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The Factor of Democracy and Prosperity and the Formation of the Nation State in the Example of Ukraine: Pre-War Picture

Abstract

Ukraine is currently facing an armed onslaught, the likes of which no European country has struggled with since the Second World War, and it will probably take years to repair the country physically and the population mentally. However, to ensure that the future recovery process does not begin with a return to the past, a thorough analysis of the state of affairs before the intensification of the Russian onslaught in 2022, which began in 2014, is needed. The primary purpose of writing the article is to show, with real examples, the ineffectiveness of the pre-war state-forming

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function in Ukraine. This analysis indicates why most of the reforms were nullified and which steps must be taken to avoid these problems for the country's correct economic, cultural, and political evolution. Using the Cobb-Douglas function, the relationship between intra-system factors of state formation and the standard of living of the country's population is also established. It is proposed to shape the national concept of the modernisation of the public administration system and its new paradigm and to develop its state-forming model, which will be adequate with regard to Ukrainian realities (including the state post-war) and global trends. Thus, the relevance of the research topic stems from the need to provide practical recommendations for the future, post-war modernisation of the state-forming system in the context of the socio-political and economic development of the country, as well as civil society.

Keywords: Civil Society, Public Administration, National Idea, Policy, Socio-Economic Development

Foreword From the Authors

This paper, looking critically at the state of the country of Ukraine before the period of Russian aggression, may be received differently. However, we believe that our aim – as academics – is to work scientifically in this scholarly work and, despite the war, to conduct a critical analysis. We are confident that our work describing the state of Ukrainian statehood before the war will be material that will be helpful in the process of rebuilding Ukraine after Russia's ouster from its territories. Thus, what follows are considerations related to the state of affairs before the escalation of the Russian armed invasion in early 2022.

Introduction

Since the early years of the post-communist transition, or, since independence in 1991 when Ukraine declared itself neutral after the collapse of the Soviet Union, it has enthusiastically confronted the various challenges posed by the region's complex history (see, e.g., Apollo, Krupska-Klimczak, 2019; Gorodnichenko, Sologoub, Weder, 2022; Marples, 2020; Snyder, 2003; Snyder, 2022; or Whitmore, 2004). In the context of the country's socio-political and economic development, the need to build a civil society has become crucial for the modernisation of the state system. It was significantly influenced by two waves of nationwide public protests in 2004 and 2013/2014. During these protests, Ukrainians took to the streets *en masse* to oppose election rigging,

usurpation of power, and corruption. They also advocated the values of a common Europe and opposed the government's departure from its pro-Western course. It is important to note that Ukrainians protesting at that time in Kyiv's central square (Maidan) began to work together not only to achieve their chosen political goals but also to modernise the state in general. They began to spontaneously create and organise various types of structures, which were, to some extent, a substitute for state institutions of the time. As Baranska and Chervinska (2014) rightly pointed out, the social movement that spontaneously emerged at that time – Euromaidan - became a space which, through the organisation of space and the totality of life, constituted a miniature representation (or perhaps better: a kind of "mapping"; an ideal model) of the Ukrainian state. These protests, referred to as the Orange Revolution (in late November 2004 to January 2005) along with the Revolution of Dignity (in February 2014), represented a kind of explosion of civic activity. They highlighted the dormant social capital in Ukrainian society, which, as a resource related to the so-called "fitness of society", offered hope for the country's development. In retrospect, however, it has to be said that this capital was largely squandered. In just a few years, the capacity of society to form collective action in such a way as to improve its situation has declined significantly. The social capital of Ukrainian society today has more individual than social features, enabling the individuals who possess it to survive and cope, rather than focus on the development of the country as a whole. We are therefore talking about survival and adaptation capital rather than national development capital (see, e.g., Potracki, Kurek, 2021).

Being aware of these problems (i.e., before the Russian invasion in 2022) and especially of the low effectiveness of the reforms undertaken in Ukraine, the problem of substantiating practical recommendations for the modernisation of the state-building system in the context of the development of civil society in Ukraine remains highly relevant (Kuzmenko, 2019; Wolczuk, 2019; Krajnik, 2022; Snyder, 2022; Pivovarsky 2003). This is because Ukraine has long been trying to make a complex democratic transition to a politically organised, responsible society of a new quality, which should increase the level of business activity and political participation of citizens by ensuring their rights and freedoms, forming a new social structure space and economic growth as a consequence. Unfortunately, the immobility of the political elite, the weakness of the opposition, the maintaining of informal institutions and practices in political life, and the vacuum of values in society did not allow the democratic direction to gain a foothold in Ukraine which therefore led to a conservative model transit to democracy (Kuzmenko, 2019).

Today, the comprehensive modernisation of Ukrainian society is essential (Buśko et al., 2023; Gorodnichenko, Sologoub, Weder, 2022; Pivovarsky 2003; Stach, 2019; Whitmore, 2004), which is a conceptual, purposeful process of transformation, when the state carries out qualitatively new transformations in all spheres of public life based on the mobilisation of national resources and taking into account the experience of developed countries (De Haas, Pivovarsky, 2022; Palamarchuk, 2014). At the same time, constant changes in Ukraine's socio-political and economic space not only actualised the problem of forming the country's development strategy, but also revealed the low efficiency of the domestic system of state and national economic management of the country's development (Kuzmenko, 2019; Pivovarsky, 2016). The low perception of state reforms by Ukrainians further exacerbates this trend. Until recently, up to 70% of the country's population did not sense any significant changes in state reforms and were sceptical about the possibility of implementing any planned reforms and achieving any planned results (Lesvk, 2019). The existing dissonance between managerial influences and the needs of society, insufficient flexibility, and adaptability of the subject of management to rapidly-changing dynamic transformations both inside and outside the public administration system led to the fact that most of the managerial influences were aimed at eliminating the consequences of problems (Obolenskyi et al., 2003).

