

Original scientific paper

UDC: 330.34:330.59:338-043.72

<https://doi.org/10.18045/zbefri.2022.1.147>

Long-run effects of human development and public governance on economic welfare: New evidence from transition economies*

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Abstract

The study attempts to gauge the impact of human development and public governance quality on economic welfare in the long term. The basic proposal of the analysis is that economic growth and/or development cannot be the measurement of the value of economic performance. For this reason, the Economic Prosperity Index, developed by the “Legatum Institute” is the dependent variable of the linear logarithmic model estimated in the paper. Besides, the measurement of economic welfare, (public) governance quality, which neoclassical economics ignored for a certain period, is considered an important input to human development. By taking these two variables into the research center, the study sights the rise in the prosperity (welfare) of 31 transition economies that achieved intense development after the 2000s from 2007 to 2020. Transition economies are selected owing to the rapid development and strong welfare effects they have reached with the millennium. So, the main hypothesis of the research is that transition economies have high human development and good governance that creates economic prosperity. By applying this research question, cross-sectional dependence and slope homogeneity tests, unit root tests, and co-integration tests, the author has conducted the lag length selection before the long-run relationship. Comprehensive analysis findings reveal that both indicators enhance economic prosperity by positively affecting them in the long run and that some of the deviations are improved.

Key words: economic welfare, human development, governance, transition economies, panel data

JEL classification: I31, O15, O16, P31, C23

* Received: 03-12-2021; accepted: 20-06-2022

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1. Introduction

The issue of economic growth and development is one of the basic research areas of *public economics*. The main goal of the countries is to ensure stable growth regardless of their development level. However, the approach to the possibility of achieving economic growth and/or development and welfare increase is a controversial issue. It is not an appropriate assessment to consider a country as developed or underdeveloped by focusing only on its economic growth/development performance. Criticisms of this approach, which identifies development and economic growth, are centered around the view that economic growth does not reduce poverty sufficiently and does not contribute adequately to the solution of various emerging social problems. It confers that the dilemmas regarding social welfare are still not resolved in many countries that exhibit an economically- efficient growth performance. It was observed that some countries' rapid economic growth in the 1970s faced problems such as political instability, rising unemployment rates, and injustice in income distribution. In addition, the costs of the structural adjustment reforms implemented in most of the developing countries in the 1980s under the supervision of the International Monetary Fund (IMF) and the World Bank (WB) were also quite heavy. These negativities have paved the way for the formation of hesitations regarding the nature, quality, and results of economic development models. Despite the negative developments in issues such as crime rates and environmental pollution in some countries with high economic growth performance, it was quite remarkable that other countries with lower incomes were in a better position in terms of human welfare. Based on these results, the international community stated that in the 1980s, it would not be possible to get rid of poverty or improve the quality of life by simply increasing the income level or increasing the economic growth rates. Haq (1995) states that high income does not mean high quality of life and getting rid of poverty. Along with income redistribution policies, a human-centered development policy that considers the quality of life of the lowest strata of the society should be implemented (Haq, 1995: 3).

With respect to economic performance, more inclusive indicators other than economic growth and income are necessary to evaluate the level of welfare. In this context, the United Nations Development Program (UNDP) published its first Human Development Report in 1990. The Development Report published by UNDP in 1990 reflects the basis of this approach. The definition based on the capability approach formulated by Sen (1979, 1982, 1985) and on a widely known human development concept emphasizes that people, not income, should be at the center of development policies. The report pointed out that human development can be explained by the combination of education and health apart from income level. According to this report, human development means leading a long, healthy, and qualified life for an individual. Ensuring human development increases the welfare,

education level, and health of individuals, allowing individuals to make more rational decisions.

According to Anand and Sen (1994), the goal of all activities is individuals, and development should be based on individual achievements, freedoms, and capabilities. The significant point is not the goods or income of individuals, but their living conditions (Anand and Sen, 1994: 1). According to Sen's approach, development is an increase in the number of things that individuals can do. Being healthy, feeding well, being knowledgeable, and being a well part of society are examples of what can be done. It is stated that owing to these achievements, economic gains will be obtained in the long term together with human development. From Sen's point of view, development means removing the obstacles in front of what individuals can do (Fukuda-Par, 2003: 302). Doryan (2001) signified that if governments provide better education and health services to their citizens, the human capital accumulation of citizens will increase, and this will positively affect economic growth in the long run. According to Ramirez et al. (1997), who acknowledge that there is a strong connection between economic growth and human development; i) Economic growth provides resources to allow for continuous improvements in human development. ii) Improvements in employment quality contribute to the economic growth process.

It brings to the fore the fact that socio-economic development cannot be expressed only with economic growth and development, and the improvement in economic performance cannot be explained by human development alone. The fact that economic indicators will not be the sole determinant of economic development/welfare/performance has brought along new and current debates on economic growth and development. One of these debates is the relationship between institutional quality and economic performance. This relationship has become an important focus of attention in economics since the first half of the 1990s, and this interest continues. There are three developments behind this revival of interest.

The first is the institutional vacuum left behind by the collapsing Soviet system and the economic disasters that this vacuum has brought along with haul and corruption. As Coase (1992: 714) points out, the transition period in Russia and Eastern Europe has revealed that the inclusion of institutional factors in the analysis of orthodox economic theory has now become an irredeemable necessity. The second development is the persistence of income inequality between the low-income and the rich countries, and even the gap widening. This situation, which is the opposite of the income convergence prediction of neo-classical economics, has led the World Bank to prioritize institutional quality. In World Development Report (2002), the World Bank stated that the biggest problem of the 21st century is to create the necessary demand for "effective market institutions" and to meet this demand. The third development is that the relationship between national income growth and intra-country income inequalities begins to follow a U-curve, in contrast to the

Kuznets curve. That is to say, after a certain level of national income, intra-country inequality increases rather than decreases. On top of that, after 1995, regardless of average income, in-country income inequalities have increased from time to time. In addition, there is a relationship between income inequality and the decrease in the labor share in the national income, and their relationship is subject to debate.

The concept of institutional quality includes a discussion that goes back to ancient times. Today, this debate shows itself in the literature as public governance. Many ancient philosophers have often debated issues such as the state, institutions, and management. Niccolò Machiavelli would describe human nature as evil and selfish. Machiavelli also argued that every way and every means must be used to achieve success. Machiavelli believed that a statesman should act by accepting this fact in his political attitudes, and even the statesman has to act pragmatist and selfish with this reality. According to Machiavelli, an unselfish leader in a society of selfish people cannot successfully pursue his cause. Machiavelli stated that politics also has its own autonomous rules; states that politics is not a field that operates within the framework of traditional moral rules. Machiavelli argued that political thought should be secularized and scientificity. However, although Machiavelli, who was against the church, was a person who defended secularism, he stated that the ruler should also use religion as a tool when necessary. In Plato's ideal understanding of the state, human beings and the state are considered one. According to Plato, the mechanism called the state is the enlarged human. Plato divided the human soul into three parts desires, mind, and will. Plato's understanding of the state is also divided into three parts. The rulers correspond to the mind, the warriors-persons responsible for protecting the state to the will, and the professional class to the desires part of the soul. According to Plato, if these three parts of the state live healthily without conflicting with each other with their minds, wills, and wishes, the ideal state will occur. According to him, the ideal state should be governed by aristocrats.

