

PECULIARITIES OF SHADOW ECONOMY IN CRISIS CONDITIONS IN UKRAINE

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Abstract: The article contains an analysis of the shadow economy at the time of quarantine restrictions and of Russia's full-scale invasion of Ukraine using statistical, analytical and functional methods of scientific research. The aim of the study is to generalize the theoretical and methodological aspects of the shadow economy, to study the current state of shadow economy escalation in the conditions of quarantine restrictions and Russia's full-scale invasion of Ukraine, and to systematize possible ways of legalizing the economy. Such a socio-economic process as the shadow economy, represents a number of shifts in the state budget structure, in particular regarding the indicator of tax revenues. In the conditions of crisis, the shadow economy can become both a driving force for balancing the economy and a threat, not only economic, but also a social one. In this article, this issue will be considered in more detail. Therefore, the dynamics of changes in the shadow economy has been considered both according to certain methods of assessing its level to the official GDP volume, and also by various economic sectors during the quarantine restrictions according to the data of the Ministry of the Economy of Ukraine. A diagram of the shadow economy factors was also developed and possible effective changes were proposed to overcome them, from which it is clear that the shadow economy needs not only a perfect assessment and specific data for its analysis, but also improvement of the management system, quality of public services and the readiness of people to come out of the "shadow".

Keywords: salary, shadow economy, shadow employment, shadowing, taxes

JEL Classification: O17, E26, H26

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Introduction

Ensuring sustainable economic development is typically one of the key objectives of state regulation. The concept of the shadow economy is being modified worldwide, including in Ukraine, which is objective and requires an understanding of the peculiarities of its mechanism. The shadow economy is a complex process that is undergoing significant expansion and affects all sectors of the economic segment in Ukraine. The aim of this article is to analyse the trends of shadow economy development using four calculation methods, characterize the peculiarities of the shadow economy in the crisis situations in Ukraine, and consolidate the factors of the shadow economy and their changes in the post-war period to improve the economic situation in Ukraine.

This article presents statistical calculations within the years 2015-2021 using four calculation methods for the shadow economy approved by the Ministry of the Economy of Ukraine. These methods include the electric method, monetary method, population expenditures – retail turnover and services method, and the method of loss-making enterprises. According to these calculations, we can understand that the shadow economy in 2021 increased according to the electric and monetary methods, while it decreased according to the other two methods. However, the integral indicator of the shadow economy suggests that the shadow economy in 2020 and 2021 remained stable at 31%, possibly due to the pandemic situation and quarantine restrictions (Ministerstvo ekonomiky Ukrainy, 2022).

Another important indicator is the level of illegal trade in tobacco products, which increased during the war in 2022 (20.1%), compared to 2020 (5.7%) and 2021 (14.7%). The level of alcohol production also increased in 2022 (36%) compared to 2021 (34%), while the level of fuel showed a tendency to decrease from 27% in 2020 to 11% in 2022 (CASE – Ukraina, 2023).

Consequently, this process attracts the attention and interest of numerous economists and tax authorities. This happens because the shadow economy develops rapidly and inflicts devastating blows on the real economy of the country, particularly during the war. An analysis of foreign and domestic sources regarding the definition of the term “shadow economy” confirms that there is no single concept, and each scholar has their own explanation of this phenomenon.

Literature review

Definition of the term “shadow economy”

The definition of the term shadow economy is discussed in the works of many foreign and Ukrainian scholars. It is known that in economy literature, the term shadow economy has different concepts depending on the characteristics provided by specific researchers. Furthermore, there is no single definition for this concept, and it is important to systematize the following opinions of the authors.

For example, Dallago (1991) considers the shadow economy to consist of illegal, hidden, and unofficial economic activities. The main types of the shadow economy include (Dallago, 1991):

1. Smuggling, illegal gambling, drug trafficking, prostitution, fraud, theft, misappropriation of funds obtained by means of loans.
2. Hidden rental income, concealed employment, work without licenses, illegal residence of foreigners, employment of retirees and individuals receiving unemployment benefits.
3. Concealment of transactions, under-the-table payments, self-employment.
4. Bartering of goods and services.
5. Gardening, horticulture, sale of homemade or artisanal products.

K. Hart (2006), who formulated the concept of the informal economy, initially encompassing only the “informal sector”, recognized the evolution of his concept, considering the fact that the informal economy is now seen as a universal feature of industrialized countries and includes everything from subsistence household activities to criminalization of the economy. One of the first to provide a definition of the shadow economy was Feige (1979). According to his interpretation, the shadow economy refers to all economic activities that, for any reason, are not taken into account and do not enter the gross national product.