Under these conditions, when it is necessary to intensify the process of state-building to give it a qualitative impetus, it is crucial to form a national concept of the public administration system modernisation – a new paradigm – and development based on its model of state-building which is adequate as regards Ukrainian realities and world trends. Thus, when selecting and adapting the developments of other countries, national scientists tend to use the contextual (Drechsler, 2013) trajectory (model) of application. These scientists also substantiate the relevance of combining the efforts of the management subject with the management object to achieve synergistic efficiency of the management process, which is reflected in a relatively new concept – so-called "joined-up" governance.

Since 2014, during the post-Maidan period, the term "European security zone" has been actively used in the informational space of Ukraine (Blockmans, 2015). The strengthening of Ukraine is not only the sole interest of its people; it is one of the key preconditions of the European Union's existence. Ukraine would have the status of a "European security zone" which means not only the development of the military, but also the acceleration of modern-European-democratic-structure formation and the consolidation of the socio-political system of Ukraine (Snyder, 2015).

The analysis of the relationships between political freedom (democracy) and economic growth in post-socialist countries, including Ukraine, undergoing transformation from 1990 to 2011, revealed a strong correlation (Piątek, Szarzec, Pilc, 2014). These studies suggest that, in the short term, one of the reasons for the expansion of political freedom could be a favourable economic situation. In the longer term, after eliminating cyclical fluctuations, democracy led to a faster pace of growth. It can be concluded that in transforming post-Soviet countries, including Ukraine, democracy and economic growth were not competing features of development. Economic freedom, which positively influences the pace of economic growth in highly developed countries, has the same positive impact on economic growth in transforming countries. However, there is no one-size-fits-all recipe or algorithm for democratising a society.

Achieving effective democratic changes involves considering a multitude of political, economic, social, national, and ethnic factors. Researching ways to address a country's socio-political problems can indeed benefit from economic-mathematical modelling, including the use of the Cobb-Douglas function. Such modelling, however, cannot be done in isolation from ongoing discussions about post-colonialism and other development parameters of dependent states (which is especially true of post-Soviet states like Ukraine) (see, e.g., Schroeder, 2016; Brzechczyn, 2020). Thus, the interdisciplinary group of authors attempts to answer the question of why most of the reforms that have been initiated (i.e., those completed, as well as those in progress) have been nullified, and what steps should be taken to avoid these problems for the proper economic, cultural, and political evolution of a post-conflict country. The authors of this paper believe that if the reforms do not take place in a situation of full transparency (with the aim of nullifying corruption), and the authors of these reforms do not benefit from the historical experience (using successes and not repeating mistakes) of countries such as Poland and Romania, the process of building a modern nation may be prolonged if at all possible.

Methodology

Theoretical and methodological foundations of the research are rooted in the findings of both national and foreign literature concerning the issues of state formation in Ukraine and the development of a mechanism for state influence on the advancement of societal well-being and prosperity within the state. Specifically, a universal method of cognition based on dialectics was employed when examining state-building phenomena within the dynamic interplay between the state and societal life. These relevant phenomena were studied not in a static but in a dynamic manner, relying on the applicable laws of dialectics:

- a) The law of the transformation of quantitative changes into qualitative ones (for instance, the expansion and constriction of the sphere of national idea development contributing to shifts in the historical context of the state).
- b) The law of negation (for example, in the state-building system of modern Ukraine, elements of both the new and past systems of public administration coexist) (Bilozyorov et al., 2017).

To establish the theoretical foundations for understanding the positive and negative determinants of statehood, the method of proceeding from the abstract to the concrete was employed. To identify similarities and differences in the individualism of people, particularly within the Ukrainian context, the comparative method was utilised. By comparing democratic phenomena against standardised criteria such as time, actors, and scope, both their common and distinctive features were revealed. Through analysis, the internal construction of the nation state was unveiled, and, through synthesis, a comprehensive understanding of the essential attributes, content, and scope of the concepts of nation and state, as well as their structural components, was formed. The application of the systemic method allowed for the examination of national phenomena as a holistic collection of elements (components) interacting with each other and their surrounding environment.

This involved the development of quantitative indicators that objectively reflect the state's condition, dynamics, and trends in democratic development. In reality, selected elements are being examined. Methods were used to identify the presence and strength of the relationship between the standard of living and the corruption perception index, more specifically, the relationships between democracy and the level of well-being, taking into account population-related issues. The method adopted was extended to include a critical analysis of the literature and considerations based on it.

Ukraine as a Nation State

Scholars are constantly searching for the correct answer to the question of why nations decline. However, many works boil down to the simple statement that a given, declining nation under scrutiny was merely unlucky. Thus, Ajemoglu and Robinson (2012) in the book "Why Nations Decline", came up with a simple explanation for successful and

unsuccessful nations; inclusive and extractive institutions. If inclusive institutions prevail, democracy prevails, and open access to resources equals the nation prospering. If, however, there is authoritarianism, clientelism, cartels, or oligarchs, the nation declines. Unfortunately, how to establish inclusive institutions for failed nations is difficult to understand.