Public governance, which has received lots of attention since ancient times, is also frequently on the agenda in our age. The search for efficiency/productivity, valid only in the private sector before the 1980s, started to show itself in the public sector with the governance approach, which is the New Public Management model that emerged as a result of the change in the public sector in recent years. The multidimensional dynamics of change accelerated with globalization led to important transformations of all societies in the socio-economic and cultural life. Concepts and values of both public administration and public organizations are also closely affected by these dynamics. On the other hand, the increase in the share of public expenditures in total economic activities with the Wagner Law results in the problems arising in the financial system, and the rapid change in information and communication technologies in every aspect of social life necessitates changes in public administration. The basis of this approach is the concept of efficiency. The phenomena that ensure efficiency within the approach framework include

the concepts of accountability, participation, participation of citizens in decision-making processes, transparency, auditing, and the rule of law. Citizen-orientedness, joint decision-making, and the widespread understanding of total quality in the public sector oblige participation at different levels and ensure citizen satisfaction in public services. The concept entered the public administration discipline with the New Public Management and Public Choice Theory towards the end of the 1980s. As a result of the new public administration or public management movements based on an efficient and productive public governance approach have caused the implementation of the reforms of adapting to the new world order in public administration. In this process, governance began to dominate almost all the public administration. Values such as joint decision-making, widespread understanding of total quality, democratic management, and individual responsibility necessitate participation at different levels. This governance approach has gained meaning and strengthened as a result of the spread of such thoughts (Kaufmann et al., 1999a: 12-18; Kaufmann et al., 1999b: 5-8; Ahrens and Meurers, 2000; Kaufmann, 2003: 2; Zak and Knack, 2001: 297). The European Union (2001) defines governance as the processes, rules, and behavior that influence the aspect of the authorizations implemented at the European level, particularly on participation, accountability, openness, effectiveness, coherence, and participation. Even the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) defines some norms for good governance, such as equity, effectiveness, rule of law, accountability, and participation (UNESCAP, 2003). The World Bank used this concept for the first time in its 1989 report (World Bank, 1989). The concept appearing in the Organization for Economic Cooperation and Development (OECD) reports in the following years has also been the subject of many empirical studies through measurable indices.

One of the arguments used to justify the exclusion of institutions from the economic analysis is the difficulty of measuring institutional quality as neoclassical economics does. Today, there are different and numerous data that can give an idea about institutional quality. Some of those are (i) Political Risk Services published by the International Country Risk Guide (ii) World Bank's Worldwide Governance Indicators (iii) Corruption Perception Index published by Transparency International. Apart from these, there are also smaller-scale datasets. For example, the regime characteristics data of Polity V Project, Business Environment Risk Intelligence's investment risk indicators, Economist Intelligence Unit's democracy index, etc. Although there are problems such as subjectivity, endogeneity, and biases, these data now allow obtaining objective measurements and analyzes of the effect of institutionalism (governance) on economic performance.

First, the concept of the institution has a different meaning than that used in everyday speech. In everyday language, the institution is closer to the concept of the existing organization with its building, management, hierarchy, and statute.

However, in economics and other social sciences, the concept of institution, which refers to when it comes to institutional quality, is a concept that affects all organizations and individuals (in this sense, it has a meta-analytic dimension). Secondly, institutions are elements of the social contract between economic actors, and in this sense, they are the results of the endogenous (internal) balance that emerges from the interaction of different interests and forces. Because of these characteristics, they may not be optimal in terms of both efficiency and equity. On the other side, the institutional quality measure measures how far is the optimal the institutional framework in society or how close to that desired point. The endogenous nature of institutions and their relationship to the optimal one is a question discussed until today. This problem was addressed by Marx in political economy and by social scientists and non-Marxist economists such as Von Mises (1949), Hayek (1960), Olson (1965, 1982), Buchanan, and Tullock (1962), Stigler (1971), and North (1990). More recently, Acemoglu (2004, 2006a, 2006b, 2008, 2010) has also contributed to this discussion and indicated why institutions might not be optimal and, on the other side, why non-optimal institutions survive, and how institutions relate to economic development.

Based on the theoretical arguments, it is a fact that the measurement of economic performance is *socio-economic development* rather than economic growth and/or development. *Human development* and *institutional quality (good governance)* are two primary concepts that will provide and maintain *economic welfare* and constitute the *research question* of the study. The *hypothesis* of the study can be expressed as “*high human development and good governance are major factors for economic welfare*”. This study aims to *contribute to the literature* by testing the related hypothesis. In addition, it aims to gauge *the impacts of human development and good governance on economic welfare* for the transition economies and the 2007-2020 period, based on the gap caused by economic growth and development-oriented analyzes in the previous literature. *The reason* why transition economies are preferred in the analysis is due to the potential for future growth and welfare of transition economies. There is *more detailed knowledge* in the data and method section. In this context, a *linear logarithmic model* is created between the United Nations Development Programme’s *Human Development Index (HDI)* and the data obtained from the World Bank’s *Worldwide Governance Indicators (WGI)* and the *Economic Prosperity Index (EPI)* compiled by the Legatum Institute’s Prosperity Index. The period of 2007-2020 is chosen under the data constraint because *the EPI index begins to be calculated in 2007*. The rest of the study consists of the following sections. Section 2 includes a theoretical and empirical literature review. Section 3 demonstrates the research methodology. Section 4 represents the empirical data and analysis. Section 5 contains the analysis results and discussion. Section 6 makes a conclusion and provides recommendations for policymakers and further research.

2. Literature review

This section examines the effects of human development and governance on economic welfare in two parts. Firstly, studies focus on the relationship between *human development* and *economic performance*, and secondly, studies that analyze the relationship between *governance* and *economic performance* are scrutinized.

With the advantage of industrialization after 1980, economic growth and development have shown a great increase in opportunities and a decrease in poverty levels with the living conditions improvement. In this direction, economic growth provides resources that will allow human development to improve. However, the improvement in the quality of labor also contributes to economic growth. In this context, there is a strong connection between economic growth and human development (Ranis et al., 2000: 198-199). The realization of more improvements in human development causes the economic growth of a country to be sustainable, while in response to economic growth, it strengthens the human development process and ensures its continuity. Therefore, human development is conferred as both an input and a result of economic growth (Boozer et al., 2003: 2; Suri et al., 2011: 506).

