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THE INFLUENCE OF THE SHADOW ECONOMY ON THE SOCIO-ECONOMIC DEVELOPMENT OF UKRAINE

Abstract: The paper identifies the key factors constraining the development of the economy of Ukraine in the time horizon of 2020 to 2030, which include as follows: the share of the shadow economy, the scale of corruption, the pension burden on the state budget, the servicing of the public debt, and the energy intensity of Ukraine's GDP. These factors have a negative impact on other, no less important aspects of the country's socio-economic development, among which it is necessary to mention, first of all, the energy dependence of the country, the deterioration of the external market conditions, imbalance in the structure of the national economy, low GDP per capita, the imperfection of the financial and credit system, the social dimension etc. The results obtained on the basis of these indicators, include a set of indicators, which are respectively strong and weak factors for the further development of the social component of the economy of Ukraine.

In this regard, a specific sequence of actions of public authorities aimed at minimizing the deterrent factors of Ukraine's socio-economic development is defined in the given paper. The calculations of the integral indicators necessary to establish the quantitative change (decrease of the integral estimation) of the indicators are made and the ranks of socio-economic development factors are determined taking into account the adjustment of the scenarios in the medium-term (to 2020) and long-term (up to 2030) time horizon, which is, of course, a positive trend.

Key words: shadow economy, socio-economic development, socio-economic factors, corruption, energy dependence, conjuncture of foreign markets, financial and credit system.

The main world economic and socio-political indicators point to the absence of systematic changes and reforms in the existing economic system of Ukraine. According to the wide range of economic indicators, Ukraine occupies one of the last places in the region in its development

progress, and this fact reflects the current state of its socio-economic environment. The informal sector of the economy, widely known as the shadow economy, with its specific socio-economic characteristics and pervasive nature of actions, is considered to be an integral part of the government economic system. Shadow economic activity penetrates all spheres of the national economy and leads to long term irreplaceable losses. However, the influence of the shadow economy on the social development of the country is much worse.

Evaluation reviews. In the social sphere of the national economy, the essence and the content of the government social policy is mainly reflected; the function of social protection and ensuring human rights is realized. That is why effective and efficient functioning of the social sphere is one of the main tasks at the present stage of ensuring sustainable social and economic development of Ukraine. Due to the application of the Delphi method, five main factors were identified that are considered to be the most deterrent to the development of the Ukrainian economy on the time horizon of 2020 to 2030 (See Table 1).

Table 1

Top-5 factors that hinder socio-economic development of the economy of Ukraine in the time horizon of 2020 to 2030 [1]

Years	2013	2014	2015	2016	2017	2018	2019	2020	2030
Factors	50	50	54,8	47	40	34	30	25	15
Share of the shadow economy (% of GDP)	50	50	52	47	40	34	30	25	15
The scale of corruption (% of GDP)	13,2	13,9	14,0	13,1	11,0	9,2	7,4	6,6	4,0
The pension burden on the budget (% of GDP)	4,2	3,9	4,0	7,5	8,0	7,4	6,0	4,8	3,1
The servicing of the public debt (% of GDP)	7,6	4,19	8,69	7,4	6,2	4,7	3,1	2,9	3,0
Energy intensity of Ukraine's GDP (kg of oil equivalent per USD)	0,36	0,34	0,338	0,328	0,318	0,309	0,299	0,28	0,18

As we can see from the Table 1, the first factor of this group is the share of the shadow sector in the national economy, which according to experts' estimates during the last three years is stably kept at the level of 50-55 % and slightly decreased to 47 % in 2016. This situation became possible as a result of the extremely unsuccessful tax-reform of 2011-2012, which practically paralyzed small and medium business across the whole country. As a result, cash receipts to the budget decreased substantially, because almost half of the circulating assets were withdrawn to the informal sector of the economy.

The second factor, closely related to the previous one, is the scale of corruption in Ukraine. According to experts' conclusions, the full scale of corruption in 2015 reached a record level of 14 % of GDP, which is about \$ 30 billion a year. As a result of the beginning of active actions against corruption, this indicator began to decrease slowly to 13.1 % of GDP in 2016. Political and

economic instability, a low creditworthiness rating and an extremely high level of country corruption led to an outflow of \$12 billion in investments only for 2014. According to experts' estimates, for the same reasons, the shortfall in foreign investment in Ukraine by 2020 will reach approximately \$150 billion.