Within the institutional approach, Ajemoglu and Robinson (2012) distinguish between economic and political institutions, which, in turn, are represented by extractive and inclusive species. National development and prosperity are possible with a combination of inclusive political and economic institutions (Ajemoglu, Robinson, 2012):

- The political process determines under which institutions people
 will live. Although economic institutions are critical as regards
 a nation's movement to wealth or poverty, according to the authors,
 politics and political institutions determine what these institutions
 will be.
- Inclusive economic institutions encourage, inter alia, large masses of people to participate in economic activities, respect private property, an impartial legal system, the provision of public services to create a competitive environment, and pave the way for technology and education. Those institutions' extractive counterparts encourage saving resources, access to management having a limited number of people, monopolies, and non-compliance with property rights. The diversity of economic development models around the world indicates the relationship between critical coincidences in development and slow institutional change.
- Inclusive political systems are rather centralised, but, at the same time, widely distribute power (pluralistic), with a clear "monopoly on legitimate violence" (the central definition of the state according to M. Weber), whereas extractive political institutions concentrate power in the hands of a narrow elite and impose weak restrictions on their exercise of power, wherein there is no rule of law.

Political and economic institutions (extractive and inclusive) are interconnected and create a whole cycle of positive, inverse-inclusive influence or a cycle of extractives. The authors highlight several hypotheses about the prosperity and decline of nations; the geographical hypothesis, the cultural hypothesis, and the ignorance hypothesis.

One of the reasons for inequality between countries is the geographical hypothesis. According to this hypothesis, the vast divide between rich and emerging countries is due to geographical differences. Wealthy nations, in contrast to their poor counterparts, occupy temperate latitudes. Such

a geographical concentration of poverty and wealth superficially leads to a geographical hypothesis, which is the starting point of the theories and views of many social scientists and scholars. However, this theory does not precisely explain the problems of Ukraine because this country has a favourable geographical position, which, to the contrary, should contribute to the economic development of the country, but for some reason, it does not work.

The second widely-used theory, the cultural hypothesis, links welfare to culture. The cultural hypothesis, akin to the geographical hypothesis, has a clear line that can be traced back to the scholar Max Weber, who argued that the Protestant Reformation and Protestant ethics, as a consequence, played a significant role in stimulating the development of modern industrial society in Western Europe. The cultural hypothesis is no longer based solely on religion but reveals other beliefs, values, and ethics. But Ukrainians have the same religion as most European countries, and Ukrainians are one of the hardest-working peoples in the world who understand the idea of poverty, but this is not a factor to rely on.

Some authors attempt to break away from the Eurocentric model of the state-nation and the dominance of the Weberian perspective. Taking Charles Tilly's state genesis model as a starting point, researchers point to the existence of specific organisations in the world where so-called "hybrid governance" operates. According to Tilly's concept, states emerge as forms of organised violence in which four types of tasks are undertaken: conducting war (understood as the elimination or neutralisation of external enemies); state-building (understood as the elimination or neutralisation of internal enemies); protection (understood as the elimination or neutralisation of a state's clients and allies' enemies); and extraction (acquiring resources for carrying out the remaining tasks) (Tilly, 1975; 1997).

The last popular theory of why some nations are poor and others rich is the theory of ignorance. It is worth pausing here for more detail; this theory argues that global inequality exists because our rulers do not know how to make a developing country rich. This idea is supported by most economists, who argue their opinion by employing a famous phrase of Robbinson (1935, p. 16): "Economics is a science that studies human behaviour as a link between goals and limited means of alternative use".

The conclusion is that economics should focus on making the best use of scarce resources to meet social goals. Indeed, the most well-known theoretical result in economics, the so-named First Welfare Theorem, determines the conditions under which the allocation of resources in a market economy is socially desirable from an economic point of view. A market economy is an abstraction aiming to capture a situation where all

individuals and organisations can produce, buy, and sell goods or services. If these circumstances do not exist, there is a market crash. Such failures are the basis for the inequality theory because the more market failures go unnoticed, the poorer the country. The ignorance hypothesis argues that emerging countries are miserable because of numerous market failures and because economists and politicians do not know how to deal with them. Rich countries are rich because they have pursued better policies and successfully overcome failures.

Political institutions determine the results of the prosperity of society. According to their established rules, incentives in politics are thus determined. Political institutions determine how a government can be elected and which structural elements have the right to do something. They establish who has power in society and for what purposes this power can be used. If power is not limited and the division of power is narrow, then political institutions are autocratic, as evidenced by absolute monarchies that have existed throughout the world for a long time.

There is a synergistic process between political and economic institutions. Interactive economic institutions are created on the basis laid down by interactive political institutions that ensure a wide distribution of political power in society and limit its arbitrary exercise. Such political institutions also complicate the usurpation of power and the destruction of the foundations of interactive institutions. Those who control political power cannot easily use it to establish extractive economic institutions for their enrichment. Interactive economic institutions create a fairer distribution of resources by supporting the existence of interactive political institutions.