One of the pioneering studies has examined the links from economic growth to human development and from human development to economic growth for 67 countries over the period 1970-1992. In the study, it is stated that there is a strong link between economic growth and human development and that growth should be sustained to achieve development plan goals such as improving the quality of human life (Ramirez et al., 1997: 1). Ranis et al. (2000) have conducted an analysis specific to developing and developed countries for the period 1960-1992 and determined a strong and positive relationship between economic growth and human development (Ranis et al., 2000: 204). Ranis and Stewart (2002) have performed several analyzes for a sample of 83 developed and developing countries for the period 1960-2000, 22 Latin American countries, and the period 1960-2001. It has been concluded that human development leads to economic growth, and although it is not systematic, economic growth also contributes to human development (Ranis and Stewart, 2002: 21-22). Suri et al. (2010) have determined a bidirectional relationship between human development and economic growth for the period 1960-2001 and for 108 developed and developing countries (Suri et al., 2010: 24-25) In the study conducted by Bundala (2012), it has been found that there is a strong relationship between human development and economic growth in a total of 40 countries (Bundala, 2012: 1). Grubaugh (2015) analyzes the relationship between economic growth and human development for 83 countries using the data from 1980 to 2010 with the dynamic panel data method and states that there is a positive relationship between the variables (Grubaugh, 2015: 15). In the study

conducted by Ucan and Kocak (2018), it has been deduced that there is a long-term relationship between the variables in the sample of Turkey, Germany, the USA, Norway, and Italy, with the data of the period 1990-2015 and panel data analysis (Ucan and Kocak, 2018: 59).

The relationship between governance quality and economic performance goes back to Adam Smith. Smith stated that trade and manufacturing are unlikely to develop in any country without a certain level of confidence in the fairness of governments. Smith also remarked that in such unfortunate countries, where the violence of the rulers is constantly feared, people can hide their opportunities rather than investing and making efforts. Neoclassical economics has ignored the importance of governance for a long time until the end of the 20th century despite Smith's views and contributions. In addition, economic decisions and actions have always been considered as a "technical" problem. This shortcoming has led economists to believe in the fact that institutionalism also has an economic side and to study in this direction after the middle of the century. A work that can be described as the pioneer of these studies is related to the perspective of "governance", which shaped the work of Williamson (1975: 31-33; 1985: 183-189) but dates to Coase's work in the 1930s. In this definition, institutions are more "governance structures" and the emphasis is on ownership structures, hierarchies, corporate culture, or information asymmetries. The main question addressed in this approach is: how and under what conditions do institutions minimize the problems of "prisoner's dilemma", which are frequently observed in the interaction between economic actors and cause suboptimal results? One way is for institutions to establish a well-defined framework of property rights (Coase, 1937: 388-392). The other way is for institutions to minimize the principal-agent problems and conflicts of interest caused by these problems. North (1994: 362) defines institutions as the "rules of the game" between economic actors. Game rules can be either "formal constraints" (e.g. constitution, law, official rule, etc.) or "informal constraints" (e.g. norms of behavior, consensus principles, voluntary rules of conduct, etc.). This definition states that institutions, societies, or economic systems are "cost and incentive structures". In this context, the main function of institutions is to create rules that outline the interaction between actors. The third definition is related to Axelrod's (1984) analysis of trust. What is essential in this definition is the trust between the actors and whether the institutions contribute to the growth of this trust or not. Internalized (i.e. informal) rules of conduct increase trust, and based on this trust, the cost of realizing contracts between actors is reduced. For this reason, trust-creating institutions both open new areas for economic activity and deepen existing ones. In terms of the relationship between institutional quality and economic performance, the following conclusions can be drawn from these definitions. According to the economic approach, which emphasizes the importance of institutions (*institutional economics*), sustainable economic

growth can only be achieved if institutions encourage and support activities that enable efficiency and output growth. In this sense, the study of North (1990) has been an important breaking point in the literature. In this study, Douglass North has explained how institutions and institutional change affect economic performance over time with an analytical framework. According to North (1990), institutions are the rules of the game and economic performance has a decisive role. Some economies develop inclusive institutions that produce growth and development, while other economies develop exclusionary institutions that produce inefficiency and stagnation. Institutions shape the development of the types of knowledge and skills fostered by the structure of an economy. Effective institutions that are created according to social norms, increase productivity and ensure production incentives accelerate economic growth. Newly established or existing organizations benefit from the opportunities created by the change in the institutional environment. Institutions are in a relationship with the past, present, and future. The impact of institutions created today will emerge in the future. This action leads to effective governance (North, 1990: 73-101). Jessop (1998) lists what is necessary for effective governance, regardless of activity level: i) creation and simplification of realistic, problem-solving models and practices that are aligned with governance objectives, ii) improving the learning capacity of models and applications, iii) establishing methods for coordinating actions, depending on the specific nature of coordination problems, iv) constituting a meta-governance system that allows for a more systematic review of issues and potentials, resource availability and necessities (Jessop, 1998: 50).

Considering these assessments, the relationship between governance and economic performance can be examined from many different perspectives and it is confirmed that the relationship is mostly positive. Many sub-elements are used in the literature to represent governance and institutional structure. At this point, there are five different groups for measuring the quality of public institutions: Institutional quality measures (corruption, bureaucracy quality, the enforceability of contracts, etc.), social capital measures (indicators of civil rights and freedoms), social characteristics (ethnic structure, social development, and capacity measures), political characteristics (quality of democracy, political regime, and duration, etc.), political instability (frequency of government changes, socio-political instabilities, duration of civil wars, etc.). Using political stability from these indicators, Barro (1991) has examined the period of 1960-1985 in 98 countries. According to the findings, growth rates are positively related to political stability measures (Barro, 1991: 407). Knack and Keefer (1995) conclude that the quality of institutions protecting property rights in selected countries for the 1972-1982 period has a positive effect on economic growth (Knack and Keefer, 1995: 224). Mauro (1995) investigated the effects of corruption levels on the economic growth of 67 countries for the period 1980-1983. Findings indicate that corruption negatively affects economic growth by causing low investment rates (Mauro, 1995: 705).

Tanzi and Davoodi (1997) have intensified above corruption. According to the findings, corruption can decelerate economic growth as it decreases the efficiency of public expenditures while increasing public expenditures. Corruption can slacken economic growth by increasing some repetitive operating, maintenance, and wage expenditures. Corruption negatively affects economic growth by reducing the quality of existing infrastructure (Tanzi and Davoodi, 1997: 1). Acemoglu et al. (2004) state that it is difficult to create economic institutions that are compatible with economic growth by working for decision-makers to have more power (Acemoglu et al., 2004: 80). Estrin et al. (2013) demonstrate that higher levels of corruption, weaker property rights, and broader government size reduces economic growth in 42 countries between 2001 and 2006 (Estrin et al., 2013: 578). Erdogan (2016) quests the nexus between institutional structure and economic performance from 1993 to 2012 for developed and developing countries. According to the findings, while there is a positive relationship between institutional structure and economic growth in developed countries, there is no relationship in developing countries (Erdogan, 2016: 102). On the other hand, there are examples of literature examining the relationship between good governance and economic performance in the context of transition economies. These studies have researched governance indicators such as democracy, participation, bureaucracy quality, civil society, rule of law, civil freedom, political right, legal framework, political stability, corruption, efficient judiciary, and security ownership through different periods and analysis methods. Governance indicators have been associated with variables such as economic growth, economic development, foreign direct investments, and macroeconomic stability, and a significant relationship has been determined (Brunetti et al., 1997a; Brunetti, et al., 1997b; Rodrik, 1997; Campos, 2000; Havrylyshyn and Rooden, 2000; Rodrik, 2000; Ahrens and Meurers, 2002).

