
Hungary	1,041	1,243	1,279	1,199	0,967	1,084	1,112	0,951
Kazakhstan	0,965	0,862	0,854	0,74	1,014	0,863	0,868	0,735
Latvia	1,043	1,117	1,079	1,097	1,047	1,220	1,061	1,210
Lithuania	1,107	1,336	1,221	1,275	1,117	1,414	1,155	1,297
Moldova	0,846	0,746	0,761	0,638	0,903	0,782	0,755	0,692
Poland	1,011	1,294	1,099	1,352	1,006	1,259	1,072	1,254
Romania	0,995	1,012	1,065	0,944	1,015	1,105	1,078	0,951
Russian Federation	0,792	0,779	0,851	0,536	0,888	0,711	0,892	0,605
Slovak Republic	1,098	1,285	1,262	1,097	0,973	1,351	1,142	1,081
Slovenia	1,019	1,705	1,105	1,632	0,987	2,000	1,091	1,297
Ukraine	0,731	0,877	0,821	0,612	0,799	0,748	0,792	0,648

Source: authors' calculation based on data from table 1

To illustrate the obtained results, the average value of standardized indicators of countries for each year were calculated separately and compared, which will help to identify positive or negative dynamics of these indicators. Thus, fig. 1 demonstrates that Moldova, the Russian Federation, and Ukraine have a low quality of institutional development among the post-socialist countries over the analysed period due to the existence of significant institutional dysfunctions. At the same time, countries that have achieved relatively higher results of post-socialist transformations (Estonia and Slovenia) demonstrate a higher quality of institutional development. The maximum rate among the analysed countries exceeds the minimum almost twice, which indicates the presence of divergent signs of institutional development of the analysed countries.

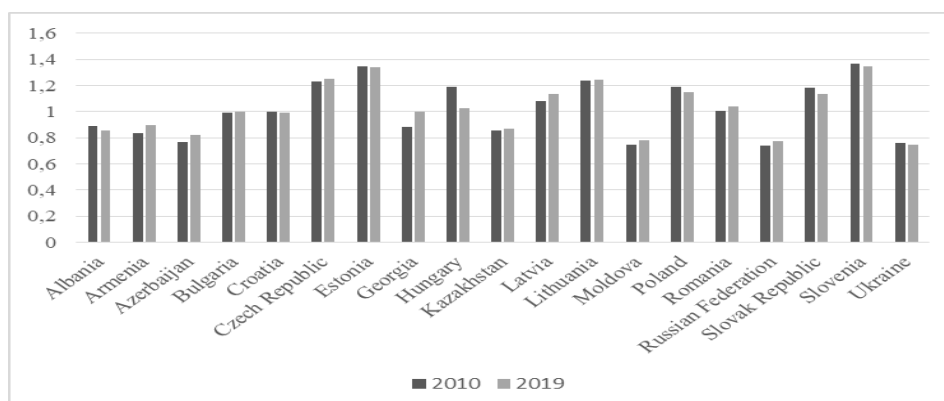


Fig. 1. Average Indicators of Institutional Development of the Analysed Post-Socialist Countries

Source: authors' calculation based on data from table 2

For a more thorough understanding of the divergence dynamics in the institutional development of the former socialist economies, that were seen over the past 30 years and evidently manifested over the past 10 years, it is necessary to analyse the dynamics of the average standardized level of institutional development for individual countries (Fig. 2).

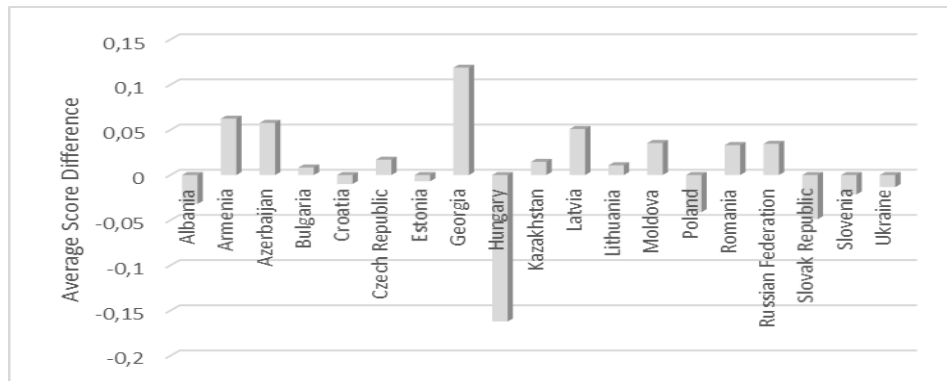


Fig. 2. Dynamics of Average Standardized Indicators of Institutional Development of the Analysed Countries

Source: authors' compilation based on previous calculations

Fig. 2 shows that Georgia has achieved *the greatest positive dynamics of institutional development* among post-socialist countries with an average score of higher than 0.1 for each indicator. *The lowest negative indicator* of such development belongs to Hungary, which reduced its results by an average of 0.17. In general, the average fluctuations of these indicators in most of the studied countries do not exceed 0.05.