The third important factor in reducing the state budget expenditures is a significant increase in the deficit of the Pension Fund. Over the past year, it has grown from 4 % (or 50 billion UAH) to 7 % (or 148 billion UAH) of GDP. This deficit is covered by the state budget. Nowadays more than 14 million pensioners live in Ukraine. The ratio for pensioners relative to the working age population has hardly changed over the last few decades, and there are 90 pensioners per 100 employees in the country, who pay pension contributions on their benefits. The expected ratio of pensioners and employees in 2025 is 1:1. Till 2050 there will be 125 pensioners per 100 employees. In this regard, there is a need for radical changes in the existing pension legislation of Ukraine in order to improve the solidarity system (the first pillar of the pension system) and the implementation of a funded system of compulsory state pension insurance (the second pillar of the pension system) with a gradual primary transition to the second pillar of the pension system [2].

The fourth factor in reducing the country's budget expenditure is the servicing of public debt. The largest payments to the IMF and the owners of Government bonds of Ukraine, were noted in 2015 for loans that were received in 2008-2010 [3], which led to the need for debt restructuring with external creditors. This extremely painful and politically undesirable procedure for Ukraine led to a decrease in the credibility of the country as a reliable borrower with a subsequent fall in creditworthiness rating of Ukraine to the level of the restricted default.

Trying to ease the debt pressure on the state budget and the balance of payments, as well as to create favorable conditions for further economic growth, Ukraine found itself in a critically instable position, when there is a necessity to conclude agreements with creditors on deferment for 4 years and reduce debt payments in exchange for the country's debt obligations on its assets (payment of the part of GDP with its growth above 3 %). Consequently, Ukraine, as a debtor state [4], actually bought a part of its debt at a discount, and the creditor received the right on material or financial resources of the country, whose value is significantly greater than debt at the current market value.

Finally, experts consider energy intensity of gross domestic product to be the fifth critical factor restraining development of the Ukrainian economy. This indicator characterizes the level of expenditure of fuel and energy resources per unit of produced gross domestic product. Ukraine meets its needs for natural energy resources at the expense of its own production by about 45 %. At the same time, energy intensity of GDP in Ukraine is 3-5 times higher than in economically developed countries. Therefore, energy saving for Ukraine is not only the decisive, but also the

cheapest source of meeting its own needs in energy carriers, since the specific capital costs for energy saving are much lower than the costs of increasing production and production of energy carriers [5].

All these factors in one way or another lead to a negative impact on the rest, no less important factors of the country's socio-economic development, among which it is necessary to single out the following ones.

Energy dependence of the country. The main reason for Ukraine's energy dependence was the historically established factual monopoly of the Russian Federation supplying natural gas, coal and fuel elements for nuclear power. The dependence of the Ukrainian economy on energy supply from Russia has led to an aggravation of the energy crisis in recent years. This was a logical result of the unreformed and corrupt nature of the national economy. Thus, only for 2012-2014 the negative impact of unprofitableness of the activity of NAK "Naftogaz" Ukrainy on the size of the fiscal deficit increased from 0.5 % of GDP in 2012 to more than 8 % of GDP in 2014, that is approximately 16 times. In 2014, the amount of capitalization of NAK "Naftogaz" Ukrainy at the expense of the state budget reached 104 billion UAH, that is more than 25 % of annual budget revenues [6]. Ukraine's energy dependence is also characterized by the 73rd position among 122 countries of the world in terms of fuel exports (3.4 % of exports in 2014) and 17th position out of 130 countries in terms of fuel imports (16.5 % of imports in 2014) . In addition, the national economy is quite energy-intensive, since the energy intensity of the economy is one of the highest in the world.

Deterioration of the conjuncture of foreign markets. At the present stage, the level of dynamism of foreign markets is quite substantial. The slowdown in demand for imports from developed economies and the gradual decline in the competitiveness of developing economies have affected the decline in the volume of world trade growth in 2013-2014, which is reflected in the indicators of the economic dimension of Ukraine's development. Despite the fact that in 2014 the EU became Ukraine's main trading partner, the volume of exports and imports between Ukraine and the EU declined to 86.6 % of 2013 (\$ 44,297.4 million) (in 2015 - \$ 25697 million, which is 26,49 % less than in 2014 (34,958.8 million US dollars). In 2015, there was a decrease in exports for almost all groups. The worsening of the external markets of the CIS occurred for a number of reasons: firstly, due to the cyclical economic downturn in the region; secondly, due to a fall in demand for Ukrainian exports due to the policy of import substitution of CIS countries; thirdly, because of the introduction of protectionism measures and creation of severe economic pressure from some of these countries [7].