3. Research methodology

The research method is arrayed as the basic linear logarithmic model, cross-sectional dependence and slope homogeneity test, unit root test, cointegration test, and the test of the long-run relationship. In equation 1, the *linear logarithmic model* of the variables is represented.

$$LNEPI_{it} = \beta_0 + \beta_1LNHDI_{it} + \beta_2LNWGI_{it} + \varepsilon_{it} \quad (1)$$

3.1. Cross-sectional dependence and slope homogeneity tests

Firstly, cross-sectional dependence between units is examined using the Breusch and Pagan (1980) LM and Pesaran (2004) CD_{LM} tests.

$$\Delta Y_{i,t} = \alpha_i + u_{it} + \delta_i Y_{i,t-1} + \sum_{j=1}^{p_i} Y_{ij} \Delta Y_{i,t-j} + \theta_i \bar{Y}_{t-1} + \sum_{j=0}^{p_i} \vartheta_{ij} \Delta \bar{Y}_{i,t-j} + u_{it} \quad (2)$$

$$t = 1, \dots, T; i = 1, \dots, N$$

It is examined whether the simple correlation coefficients obtained by using the residuals estimated from the model, which is defined as (2), are equal to zero. For this purpose, the autocorrelation in error terms for each cross-section unit is obtained by using the model that also includes the lagged values of $\Delta \bar{Y}_i$ and $\Delta \bar{Y}_{i,t}$. To examine whether there is a dependency between the cross-section units, the hypotheses are:

$$H_0 : \rho_{ij} = \text{cor}(u_{it}, u_{jt}) = 0 \quad i \neq j \quad \text{There is no dependency between units.}$$

$$H_a : \text{cor}(u_{it}, u_{jt}) \neq 0 \quad i \neq j \quad \text{There is dependency between units.}$$

Therefore, the test statistic is generated as follows when N and T go to infinity.

$$CD_{LM} = \left(\frac{1}{N(N-1)}\right)^{\frac{1}{2}} \sum_{i=1}^{N-1} \sum_{j=i+1}^N (T \hat{\rho}_{ij}^2 - 1) \quad (3)$$

Also, slope coefficients may not be homogeneous in panel data analysis. The slope homogeneity test developed by Pesaran and Yamagata (2008) based on Swamy (1970) is also applied to the analysis. Equation (4) presents the model of Swamy (1970).

$$\hat{S} = \sum_{i=1}^N (\tilde{\beta} - \tilde{\beta}_{WFE}) \frac{x_i' M_T x_i}{\tilde{\alpha}_i^2} (\tilde{\beta} - \tilde{\beta}_{WFE}) \quad (4)$$

M_T shows the identity matrix, $\tilde{\beta}$ and $\tilde{\beta}_{WFE}$ presents the parameters of the weighted fixed effect and pooled ordinary least squares. Pesaran (2008) developed this model as follows.

$$\tilde{\Delta} = \sqrt{N} \left(\frac{N^{-1} \tilde{S} - k}{\sqrt{2k}} \right) \quad (5)$$

$$\tilde{\Delta}_{adj} = \sqrt{N} \left(\frac{N^{-1} \tilde{S} - E(\tilde{Z}_{it})}{\sqrt{\text{Var}(\tilde{Z}_{it})}} \right) \quad (6)$$

$\tilde{\Delta}_{adj}$ indicates the bias-adjusted result of $\tilde{\Delta}$. k shows the number of regressors and

$$\tilde{Z}_{ij} = k. \text{Var}(\tilde{Z}_{it}) = \frac{2k(T-k-1)}{T+1}$$

The hypothesis is as follows:

$$H_0 : \beta_i = \beta; H_a : \beta_i \neq \beta$$

3.2. The CADF (Augmented Dickey-Fuller) unit root test

After cross-sectional dependence and slope homogeneity estimation, the unit root test is conducted whether the series is stationary or not. One of the second-generation panel unit root tests is Pesaran's (2007) Augmented Dickey-Fuller (CADF) test. In this test, as a result of the simulations of the panel unit root test, significant results can be obtained both for N goes to infinity and for cases where T is greater than N , and N is greater than T . Starting from the basic ADF (7) equation, an error term is defined that consists of two different parts that are common for all series and unique to the series defined separately for each series. That is, spatial correlation is also considered under cross-section dependence.

$$\Delta Y_{i,t} = \alpha_i + \beta_i Y_{i,t-1} + \delta_{i,t} + \sum_{j=1}^{p_j} \phi_{i,j} \Delta Y_{i,t-j} + u_{i,t} \quad (7)$$

The ADF equation used by the CADF test is represented in equation (8). As N goes to infinity, it is decided which sections are stationary or not, by estimating the equation with the least squares.

$$\begin{aligned} \Delta Y_{i,t} = & \alpha_i + \beta_i Y_{i,t-1} + \sum_{j=1}^{p_j} c_{i,j} \Delta Y_{i,t-j} + d_i t + h_i \bar{y}_{t-1} + \\ & + \sum_{j=0}^{p_i} \eta_{i,j} \Delta \bar{y}_{i,t-j} + \varepsilon_{i,t} \end{aligned} \quad (8)$$

The null and alternative hypotheses of the CADF test are as follows:

$$H_0^i : \beta_i = 0; H_A^i : \beta_i < 0$$

The \overline{CADF} statistics calculated for case $N > T$ are shown in equation (9). This statistic is called the CIPS statistic and does not calculate significant results for $T > N$.

$$\overline{CADF} = CIPS = \sum_{i=1}^N \frac{CADF_i}{N} \quad (9)$$

3.3. Cointegration test

Following the unit root test, the cointegration test and long-run relationship are researched by Westerlund and Edgerton (2007), and the panel fully modified ordinary least squares. For robustness check, the dynamic ordinary least squares method is also adopted for the long-run relationship. It has been used by Pedroni (1999: 667) to eliminate the shortcomings of the basic statistical cointegration test statistic based on the error correction model of Westerlund and Edgerton (2007). The error correction model of Westerlund and Edgerton (2007) is as in equation (10).

$$\Delta Y_{i,t} = \delta_i d_t + \alpha_i Y_{i,t-1} \lambda_i x_{i,t-1} + \sum_{j=1}^{p_i} \Delta_{i,j} \Delta Y_{i,t-j} + \sum_{j=0}^{p_i} \lambda_i \Delta x_{i,t-j} + e_{i,t} \quad (10)$$

The null and alternative hypothesis of the test is as follows.