Most foreign scientists prefer the notion that the shadow economy is an invisible economy that is not included in statistical reporting, and therefore not in the GDP. This assertion is supported by the views of the American economist Gutmann (1977), who emphasizes the impossibility of disregarding unrecorded activities in developed countries. In other words, the actual economic activity is larger than what is officially registered. For Gutmann (1977) and Feige (1979), the shadow economy (which they referred to as the “underground economy”) is the unaccounted portion of the GDP that should be added to economic activity.

For Tanzi (1983), the shadow economy, also referred to as the underground economy, refers to income that is not reported to tax authorities. It is precisely these discrepancies in the formulations that Tanzi himself pointed out when explaining the differences in the estimated indicators of the shadow economy.

According to Frans (1992), the shadow economy is activity that is not included in the GDP due to a lack of a methodological basis for accounting for the illegal production of goods and services. Its components include hidden activities of self-employed and employed individuals working in addition to their official employment.

Medina and Schneider (2018) use the following definition: the shadow economy includes all economic activities which are hidden from official authorities for monetary, regulatory, and institutional reasons. Monetary reasons include avoiding paying taxes and all social security contributions; regulatory reasons include avoiding governmental bureaucracy or the burden of the regulatory framework, while institutional reasons include corruption law, the quality of political institutions and weak rule of law.

According to Baklouti and Boujelbene (2020) the shadow economy, also known as the informal, illegal, black, or underground economy, consists of economic activities that fall outside the formal or legal economy.

The shadow economy is the visible and measurable tendency to bypass the state, whereas informality is the framework allowing us to explain and understand why people are willing to remain in the shadow, avoid the state, not to respect state authority and in general bypass the state (Polese, 2021).

One of the first Ukrainian scholars to study the shadow economy was Turchynov (1995). He proposed a definition of the shadow economy as an economic activity of economic entities (individuals and legal entities) that is not recorded, controlled, or taxed by official government bodies and/or aims to generate income by violating existing legislation. This definition quite accurately reflects this economic category. Mandybura (1998) examines the shadow economy from the perspective of a narrow and broad spectrum, namely:

- a) in a narrow sense, the shadow economy is limited to those types of economic activity and corresponding relations that are either illegal or socially dangerous (which, in practice, do not always coincide);
- b) in a broad sense, the shadow economy includes:
 - the household sector (the sector of subsistence production);
 - the informal sector (unregulated activities – small-scale production, services, trade, the “grey economy”);
 - the “dark-grey” sector (concealed sector of legitimate economic activities),
 - the “black” sector (criminal, “illegitimate”);
 - diversified components of the black economy.

These distinctions provide a more comprehensive understanding of the various dimensions and components of the shadow economy.

Lamanova (2000) believes that the shadow economy is a set of relations between individuals, groups of individuals, individuals and institutional units, and individual institutional units regarding the production, distribution, redistribution, exchange, and consumption of material goods and services, the results of which are not accounted for by official statistics for various reasons, and the amount of which is not included in macroeconomic indicators.

Zasanskyi (2003) postulates that the shadow economy functions as a sphere of activity related to the relationships between people in the processes of production, distribution, exchange, and consumption, based on social opposition to the main macro-management mechanisms and their functioning outside of managerial control and accounting, with the aim of evading income taxation. This definition of the phenomenon has a one-sided nature as it only reveals it from the perspective of managerial positions.

On the one hand, Mazur (2006) defines the shadow economy as a complex socio-economic phenomenon represented by a combination of uncontrolled and unregulated economic relations, both illegal and legal but immoral, between economic agents regarding obtaining additional profit through income concealment and tax evasion. On the other hand, Mochernyi (2002) believes that the shadow economy is a sphere of economic activity aimed at generating income from prohibited activities

or evading social (governmental) control and tax payment in the implementation of legal economic activities.

Naumov, Hryshova and Davydiuk (2016) state that the shadow economy emerges when the actions of government and regulatory structures, individual people, or their groups contradict objective economic laws.

Another researcher defines the shadow economy as a complex socio-economic phenomenon characterized by a combination of uncontrolled and unregulated economic relations among economic actors, involving both illegal and legal but immoral activities, aimed at obtaining excess profits by concealing income and evading tax payments (Varnaliy, 2006).

The shadow economy has three components: informal, hidden and underground (criminal) economies. The informal economy is characterized by the unregulated production of goods and provision of services; the hidden economy is the legal production and selling of unregistered goods and services; the underground (criminal) economy – prohibited activities (corruption, drug trafficking, etc.) (Buha et al., 2023).

The analysis of all those interpretations confirms the fact that the shadow economy is a complex economic category as no definition is repeated and none can fully and accurately reveal its essence.

Problems of shadow economy

In today's reality, it is confirmed that the shadow economy leads to a reduction in the volume of the state budget, a decrease in financial security, and creates inconsistency in the overall economy of the country as well as the adoption of inadequate governance decisions. Undoubtedly, the aforementioned problems are extremely significant and require solutions that cannot be achieved without a proper understanding of the scale and dynamics of the shadow economy.