In almost 30 years of independence, Ukraine has not adopted a clear economic strategy nor created viable professional institutions, and has yet to create attractive business development and investment conditions. And the result? Since 1991, Ukraine's GDP has fallen by 28%, while Poland's GDP has grown by 15.1%, as has Moldova's, by 6.8%. During this time, Ukraine positions itself as a resource base on the world market, as about 25% of its labour works abroad, and exports account for 60% of raw materials (Ukrstat, 2021). In sum, three decades after its liberation from Moscow's influence, Poland's gross domestic product had reached USD 679 billion, whereas Ukraine's GDP is at a mere USD 199 billion, representing a more-than-threefold disparity (World Bank, 2021).

In the world ranking of country prosperity, formed by the analytical organisation Legatum Institute, Ukraine 2020 ranks 92nd out of 167 (see Legatum Prosperity Index, 2020, p. 16). The Legatum Prosperity Index (2020) is a series of studies aimed at assessing countries' contribution to the

prosperity of their peoples, reflecting both economic, social, and political well-being. According to research by the Legatum Institute, the strengths of Ukraine are education (38th place) and living conditions (69th place), whereas its weaknesses are social capital, interpersonal trust, and trust in institutions (147th place), and personal security (144th place) (Figure 1).



Figure 1. A Breakdown of the Performance of Ukrainian Prosperity, 2020 Source: based on Legatum Prosperity Index, 2020.

In 2020, Ukraine, Guyana, and El Salvador were ranked 91st, 92nd and 93rd respectively. Ukraine was overtaken by Namibia, South Africa, Mongolia, and the Philippines, and it is noted that, compared to 2019, Ukraine rose by four positions, and for four years (since 2016), it fell in the ranking by 11 places (Figure 2) (see: Legatum Prosperity Index, 2020, p. 16).

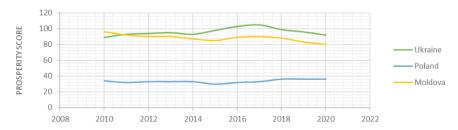


Figure 2. Prosperity Change by Ukraine, Poland, and Moldova, 2010–2020 Source: based on Legatum Prosperity Index, 2020.

At the present stage of the development of Ukrainian society, the progressive political forces of the country face the task of consolidating the nation to implement political, economic, and social reforms. This process is only possible with the revival and formation of the nation's spirituality, national consciousness, and self-consciousness. It is a question of stimulating the national revival, renewal in all its aspects, a consolidation of the Ukrainian nation, the formation of the people of Ukraine as a society, and the inclusion of the state in the general civilisation process. Resolving these issues will make it possible to overcome the alienation of people as members of different ethnic groups, to avoid interethnic clashes and conflicts, as national harmony can only be achieved with solid, concrete guarantees of national balance (Gonta, 2017).

Using the Cobb-Douglas function, the authors will analyse the impact of democracy on the development of the nation's prosperity and consider the possibilities of further economic development. Structuring elements at the national level from the standpoint of a systems approach makes it possible to identify effect-generating factors that, using appropriate economic and mathematical tools, show not only the existing relationship between factors (input variables, which, in relevant mathematical models, are called argument factors, predictors, exogenous, or independent) and the resulting indicators (endogenous, dependent or explanatory) but also the degree of such a relationship. With appropriate correlation-regression models, it is possible to identify priority measures to improve the system (in this sense, the system is the state/nation) (Voinycha, Popivniak, 2020).

Regression analysis begins with the formation of a database. Information on a nation's development (prosperity) indicator is provided by the Legatum Institute (Democracy Index, 2020). To analyse the data related to the development of democracy, the index of democracy, which forms the Economic Intelligence Unit, was chosen. The EUI Democracy Index provides an overview of the state of world democracy for 165 independent states and two territories. The Democracy Index is based on five categories: electoral process and pluralism; civil liberties; government; political participation; and political culture. Based on estimates of 60 indicators in these categories, each country then classifies itself as one of four types of regime: a full democracy; an imperfect democracy; a hybrid regime; or an authoritarian regime (Democracy Index, 2020). According to research by the Economic Intelligence Unit, Ukraine is characterised by the so-called "hybrid" democracy with no absolute rule of law, no independent judiciary, widespread corruption, and problems in the governance system.

To visually assess the level of prosperity of countries and the level of democracy, the authors have plotted the value of these indicators on a graph (Figure 3). Data analysis shows that even the naked eye can see the existence of such a connection. Lest we forget, leaders in the development of democracy are leaders in the world regarding living standards and vice versa.

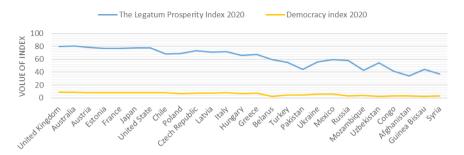


Figure 3. The Level of Prosperity and the Level of Democracy in the Studied Countries

Source: based on the Legatum Prosperity Index (2020) and Democracy Index (2020).

When analysing the impact of intra-system factors on improving a population's living standards, it is advisable to use modern mathematical methods of statistical data processing (Kuzmenko, 2017). This toolkit can provide computer support for solving a vital problem of any study; identifying and describing the relationships between those factors based on the partial results of statistical observation of the events or indicators being analysed. When constructing the Cobb-Douglas function, we consider the world's population according to the UN.