The obtained results are presented in fig. 3. It is clearly noticeable the tendency to *group or cluster divergence* of the results, meaning that countries are grouped by similarity of institutional development results. This necessitates further in-depth structured cluster analysis and identify groups of countries with similar institutional characteristics for each year separately in order to compare the dynamics and hence the vectors of convergent-divergent institutional development of national economies.

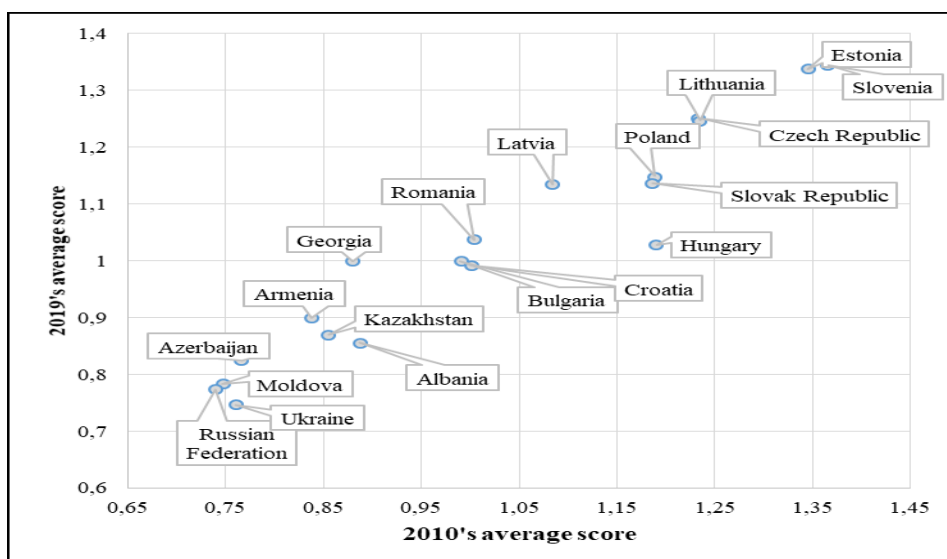


Fig. 3. Scatter Plot of Convergent-Divergent Institutional Development of the Analysed Countries

Source: authors' compilation based on previous calculations

Cluster analysis was performed using *Euclidean distance* and building on this basis *dendrograms* for each year separately in order to further compare the results. According to the obtained results of clustering, which are shown in fig. 4 and fig. 5, countries were ranked by the quality of institutional development.

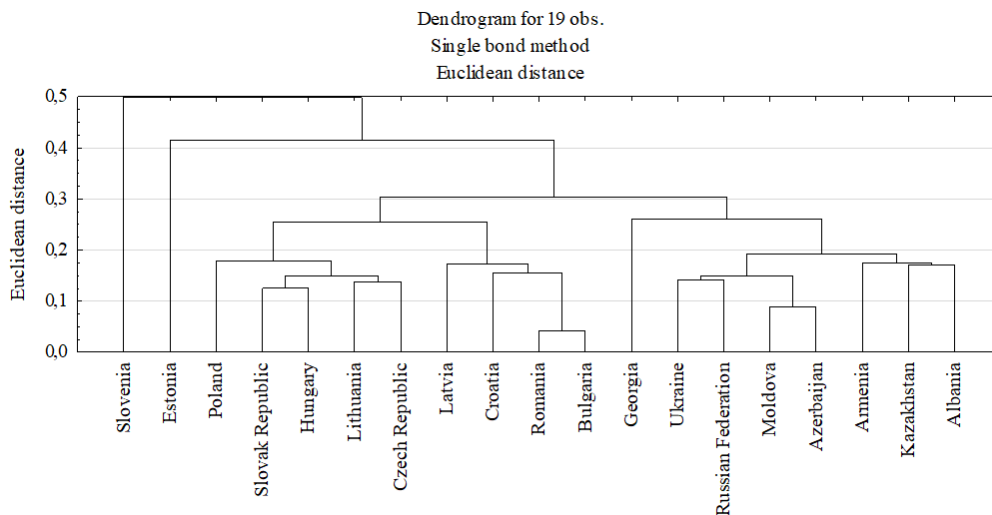


Fig. 4. Dendrogram of Institutional Development of the Analysed Post-Socialist Countries for 2010

