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The Impact of Corruption on the Economic Security of the State

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Abstract: The level of national economic security is influenced by many factors. But over the past year and a half, Ukraine has faced new challenges and threats of an unprecedented blow to its economic security from the armed aggression of the Russian Federation. In addition to the above-mentioned threats to Ukraine's economic security, "old" internal problems, one of which is corruption, have had a significant negative impact. Summarizing domestic and foreign scientific theories and empirical studies, the article analyzes the main elements of corruption's impact on economic security and identifies the direct and indirect impact of corruption on economic growth. It is argued that corruption has increased the challenges to the country's economic security due to: a decrease in total investment and a slowdown in economic growth, a reduction in spending on education and health care, a deterioration of infrastructure and taxation, and a decrease in foreign direct investment. The author concludes that it is necessary to systematically develop and implement measures to prevent and combat economic corruption. At the same time, achieving economic security should be an attribute and integral part of the national anti-corruption policy.

Keywords: corruption; economic security; budget; economic growth; anti-corruption policy.

JEL Classification: D73; F52.

Introduction

The current scale of global corruption is staggering. The World Bank Institute's estimate of more than \$1 trillion is only a rough idea of how much bribery takes place around the world. The World Economic Forum estimates that corruption costs more than \$2.6 trillion a year, or about 5 percent of global gross domestic product. At the same time, according to conservative estimates, since national security motives are a reliable bulwark for concealing corrupt activities, corruption in the defense sector costs the world \$20 billion a year (Transparency International Ukraine 2021). Globally, corruption is considered a major problem for countries and their development, although it has always been inherent in almost all societies. The presence of corruption in state institutions, regardless of the status and level of development of a country, undermines the legitimacy of the government, threatens the

fundamental values and sovereignty of society, and causes distrust in other countries, and cooperation in such a situation is impossible.

In particular, as stated in the United Nations Convention against Corruption (United Nations Office on Drugs and Crime 2004), it is in developing countries that the consequences of corruption are most devastating, as it harms the most vulnerable, limits significant financial resources for development, undermines the ability of governments to provide basic services, increases inequality and injustice, and jeopardizes foreign aid and investment. Corruption is a key driver of economic inefficiency and a major obstacle to poverty reduction and development. From the first years of Ukraine's independence to the present day, domestic and foreign experts and scholars have consistently noted the significant negative impact of corruption on the Ukrainian state. They have consistently emphasized corruption in public procurement, the energy sector, and the management of land and other natural resources. Corruption in the judiciary and law enforcement is particularly dangerous.

Transparency International's research shows that in 2022, Ukraine ranked 116th out of 180 countries in the Corruption Perceptions Index (CPI), receiving 33 points out of 100 (Transparency International Ukraine 2022). Compared to 2021, the CPI increased by 1 point, regaining its 2020 value. Such a stagnation in the Corruption Perceptions Index can only indicate a period of stagnation in the process of overcoming this negative phenomenon.

Unfortunately, according to the results of the study, our country is still at the bottom of the graph, belonging to countries with a rather high level of corruption. In general, over the past 11 years, corruption in Ukraine has partially decreased, as the Corruption Perceptions Index increased by 7 points in 2022 compared to 2012, from 26 to 33 points. However, this increase is rather insignificant: an average of 0.7 points per year. There have also been two drops in the Corruption Perceptions Index: in 2013, 2019, and 2021.

Today, corruption has become so widespread that both Ukrainian citizens and the international community see it as a major threat to independence and national security. The report of the U.S. Helsinki Commission (Council for Security and Cooperation in Europe) states that "corruption prevents Ukraine from becoming a fully-fledged, prosperous democracy and hinders its ability to fight Russian aggression" (Voice of America 2017). Citizens' trust in state institutions has been undermined, as it is well known that officials at all levels are unable to protect the national interests, rights, and freedoms of citizens, as they are focused on personal enrichment.

Nevertheless, several studies conducted abroad on the economic consequences of corruption show that these consequences are significant and not only limit the growth of countries but also increase it. In particular, in the 1960s, world-renowned economists N. Leff and S. Huntington noted that corruption can be considered a useful substitute for the rule of law where the rule of law is underdeveloped. As a result, "the benefits of corrupt activity, that is, the value created by the additional productive transactions it enables, may outweigh the costs." This is most likely to happen when legal business opportunities are severely limited.

It is worth noting that corruption has significant economic consequences, both hindering and promoting growth. The relative magnitude of these two effects depends on the country's enforcement of property protection laws. When such protection is weak, corruption at the state level can significantly contribute to the expansion of economic activity. In this regard, the task was set to deepen scientific research in the field of assessing the direction and intensity of the impact of corruption on economic growth and economic security of the country. The purpose of this paper is to study the mechanisms of corruption's impact on various aspects of the country's economic development and to determine the impact on key elements of economic security.

1. Materials

The study is based on the general philosophical and general scientific level of theoretical and empirical knowledge. To achieve this goal and solve the tasks set, the article uses a set of general methods and special methods that meet the objectives, namely: theoretical - generalization; abstraction - the study of the essence and concept of corruption and its impact on economic security, induction, deduction; comparison and systematization - to determine the diversity of corruption phenomena and their impact on the economic development of Ukraine; observation, analysis, synthesis, cause, and effect - to determine the social aspects of corruption development in Ukraine.