In its formalised form, the Cobb-Douglas function looks like this:

$$Y = f(K; L)$$
 [1]

This function determines the relationship between the initial factor (the country prosperity index) Y as the factor that reflects the level of democracy – the democracy index K, and the factor that reflects the population of country L, where the possibility and limitations of factor substitution are significant. Twenty-six countries were selected for the study and evaluated by the above organisations.

To sum up the results, the following conclusions can be made:

There is a strong relationship between the studied variables of the studied system. These relationships' structure and density are characterised

based on paired correlation coefficients. Thus, the linear function takes the form of:

$$Y_1 = 0.4559X_1 - 0.0158X_2 + 3.5026$$
 [2]

With $a_0 = e^a = e^{3.5026} = 33.2017$ and get the Cobb-Douglas function:

$$Y_{t} = 33.2017 \, K^{0.4559} L^{-0.0158}$$
 [3]

Table 1. Initial Data for the Formation of the Cobb-Douglas Function

Countries (t)	Prosperity Index 2020 (Yt)	Democracy Index 2020 (Kt)	The population of the countries in 2020 (Lt)	Ln(Yt)	Ln(Kt)	Ln(Lt)
United Kingdom	80.07	8.53	67886	4.382901	2.143589	11.12559
Australia	80.43	8.96	25449	4.387387	2.19277	10.14443
Austria	78.6	8.16	9006	4.364372	2.099244	9.105646
Estonia	76.89	7.84	1326	4.342376	2.059239	7.189922
France	76.55	7.99	65273	4.337944	2.078191	11.08633
Japan	77.27	8.13	126476	4.347306	2.095561	11.74781
United States	77.46	7.96	331002	4.349762	2.074429	12.70988
Chile	68.39	8.08	19116	4.225227	2.089392	9.858281
Poland	69.14	6.85	37846	4.236133	1.924249	10.54128
Czechia	73.12	7.67	10108	4.292102	2.037317	9.221082
Latvia	71.01	7.24	1886	4.262821	1.979621	7.542213
Italy	71.83	7.74	60471	4.274302	2.046402	11.00992
Hungary	66.13	6.56	9660	4.191623	1.880991	9.175749
Greece	67.32	7.39	10423	4.209457	2.000128	9.25177
Belarus	59.33	2.59	9449	4.083115	0.951658	9.153664
Turkey	54.94	4.48	84339	4.006242	1.499623	11.3426
Pakistan	44.25	4.17	220892	3.789855	1.427916	12.30543
Ukraine	55.73	5.81	43733	4.020519	1.759581	10.68586
Mexico	59.53	6.09	128932	4.08648	1.806648	11.76704
Russia	58.04	3.31	144386	4.061132	1.196948	11.88025
Mozambique	42.98	3.65	31255	3.760735	1.294727	10.34993
Uzbekistan	54.37	2.12	33469	3.995813	0.751416	10.41837
Congo	41.21	3.11	89561	3.718681	1.134623	11.40268
Afghanistan	34.35	2.85	38928	3.536602	1.047319	10.56947
Guinea Bissau	44.03	2.63	13132	3.784871	0.966984	9.482807
Syria	37.07	2.7	17500	3.612808	0.993252	9.769956

Source: Prosperity Index (2020); Democracy Index (2020); Population by Country (2020).

An analysis of the adequacy of the regression equation obtained based on these coefficients of determination (R^2), F-criterion, and the level of its significance p, as well as studies of regression model residues and graphical visualisation of the residual scattering diagram, give an observer reason to believe that the linear regression model adequately describes between variables. Thus, the constructed production function is characterised by reliable statistical characteristics.

An analysis of this dependence allows us to estimate the values of the input parameters at which the function of the Prosperity Index reaches a maximum. A study of the prosperity function has shown that for some values of elasticity, the maximum value of the prosperity function increases by several orders of magnitude, which is vital for the strategic management of a country's development. However, the prosperity index is more difficult to achieve in countries with large populations.

Function [2] shows that the parameter that characterises the quantitative impact of the Democracy Index on the dynamics of growth of the Prosperity Index and the parameter that characterises the quantitative impact of population on the dynamics of growth of the Prosperity Index are 0.4559 and -0.0158, respectively. It means that a 1% increase in the Democracy Index increases the Prosperity Index by about 45.6%, and an increase in the country's population can reduce it by 1.6%. Thus, there is a direct relationship between the indices of prosperity and democracy and a negative relationship between a country's population. However, it should be understood that the main direction of a country's economic growth policy is the state policy of forming not only qualitative but also quantitative human capital. In this context, it is crucial to implement the strategic priority of public policy to develop civil society in Ukraine. Under such conditions, the policy should be aimed at using the opportunities of civil society, in particular, to ensure non-conflict relations in ethnonational, cultural, and religious spheres, along with the intersectoral social partnership between government, business, and civil society institutions to create conditions for the direct involvement of stakeholders in management decisions. Social groups should be created that would contribute to ensuring social harmony, social peace, sustainable development, and stability in the state. Under such conditions, large countries have achieved economic prosperity (the USA, the UK, China, Japan, among others).