Source: authors' compilation based on previous calculations

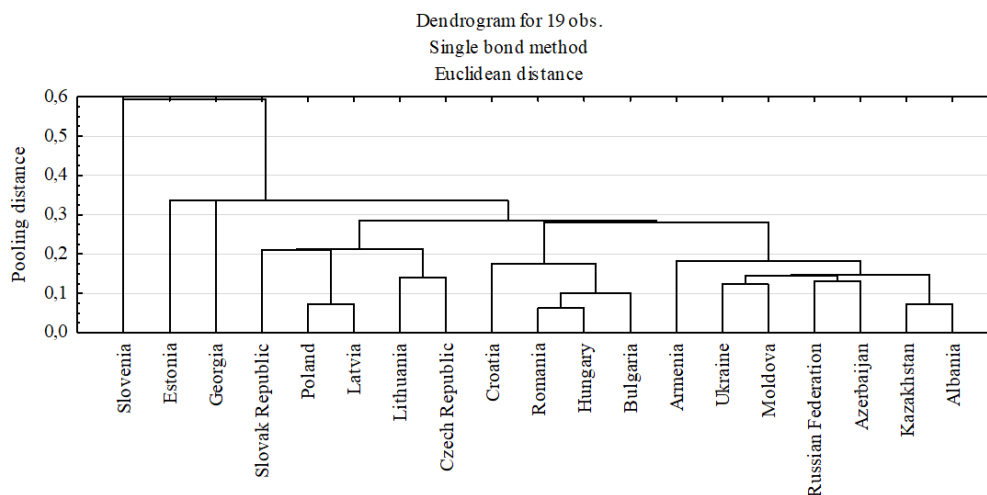


Fig. 5. Dendrogram of Institutional Development of the Analysed Post-Socialist Countries for 2019

Source: authors' compilation based on previous calculations

It should be noted that the line of demarcation between the countries along which the institutional clustering was carried out was drawn at the level of 0.19 for 2010 and 0.16 for 2019, respectively. As a result, it was found that in 2010 there were 4 clusters of post-socialist countries in terms of institutional development of economies, while in 2019 their number increased to 6. However, several sample countries show abnormally high results, which does not allow to include them in existing clusters or merge into one.



The obtained results are shown in table 3.

Table 3. The Results of Clustering of the Analyzed Countries by the Quality of Institutional Development

2010		2019	
1 st cluster	Albania, Armenia, Kazakhstan	1 st cluster	Albania, Kazakhstan
2 nd cluster	Azerbaijan, Moldova, Russian Federation, Ukraine	2 nd cluster	Russian Federation, Azerbaijan
Transition from 2 nd to 3 rd cluster	Georgia	3 rd cluster	Ukraine, Moldova
3 rd cluster	Bulgaria, Romania, Croatia, Latvia	Transition from 3 rd to 4 th cluster	Armenia
4 th cluster	Czech Republic, Lithuania, Hungary, Slovakia, Poland	4 th cluster	Bulgaria, Hungary, Romania
Others	Estonia, Slovenia	Transition from 4 th to 5 th cluster	Croatia
		5 th cluster	Lithuania, Czech Republic
		6 th cluster	Latvia, Poland
		Others	Estonia, Slovenia, Slovakia, Georgia

Source: authors' compilation

According to the obtained results, over the analysed ten-year period, 13 countries changed the cluster and, accordingly, their number increased in terms of the quality of institutional development, which indicates a significant institutional divergence. Moreover, the results indicate the influence of the geopolitical factor on the formation of clusters. It is manifested in the fact that, firstly, in each cluster there is a territorial connection between countries, the only exception is the first cluster, but among its representatives there are also neighbouring countries. Secondly, if to analyse the existing clusters in more detail, it turns out that none of the European Union (EU) countries groups into the cluster with non-EU countries, which indicates the impact of this association on the institutional development of its members. To deepen the understanding of the reasons for transitions between clusters, a factor analysis was performed, which is detailed in Table 4.*

Table 4. Analysis of Institutional Factors of Countries Transitions Between Clusters

Country	Transition		Factor's dynamic			
	From	To	Economic Freedom	Fragile State	Property Rights	Corruption Perceptions
Albania	1	-	-0,065	-0,038	0,060	-0,131
Armenia	1	3/4	-0,062	-0,033	0,100	0,208
Azerbaijan	2	-	0,083	-0,015	0,127	0,003
Bulgaria	3	4	0,041	0,023	-0,042	-0,039
Croatia	3	4/5	-0,026	0,063	-0,047	-0,087
Czech Republic	4	5	-0,010	0,018	0,023	-0,027
Estonia	Others	-	-0,045	0,112	-0,037	-0,149
Georgia	1/2	Others	0,014	0,024	0,195	0,188
Hungary	4	3	-0,074	-0,159	-0,168	-0,313
Kazakhstan	1	-	0,048	0,001	0,014	-0,045

* Countries that have changed their cluster are highlighted in grey in the table. Standardized indicators, which have changed by more than 0.05 from the weighted average assessment each year, are in bold, and they will be taken into account to distinguish groups of indicators of institutional development of post-socialist countries.