To assess the impact of corruption on Ukraine's economic security, the author uses analysis, synthesis, transition from the abstract to the concrete, deduction, and modeling. Using generalization, analysis, grouping, modeling, synthesis, and comparison, it is proved that corruption is a threat to the country's economic security. Modeling, analysis, induction, grouping, comparison, and observation are used to develop solutions to existing problems in the industry. The impact of corruption on national economic security is shown by the methods of analysis, synthesis, generalization, and cause-and-effect relationship.

The spread of corruption in Ukraine and its destructive impact on the country's economic security have long been the focus of attention of domestic scholars. In particular, it is possible to note the fundamental research of O. Busol (2015), V.M. Geets (2017), M. Skrypnychenko *et al.* (2018), N. Yurkiv (2018), L. Parfentii (2022). The works of O.I. Baranovsky (2006), V. Trepak (2020), V. Mazyarchuk, and I. Fedko (2016) reflect on the development of financial systems affected by corruption. At the same time, there is a lack of domestic research on the multidimensional impact of corruption on national economic security, as well as limited empirical studies on quantifying the impact of corruption on the Ukrainian economy.

In foreign studies, the problem of assessing the impact of corruption on economic growth and components of economic security is considered more broadly, taking into account various aspects of economic and financial activity. Convincing empirical evidence of the economic and social cost of corruption is provided by R. Lemarchan (2019), R. Hanlon (2022), Y. Margalit (2019), and many others. Therefore, it is necessary to deepen the generalization of theoretical and empirical studies on the impact of corruption on the economic development of countries, which will help to identify danger points among the key elements of economic security.

2. Results and Discussion

The creation of civil society is becoming a reality as part of the transition to a market economy and overcoming the most serious threats to the economic stability of the nation, the main one being corruption. Corruption is a negative socio-economic phenomenon that discredits Ukraine in the international arena, hinders investment in all sectors of the national economy, including the financial sector, creates unfavorable conditions for doing business, etc Corruption is a certain negative phenomenon that affects the social, moral, psychological, and economic spheres of society. The spread of corruption in Ukraine and globally makes it a serious threat.

Corruption is an illegal activity in politics and public administration that involves the use of public officials and the powerful opportunities provided to them for personal gain. There are three main approaches to characterizing corruption from a methodological point of view. The first approach assumes that corruption is a deviation from legal requirements, official morality, and basic moral standards. This method allows for explaining corruption from both a broad and a specific point of view. Generally speaking, officials are considered corrupt when they directly use the power that comes with their positions to further their interests. In the strict sense, corruption is defined as the adoption of illegal decisions by the authorities that allow another party to gain some benefit and officials to receive illegal remuneration.

According to the second strategy, corruption is seen as a social phenomenon that determines the effectiveness of existing national socio-economic institutions and legal systems. This approach views corruption as a "source of friction" that society as a whole, as well as its governing institutions, must overcome to achieve its goals. This behavior is a reflection of the corruption of the social system as a whole. According to the third point of view, corruption is a broad set of strategies used to influence the behavior of specific social groups to gain advantages for organizing and doing business at the proper level and quality of national service (Samiylenko *et al.* 2021).

The level of corruption in Ukraine continues to be high, comparable to the level of economic security of the country. As a result, according to the Economic Security Strategy of Ukraine until 2025 (President of Ukraine 2021), the state of Ukraine's economic security from 2010-2019 was assessed as unsatisfactory, with a decline in almost all indicators to a threatening level in 2012 and 2014-2015. The average level of economic security for the current period is 40%, which means a zone of unsatisfactory condition, according to calculations made by the Ministry of Economy of Ukraine by the Methodology for Calculating the Level of Economic Security of Ukraine, approved by the Order of the Ministry of Economic Development and Trade of Ukraine of October 29, 2013, No. 1277. In 2019, the level of economic security in Ukraine was 43%, and in the first half of 2020 - 41% (Voice of America 2017).

As stated in the Economic Security Strategy of Ukraine until 2025 (President of Ukraine 2021), corruption is one of the main threats to investment and innovation security. The high degree of shadow economy and the phenomenon of legalization of illegal income are two major problems in the area of financial security (money laundering). Since the shadow economy fosters corruption, and the extent of corruption is the basis for the functioning of the shadow economy, it is well known that these two phenomena are closely intertwined and dependent on each other. In addition, corruption is a major source of proceeds of crime and a key factor in many money laundering schemes.

Corruption not only threatens the country's development, social stability and security, and economic well-being but also leads to the destruction of its democratic system and social values. Corruption seriously affects the efficiency and fairness of the distribution and redistribution of public resources, leading to national economic

inequality. It also affects business activity, as in the context of corruption, business entities simply cannot avoid corrupt relations in the course of their business activities, which ultimately leads to a slowdown in the country's economic development.

According to some studies, corruption, in addition to its general degree, can have various individual characteristics. One of these characteristics is the unpredictability of the service market, including corruption: the unpredictability of corruption in individual organizations, the level of useless behavior of a corrupt official, etc. Thus, the analysis of the relationship between corruption and FDI shows that the perception of the level of corruption and bribery in a country plays a very important role: "Uncertainty about corruption kills the will to invest" (Hanlon 2022). Measures to minimize corruption can theoretically lead to a reduction in the shadow economy in a country, as corruption is directly correlated with the presence and size of the shadow economy. First of all, this can significantly affect the size and effectiveness of social programs that depend on tax revenues, which in turn can affect the overall efficiency of the economy.