Ukraine has the opportunity to achieve economic growth, as the inclusive process and institutional changes have been launched, but many reasons hinder success. The first reason is the lack of completed reforms, as their current incompleteness significantly worsens the

general welfare of the state and produces significant obstacles to economic development. The main problem continues to be the incompleteness of reforms in the law enforcement system, health care, and the protection of property rights. The second reason is people's low level of economic literacy, their lack of understanding as regards entrepreneurial activity, and respect for private property. The third reason is the low efficiency in the disposal of state property. The fourth is the obsolescence of the regulatory framework and its over-regulation, which is accompanied by an increasing impact on the degradation of economic sectors (Sobolieva-Tereshchenko, Zhukova, 2020; Zelinska, Andrusiv, Simkiv, 2020). All of this increases the unattractiveness of the state to foreign investment in general. The fifth reason is the loss of foreign markets, along with the inability to use geopolitical opportunities to expand geography and improve the conditions for exporting Ukrainian products. The sixth reason is the urgent need for updated infrastructure (energy, production, logistics, etc.). The post-Soviet stock is exhausted, and there is no alternative to innovative economic growth in Ukraine, as any effort to modernise infrastructure can only achieve what Ukraine's international competitors did ten years ago. The seventh - and most significant is the outflow of talent. According to various data, Ukrainians abroad produce 2 to 4 times more GDP than Ukraine (Sheremeta, 2016).

The victory of the Revolution of Dignity in 2014 opened a window of opportunity for profound changes in Ukrainian society and an effective transition towards a fully democratic country. Among the former Soviet republics that have successfully undergone reforms and democratisation, there are countries that have become members of the EU and NATO, namely Lithuania, Latvia, and Estonia. Political observers and scholars agree that Ukraine, Moldova, and Georgia could follow these countries' paths.

The experience of reforming all aspects of public life in Lithuania, Latvia, and Estonia indicates that reforms in Ukraine should be based on the requirements set for candidate countries seeking NATO and EU membership. As we all know, NATO represents not just a military alliance but a union built on democratic values. Accession to the Alliance is preceded by a country's fulfilment of the Membership Action Plan (MAP).

The authors believe that at the current stage of implementing political, economic, and social reforms, Ukraine should base its efforts on fulfilling NATO's Membership Action Plan (MAP) as a candidate country for NATO membership. The MAP is a practical manifestation of the policy of open doors and involves reform in the following main areas:

1) Political and economic issues,

- 2) Defence/military matters,
- 3) Resource issues,
- 4) Security issues,
- 5) Legal issues.

The open military aggression by Russia against Ukraine has influenced the possibility of systematically implementing these reforms. Over the past year and a half, significant, positive changes have occurred in the military component, in that the Ukrainian army has successfully adopted NATO standards in the military sphere, including administrative, operational, and material-technical aspects. Ukrainian military personnel undergo training in NATO member countries, and acquire and effectively use modern military equipment.

Implementing the second-military component of the Annual National Program cannot disregard the requirements for other directions of the country's reform. In Ukrainian politics, there is a heated debate about the advisability of Ukraine acquiring fully-fledged NATO membership without fulfilling the Annual National Program. In this regard, the example of Finland and Sweden is cited. However, the authors believe that in this case, it is difficult to compare Ukraine with Finland and Sweden. Finland and Sweden are economically, politically, and democratically compatible with NATO member countries.

A more acceptable path for Ukraine in building a full democracy is the experience of countries such as Romania and Poland. Currently, these countries are members of both the EU and NATO, but they initially became NATO member countries first. Reforming political, economic, legal, and other issues and bringing them in line with NATO standards significantly facilitated their compliance with EU membership requirements.

Summarising the research findings, it is necessary to note that the democratisation of society significantly improves the well-being of the population. Ukraine has a clear plan for further development based on the requirements for reforms set by NATO and the EU. A series of reforms that Ukraine needs to undertake include the following conditions:

- Reform of the Constitutional Court,
- The continuation of judicial reform,
- Anti-corruption measures, including the appointment of the head of the Specialized Anti-Corruption Prosecutor's Office (SAP),
- Combating money laundering,
- The implementation of anti-oligarchic legislation,
- The harmonisation of audiovisual legislation with European standards.
- An amendment of legislation regarding national minorities.

Compliance with the so-called Copenhagen criteria will allow Ukraine to build a democratic, socially responsible society, ensure economic development, and achieve political stability.

Conclusions

The formation of an independent, democratic, and economically self-sufficient nation state is a prolonged process that is inherently linked to changes in all aspects of society and determines the common boundaries not only of institutional reform but also of the quality of state policy, its shaping, and implementation. Successful implementation of structural transformations is possible only with scientific support for the modernisation of public administration and the improvement of the mechanism of institutional support.

Using methods of economic-mathematical modelling of democratic processes and social phenomena, the interconnection between internal systemic factors, such as population size and the level of democracy, and their impact on the level of societal well-being and the prosperity of the state has been established. Based on the use of the Cobb-Douglas function, it has been proven that the level of democracy positively influences societal well-being and prosperity.

Reorganising political institutions, their interactivity, pluralism, and adequate centralisation to prevent chaos will help address some issues in Ukraine. This will then become a catalyst for the reform of economic and cultural institutions towards greater interactivity.

Today, the foundation of the state-building process, using foreign experience, will not only be the formation of a rational selection and adaptation of specific provisions of state construction from other countries to the contemporary needs and realities of Ukrainian society, but also the formation of situational factors along with the country's circumstances during wartime and in the post-war period, with a focus on existing problems or the ultimate goal; available resources (the balance between aspirations and capabilities), and subjective factors.