Latvia	3	6	0,005	0,103	-0,018	0,114
Lithuania	4	5	0,010	0,077	-0,066	-0,048
Moldova	2	3	0,057	0,036	-0,006	0,019
Poland	4	6	-0,005	-0,035	-0,027	-0,172
Romania	3	4	0,020	0,093	0,013	-0,044
Russia	2	-	0,096	-0,068	0,041	0,040
Slovak Republic	4	Others	-0,125	0,066	-0,120	-0,076
Slovenia	Others	-	-0,032	0,295	-0,014	-0,425
Ukraine	2	3	0,069	-0,129	-0,029	0,003

Source: authors' compilation based on previous calculations

Analysing the obtained results, the following groups of institutional indicators were distinguished according to their change (table 5):

- those that influenced the transition of countries between clusters;
- those that have changed significantly in general.

Table 5. Groups of Indicators of Institutional Development in Post-Socialist Countries

Indicator	Economic Freedom		Fragile State		Property Rights		Corruption Perceptions	
<i>Influenced the transition between clusters</i>	5	38%	7	54%	5	38%	7	54%
<i>In general, they changed by more than 0.05</i>	8	42%	10	53%	7	37%	10	53%

Source: authors' compilation based on previous calculations

Table 5 shows that the most powerful factor in the institutional development of post-socialist countries is the fight against corruption, as the main cumulative dysfunction of the institutional environment, and the provision of stable public policies, which showed similar results (both indices affected more than half of the transitions between clusters and in general changed significantly in 53% of cases). At the same time, ensuring transparent conditions of doing business and improving mechanisms for protecting the property rights of economic entities also play an important role in the institutional development of these countries, as both of these indicators affected one in three sample countries that made the transition between clusters.

It is important to take into account that the achievement of sustainable and irreversible results of institutional market reform in the analysed countries has had a positive impact on the pace and results of their economic development. It is well-known fact that countries with the highest quality of institutional development also had higher GDP per capita.

CONCLUSIONS

Thus, a comparative analysis of the institutional development of post-socialist countries and the impact of institutional dysfunctions on the convergent-divergent nature of the latter allows us to draw the following conclusions:

- 1) as a result of a comparative analysis of the institutional development of 19 post-socialist countries during the second decade of the XXI century, a similarity of changes in the average levels of such development was revealed, which may indicate a cluster (convergent-divergent) relationship between the analysed countries;



2) in order to confirm this assumption, countries were clustered using the Euclidean distance and it was found that due to different rates of institutional development of post-socialist countries the number of clusters increased over the past 10 years, from 4 to 6, which indicates the differentiation and the divergent institutional development of these countries. However, several countries (Slovenia and Estonia in 2010 and Slovakia and Georgia, which joined them in 2019) showed abnormal results that did not allow them to be included in existing clusters, or combined into one;

3) additionally, the obtained results confirmed the existence of divergent institutional processes, as 13 analysed countries changed their cluster. At the same time, there is a general positive dynamic of institutional development of these post-socialist countries;

4) the highest quality of institutional development was demonstrated by Georgia. According to the results of clustering, Armenia and Croatia were in the transitional position between formed clusters in 2019, because their results exceed the indicators of the cluster in which they were included in 2010, but do not yet allow them to be assigned to the next cluster. However, Hungary, the only one of the analysed countries, has moved to a group of countries with a lower quality of the institutional environment;

5) during the analysed period, among the institutional development indicators of 19 post-socialist countries, the corruption perception index and the fragile states index often varied significantly, which are clear projections of institutional dysfunctions in these countries. Additionally, within the studied indicators, the index of economic freedom and the property rights index had the least impact on the quality of institutional development.

Given the above, it is possible to state the convergent-divergent nature of the institutional development of post-socialist countries. Convergent trends of such development are determined by: (1) the general direction of market reforms and a common strategy for post-socialist systemic change; (2) geopolitical factors related to the territorial proximity of countries and their membership in regional associations. In addition, the divergence of the institutional development of post-socialist countries is due to the degree of congruence of the existing and prevailing informal institutional environment in the country with the implemented institutional innovations, which is reflected in various institutional dysfunctions.

Under these circumstances, the institutional environments of these countries form their own unique trajectories of development, reflecting complex and contradictory convergent-divergent processes, when accumulated elements of the system form a unique integrity that varies from country to country and from cluster to cluster. It can be assumed that the preservation of the identified trends will lead to a further division of countries into a larger number of unique clusters, which necessitates the implementation of further research within this issue. Taking into account the correlation between the institutional and economic development of post-socialist countries that have carried out systemic market transformations, it is strategically important to focus reform efforts on overcoming institutional dysfunctions and improving the quality of their institutional environment.



Conflict of interests

The authors declare no conflict of interest.

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