Collateral damage from the erosion of the state's reputation, an increase in crime in general, the promotion of corruption in law enforcement agencies, and a decrease in national security due to corruption in the military all contribute to this issue. However, quantifying the relationship between corruption and such socio-political phenomena requires not only the development of special methodologies but also the collection of a large amount of local data (Vysotska and Vysotskii 2017).

We believe that corruption is directly related to the shadow economy. The shadow economy is an economic activity in which entities avoid official accounting and taxation. The shadow economy is divided into three types, as described below, depending on the type of activity and source of income:

- 1) informal economy legalized (permitted) economic activity, whose entities avoid official accounting and stimulate their activities due to the situational needs of individuals. This is the largest segment of the shadow economy, represented by various types of small-scale production of goods and services (e.g., music or photography services at weddings, escorting passengers or cargo, tutoring, repairs by agreement with customers, and construction work) by individuals. Selling household goods on the spontaneous market). The modern type of activity adds activities that are determined by the latest advances in information technology, are not yet covered by the current legislation, and are difficult to tax due to their virtual nature (for example, the so-called home office, i.e., you can earn money on your computer without leaving your home);
- 2) hidden economy legal economic activity, usually dominated by entrepreneurs who carry out various organizational and financial manipulations to obtain additional profit (e.g., artificial division), which the state establishes for small businesses, using barter transactions to make a profit, making informal payments to employees to "warm up" the staff (the so-called envelope). This economy is also known as the "shadow" economy, because in it, expenses are still legal, but income is illegal;
- 3) the criminal economy is known as financial fraud, theft, smuggling, bribery, drug trafficking, pimping, and extortion. Illegal (criminal) activities in the form of human trafficking, etc. (Pygolenko 2009).

The main reasons for the shadow economy are:

- imperfect legislation, mainly tax legislation. In particular, excessive tax pressure (excessive tax rates and/or excessive taxation), confusing (non-transparent) mechanisms of tax administration (calculation), unfair tax benefits for entrepreneurs closely connected to the state, etc;
- the corruption of the national administrative system, which consists of the commercialization of officials' duties, is a purely human flaw (greed, legal ignorance, etc.) (Vysotska et al. 2019).

Combining crime with the legal economy through access to political power and the possibility of "laundering" dirty money. Corruption is committed for illicit enrichment. Funds obtained through corruption are legalized in various ways. The State Financial Supervision Service of Ukraine (SFSU) controls financial transactions to prevent possible laundering of dirty money. Typical methods of laundering the proceeds of corruption include the following:

- involvement of persons who have no family ties to corrupt officials;
- receipt of cash "bribes" with further transfer of funds in non-cash form;
- bringing the proceeds of corruption to Ukraine and further legalization;
- receiving inheritance (multiple) from persons who are not related to the corrupt official;
- acquisition of corporate rights (Geets 2017).

The impact of corruption on economic growth has been the subject of many studies over the past few decades. Domestic scholar V. Trepak (2020) notes that the results of his research indicate that corruption contributes to the emergence and development of negative phenomena and processes in the economic sphere, in particular, the distortion of the mechanism of market competition, the emergence of monopolistic tendencies in

the economy, and the identification of inefficient allocation of state budget funds. This leads to an unfair distribution of income, enriches corrupt actors at the expense of other members of society, contributes to the growth of prices for goods and services due to the so-called "administrative costs" of corruption, and determines the existence and development of organized crime and the shadow economy.

According to V. Mazyarchuk and I. Fedko (2016), corruption reduces overall investment and thus economic growth. The decline in investment is associated with uncertainty caused by inflated production costs and corruption. Slower growth is a direct consequence of lower investment inflows. In addition, spending on education and health care has also declined due to the ease of budgetary maneuvers in these areas. As officials can easily generate revenue from public investment projects, the country's infrastructure and public investment projects are deteriorating, and tax revenues are declining due to corruption in the tax and customs authorities. These factors contribute to an increase in the share of public investment. As a result, the quality of state functions is declining, and foreign direct investment is decreasing, as corruption has the same effect as taxation, causing insufficient budget revenues.

I. Burakovsky (2018), Head of the Institute for Economic Research and Policy Consulting (IERPC), noted that corruption leads to the loss of state sovereignty. According to the researchers, there is a so-called "corruption space" in Ukraine, in which certain funds circulate (their volume is the size of the space). Narrowing corruption opportunities means "withdrawing" (in a positive sense) money from various corruption mechanisms. Since the extent of corruption in the Ukrainian economy is currently unknown, it is difficult to assess which parts of the overall corruption situation have changed. The only economic sectors that IERPC assessed were those where it was possible to conduct an economic assessment between 2014 and 2018. These sectors were those that historically caused the nation to suffer significant losses from corruption. Therefore, they compared the effect (reduced space for corruption) to GDP and determined that these effects amounted to \$6 billion, or 6% of GDP per year over the same period to get a sense of the scale of the change.

Most scholars have found, based on numerous theoretical and empirical studies, that corruption has the most detrimental effect on the economy. According to domestic and foreign research and analysis of the impact of corruption on economic security and financial elements, the following points can be made.