Significant discrepancies in assessing the level of the shadow economy are due to different principles of defining the concept of the shadow economy and assessment methodologies. Various origins of the term shadow economy as mentioned earlier in the article, including the shadow economy (Mandybura, 1998; Mochernyi, 2002), the underground economy (Tanzi, 1983), the hidden economy (Gutmann, 1977), the illegal economy (Portes & Boroz, 1988) and the informal economy (Hart, 2006), offer diverse interpretations and existing estimates.

Consequently, the assessments of the level of the shadow economy are not always the same as they may be calculated based on different interpreting concepts of the economy (legal economy, officially defined indicators of economic activity, or the entire economy of the country). Currently in Ukraine, there is no universally accepted unified method (Verkhovna Rada Ukrainy, 2009) for measuring the shadow economy.

Nevertheless, researchers continue to refine and expand the basis for assessing the shadow economy. In addition, the concealment of economic activities from state control and taxation is a consequence of an imperfect system functioning in the country, which in turn encourages businesses to engage in shadow employment. Hence,

one of the fundamental tasks of reforms in Ukraine is formalization of the economy, which is also an important issue in the study of this topic. Experts consider it one of the top priorities for economic growth in Ukraine. However, the potential for such growth is assessed by them within a wide range, which is due to different estimations of the level of the shadow economy.

It is worth noting that a level of shadow economy ranging from 10-12% of the main GDP is considered normal, while 20% is deemed critical for the overall economy. A catastrophic level is considered to be in the range of 40-50%, as conflicts between legal and shadow businesses are observed in almost all spheres of societal life. In such cases, it is not the state that controls the economy, but rather the shadow structures (Pryvarnykova, 2010).

Traditional shadow economy measurements allow some socio-economic phenomena correlated with low state efficiency to be quantified. Nonetheless, the causal relationship is not always clear nor whether non-compliance stems from the perceived state inefficiency and the idea that abiding by the rules leads to nothing good or it can be avoided, or the opposite, that state inefficiency happens because of citizens' behaviours and attitude (Polese et al., 2022).

Statistical calculations of the shadow economy in Ukraine

In order to make an integral assessment of the level of the shadow economy in Ukraine, several methods are used, the averaged value of the results of which represents a characteristic of the state and trends of shadow economy development. The most acceptable methods for determining the volumes of the shadow economy under the conditions of available statistical data are the following: population expenditure – retail turnover and services, financial, monetary, and electricity methods. The method of loss-making enterprises is applied to estimate the minimum and maximum coefficients within which the level of the shadow economy is situated (Verkhovna Rada Ukrainy, 2009).

Calculating the level of the shadow economy using the population expenditures – retail turnover and services method involves identifying the excess consumer monetary expenditures by the population on purchasing goods over the total sales volume of goods to the population by all economic entities in the legal sector of the economy. Calculating the level of the shadow economy using the financial method involves determining trends in the change of proportions between the value of goods, works, and services used in the production process, and the gross income of enterprises (economic associations), institutions, and organizations in the country as a whole or in another type of economic activity. Calculating the level of the shadow economy using the monetary method involves determining trends in the change of the ratio of cash to bank deposits during the analysed period compared to a base period, which is taken as the year 1991 (Verkhovna Rada Ukrainy, 2009).

Calculating the level of the shadow economy using the electricity method involves comparing the growth of domestic electricity consumption with the growth of GDP. It assumes that the growth of domestic electricity consumption should correspond to the growth of real GDP. If there is an excess of the growth of domestic

electricity consumption over the growth of GDP, it is considered that electricity is being used for production in the shadow economy. Calculating the level of the shadow economy using the method of loss-making enterprises involves determining the boundaries of the minimum and maximum coefficients of the shadow economy as a percentage of GDP, within which the level of the shadow economy exists (Verkhovna Rada Ukrainy, 2009).

These methodological recommendations are developed to assess the level of the shadow economy in the national economy as a whole and by specific types of economic activities through indirect calculations of the value of goods (works, services) at the macroeconomic level, intentionally overstated or understated by economic entities in statistical reporting (Verkhovna Rada Ukrainy, 2009).

The statistical data provided by the Ministry of the Economy represent an integrated indicator calculated by using four methods that cover various sectors. Two of these methods are classic approaches: the electricity method and the monetary method. The other two methods were developed in Ukraine, taking into account the national specificities of the shadow economy. These methods involve analysing the losses of enterprises, and retail trade turnover and services.