H_0 : There is no cointegration for all cross-sections.

H_A : There is cointegration for some cross-sections.

Then, Westerlund and Edgerton (2007) estimate the error correction equation as in equation (11) with least squares to calculate panel statistics.

$$Y_{i,t} = \delta_i d_t + \lambda_i x_{i,t-1} + \sum_{j=1}^{p_i} \alpha_{i,j} \Delta Y_{i,t-j} + \sum_{j=0}^{p_i} \lambda_i \Delta x_{i,t-j} + e_{i,t} \quad (11)$$

Finally, panel cointegration statistics are calculated as in equations (12) and (13) according to the following null and alternative hypotheses.

$$H_0 = \alpha_i = 0 \text{ and } H_A = \alpha_i < 0$$

$$P_\tau = \frac{\alpha}{st(\alpha)} \sim N(0,1) \quad (12)$$

$$y_{i,t} = \alpha_i + \beta x_{i,t} + \mu_{i,t} \quad (13)$$

Westerlund and Edgerton (2007) quantify this calculation according to whether the LM statistic is below the critical value. If the calculated value is below the critical value, the null hypothesis is accepted. Critical values are obtained by the bootstrap method to eliminate cross-sectional dependence.

3.4. Estimating the long-run relationship

After applying unit root and cointegration tests, DOLS (Dynamic Ordinary Least Square), and FMOLS (Full Modified Ordinary Least Square) methods have been used, which have been developed by Pedroni (2000, 2001). The methods have been used to estimate the final unbiased coefficients of this relationship, and to test the consistency of their estimators within the framework of expectations. While the FMOLS method corrects deviations in standard fixed-effect estimators (caused by problems such as autocorrelation, and heteroskedasticity), the DOLS method is a method that can eliminate deviations in static regression (especially due to internality problems) by including dynamic elements in the model. Pedroni (2000)'s FMOLS method, which allows for significant heterogeneity between individual cross-sections, considers the existence of a possible correlation between the differences of the constant term, error term, and independent variables. Pedroni (2000) also examined the strength of the FMOLS method in small samples and scaled that the performance of the t statistic in small samples is better with Monte Carlo simulations (Nazlıoglu, 2010: 98). The method improved by Pedroni (2000) is based on the following panel regression model.

$$y_{i,t} = \alpha_i + \beta x_{i,t} + \mu_{i,t} \quad (14)$$

$$x_{i,t} = x_{i,t-1} + e_{i,t} \quad (15)$$

In this equation, it is assumed that $y_{i,t}$ dependent variable, $x_{i,t}$ independent variables and α_i are fixed effects, while there is no dependence between the sections that make up the panel. Since the error terms in equation (14) are a stationary process, if $y_{i,t}$ is integrated in the first order, there is a long-run cointegration relationship between $y_{i,t}$ and $x_{i,t}$. Thus, β indicates the long-run cointegration vector to be predicted. While obtaining the cointegration vector for the panel in the FMOLS estimator, the model in equation (14) is first predicted using the FMOLS estimator for each cross-section. Pedroni (2000) recommends using the Newey-West estimator, which is consistent under the heteroskedasticity problem when procuring the long-run variance-covariance matrix for each cross-section. Then, the coefficients of cointegration acquired from the FMOLS estimation of each cross-section are averaged and the vector of cointegration is computed for the panel (Kocak and Uzay, 2018: 93-94). The panel DOLS estimator proposed by Pedroni (2001) presupposes forecasting of the following regression model.

$$y_{i,t} = \alpha_i + \beta x_{i,t} \sum_{k=-K_i}^{K_i} \gamma_{i,k} \Delta x_{i,t} + \mu_{i,t} \quad (16)$$

$-K_i$ and K_i demonstrate the number of antecedents and lags in the regression model. In this model, where it is presumed that there is no dependence between the cross-sections that make up the panel, the panel cointegration vector is obtained, firstly, the model in equation (15) is estimated for each cross-section. Here, just like the panel FMOLS estimator, the Newey-West method can be used in the panel DOLS estimator. Secondly, the arithmetic average of the cointegration coefficients procured from this DOLS estimation of each cross-section is taken and the panel cointegration coefficient is calculated as follows (Nazlıoğlu, 2010: 99).

$$\hat{\beta}_{GD}^* = N^{-1} \sum_{i=1}^N \beta_{D,i}^* \quad (17)$$

where $\hat{\beta}_{GD}^*$ shows the coefficient of cointegration gained from the DOLS estimation for each cross-section, while the t-statistics of the panel DOLS estimators are computed as follows (Nazlıoğlu, 2010: 99).

$$t_{\hat{\beta}_{GD}^*} = N^{-1/2} \sum_{i=1}^N t_{\beta_{D,i}^*} \quad (18)$$

Here $t_{\hat{\beta}_{GD}^*}$ denotes the t-statistic for the coefficient of cointegration sourced from the DOLS estimation for each cross-section (Nazlıoğlu, 2010: 99).

4. Empirical data and analysis

The study measures the impact of human development and governance on economic welfare for the period 2007-2020 and 31 transition economies². A transition economy is a technical definition given to economies that are transitioning from a state-controlled economy to a free-market economy. Countries with transition economies switch to an environment where the free-market determines prices instead of a central organization in the process of economic liberalization. In this process, trade barriers are removed, public institutions and organizations are privatized, and trade liberalization is realized. Transition economies were in a situation where the phenomenon of poverty and scarcity of consumer goods was experienced. In transition economies before the transition to free-market economies, financial imbalances were high, the productivity of agricultural and industrial goods was low, there was a monopoly structure in the industrial sector, high inflation was experienced, and the rule of law did not apply to everyone in society. The developments such as the fall of the Berlin Wall in 1989, the collapse of the Eastern Bloc, the disintegration of Yugoslavia and Czechoslovakia (Czechia) after 1993, etc. marked the beginning of radical changes in the global economy, and free-market economy became a solution. It is observed that the economies, which started the transition process to a free-market economy, cover a wide geographical area and have a high population density. In the first stage of the transition, economic depressions were experienced in all transition countries. Therefore, negativities emerged in macroeconomic indicators. After the 2000s, the development levels of these states, which became stronger economically, socially, and politically, started to increase. *These energetic and potent matters of the transition economies have been influential in the choice of sample. The reason for choosing the period 2007-2020 is that data on economic prosperity has started to be calculated from 2007.* The economic welfare data (*EPI*) used as the dependent variable has been obtained from the Legatum Institute (2021), the independent variable human development index (*HDI*) has acquired from the United Nations Human Development Program (2021), and the other control variable governance quality (*WGI*) has been procured from the World Bank Worldwide Governance Indicators (2021).