The economy is a dynamic mechanism that changes its state for some time under the influence of various reasons (Fig. 1). Therefore, to achieve qualitative transformations, it is necessary to minimize the impact of negative factors, primarily corruption, on the country's economic health. Economic growth is a steady increase in economic productivity over a long period or simply an increase in the economic power of a country through an increase in GDP. In other words, a growing economy produces more goods and provides more services. This process is accompanied by an increase in the competitive advantages of the national economy on the world stage.

Economic growth

- increase in GDP

Qualitative changes

- structural shifts
/efficiency of the economy

Economic development

Figure 1. Elements of economic development under the influence of corruption

Source: developed by the authors

Development is a multifaceted process that includes changes in social and governmental institutions, as well as accelerating economic growth, reducing inequality, and eradicating poverty. Thus, not only economic growth but also social, cultural, and institutional changes lead to an improvement in the quality of life of the population. That is why it is so important to minimize the impact of corruption on the development process (Vysotska *et al.* 2019). Based on a generalization of foreign theoretical and empirical studies, we can identify the key dependence of economic growth on national corruption indicators (Table 1). They can be used to model the impact of corruption on future economic growth.

Table 1. Variables for assessing the impact of corruption on economic growth

Variable	Anticipated impact	The content of the indicator	Empirical studies	Source				
Dependent variables								
Dependent variable with lag		Real GDP per capita	Natural logarithm of GDP per capita (\$)					
Corruption		Corruption perceptions index.	L. Pelegrini, R. Gerlach, T. Eidt; M. Ugur, N. Dasgupta, B. Venard; S. Saha, R. Gunder; B. Tarek, Z. Ahmed.	Transparency International (TI)				
	+		P. Meon, C. Secat; P. Egger, G. Winner; T. Eidt, J. Dutta; J. Heckelman, B. Powell.					
Democracy Index	+	Democracy freedom index	A. Schumpeter, G. Kotera <i>et al.</i> ; G. Heckelman, B. Powell; S. Saha, R. Gunder	Freedom House music				
Index of economic freedom		Average value of the index of economic freedom	G. Heckelman, B. Powell. E. Peev, D. Muller	The economic freedom of the world (EFW)				
Independent variables								
Capital investments		Investment/GDP ratio	I. Ekanayaki, D. Chatrna	Work Bank				
Population growth rate	-	Percentage of annual population growth	R. Barro, C. Sala-i-Martin; J. Sachs	Work Bank				
Trade openness		Percentage of imports and exports to GDP	R. Wakzyarg, K. Welch; F. Wang, K. Liu; B. Okuyan <i>et al.</i>	Work Bank				
Education level		Percentage of pupils enrolled in primary school (%)	S. Berkheim; A. Boughanmi.	Work Bank				
Government expenditure		Percentage of public expenditure from GDP	D. Landau; M. Marlowe, S. Folster, M. Henrickson.	Work Bank				

Source: generalized by the author

When studying corruption, it is first of all necessary to identify those aspects of the phenomenon that pose a real threat to the country's economic security. These threats include an increase in the size of the shadow economy; the combination of crime with the legal economy through the acquisition of political power and the possibility of "laundering" dirty "money"; violation of competition in the market; delay in the emergence of effective private owners and the efficient use of budget funds. Low price growth due to the inclusion of corrupt officials' "services" in the price, a decline in trust in the state and its ability to regulate economic processes increased social inequality, and income gaps between different segments of the population (Hoinaru *et al.* 2020).

One of the distinguishing factors of the successful development of European countries compared to Ukraine is a significantly lower level of corruption. In Ukraine, the gross domestic product (GDP) per capita in current prices for 1990-2020 increased from 1,816.0 to 3,726.9 dollars. USA, *i.e.* 2.1 times. During the same period, for example, in Poland, this indicator increased from 1,740.0 to 15,656.2 dollars. USA, *i.e.* almost 9 times. According to the calculations of the International Monetary Fund, if the level of corruption in Ukraine were reduced to the average level among European countries, then real GDP growth would not be 3%, but 5%. In addition, it would change the growth potential (Akimova *et al.* 2020).

Corruption indirectly affects the national monetary system and the stability of the national currency. The sources of shadow revenues are bribes and unofficial payments outside the sphere of influence of the official authorities, as the National Bank of Ukraine and the government are unable to manage large amounts of money in the shadow. If its volume grows to a critical level, this flow of money can panic any part of the domestic market. The optimal level of inflation should increase along with corruption, as the size of the shadow economy is a more effective tool for increasing government revenues than changes in the tax system by expanding the money supply. Inflation reduces public sector wages and thereby increases the demand for additional revenues, *i.e.* the causal relationship in this case can be as follows (Margalit 2019).

Local experience shows that corruption hurts a country's ability to innovate. First, it includes restrictions and additional requirements for business operations that are not permitted by law, granting specific business entities undue advantages, and entering into agreements that business entities are forced to enter into against them. As a result, certain businesses, especially those from countries with low levels of corruption, lack the experience necessary to engage in corrupt practices. As a result, they lose market share or prefer to operate in countries with low levels of corruption (Nagorna 2019).