Growth of financial and economic dependence. The total amount of state and publicly guaranteed debt of Ukraine as of December 31, 2015 reached \$ 65.488 billion, which is 6.19 %, or

\$4.324 billion lower than the beginning of the year. The total amount of state and state guaranteed debt in hryvnia equivalent at that date amounted to UAH 1.572 trillion, which is by 42.78 %, or by UAH 470.932 billion, more than the indicator at the beginning of the year [8].

Imbalance in the structure of the national economy. During the years of independence, Ukraine has formed a vulnerable economic structure with significant sectoral imbalances, a reorientation to sectors with a low level of technological processing and a significant dependence of demand on foreign markets. The economy of Ukraine is increasingly characterized by the resource and energy intensity of production, the excessive extensive development of the extractive industry, the backwardness of the agro-industrial sector, the low level of innovative production, the backlog of infrastructure development, the isolation of the financial and real sectors of the economy, and the inefficient functioning of the economic sectors that support public development. Over the past 25 years, Ukraine's economy has become characterized by such trends in its structure's imbalance, as: a reduction in the share of agriculture and forestry from 25.5 % to 10.5 %; The decline in the processing industry to 13.8 % in 2013, which in 1990 accounted for almost a third of the total GDP; the rapid growth of the share of the financial sector to 5 % and the trade sector in 18.2 % (more than 3.5 times) [9].

Low GDP per capita. In 1990 prices, GDP per capita in the pre-crisis 2011-2012 was just under 80 % of GDP from the level of GDP achieved in 1990. If in previous 1990-2008 years these indicators gradually grew from the level of 50 % in the first years of independence to 83.3 % in 2007-2008, then in the next two years this indicator has significantly decreased [9]. Thus, the limit of the starting level of GDP since the beginning of the formation of Ukraine as an independent state has not been achieved. In 2013, according to GDP per capita, Ukraine ranked 139th position out of 226 countries in the World Bank rating. The level of GDP per capita in Ukraine averaged \$4029.7. In 2014, this indicator was at the level \$3082.5. Therefore, the country moved to the 150th position out of 218 countries. Ukraine fell into the group of countries with gross income, which is below the average, taking a position above such countries as Zimbabwe and Honduras, but below Bolivia and the Republic of the Congo. It should be mentioned that the lowest category includes countries with a gross per capita income of less than \$1035.0 [10].

Imperfection of the financial and credit system. The main reasons for the critical state of Ukraine's financial sector are the institutional weakness and inadequate level of implementation of economic reforms for a considerable period of time. This situation in the country is characterized by a number of indicators. Thus, according to the Fragile States Index, Ukraine ranked 83rd position in 2015 out of 178 countries [11]. According to the indicator "Poverty and Economic Decline", Ukraine reached 114th position. According to the indicator "State Legitimacy", it occupied 145th place, and according to the "Security Apparatus" indicator, the country moved to the 149th place.

All these indicators have one thing in common: they directly determine the low level of the functioning of the financial and credit system of the economy of Ukraine. The outflow of deposits from banks following the results of 2014 became the highest after the crisis in 2009. During 2014-2015 the volume of deposits in national currency decreased by 8.0 % (or to 388.7 billion UAH). The volume of deposits in foreign currency for this period decreased by 42.9 % or to \$19.4 billion. Taking into account the fact that the main source of financing is the loans of the National Bank of Ukraine on the security of government debt obligations, this channel, gradually increasing the amount of domestic debt, is an additional component of the “debt loop” for Ukraine [12].

Informative reviews. Social dimension. To form the trend of the social component in Ukraine, the methodology for determining the State Fiscal State Index [11] was taken as the basis, which has been calculated since 2005 by the Fund for Peace at the United Nations. During its compilation, the indicators of all the countries, covered by the research, were analyzed by using the Conflict Assessment System Tool. The analysis was carried out on the basis of 12 criteria, also known as the social indicators of the country’s “insolvency”.

Based on the above information, the “Economic, political and social instability” indicator was chosen as the main trend that reflects the social component of the country. To justify the choice of a trend that can be an indicator of the social sphere, we proceeded from the fact that the social sphere is the sphere of development of processes in society that relate not only to rational forms of human activity, but also the material and non-material results of human activity, the conditions for education, upbringing and scientific activity, i.e. the development of a full-fledged personality, social activity and the activities of social institutions, the reproduction of the population and the state of the health care system.