The shadow economy in Ukraine accounts for approximately one-third of the GDP. According to data from the Ministry of the Economy, its size varied between 28% and 33% from 2015 to 2021 (Figure 1). However, these figures cannot be considered statistical as they are approximate estimates that serve as a benchmark for tracking the dynamics of the hidden economy. We also observe stability in the level of the shadow economy; it remained unchanged at 31% of the official gross domestic product in 2020 and 2021. This stability may indicate that economic entities have adapted to operating under constraints, particularly during the COVID-19 pandemic, and developed new channels for shadow activities.

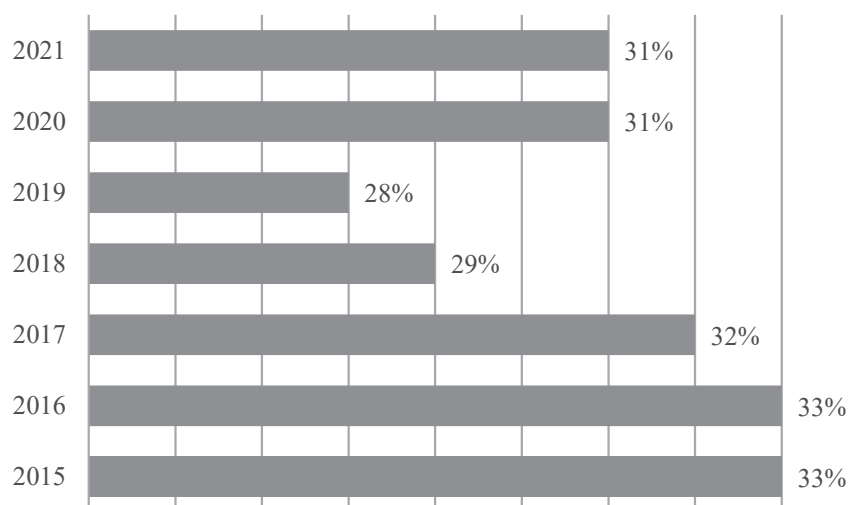


Figure 1. Integral indicator of level of shadow economy

Source: (Ministerstvo ekonomiky Ukrainy, 2022)

Nevertheless, based on these data, two out of the four methods showed an increase in the shadow level. Specifically, the electricity and monetary methods increased by 2 p.p. to 28% and 33% of the official GDP respectively. On the other hand, the population expenditure – retail turnover and services method decreased by 2 percentage points to 23% of the official GDP, and the method of loss-making enterprises dropped by 10 percent to 22% of the official GDP (Figures 2 and 3). Such dynamics are influenced by specific factors, namely by the gradual intensification of business activity amid the adaptation of enterprises to ongoing restrictions, resulting in improved financial performance during the reporting period. Additionally, there may have been constraints on the traditional channels of shadow activity, which was one of the atypical manifestations of the pandemic in 2020-2021.

The shadow economy encompasses a wide range of activities, including criminal activities such as prostitution, drug and arms trafficking, the resale of stolen goods, underground casinos, as well as economic activities that go unrecorded and therefore remain untaxed, such as light industry, small-scale production in households, unreported harvests, and others (Doshchatov, 2022).

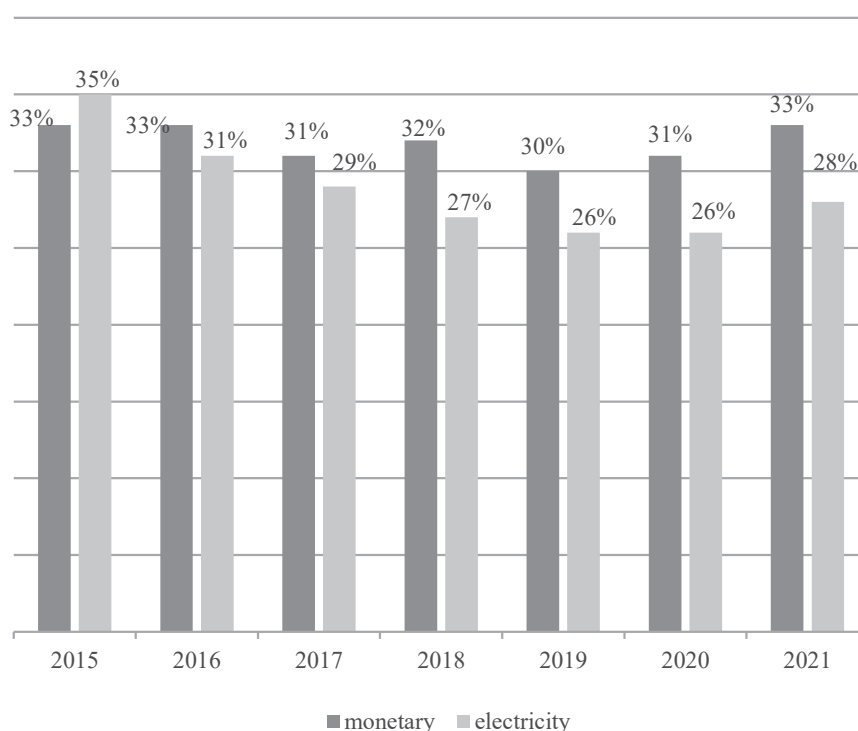


Figure 2. Level of shadow economy according to two methods (monetary and electricity) in relation to official volume of GDP (%)