Secondly, the lack of transparency in business practices leads to a loss of interest from investors, which is a factor in the economy lagging behind corrupt regions in the future with higher standards of business transparency. The driving force behind economic development is investment activity. Foreign investment brings about the most progressive structural changes in the economy. As of the end of 2019, the volume of foreign direct investment per capita in Ukraine amounted to USD 1,112. The figure was equal to USD 1,112 per capita. In Poland, this figure was equal to USD 6242. In Poland, the figure was \$6242, which is 5.6 times higher. A survey of foreign investors, 74% of whom currently have investments in our country, conducted in November 2020, showed that the most significant obstacles to foreign investment in Ukraine are distrust in the judicial system (8.5 points on a 10-point scale) and widespread corruption (8.2 points) (National Agency for the Prevention of Corruption 2023).

Third, it is more difficult to organize new businesses and new projects. Corruption is a serious impediment to innovation, as innovators are more in need of government services such as licenses and import quotas than producers with established business processes. The high demand and inelasticity of such public services make them prime targets for corruption. Fourth, innovators do not have extensive corruption or lobbying ties and are therefore particularly vulnerable to bribery and expropriation. Innovators can't operate regularly in a corrupt atmosphere, as they have less access to credit financing and often face greater challenges in corrupt practices.

Corruption has a double negative impact on the budget. First, the budget receives less tax revenue due to the existence of the shadow economy, and second, budget funds are used inefficiently, as they are mainly financed by corrupt public expenditures. A one-point drop in the Corruption Perceptions Index reduces national income by 1.71-2.51% of GDP. Each unit increase in corruption reduces spending on education and health care by 0.34-0.45% of GDP (Skrypnychenko *et al.* 2018). Prices are higher because the price includes the cost of the "services" of corrupt officials. Corruption increases the price of goods. Producers are forced to pay bribes, and the resulting costs are included in prices, thereby passing the costs on to consumers. Corruption not only increases the cost of goods but also increases the cost of investments and investment projects. It has been established that corruption increases the cost of an investment project by 10-20% (Yurkiv 2018).

Every year, the state budget of Ukraine loses UAH 455 billion due to corruption schemes, including UAH 120 billion through "envelopes" and conversion centers, UAH 100 billion through "gray imports", UAH 100 billion through schemes in public procurement, UAH 70 billion through offshore schemes, UAH 30 billion through "twists", UAH 20 billion through schemes involving individual entrepreneurs, and UAH 15 billion through counterfeiting. Losses of budget funds lead to underfunding of the expenditure side of the state budget, which has an unsatisfactory impact on the social sphere and the country's defense capability. The lack of budget funds leads to higher inflation, which increases macroeconomic instability (National Agency for the Prevention of Corruption 2023).

Non-transparent public procurement tenders have led to the fact that public orders, and thus budget funds, are awarded not to those who are competitive, but to those who have been able to gain advantages illegally. This leads to a decrease in market efficiency and discrediting the ideas of market competition. It should be noted that Ukraine has introduced the ProZorro electronic public procurement system, which has replaced paper public tenders (Uddin and Rahman 2023).

Inefficient use of budget funds. Corruption hurts both state budget revenues and expenditures. As the level of corruption in a country increase, budget revenues decrease. Tax revenues are more vulnerable to corruption than other budget revenues, as a 1% increase in corruption was associated with a 1.5% decrease in

revenues relative to GDP and a 2.7% decrease in tax revenues relative to GDP. As a result of the state's fight against corruption, state budget revenues have increased on average fourfold over the long term (Rodchenko and Govorukha 2020).

The state budget expenditures - social expenditures - also suffer from corruption, as corrupt government expenditures are primarily financed, and social expenditures lose their targeting, *i.e.* they are received by the wealthy. According to IMF calculations, a unit increase in corruption corresponds to a decrease in the ratio of such expenditures by 1.32-2.19% of GDP. Also, a unit increase in corruption reduces the ratio of education and healthcare spending to GDP by 0.34-0.45%.

Price increases due to increased "corruption costs". Businesses pay bribes to avoid paying taxes and government regulation. In Ukraine, 62% of respondents evade taxes, 47% of them pay bribes, and the average amount of bribes is 1.76% of income (National Agency for the Prevention of Corruption 2023).

It increases the income gap between different classes of the population. Corruption contributes to the unfair redistribution of wealth in favor of limited segments of the population. This has led to an increase in inequality among the population. Moreover, a large share of shadow income is received by representatives of the upper classes. The top 20% of wealthy households in Ukraine earn more than 70% of unofficial income. According to others, the simplest true picture of the distribution of total monetary income (including money) among different classes of the population is as follows:

- 40% of the population receives about 10% of total monetary income (about 10% of the country's population):
- 30% of the population receives up to 30% of income (approximately one-third in the shadow);

10% of the population - about 40% of the total income of the country's population (about 75% of them are in the shadow) (Parfentii 2022).

Corruption undermines the foundations of economic competition. The economic model of free competition implies that prices for goods and services are determined solely by market factors, the ratio of supply and demand. Corruption schemes lead to higher prices. Doing business becomes more expensive and loses its competitiveness. There are many examples where prices for the same goods in Ukraine are much higher than in European countries. Overpriced goods limit the purchasing power of Ukrainians, most of whom already have insufficient income. Consequently, limited demand does not stimulate the development of the production of goods and services.

Corruption hinders the mobility of production factors, which is an important component of free competition. We are talking about state-owned factors of production, and their involvement in private business does not always occur without the use of corruption schemes. For a long period, most corrupt practices in Ukraine have been committed in the transfer of state-owned land. Starting in October 2017, corruption in the field of land relations was countered by the introduction of leasing state-owned agricultural land exclusively through electronic land auctions (Drebee and Abdul-Razak 2020).