To perform the indicator function and the content of the listed conditions, this trend should include the following indicators:

indicators reflecting the performance of major social institutions: the level of trust in the government, army, political parties, police, local authorities and judges, as well as the dysfunctionality of law enforcement structures;

indicators reflecting the state of the political situation: a critical assessment of the political development trends and practice in the country, the willingness of the citizens to take part in various protest actions;

indicators reflecting the impact of the economic situation on the development of the government social sphere: the level of dissatisfaction with the needs and interests of the population, the scale of corruption, social inequality, the level of shadowing of the national economy;

indicators of human capital, the quality of human capital;

indicators of the effectiveness of the state apparatus, the availability of social infrastructure,

the disorganization of the state administrative apparatus, the reform of the social and administrative sphere of the government, the loss of sovereignty;

other indicators: the level of social communications, the level of prevalence of “social” diseases, the demographic decline, the development of basic elements of civil society, the transition to European standards of quality of life, the intensification of terrorist activity.

At the next stage of our research, a set of indicators was identified from the above-mentioned groups of indicators, which are considered to be strong and weak factors (indicators) for the further development of the social component of the national economy in Ukraine (See Table 2).

Table 2

The quantitative values of socio-economic development indicators on the Miller scale (1-7) by 2020 + (until 2030) [data, grouped on the basis of: 1-5, 7, 9, 11, 12]

Strong factors (indicators)		Quantitative value	Weak factors (indicators)		Quantitative value
1	The quality of the human capital	4/(5)	1	The scale of corruption	5/(6)
2	Level of social communications	3,5/(5)	2	The prevalence of “social” diseases	5/(6)
3	Availability of social infrastructure	3,5/ (5)	3	Demographic decline	6/(7)
			4	Social inequality	5/(6)
			5	Wage level	4/(5)
			6	The unemployment rate	5/(5)
			7	Population’s level of consumption	4/(6)
			8	Cost of living	4/(6)
			9	Housing security	5/(5)

Based on the data in Table 2, we can assume that only 3 of the 12 factors are the strengths of the socio-economic system of the country, while the remaining 9 factors are its weaknesses, which are constantly progressing in modern market conditions.

News. Therefore, all this necessitates the formation of a certain sequence of actions that must be carried out by state authorities and aimed at minimizing the influence of the Top-5 factors that hinder socio-economic development of the economy of Ukraine in the time horizon of 2017 to 2020 (See Table 3). Taking into account the considered factors of the shadow economy, their influence on social and economic development, and the proposed measures to minimize the impact of the deterrent factors of Ukraine’s social and economic development, it is necessary to determine the degree of development, according to the adjustment of the possible scenarios of Ukraine’s socio-economic development in the medium-term (up to 2020) and long-term (up to 2030) time horizon. For data processing, SWOT analysis method was used on the basis of assessments of the manifestation of factors, namely the calculation of the normalized values of the estimates using the formula:

$$F_i = \frac{f_i - S_{min}}{S_{max} - S_{min}}, i \in S \cup W \cup O \cup T$$

where F_i is the normalized value of the expert estimate f_i , which is given in the Miller scale with the range S_{min} , S_{max} .

Table 3

Specific sequence of actions of public authorities aimed at minimizing the deterrent factors of socio-economic development of Ukraine [2-5, 8, 9, 13]