Source: (Ministerstvo ekonomiky Ukrainy, 2022)

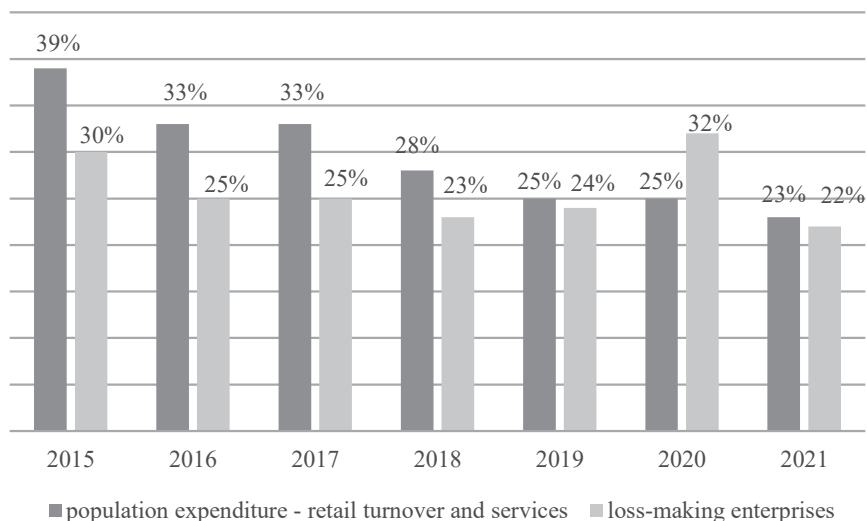


Figure 3. Level of shadow economy according to two methods (population expenditure – retail turnover and services, loss-making enterprises) in relation to official volume of GDP

Source: (Ministerstwo ekonomiky Ukrainy, 2022)

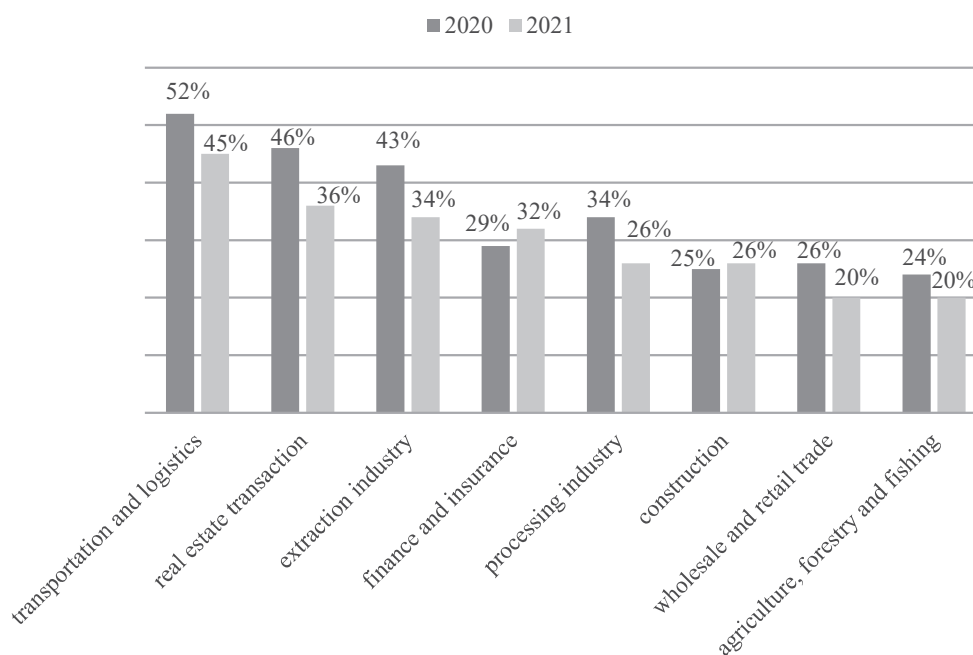


Figure 4. Level of shadow economy by types of economic activity in 2020-2021

Source: (Ministerstwo ekonomiky Ukrainy, 2022)

In Figure 4, we observe the level of the shadow economy by the types of economic activities, where the most significant reduction in the share of the shadow segment occurred in real estate transactions, decreasing from 46% to 36%, in the extraction industry from 43% to 34%, and in the processing industry – from 34% to 26%. The level of the shadow economy also decreased in such sectors as transportation and logistics, wholesale and retail trade, agriculture, forestry, and fishing. One of the reasons for these dynamics could be the increase in the domestic market demand and favourable conditions in external markets. Nonetheless, there were two sectors where the level of the shadow economy increased: finance and insurance (from 29% to 32%) and construction (from 25% to 26%), primarily owing to rising prices of the necessary raw materials for construction works.