The business environment considers corruption to be a significant obstacle to doing business. According to the results of a national sociological survey of the population and business representatives for a comprehensive assessment of the corruption situation in Ukraine based on the Methodology of the Standardized Survey on Corruption in Ukraine, approved in 2021 by the NACP, entrepreneurs "consider political corruption at the highest level to be the most serious type of corruption among the three proposed" (political, business and every day), "but assess the situation more positively than the population. In particular, 85.8% of business representatives consider political corruption at the highest level to be a serious problem, while less than half of the respondents consider everyday corruption to be a serious problem."

Overall, on a five-point scale, business representatives consider corruption to be a very serious threat to business activity (average 4.35 points). They consider the most corrupt areas to be permitting and mining (4.54 points). This is followed by customs (4.40 points), privatization of enterprises (4.26 points), forestry (4.25 points), public procurement of works and services for construction, repair and maintenance of state and local roads (4.24 points), public procurement of works and services for implementation of other major infrastructure projects (4.18 points), land relations, land management (4.16 points), judiciary (4.05 points) and others (National Agency for the Prevention of Corruption 2023).

The emergence of political corruption in Ukraine in the late 1990s and early 2000s at the national level among the top leadership of the state, executive and judicial authorities, members of parliament, and leaders of political parties led to the monopolization of the mining and metallurgical, fuel and energy complexes, chemical industry, machine building, shipbuilding, and oil and gas markets. The monopolization of the leading sectors of

the economy has led to the emergence of oligarchy. The monopoly position allows for excessive profits, some of which are used by the oligarchs to commit corrupt acts for further enrichment.

Over the years, the oligarchy has become a stable source of increased corruption in Ukraine among representatives of all branches of government. The signing of the Law of Ukraine No. 1780-IX "On Prevention of Threats to National Security Associated with the Excessive Influence of Persons with Significant Economic and Political Weight in Public Life (Oligarchs)" by President of Ukraine Volodymyr Zelenskyy on November 5, 2021, creates the legal framework for eliminating the preconditions for doing business using oligarchic schemes (Asteriou *et al.* 2021).

It is worth noting that corruption in the public sector has a large negative impact on corporate tax payments. Thus, reducing public sector corruption can have a significant impact on a country's ability to collect taxes. This is especially important for small and medium-sized state-owned enterprises that seek to reduce their tax burden in a corrupt environment. However, large multinational corporations respond to public sector corruption by investing in other countries, revealing the opportunity cost of corruption. As corruption has a similar effect on taxes, foreign direct investment (FDI) flows decrease. Thus, FDI inflows are inversely proportional to levels of corruption (Fig. 2) (Busol 2015).

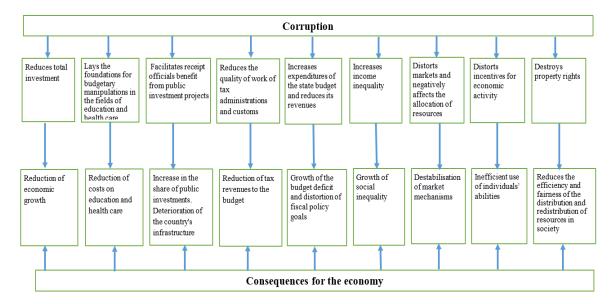


Figure 2. The impact of corruption on the economy

Source: developed by the authors

It is possible to identify a trend that democracies with open economies, free press, strong trade, and a high proportion of women in government have the lowest levels of corruption. On the other hand, less developed countries that rely on fuel and raw material exports, have complex regulatory and legal systems and have economies defined by "inflationary instability" have very high levels of corruption. Thus, the extent to which corruption affects the economy also depends on the country's legal and institutional framework, as well as the quality of its governance and political institutions. The absence of political stability and a good legislative framework can lead to a favorable environment for corruption, which in turn can lead to ongoing crises. This is evidenced by the failure to implement the necessary reforms in every sphere of life, which reduces the quality of life of the population (Samiylenko *et al.* 2021).

In addition, studies show that average income in corrupt countries is one-third lower than in countries with low levels of corruption, literacy rates are about 25 percent higher, and infant mortality rates are three times lower. This data shows that corruption poses a serious threat to the socio-economic situation in a country and systematically affects the level of economic development. A comparison of data across countries shows that corruption is consistently associated with lower GDP per capita growth, economic inequality, and lower human development (WGI 2022).

Thus, corruption hurts long-term economic growth, as it affects investment, taxation, public spending, and human resource development. Direct economic losses from corruption are insufficient budget revenues and inefficient spending of budget funds. The overall decline in economic efficiency under corruption is an indirect

consequence of corruption, including economic losses due to the causes of corruption (*e.g.*, administrative barriers that lead to corruption while reducing economic efficiency). In addition, the economy suffers from losses caused by corruption itself (*e.g.*, a drop in investment returns due to corruption). It is extremely difficult to calculate the negative impact of corruption (Lemarchan 2019).