The Economic Prosperity Index (*EPI*) is developed by Legatum Institute and is ranked on average between 0 and 100. 100 shows the highest economic welfare, and 0 presents the lowest economic welfare. The index is constructed by analyzing 104 variables and has 12 sub-components. These are safety & security, economic quality, education, natural environment, investment environment,

² Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Cambodia, Croatia, Czechia, China, Estonia, Georgia, Hungary, Kazakhstan, Laos, Moldova, Montenegro, North Macedonia, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Vietnam

personal freedom, health, market access & infrastructure, social capital, enterprise conditions, governance, and living conditions. Human Development Index³ (*HDI*), which contains three different sub-components as education, life expectancy, and income per capita according to purchasing power parity, takes a value between 0 and 1. As the index value approaches 1, it indicates a higher level of development. The Worldwide Governance Indicators (*WGI*) consist of data on six basic dimensions of governance: Government Effectiveness, Regulatory Quality, Rule of Law, Political Stability and Lack of Violence, Control of Corruption, and Voice & Accountability. Governance values are standardized for each year with a standard deviation value. Values range from -2.5 to +2.5 points, with higher scores indicating better governance outcomes, while negative scores indicating poor governance. A single governance indicator has been generated by averaging these six basic dimensions and transforming the series between 0 and 100 for the estimation. The reason why the series is reconstructed between 0 and 100 is that the model is logarithmic. Since the logarithm of the negative values cannot be taken, the series has been transformed into positive values. Table 1 represents the summary statistics of the data. Depending on which of the mentioned indicators influence countries' improving their economic performance is one of the substantial research fields of economic theory. Most literature confers that economic growth and development indicators are in performance measurement. Economic growth is an increase in the number of goods and services produced over time, and growth is dependent on an increase in money creation. However, the increase in economic growth may not be parallel to the increase in welfare. In recent years, indicators related to these variables have been ineffective in determining economic performance. Many factors, especially education, health, and income, are used in economic calculations. However, the insistence of mainstream economic theory on its approaches essentially inclines incomplete and misleading results in the general economy. Therefore, various indicators, specifically the Economic Prosperity Index (*EPI*), have been used recently rather than economic growth and development measurements. Creating environments to provide for the basic needs of society as well as higher-level needs forms the basis of the human development approach. The understanding of development, which espies the improvement of countries in the increase of economic growth (*GDP*), weakened after the 1980s and left its place to the philosophy of "human development". Human is at the center of this philosophy. Raising the production of wealth is seen as a prerequisite. The foundations of this idea have been laid by Amartya Sen and implemented by a team led by Mahbubul Haq with the contributions of the United Nations Development Programme (*UNDP*). Since 1990, it has become increasingly widespread and accepted in the

³ Please note that "Human Development Index" is from 2007 to 2019, while the other indicators are from 2007 to 2020.

world. This view, which occurred because only GDP is a development indicator in measuring the level of development, has brought the HDI formula to the theory because of the studies. Although, at first, there was no change at the desired level, the formulas used in the calculations were renewed and made more meaningful over time.

Table 1: Summary statistics of the variables

Variables	Mean	Sta. Dev.	Min.	Max.	Skewness	Kurtosis	Observations
<i>EPI</i>	59.51894	7.602885	44.74506	76.89146	0.362923	4.163824	434
<i>HDI</i>	0.769005	0.0849614	0.481	0.917	0.261051	4.372485	403
<i>GOV_EFE</i>	-0.0011582	0.6645735	-1.603811	1.343336	-0.417202	3.260672	434
<i>RQ</i>	0.0831605	0.8290338	-2.090988	1.698142	0.260174	3.472813	434
<i>RL</i>	-0.3069365	0.6839921	-1.54336	1.61278	-1.306184	2.629593	434
<i>PS</i>	0.0715253	0.6151921	-2.020833	1.147953	-1.014923	3.372518	434
<i>CC</i>	-0.3069365	0.6839921	-1.54336	1.61278	-0.429301	4.529381	434
<i>VA</i>	-0.259625	1.025823	-2.259159	1.214439	0.325184	3.019372	434
<i>WGI (Ave.)</i>	-0.0953286	0.6949527	-1.431124	1.292524	-0.492421	5.104927	434

Notes: *GOV_EFE* Government Effectiveness, *RQ*: Regulatory Quality, *RL*: Rule of Law, *PS*: Political Stability and Lack of Violence, *CC*: Control of Corruption, *VA*: Voice & Accountability
 Source: Edited by the author using Stata 14.2

Table 1 indicates that all variables are convergent, except for the *EPI* variable. This is because the *EPI* variable takes values between 0 and 100. Variables are included in the linear model with their logarithmic forms. The kurtosis range of the distribution is between 2.67 and 5.10. That is, the variables are asymmetrical. Of the skewness values, 4 are positive and 5 are negative. *WGI* variable (average of 6 sub-components) displays negative skewness, and *EPI* and *HDI* variables point to positive skewness.

In the study, firstly, the cross-sectional dependence of the variables is tested. In panel data analysis, to avoid fallacious findings, the subsistence of cross-sectional dependence should be considered. The subsistence of cross-sectional dependence in variables and the error term is analyzed with Breusch and Pagan (1980) *LM* and Pesaran (2004) *CD_{LM}* tests. The subsistence of cross-sectional dependence attributes to a significant correlation between the errors of a model. The null hypothesis of the tests refers to no cross-sectional dependence exists. The alternative hypothesis of the tests means cross-sectional dependence exists. According to the findings, the probability values are less than 1% and there is a cross-sectional dependence between the series. In addition, it is necessary to determine the slope homogeneity.

Table 2 shows the results of the Swamy S test used to detect whether the estimated model is heterogeneous or not. The homogeneity test studies that started with Swamy (1970) have been expanded with the studies of Pesaran and Yamagata (2008). The test developed two different test statistics for large and small panel datasets. Δ is used to interpret the prediction findings for large panel datasets, while Δ_{adj} is used to interpret small panel datasets. The null hypothesis of the test predicts that the slope coefficients are not heterogeneous, while the alternative hypothesis estimates that the slope coefficients are heterogeneous. The result indicates that the null hypothesis is rejected, the slope coefficients vary between cross-sections, and are heterogeneous.