The shadow economy in wartime

Globalization and its impact on the economic segment lead to an increase in the overall level of the shadow economy worldwide. Importantly, this level is not dependent on the level of economic development of a country. Some scholars argue that the shadow economy exists not only within individual countries but also in the context of global players such as states and organizations, which serve as carriers of shadow processes worldwide (Pichuhina & Chorna, 2015).

World history points out the following classic causes of the formation of the shadow economy (Morytsan et al., 2014):

- a complex labour market situation that contributes to the formation of small and medium-sized businesses, which become centres for the development and operation of shadow economic relations;
- rapid migration processes from rural and depressed regions to cities, resulting in the formation of shadow economic relations;
- the high level of state regulatory intervention in the economy, particularly high taxation and corruption;
- intense competition in the market, which compels producers to reduce the cost of resources through various means, including illegal ones;
- excessive institutionalization and regulation of labour relations, leading to their transition into a more informal and flexible form.

These aforementioned reasons have been applicable to Ukraine in the recent years of its independence, and in conjunction with crisis situations, have contributed to the intensification of economic shadowing.

Ukrainian President Zelensky sincerely believes in the fight against not only the aggressor country but also the shadow economy in the present time and during the reconstruction of Ukraine in a new way, without involvement of the shadow sector of the economy (Ofis Prezidenta Ukrainy, 2022). He believes that currently, in some of regions, any economic activity, whether official or unofficial, is simply a matter of survival. Nonetheless, when it comes to a normal, stable, and strong society, as well as defence of the country, we must understand that there are those who serve

and those who support by means of their work those who serve. Therefore, this involves official employment, tax payments, a maximum expansion of economic opportunities on a legal basis, as well as a complete modernization of state institutions.

Hence, it is crucial for both political leaders and the society as a whole to understand and be prepared for the absence of the shadow in Ukraine. The existence of the shadow economy directly depends on people's desire to reduce tax payments and purchase goods at lower prices. This issue remains at the forefront and requires responsible changes and successful management decisions, not only during wartime, but also in the post-war period. The current situation has transformed and mobilized Ukrainians, creating prospects for the society to support the President's position regarding the shadow economy in Ukraine.

In the situation of the war, the advantages of official employment in terms of preserving at least partial wages from employers and receiving support from the state are evident. Nevertheless, this applies exclusively to the formal sector of employment as workers in the informal sector have faced failures since employers could quickly and without explanation terminate their employment, which is quite logical since their employment was not documented or guaranteed from the beginning (Derzhavnyi tsentr zainiatosti, 2022a).

On the other hand, to some extent the shadow economy also "saves" the economy in the present time because even wages that are not subject to taxation are better than complete unemployment. Consequently, taxes are still collected by the state through excise duties on fuel, tobacco, or food products (Derzhavna podatkova sluzhba, 2023). Additionally, the state and the Armed Forces act as significant employers at the moment as many families rely on the wages of military personnel. Therefore, they should receive fair compensation for their work, regardless of where they serve.

In 2022, the state received 60.7 billion UAH from domestically produced excisable goods, two-thirds of which came from tobacco products. According to the law on the state budget, the state plans to collect 64.35 billion UAH in excise tax from domestically produced excisable goods in 2023. Almost all of this increase is expected to come from tobacco products. The amount of revenue would be much higher if not for significant tax evasion efforts (Ekonomichna pravda, 2023b).

According to Kantar Ukraine, the level of illegal tobacco products reached 19.9% in 2022, compared to 16.9% in 2021 and 6.9% in 2020. Compared to 2021, the share of counterfeit products (6.6%) and products intended for duty-free zones or export but sold illegally in Ukraine (11.7%) rose. However, a decrease in the share of counterfeit products in November 2022 led to a reduction in the overall level of illegal production by the end of the year. Regarding the volume of the shadow cigarette market in Ukraine in money terms, it reached 19.14 billion UAH in 2022. It is known that 63% of illegal products are sold in stores alongside legal products (Ekonomichna pravda, 2023a).