It should be unequivocally emphasised that no criteria of economic modernisation in defiance of cultural inertia (conservatism, nationalism, or resentment) protect the turnaround on the development path (see, e.g., Lipset, 1959; Huntington, 1991) especially in shorter time windows (Treisman, 2020). Poland has painfully experienced this in recent years. And if Poland, a country which has higher Prosperity and Democracy indexes (see Table 1), has proven to be susceptible to these treatments, Ukraine and its people should be very careful in this regard. Education

emerges as an antidote in this situation, playing a pivotal role in shaping an open, tolerant, and dynamic society, free from cultural constraints. Its fundamental components encompass the cultivation of cultural awareness, development of critical thinking skills, facilitation of intercultural dialogue, enhancement of social skills, and the promotion of universal values.

Ukraine's situation is, however, further complicated by one more fact; future ambitions of reconstruction, development or modernisation will develop with tendencies towards sustainable development and maybe even de-growth (see e.g. Foryś, Gorlach, 2023). Considerations in this regard could provide a testing ground for future research.

References

- Adzhemohlu, D. and Robinson, D. (2012) Why Nations Fail: The Origins of Power, Prosperity, and Poverty. New York: Crown Business.
- Apollo, M. and Krupska-Klimczak, M. (eds.) (2019) *Poland and Ukraine: Problems and prospects*. Kraków: Wydawnictwo Naukowe Uniwersytetu Pedagogicznego.
- Barańska, K. and Chervinska, J. (2014) "Kultura na Euromajdanie", *Zarządzanie w Kulturze*. No. 14, pp. 391–403.
- Bilozyorov, I., Vlasenko, V., Horova, J., Zavalnyi, A. and Zayats, N. et al. (2017) *Theory of the state and law: teaching manual* in Husareva, S.D. and Tikhomirova, O.D. (eds.) *Education of Ukraine NAVS*.
- Blockmans, S. (2015) "Crimea and the quest for energy and military hegemony in the Black Sea region: governance gap in a contested geostrategic zone", *Southeast European and Black Sea Studies*. Vol. 15(2), pp. 179–189.
- Brzechczyn, K. (2020) "Między zachodnim kolonializmem a wschodnim imperializmem. Dyskurs postkolonialny a trajektoria rozwojowa społeczeństw Europy Środkowo-Wschodniej w świetle nie-Marksowskiego materializmu historycznego", *Miscellanea Posttotalitariana Wratislaviensia*. No. 8, pp. 165–189.
- Buśko, M., Balawejder, M., Kovalyshyn, O. and Apollo, M. (2023) "Do geographic location and historical conditions affect the quality and availability of open cadastral data? From early cadastral maps till now", *Reports on Geodesy and Geoinformatics*. Vol. 16(1). DOI: 10.2478/rgg-2023-0008.
- De Haas, R. and Pivovarsky, A. (2022) The Reconstruction and Development of Ukraine's Financial Sector after the War in Gorodnichenko, Y., Sologoub, I. and Weder, B. (eds.) Rebuilding Ukraine: Principles and Policies. London: CEPR Press.

- Democracy Index (2020) Available at: https://www.eiu.com/topic/democracyindex (Access 9.10.2023).
- Drechsler, W. (2013) "Three paradigms of governance and administration: Chinese, Western and Islamic", Society and Economy. In Central and Eastern Europe. Journal of the Corvinus University of Budapest. Vol. 35(3), pp. 319–342.
- Foryś, G. and Gorlach, K. (2023) Rozwój jako ruch społeczny. Wykłady o ruchach społecznych i rozwoju zrównoważonym. Warszawa: Wydawnictwo Naukowe Scholar.
- Gonta, S. (2017) "Mental determinants of the national economy of Ukraine", *Scientific Bulletin*. Vol. 3, pp. 152–158.
- Gorodnichenko, Y., Sologoub, I. and Weder, B. (eds.) (2022). Rebuilding Ukraine: Principles and Policies. London: CEPR Press.
- Huntington, S.P. (1993). The third wave: Democratization in the late twentieth century. Oklahoma: University of Oklahoma Press.
- Krajnik, O. (2022) "Democratization of governance as the basis of local economic development in Ukraine", Journal of Geography, Politics and Society. Vol. 12(2), pp. 27–35.
- Kuzmenko, Y. (2019) The origins of democratic transition of Ukraine in Apollo, M. and Krupska-Klimczak, M. (eds.) Poland and Ukraine: Problems and prospects. Kraków: Wydawnictwo Naukowe Uniwersytetu Pedagogicznego, pp. 186–209.
- Lesyk O.V. (2018) Implementation of foreign experience as one of the actual ways of transformational transformations of the domestic public administration system. Available at: http://www.oridu.odessa.ua/9/buk/new_14_09_18. pdf (Access 9.10.2023).
- Lipset, S.M. (1959) "Some social requisites of democracy: Economic development and political legitimacy", *American Political Science Review*. Vol. 53(1), pp. 69–105.
- Marples, D.R. (2020) *Understanding Ukraine and Belarus. A Memoir*. Bristol: E-International.
- Obolenskyi, O.Y., Melnyk, A.F., Vasina, A.Y. and Hordiienko, L.Y. (2003) Derzhavne upravlinnia [Public administration]. Kyiv: Znannia-Pres.
- Palamarchuk, M.O. (2014) Vyklyky modernizatsii v Ukraini: politychni aspekty. Kyiv: NISD.
- Piątek, D., Szarzec, K. and Pilc, M. (2014) "Wolność gospodarcza i demokracja a wzrost gospodarczy krajów transformujących się", *Ekonomista*. No. 3, pp. 367–395.
- Piddubna, H.K. (2017) "Application of controllability of linear differential equations with delay in the economy", *Prychornomors'ki ekonomichni studio*. No. 131, pp. 184–187.