#	The deterrent factor	Quantitative value in the 2015/2016 year	Actions of the government (reforms) aimed at minimizing of the deterrent factors	The expected time of reforms	The expected value of the deterrent fact in 2020
1	Share of the shadow economy (% of GDP)	52 % / 47 %	1.1. Reforming the tax system. Liberalization of the tax system should be carried out simultaneously with increasing the responsibility of individuals and legal entities for violation of tax legislation. 1.2. Transition to the civilized land market. Such a transition, for the current conditions of Ukraine's development can last from 5 to 15 years. It requires a systemic solution of a number of new problems.	2017-2020 years	25 %
2	The scale of corruption (% of GDP)	14 % / 13,1 %	2.1. Large-scale liberalization of the national economy, the abolition of the majority of coordinating bodies in the economy and society, a reduction in the number of employees of these links from 30 % to 40 %. 2.2. The usage of open electronic forms of reporting on incomes and expenditures of civil servants, close members of their families, and, finally, all legal and physical persons, subjects of entrepreneurial activity in the nearest perspective. 2.3. Increased responsibility for avoiding public reporting on income received and expenditures incurred for persons connected with the civil service, as well as for close members of their families.	2017-2019 years 2017-2019 years 2018-2030 years	4 %
3	The pension burden on the budget (% of GDP)	4% / 4,1%	3.1. The implementation, in parallel with the joint pension system, of a funded pension system and the creation of financial institutions (possibly with the participation of foreign participants) to provide and insure the accumulated pension deposits of the population.	2017-2020 years	4,8 %
4	The servicing of the public debt (% of GDP)	8,69% / 7,4%	4.1. Trying to ease the debt pressure on the state budget it is advisable for the state authorities to reach an agreement with creditors to amend the terms of the debt on the terms of reducing payments and exchanging the country's debt obligations for its assets. 4.2. Agreement with international lenders of restructuring of public debt, as well as ensuring a significant reduction in state-guaranteed debts.	2017 years 2018-2030 years	2,9 %
5	Energy intensity of Ukraine's GDP (kg of oil equivalent per USD)	0,338 / 0,328	3.1. Introduction of the system of European energy standards. 3.2. Improving of the existing system of state expertise. 3.3. Improvement of commercial metering of energy consumption. 3.4. Implementation of the large-scale effective and environmental industry projects. 3.5. Reduction of energy consumption of energy carriers (natural gas, oil, electricity, etc.). 3.6. The implementation of the alternative clean energy sources and the realization of the state support for this program (promotion, benefits system and incentives).	2017-2020 years	0,18

The performed calculations allow to determine the quantitative change (decrease of the integral estimation) of the socio-economic development indicators taking into account the

adjustment of the scenarios for the medium-term (up to 2020) and long-term (up to 2030) time horizon (See Table 4).

Table 4

**Quantitative change in socio-economic development indicators, taking into account
the adjustment of scenarios in the medium-term (up to 2020) and long-term (up to 2030) time
horizon [calculated on the basis of data from 2-5, 7, 9, 10, 12]**

#	Factors	Normative value of the factor		Compensation for opportunities				Growing threats				Integral estimation			
				2020		2030		2020		2030		2020		2030	
		2020	2030	Rank	Quantitative value	Rank	Quantitative value	Rank	Quantitative value	Rank	Quantitative value	Rank	Quantitative value	Rank	Quantitative value
Economic factors															
1.	Energy dependence of the country	0,58	0,33	7	0,49	5	0,28	4	0,44	4	0,25	5	0,46	6	0,26
2.	The deterioration of the external market conditions	0,42	0,42	8	0,35	10	0,33	2	0,12	7	0,09	10	0,26	14	0,24
3.	Imbalance in the structure of the national economy	0,67	0,33	6	0,44	6	0,19	8	0,42	5	0,14	9	0,43	9	0,17
4.	Low GDP per capita	0,75	0,50	4	0,75	2	0,50	1	0,63	2	0,42	1	0,69	1	0,46
5.	The imperfection of the financial and credit system	0,83	0,50	3	0,56	4	0,33	2	0,56	3	0,33	2	0,56	4	0,33
Social settings															
6.	The level of corruption	0,83	0,33	5	0,65	3	0,26	5	0,65	1	0,26	4	0,65	3	0,26
7.	The prevalence of “social” diseases	0,67	0,33	6	0,41	8	0,20	7	0,31	6	0,16	7	0,36	11	0,18
8.	Demographic decline	0,83	0,58	2	0,28	11	0,19		0,42	5	0,29	3	0,35	12	0,25
9.	Social inequality	0,83	0,67	1	0,37	9	0,30	3	0,42	5	0,33	2	0,39	10	0,32
10.	Wage level	0,83	0,50	3	0,83	1	0,50	1	0,42	5	0,25	5	0,66	2	0,40
11.	The unemployment rate	0,67	0,33	6	0,37	9	0,19	8	0,44	4	0,22	6	0,41	8	0,20
12.	Population’s level of consumption	0,83	0,50	3	0,42	7	0,25	6	0,42	5	0,25	5	0,42	7	0,25
13.	Cost of living	0,83	0,33	5	0,49	5	0,19	8	0,56	3	0,22	6	0,52	5	0,21
14.	Housing security	0,67	0,33	6	0,22	12	0,11	9	0,31	6	0,15	8	0,27	13	0,13

Further shadowing of the national economy, its rooting in transformational societies is the cause of the emergence of macroeconomic imbalances and structural deformations of the country's socio-economic development. Therefore, the shadow economy can rightly be called one of the most important threats to the national interests of the country and national security in its economic sphere. Thus, there is an objective need to develop a theoretical and methodological concept for the practical implementation of ways and methods of the economy de-shadowing in the transformation period.

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