Similar data are provided by the centre for economic research CASE-Ukraine, which estimated the shadow share of tobacco products at 20.1% in 2022, 14.7% in 2021, and 5.7% in 2020, indicating a significant rise in the shadow sector. According to WHO, from 2015 to 2019, the volume of illegal alcohol in Ukraine accounted for an average of 36% of the market. Meanwhile, CASE-Ukraine's research calculated

the level of shadow alcohol consumption, which stood at 34% in 2021 and 36% in 2022. As for all types of automotive fuels, the shadow share declined to 22% in 2021 and 11% in 2022, with 27% in 2020. The actual consumption of which is adjusted according to the change in real GDP, which grew by 3.4% in 2021 and decreased by 30% in 2022 (CASE-Ukraine, 2023).

The high level of the shadow economy, which significantly undermines the effectiveness of management systems, requires specific and gradual changes to minimize the shadow economy in Ukraine. Nevertheless, as mentioned above, in the conditions of active military operations in the eastern regions of the country, the shadow economy to some extent plays a traditional role as a buffer that mitigates the impact of crisis phenomena on people's incomes and restrains the growth of unemployment.

According to the State Employment Service, as of early April 2022, the number of officially registered unemployed reached 277,000 people (Derzhavnyi tsentr zainiatosti, 2022b). The increase in unemployment occurred as a consequence of a deep decline in economic activity and the influx of unemployed migrants from the front-line territories, who are in need of employment.

Internal migrants create additional pressure on the labour market since the employment structure in the eastern regions has significantly shifted towards the industrial sector compared to the western and central regions where they migrate to (Analitychnyi tsentr Cedoss, 2022). This exacerbates the existing structural and qualification disparities between the labour demand and supply, even taking into account the impact of business relocations. The increment in the unemployment rate somewhat hampers the effectiveness of restraining factors, including the presence of forced migrants who did not actively seek employment, mobilization, and the weak financial resilience of households, which compelled household members to actively search for work, even if it is less skilled and lower-paying.

According to the estimates of the National Bank of Ukraine, at the beginning of the war, the economy contracted by 50%, which means a loss of half of the production. However, the recovery process began thereafter, and the decline in GDP was 45% in March and 40% in April. The ability to export is critical for Ukraine. Before the war, Ukraine was exporting up to 13 million tons per month, but now it is around 2 million tons. There might be a possibility of expanding this to 5-6-7 million tons in the future, but even that would still be only half of the pre-war volume, significantly impacting the economy and the possibilities for production recovery (CASE-Ukraine, 2022).

The economic losses resulting from the military aggression against Ukraine amount to \$130 billion, and potential GDP losses range from 1.5 to 1.7 trillion UAH. Based on tax coefficient calculations, this translates to at least 525 billion UAH in uncollected tax revenues, or potentially up to 600 billion UAH.

At the end of 2022, tax revenues covered less than 50% of the consolidated budget needs (compared to 85% in peacetime). A reduction in the expenditures is possible through the optimization of state agencies, the largest agency in terms of public order being the State Tax Service. This optimization can be achieved through the implementation of technologies and digital solutions (CASE-Ukraine, 2023).

Methods and results of authors' own observation

To achieve the aim of the article, a combination of general scientific and specialized methods of scientific research was used, which enabled unity of the research. A study of the theoretical and practical aspects of the formation of the shadow economy component in crisis conditions in Ukraine was conducted using the following methods:

1. analysis of literature, logical generalization, synthesis, induction, and deduction when clarifying the conceptual framework;
2. dialectical and systemic-structural methods in analysing the understanding of the economic nature of shadow economy evaluation and its problematic aspects;
3. comparative and statistical analysis to specify the diversity of evaluating the level of shadow economy formation in Ukraine;
4. graphical method for visualizing the level of the shadow economy in Ukraine based on different indicators and criteria during the period from 2015 to 2021. This includes the integral indicator of the shadow economy level, the level of the shadow economy according to the four most commonly used methods in Ukraine – electricity, monetary, loss-making enterprise and population expenditures – retail turnover and services in relation to the official GDP volume, as well as indicators of the shadow economy level by types of economic activity (transportation and logistics, real estate transactions, extraction industry, finance and insurance, processing industry, construction, wholesale and retail trade, agriculture, forestry and fishing) in 2020-2021.

Table 1. Factors and their changes in post-war period in Ukraine

Factors of shadow economy	Changes
Corrupt activity	<ul style="list-style-type: none"> – raise level of property rights protection – strengthen control and inspections – apply labor relationship certification methodology between employees and employers (failure to formalize may result in penalties)
Tax burden	<ul style="list-style-type: none"> – reduce burden on wage fund (in regions affected by the conflict) – maintain tax rules and rates unchanged for certain period of time – require use of transaction registers after end of war
Rapid growth of number of refugees	<ul style="list-style-type: none"> – encourage workforce to return from abroad – promote employment and create conditions for veterans and war-affected individuals; – implement subsidies and skill enhancement programmes with government participation
Weak efficiency of management system	<ul style="list-style-type: none"> – implement institutional reform (fundamental change) – improve quality of governance – renew tax authorities – enhance quality of public services
Regulatory pressure and monopolization	<ul style="list-style-type: none"> – reform regulatory and monopoly sectors

Source: Author's own compilation (T. Demkovich)

In general, the impact of the shadow economy on the economic environment and society is rather negative than positive. By analysing the issues of the shadow economy, its causes, and existence in crisis conditions, a scheme of factors of the shadow economy that currently exist in Ukraine was developed, which included their potential changes for de-shadowing of the economy in the post-war period (Table 1).