- Pivovarsky, A. (2016) Stuck in Transition: Successes and Failures of Economic Reform in Ukraine in Hale, H.E. and Orttung, R.W. (eds.) Beyond the Euromaidan: Comparative Perspectives on Advancing Reform in Ukraine. Redwood City: Stanford University Press. DOI: http://dx.doi.org/10.11126/stanford/9780804798457.003.0012.
- Potracki, M. and Kurek, D. (2021) "Kapitał społeczny ukraińskiego społeczeństwa po rewolucji godności", *Wschód Europy*. Vol. 7(1), pp. 63–75. DOI: http://dx.doi.org/10.17951/we.2021.7.1.63-75.
- Schroeder, G. (2016) Economic transformation in the post-Soviet republics: An overview in Kamiński, B. (ed.) Economic Transition in Russia and the New States of Eurasia. New York: Sharpe, pp. 11–41.
- Sheremeta, P. (2016) *Ukraini potriben sotsialnyi reinzhynirynh*. Available at: https://lb.ua/economics/2016/10/03/346538_pavlo_sheremeta ukraini potriben.html (Access 9.10.2023).
- Snyder, T. (2003) *The Reconstruction of Nations: Poland, Ukraine, Lithuania, Belarus, 1569–1999.* New Haven: Yale University Press. DOI: http://dx.doi.org/10.1086/ahr/109.1.280.
- Snyder, T. (2015) "Integration and Disintegration: Europe, Ukraine, and the World", *Slavic Review*. Vol. 74(4), pp. 695–707. DOI: http://dx.doi.org/10.5612/slavicreview.74.4.695.
- Snyder, T. (2022) On Tyranny and On Ukraine: Lessons from Russia's War on Ukraine. Penguin Audio. Available at: https://www.amazon.com/Tyranny-Ukraine-Lessons-Russias-War/dp/B09YVNBH5P (Access 9.10.2023). DOI: http://dx.doi.org/10.33140/psi.01.01.09.
- Sobolieva-Tereshchenko, O. and Zhukova, Yu. (2020) "Stress testing the banking systems: Approach of Ukraine", *Journal of Eastern European and Central Asian Research*. Vol. 7(2), pp. 205–218. DOI: http://dx.doi.org/10.15549/jeecar.v7i2.358.
- Stach, Ł. (2019) Towards West, East or (in)stability? Poland and Ukraine: 1991–2016 in Apollo, M. and Krupska-Klimczak, M. (eds.) Poland and Ukraine: Problems and prospects. Kraków: Wydawnictwo Naukowe Uniwersytetu Pedagogicznego, pp. 210–226.
- The Legatum Prosperity Index (2020) *A tool for transformation*. Available at: https://docs.prosperity.com/2916/0568/0539/The_Legatum_Prosperity_Index_2020.pdf (Access 9.10.2023).
- Tilly, Ch. (1997) Roads from Past to Future. Oxford: Rowman and Little-field.
- Tilly, Ch. (ed.) (1975) *The Formation of National States in Western Europe*. Princeton: Princeton University Press. DOI: http://dx.doi.org/10.1017/s0008423900045054.

- Treisman, D. (2020) "Economic development and democracy: predispositions and triggers", *Annual Review of Political Science*. Vol. 23(1), pp. 241–257. DOI: http://dx.doi.org/10.1146/annurev-polisci-050718-043546.
- Ukrstat (2021) *Derzhavna sluzhba statystyky Ukrainy*. Available at: http://www.ukrstat.gov.ua/ (Access 9.10.2023).
- Voinycha, L. and Popivniak, R. (2020) "Mentality management: mentality formation and strategy development", *Journal of Eastern European and Central Asian Research*. Vol. 7(2), pp. 230–237. DOI: http://dx.doi.org/10.15549/jeecar.v7i2.407.
- Whitmore, S. (2004) State Building in Ukraine: The Ukrainian Parliament, 1990–2003. London: Routledge.
- Wolczuk, K. (2019) "State building and European integration in Ukraine", Eurasian Geography and Economics. Vol. 60(6), pp. 736–754. DOI: http://dx.doi.org/10.1080/15387216.2019.1655463.
- World Bank (2021) National accounts data, and OECD National Accounts data files: GDP (current US\$) Poland, Ukraine. Available at: https://data.worldbank.org/indicator/NY.GDP.MKTP. CD?end=2021&locations=PL-UA&start=1991/(Access 9.10.2023).
- Yatsiv, I. and Kolodiichuk, V. (2017) "Formation of social responsibility of large agricultural land users in Ukraine", *Economic Annals-XXI*. Vol. 168(11–12), pp. 48–52. DOI: http://dx.doi.org/10.21003/ea.v168-10.
- Zelinska, H., Andrusiv U. and Simkiv, L. (2020) "Knowledge economy: trends in the world and analysis of Ukraine", *Journal of Eastern European and Central Asian Research*. Vol. 7(1), pp. 104–116. DOI: http://dx.doi.org/10.15549/jeecar.v7i1.325.