Table 2: Cross-sectional dependence and slope homogeneity results

Variables	LM Test Results		CD_{LM} Test Results	
	Statistic	p-value	Statistic	p-value
<i>EPI</i>	328.47	0.000	73.71	0.000
<i>HDI</i>	273.59	0.000	54.68	0.000
<i>WGI</i>	158.37	0.000	12.01	0.000
<i>Model</i>	302.52	0.000	3.263	0.000
Slope Homogeneity Result				
<i>Model</i>	Δ		Δ_{adj}	
	Statistic	p-value	Statistic	p-value
	8.217	0.000	7.643	0.000

Source: Authors research

It is also examined whether the series is stationary or not to prevent the issues caused by the cross-sectional dependency. Otherwise, spurious regression problems may occur in models established between non-stationary series (Gujarati and Porter 2012: 748). For this reason, Cross-sectionally Augmented Dickey-Fuller (CADF) unit root test which has been generated by Pesaran (2006) is used for the stationarity analysis. This analysis quantifies the cross-sectional dependence on whether the number of observations is greater than the time dimension of a sample or not. Later, cross-sectionally Augmented Dickey-Fuller (CADF) unit root test has been generated by Pesaran (2007) and this analysis quantifies the cross-sectional dependence on whether the number of observations is greater than the time dimension of a sample or not. If the CADF critical value is greater than the CADF statistic, the null hypothesis is rejected, and it is concluded that the series is stationary. The findings indicate that the series have unit roots at level (5%) and become stationary when *the first difference* is taken so the null hypothesis is rejected.

H_0 : The series includes unit-roots.

H_1 : The series does not include unit-roots.

Table 3: CADF unit root test results

Variables	Level	First Difference	Result
<i>EPI</i>	-4.283	-8.739**	I_1
<i>HDI</i>	-2.175	-5.496**	I_1
<i>WGI</i>	-0.038	-0.263**	I_1

Notes: ** presents the rejection of the null hypothesis at 5%. The 5% critical value for the model with a constant is -1.372 while the value with constant and trend is -2.439.

Source: Authors calculation

Table 4 shows the lag lengths determined according to the Akaike, Schwarz, and Hannan-Quinn information criteria. Since the data set consists of annual data, the maximum lag level has been specified as 3. According to the information criteria in Table 4, the most appropriate lag length is 2. Besides, when the lag length is set to 2, it is observed that there are no autocorrelation and heteroskedasticity problems in the error terms obtained from the VAR estimation, and the error terms are normally distributed.

Table 4: Lag length

Length	AIC	SIC	HQ
0	-5.176	-5.531	-5.372
1	-11.428	-9.251	-11.538
2	-13.370*	-12.829*	-14.803*
3	-15.583	-15.729	-16.037

Source: authors calculation

The cointegration test results regarding the lag length determined as 2 are shared in Table 5. The cointegration test has been performed with the analysis of Westerlund and Edgerton (2007). Other tests assume that not all series are stationary. Contrary to other tests, this test calculates with the precondition that only one series is not stationary. The null hypothesis of the test assumes that there is a cointegration relationship between the series, and the alternative hypothesis of the test assumes that there is no cointegration relationship between the series. This test gives efficient results for both large and small panel datasets in response to heteroskedasticity and autocorrelation problems (Westerlund and Edgerton, 2007: 187).

Table 5: Westerlund and Edgerton cointegration test result

LM Statistic	Asymptotic p-value	Bootstrap p-value
8.364	0.000	0.000

Note: Bootstrap (10.000) represents the probability value of the repetitive distribution.

Source: authors calculation

The test, which determines the cointegration relationship with the LM (Lagrange Multiplier) bootstrap test statistic, gives two probability value estimations, asymptotic p-value, and bootstrap p-value. Since the cross-section dependency has been determined, the bootstrap p-value estimation findings are used to determine the cointegration relationship. On the other hand, as can be seen in Table 4, there is no cointegration relationship between the series according to the results of both probability values (according to all the significance levels of 1%, 5%, and 10%). This result confirms the existence of a *long-term relationship* between the series.

Table 6: Panel fully modified ordinary least squares (FMOLS) and panel dynamic ordinary least squares (DOLS) estimation results

Dependent Variable: <i>EPI</i>	Panel FMOLS Results		Robustness: Panel DOLS Results	
	Coefficient (sta. error)	p-value	Coefficient (sta. error)	p-value
<i>HDI</i>	0.575 (0.055)	0.000	0.974 (0.102)	0.000
<i>WGI</i>	0.096 (0.012)	0.000	0.075 (0.018)	0.000

Notes: Estimation of long-run covariance has been conducted by using Barlett kernel, Newey-West bandwidth = 6.000 for panel FMOLS. Estimation of long-run covariance has been adapted by using Barlett kernel, Newey-West fixed bandwidth for panel DOLS.

Source: authors calculation

After detecting the subsistence of a long-term relationship between the series, the *long-term coefficients* have been estimated with the panel fully modified ordinary least squares (FMOLS) method and panel dynamic ordinary least squares (DOLS) method for *robustness check*. These methods can be used to estimate the long-term coefficients in series with first-difference stationery and cointegrating relationships. Table 6 presents the long-run effects of the estimated models. The effect of *HDI* on economic welfare (*EPI*) is positive and significant at the 1% level. Accordingly, a 1% increase in human development (*HDI*) enhances economic welfare (*EPI*) by 0.57% and 0.97%, according to both models. The governance variable (*WGI*) also affects economic welfare positively. This effect is statistically significant at the 1% level. A 1% improvement in governance quality increases economic welfare (*EPI*) by 0.09% and 0.07% according to both estimates. These findings are *similar* to the *previous literature*.

Table 7: Vector error correction model

	Coefficient (std. err.)	t-statistic	p-value
$D(EPI)(-1)$	0.37128 (0.27970)	1.3274	0.825
$D(HDI)$	0.62930 (0.34271)	1.8362	0.034
$D(HDI)(-1)$	0.28493 (0.27154)	1.0493	0.078
$D(WGI)$	0.01059 (0.05746)	0.1843	0.321
$D(WGI)(-1)$	0.08627 (0.16394)	0.5262	0.042
$ECT(-1)$	-0.21794 (0.11636)	-1.8729	0.034*

Source: authors calculation

Finally, the vector error correction model has been estimated to determine in how many periods the errors will be *eliminated*, and the variables will come to *equilibrium*. The “ECT (Error Correction Term)” variable shown in Table 7 represents the error terms obtained from the estimations. A prominent principle of cointegrating variables is that deviations occur in the long-run equilibrium over time. For the model to reach its long-run equilibrium again, some of the variables must be able to provide this. In the error correction model, the short-term dynamics of the variables in the system are affected by the deviation in the equilibrium. The error correction model equation includes the first differences of the variables as well as the one-term lag errors of the cointegration regression. One of the advantages of using the error correction model is that it reveals short-term and long-term causality and the other is that it determines and corrects the imbalance between the variables (Enders, 1995: 365-366). According to the results, the sign of the lag value of the error correction term is negative and significant at the 5%* level. Since the error correction model is statistically significant and negative, there will be a tendency towards equilibrium again in the face of divergences from the long-term equilibrium. Approximately 21% of the deviations are corrected.