Let us consider in more detail the experience of countries that have managed to develop effective mechanisms to combat corruption, reduce its scope, and establish control over the activities of officials. As part of this study, we consider it necessary to study the determinants used by them that contribute to preventing and overcoming corruption, as well as to implement them in Ukraine. According to the Transparency International ranking in 2020, the leading countries in preventing and fighting corruption were: New Zealand, Denmark, Finland, Switzerland, Singapore, Sweden, Norway, the Netherlands, Luxembourg, Germany, Canada, the United Kingdom, Japan, France, the United States, and other countries (Sinha *et al.* 2019).

These countries, as well as several others, have achieved effective results in combating and overcoming corruption. Today, these countries are role models that indicate the benchmarks to which we should strive. Each country, on the one hand, has developed its peculiarities of organizing the process of preventing and combating corruption, and on the other hand, there are certainly some common features, such as firmness and determination to carry out anti-corruption activities, involvement of the public in these actions, and moral and ethical rejection of corruption.

In civil society in countries such as Germany and the United Kingdom, there is a prevailing understanding that if a person holds an important public office, he or she must be talented and professional. To formulate the determinants of counteracting and overcoming corruption in Ukraine, a thorough study of the experience of these countries is needed, with a special focus on Singaporean and Polish practices that have proven effective today (Malanski and Póvoa 2021).

For example, Singapore has established and is successfully operating a special independent and autonomous body to combat and overcome corruption - the Corruption Investigation Bureau, whose activities are aimed at verifying the facts of offenses and abuses of officials, studying the functioning of state organizations and structures whose activities are inclined to corruption schemes, and developing recommendations for them. The country focuses on eliminating the preconditions for corruption risks, which is quite effective and successful. Thus, in Singapore, overcoming corruption is a priority state direction, the implementation of which has a positive impact on the country's economic development. The study of Polish experience points to the following four determinants of overcoming corruption: transparency of the public sphere, individual initiative, media activity, and control of the political sphere (Mukhtarov 2022).

In Germany, the police are the leading institution involved in the fight against corruption. Measures aimed at countering corrupt activities are being actively implemented at the local level. The country has also created a register of corrupt companies, which will lead to close supervision and control of the firm's activities by the Main models of anti-corruption activities Singaporean or Asian (Singapore, Japan, South Korea, North Korea) Swedish or Scandinavian (Sweden, Finland, Denmark, the Netherlands) (Alfada 2019).

A vertical strategy aimed at obtaining quick results, the consequence of which is not the complete elimination of corruption, but finding a level of corruption that is acceptable to both the government and society. A horizontal strategy aimed at consistent implementation of anti-corruption activities based on anti-corruption incentives for law enforcement agencies and the inability to participate in the execution of public procurement in the future.

The analysis of the Dutch experience shows that there is cross-cutting transparency and publicity in the actions and work of officials. A system of control over state and public organizations and institutions that may become centers of corruption exists and is functioning effectively. A system of penalties for corruption offenses has also been developed, including deprivation of both pension and social services and welfare (Sharma and Mitra 2019).

The experience of other countries that have high rankings in the Corruption Perceptions Index, including the determinants of anti-corruption policy, is shown in the table below. The analyzed foreign experience in countering, preventing, and combating corruption allows us to identify leading trends, mechanisms, and tools that can be useful for our country. The main ones are as follows:

• formation of a conscious civil society about the intolerance of corruption through constant information explanation about the negativity of this phenomenon, implementation of various anti-corruption programs and projects;

- intensification of the activities of civil society organizations and expansion of their influence on anticorruption processes through the actual introduction of their representatives to the supervisory and advisory boards of public administration bodies;
 - prevalence of preventive and encouraging anti-corruption measures over repressive ones;
- expanding the use of e-governance, Internet platforms, and interactive websites to quickly respond to citizens' reports of facts containing corruption components (Bahoo *et al.* 2020).

In our opinion, summarizing the results of a large number of studies, we can say that corruption leads to a decrease in total investment, and thus to a slowdown in economic growth. This reduction in investment is explained by the uncertainty caused by inflated production costs and corruption. The slowdown in growth is a direct result of lower investment inflows.

Increase the share of public investment by making it easier for officials to benefit from public investment projects. Corruption of tax and customs officials leads to lower tax revenues. As a result, the quality of productivity decreases, and the state operates with insufficient budget revenues (Ceschel *et al.* 2022).

Recently, Ukraine established the National Anti-Corruption Bureau, a national law enforcement agency whose main tasks are to prevent, detect, deter, investigate, and solve corruption offenses committed by senior officials, as well as to prevent the commission of new crimes. The establishment and launch of the National Anti-Corruption Service of Ukraine was one of the requirements of the IMF and the European Commission for visa liberalization between Ukraine and the EU (Baranovsky 2006).

In addition to Transparency International Ukraine, the Anti-Corruption Action Center, which also reports and investigates corruption, launched a website, UKR.AV, this year to provide information on fraud in public procurement. The easiest place to spot corruption is in public procurement. The state spends about UAH 300 billion. Every year, public procurement is like an abyss. Over the past two years, we have managed to preserve the state budget and prevent the theft of more than UAH 1 billion. Only contracts that were terminated or forced to reduce prices were considered. Therefore, the conditions for combating corruption in Ukraine are gradually being created (Serednyak 2018).