Given the scale of the invasion and the area directly affected by military actions, there are minefields, destruction, and the impossibility of conducting economic activities near the front lines. There is also an outflow of consumers of goods who are currently located either in western Ukraine or outside its borders. Thus, the construction, supply, installation, and commissioning of new equipment for the destroyed enterprises are essential for the renewal and dynamic growth of the economy. Consequently, the return of part of the Ukrainian population, particularly the employed population, as well as the recovery and invitation of foreign investors to participate, will ensure the abovementioned outcomes.

Conclusions

Employment during a full-scale war has been significantly impacted, with the main problems being mass job losses, the destruction of enterprises, deprivation of social needs, and a continuous increase in refugees. The extensive loss of jobs, internal and external migration of the working population during the full-scale war, has exacerbated the situation in the labour market. In Ukraine, the most in-demand sectors are infrastructure restoration, the construction of residential complexes, provision of essential goods, and guarantees for official employment and decent working conditions. Regarding the shadow economy sector and innovations during the state of war in Ukraine, it is important to reduce tax burdens for employers, thereby motivating organizations to retain existing jobs and potentially create new ones.

In conclusion, it is important to establish social justice, to consider the attitude of the working population, to structure the economy, and to develop human capital. Preferential treatment should primarily be given to those who cooperate with the state, thereby incentivizing employers to engage in official employment, that is, to promote social dialogue and fulfil social obligations. It would be advisable to provide subsidies and increased qualifications for vulnerable individuals (war participants, refugees, orphans, people with disabilities, etc.) with long-term guaranteed assistance and support from the government.

Certain institutional changes necessitate the creation of a state body responsible for prioritizing the interests of employees and reducing the shadow sector of activity for employers. It is also important to concentrate resources for economic and technological integration, eliminate external financial dependence, and promote industrial and scientific sectors. De-offshorization, transparent accounting practices, and the automated distribution of tax information should serve as driving forces for these changes.

The conducted research enables us to understand that the shadow economy in crisis conditions in Ukraine is a complex dualistic phenomenon with both positive and negative consequences for the national economy and the population as a whole.

The existence of a shadow economy poses risks to national and social security, but it is important during times of war to prepare the society for changes and the adoption of new legislative solutions.

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CECHY SZAREJ STREFY GOSPODARKI W WARUNKACH KRYZYSU W UKRAINIE

Streszczenie: Artykuł zawiera analizę szarej strefy gospodarki z wykorzystaniem statystycznych, analitycznych i funkcjonalnych metod badań naukowych w okresie stanu epidemiologicznego oraz pełnej inwazji Rosji na Ukrainę. Celem badania jest uogólnienie aspektów teoretyczno-metodologicznych szarej strefy gospodarki, zbadanie współczesnego stanu skalowania szarej strefy w warunkach ograniczeń kwarantannowych oraz pełnoskalowego wtargnięcia Rosji do Ukrainy i systematyzacja możliwych sposobów legalizacji gospodarki. Szara strefa ekonomiczna to zjawisko społeczno-gospodarcze, które przedstawia sobą szereg przesunięć w strukturze budżetu państwa, szczególnie w odniesieniu do wskaźnika dochodów podatkowych. W warunkach kryzysowych określone elementy szarej strefy mogą stać się zarówno siłą zrównoważenia poziomu szarej gospodarki, jak i zagrożeniem nie tylko ekonomicznym, ale również społecznym. Dlatego przeanalizowano dynamikę zmian w szarej strefie gospodarki zarówno według określonych metod oszacowania jej poziomu w stosunku do oficjalnego PKB, jak i w różnych gałęziach gospodarki w okresie ograniczeń kwarantannowych, na podstawie danych Ministerstwa Gospodarki Ukrainy. Opracowano również statystykę czynników szarej strefy i zaproponowano możliwe skuteczne zmiany w celu ich przezwyciężenia. Z istoty niniejszego badania wynika, że szara strefa gospodarcza potrzebuje nie tylko doskonałej oceny oraz szczegółowych danych do jej analizy, ale także uporządkowania systemu zarządzania jakością usług publicznych i gotowości ludzi do wyjścia z „cienia”.

Słowa kluczowe: place, podatki, praca „na czarno”, szara strefa gospodarki

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