5. Results and discussion

By beholding empirical results, it is obvious that human development and governance are positively connected with the economic prosperity in transition economies for the period 2007-2020. Moreover, Moreover, according to both models, a 1% increase in human development increases economic welfare (EPI) by 0.57% and 0.97%. A 1% raise in governance quality recovers economic prosperity (EPI) by 0.09% and 0.07%. These findings are compatible with the previous theoretical and empirical literature. Gaining economic prosperity is not only related to the improvement of macroeconomic indicators such as growth or development. Some of the arrangements suggested to implement for a complex welfare-based

economic orientation are: stimulating the economy to be more active, liberalizing prices and markets, reallocating resources accordingly, developing market-based and indirect instruments for macroeconomic stability, implementing a tight budget policy for a certain period of time to increase productivity in the economy, corporate and legal to protect property rights, legal provisions, and transparent market entry regulations is the creation of a framework, creating human development by strengthening the socio-economic components of the future expectations of individuals. On the other hand, good governance established in countries reduce economic vulnerabilities. The positive effect of governance on economic performance hinges upon factors such as ensuring government stability, securing property rights, preventing corruption, improving socio-economic conditions, increasing the rule of law, expanding the environment of freedom, and diminishing the threat of internal and external turmoil. In this context, the main policy recommendations depending on the study can be listed as follows: i) It is advisable to accept that *human development* is a major input that affects this process as well as due to the *economic welfare process*. ii) For the countries to achieve human development in parallel with the level of economic development, it is necessary to develop *not only income policies* but also a development model that *focuses on humans*. iii) For the development of individuals, it is essential to improve the *governance conditions* as well as the economic conditions. iv) Countries should adopt policies aimed at improving *the quality of life of humans and governance*.

6. Conclusions

The aim of this study was to include *31 transition economies* that showed rapid economic development in the 2000s in the *research center*. The annual data for the *2007-2020* period measures the impact of *human development* and *governance quality* on *economic welfare*. The *Human Development Index (HDI)* compiled by UNDP (2021), the *Worldwide Governance Indicators (WGI)* reported by the World Bank, and the *Economic Prosperity Index (EPI)* developed by the Legatum Institute, which has been used frequently in recent years, are included in the *linear logarithmic model*. Before the estimations, the author applied cross-section dependence of the series, slope homogeneity, stationarity analysis, determination of the appropriate lag length to be used in the model, and cointegration tests. Then, the conclusion is that human development and good governance *positively* affect economic welfare in the *long run* through the *panel fully modified ordinary least squares* and *panel dynamic ordinary least squares* methods. The research results show that these findings are *compatible with the previous literature*. A 1% improvement in both indicators increases economic welfare by 0.57% and 0.97% (FMOLS), by 0.09% and by 0.07% (DOLS). In addition, determined in line with the findings of the *vector error correction model*, they show that 21% of the deviations

are possible to correct in the long term and confirm the hypothesis that “high human development and good governance are major factors for economic welfare”. In the light of these evaluations, the author believes that the study contributed to the literature in *two aspects*. i) It is not sufficient to include only economic growth and/or development indicators in the measurement of economic performance, and it is essential to use other variables such as *economic welfare* in the analysis. ii) *Human development* and *quality of governance* are the primary indicators for increasing the economic welfare of rapidly developing transition economies.

The level of development of the societies and the ability to achieve economic growth-development purposes is a multivariate economic goal. With the concept of welfare and social state that emerged after the Second World War, the focus turned to the importance of investments in the human capital development in countries. These goals, listed as preventing poverty, ensuring equality in income distribution, sustaining economic efficiency, providing economic welfare, social balance, and harmony, realizing full employment, and price stability, are necessary for individuals to continue their lives without falling below a certain life level. On the one hand, these goals, founded on the basis of supporting individuals with social and economic rights, so that they can fully benefit from positive rights or electoral rights, contribute to human development. It is advisable to reinforce these supports or targets with a good governance mechanism. Basically, it is necessary to examine the effects of factors such as property rights, rule of law, and the role of the state on economic welfare or development. Societies with good institutions invest more in human capital, technology, and industrialization, and stay one step ahead in achieving economic wealth or welfare. The study substantiates this basic scientific premise that *high human development and good governance positively impact economic well-being in transition economies*. However, the following constraints of the analysis are also essential for future studies.

It is envisioned that the economic prosperity index, which started to be calculated as of 2007, effectuates the *main limitation* of the study. This situation creates a deficiency in what way to explain the relationship before and after the crisis. On the other hand, it is possible to state that having an alternative and comprehensive data set to the economic growth indicator(s) will facilitate researchers in *estimating the long-term effects for future studies*. The measurement of governance is also hotly debated, and it is another major issue to consider for future studies that some indicators, such as *the control of corruption*, are perception indexes. In addition, the phenomenon of economic welfare is an issue for all developed, developing, and underdeveloped countries. Since the sub-components of the variables in the model and some indicators used in the computation of these components are *similar to each other*, *further research* may realize estimations with *alternative econometric methods* and *country samples* by considering issues such as *multicollinearity*. Forecited matters will evolve *the contribution to the research field*.

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Dugoročni učinci ljudskog razvoja i javnog upravljanja na ekonomsko blagostanje: novi dokazi iz tranzicijskih gospodarstava

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Sažetak

Studija pokušava procijeniti utjecaj ljudskog razvoja i kvalitete upravljanja na dugoročno ekonomsko blagostanje. Osnovni prijedlog analize je da gospodarski rast i/ili razvoj ne mogu biti mjera vrijednosti ekonomske uspješnosti. Zbog toga je Indeks ekonomskog prosperiteta koji je razvio "Legatum Institute" zavisna varijabla linearnog logaritamskog modela koji se u ovom radu procjenjuje. Osim toga, mjerenje ekonomske dobrobiti, kvalitete (javnog) upravljanja, koje je u određenom razdoblju neoklasična ekonomija ignorirala, smatra se važnim inputom za ljudski razvoj. Uzimajući ove dvije varijable u istraživački centar, studija uočava porast prosperiteta (blagostanja) 31 tranzicijske ekonomije koja je postigla intenzivan razvoj nakon 2000-ih od 2007. do 2020. godine. Tranzicijska gospodarstva odabrana su zbog brzog razvoja i snažnih učinaka na dobrobit koje su postigle tijekom milenija. Dakle, glavna hipoteza istraživanja je da tranzicijska gospodarstva imaju visok ljudski razvoj i kvalitetno javno upravljanje koje stvara ekonomski prosperitet. Primjenom ovog istraživačkog pitanja, testova ovisnosti presjeka i homogenosti nagiba, testova jediničnog korijena i kointegracijskih testova, autor je proveo odabir optimalnog vremenskog pomaka prije utvrđivanja dugoročne međuovisnosti. Nalazi sveobuhvatne analize otkrivaju da oba pokazatelja povećavaju gospodarski prosperitet tako što dugoročno utječu na njih i neka odstupanja su poboljšana.

Ključne riječi: ekonomsko blagostanje, ljudski razvoj, javno upravljanje, tranzicijska gospodarstva, panel podaci

JEL klasifikacija: I31, O15, O16, P31, C23

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