We believe that due to a long history of "turning a blind eye" to corruption, Ukraine's economic performance is now one of the lowest in the world. Undoubtedly, corruption is a long-standing systemic social phenomenon that requires a lot of effort and time to overcome. To reduce the level of corruption in Ukraine, it would be useful to have an effective and efficient anti-corruption judicial system, actively involving businesses in creating new transparent rules of relations between the government and business. We believe that the fight against corruption requires certain actions by the authorities, namely: developing an effective anti-corruption policy, strengthening responsibility and punishment for corruption, reforming courts and criminal justice agencies, simplifying the business environment, and decriminalizing the economy. Form an effective and transparent administrative, political, and financial system, pay attention to the legality of the use of budget funds, conduct electronic public procurement, and create a system of easy access to information.

Also, extremely important elements of the anti-corruption system in Ukraine should be:

- development and adoption of a clear and understandable code of conduct for public officials, which will set out specific principles of their behavior;
- creation of a specific list of interests of public officials, according to which they should be held liable for committing such acts;
- inclusion in the register of information on property and income of public officials of information on all their interests, including political, scientific, and charitable, which are realized on a paid or free basis;
 - continuous implementation of preventive measures in the relevant area.

Conclusions and Further Research

Corruption threatens national security and affects many aspects of a country's economic development. It is also important to understand the impact of corruption on key elements of economic security. To accurately measure corruption, most studies use large datasets with many years of measurements. They are usually performed using various econometric techniques. Most large studies show significant economic negative effects of corruption, including reduced economic growth potential. This is because corruption is usually kept secret, making information inaccurate and unreliable.

Corruption hurts long-term economic growth. It reduces tax revenues, reduces investment, reduces public spending, and reduces the rate of economic growth in a country. Corrupt governments also experience a decline in infrastructure, reduced funding for education and healthcare, and increased control over the population that benefits from education and healthcare.

The introduction of a systematic anti-corruption approach and the implementation of anti-corruption measures is long overdue. At the same time, maintaining economic security should be part of any state's anti-corruption policy. That is why it is so important to create a concept of economic security that should comply with the following principles. The main duty of the state is to actively promote the creation and functioning of basic market institutions. This includes ensuring that the legal environment is maintained through adherence to market principles, as well as prohibiting monopolization of the economy. Otherwise, companies will not be able to operate efficiently. In addition, the state should actively support investment lending and uncompromising protection of state property.

The state-monopolized financial banking and procurement systems of Ukraine, such as Naftogaz of Ukraine, Ukrnafta, and Ukrzaliznytsia, should be removed from the corrupt system. This includes the financial system and public procurement; the latter is the process by which large national projects are selected. Eliminating corruption in this way would also eliminate the state's monopoly in many other areas. The deoligarchization of the national economy should be carried out as soon as possible. People in charge of the economy must be incorruptible. In addition, they must be free from illegal lawsuits and obvious mafia influence. They need to resist bribery and maintain the proper functioning of the national economy.

Additional government initiatives are needed to end the economic downturn. States should establish new relationships with the World Bank and the International Monetary Fund to receive tranches of currency. These funds should be used to finance real projects, such as social security and new businesses. Currently, the state invests in unproductive projects, such as the accumulation of speculative capital through luxury goods. By switching these projects to financing, countries can help ensure the financial security of their citizens. Privatized state-owned companies continue to suffer from the same problems as the corporations they replaced. These include outdated technology, inefficiency, and lack of creativity. The creation of new enterprises contributes to the creation of a competitive environment while maintaining the problematic issues.

Ukraine's monetary policy should be changed to make the country's central bank accountable and transparent. This can be achieved by making the information they provide reliable, timely, understandable, and complete. The markets that the bank regulates should be able to use this information to make informed decisions. It is important to continue researching the economic importance of corruption and its impact on national security. This is because many people are not sure how best to approach this topic and need more concrete evidence to support their theories. A key step in this direction is to develop a coherent theory on how to explain corruption as an informal economic institution.

Current research needs to be expanded to prove the link between corruption indicators and economic security. It is also necessary to quantify the impact of the fight against corruption on economic security measures. This work should be done on a larger scale than a single organization. The institutional context of corruption and its impact on the economy as a whole should be taken into account. This will help to create a more reliable basis for future policy decisions on corruption.

Prospects for further research in this area will be the development of specific programs to protect the economy from corruption risks. The scientific novelty of the results obtained is to identify and solve existing problems related to the development of practical recommendations for improving and implementing the mechanism of state anti-corruption policy in ensuring the economic security of Ukraine. The practical significance of the results obtained is to develop recommendations for improving the theoretical and methodological foundations for the development and improvement of the mechanism of national anti-corruption policy to ensure the economic security of Ukraine.

Credit Authorship Contribution Statement

Anatoly Mazaraki: write the contribution of first author choosing the relevant actions, but not limited to Conceptualization, Investigation, Methodology, Project administration, Software, Formal analysis, Writing – original draft, Supervision, Data curation, Validation, Writing – review and editing, Visualization.

Tetiana Melnyk: write the contribution of the second author choosing the relevant actions, but not limited to Conceptualization, Investigation, Methodology, Project administration, Software, Formal analysis, Writing – original draft, Supervision, Data curation, Validation, Writing – review and editing, Visualization.

Lyudmila Serova: write the contribution of the third author choosing the relevant actions, but not limited to Conceptualization, Investigation, Methodology, Project administration, Software, Formal analysis, Writing – original draft, Supervision, Data curation, Validation, Writing – review and editing, Visualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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