

# THE STRATEGIC COST OF RUSSIAN AGGRESSION FOR UKRAINE'S ECONOMY

*Analytical Report*

*(This research covers the period predating the full-scale invasion  
on February 24, 2022)*

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This report examines the systemic economic and social impact of the hybrid aggression that the Russian Federation has been carrying out against Ukraine since 2014. The authors argue that direct losses of natural, material and human resources due to the occupation of a part of Ukraine combined with significant bottlenecks to the economic and social development of the country limit the choice of development paths. The report assesses the adaptability of the Ukrainian economy to these negative consequences as well as the steps taken to overcome them. It also outlines the strategy of lowering the cost of Russian aggression for Ukraine and easing the sensitivity of the national economy to further hybrid influences.

## 1. INTRODUCTION

At the turn of its third decade of independence, Ukraine faced the most dramatic event in its recent history – open military actions by the Russian Federation.

Those actions were preceded by hybrid aggression, which is understood in this study as a combination of conventional and unconventional tools of influence and means of subversive activities involving the vulnerabilities of the rival in order to subordinate their actions to the interests of the aggressor.

**This broad approach allows us to identify Russia's deployment of aggressive actions against Ukraine long before the beginning of the "hot" phase associated with the armed intervention in 2014 and the occupation of part of Ukraine. Conversely, it enables us to consider armed aggression as a component of Russia's consistent strategy aimed at returning Ukraine to the sphere of Russian political, economic and humanitarian influence.**

The escalation of economic pressure on Ukraine has become an important prerequisite for the implementation of Russia's open aggression.

The Russian Federation took active steps to systematically oust Ukrainian goods from the Russian domestic market and tighten trade restrictions. This turned into a trade war starting back in 2012, when the export of goods from Ukraine to Russia decreased by 11%, and then in 2013 by another 14.6%.

The rapid reduction of export flows from Ukraine to Russia and the narrowing of production cooperation in this area have severely hampered the domestic economy, while artificially creating conditions for economic stagnation and increasing macroeconomic imbalances. It is important that the negative economic effects of this "preparatory stage" had a pronounced regional dimension. In 2012-2013, the most significant negative trends emerged in the economies of Donetsk and Luhansk oblasts, which largely cooperated with Russia in the economic sphere.

**The Russian-inspired armed confrontation in Donetsk and Luhansk oblasts and the temporary occupation of Crimea has brought hybrid aggression to a qualitatively new level, which highlighted a new type of threat to Ukraine's economic sovereignty.** In particular, this includes the fragmentation of the economic and customs space of the state; expropriation of state property, property of individuals and legal entities in the uncontrolled territories, property losses due to combat operations and acts of terror; obstacles to sustainable economic development; physical barriers to financial and economic activities in domestic and foreign markets; disruption of critical national infrastructure through physical, economic and informational impact; social discontent in the government controlled part of Ukraine; the use of economic dependence to gain political control and so on.

**The high sensitivity of the national economy to Russian aggression came to the fore through the unpreparedness and the low resource availability to respond to aggression at the time the confrontation started in 2014.** The escalation of Russia's aggression against Ukraine revealed the limitations of the "confrontation contra economy" approach, when strengthening economic cooperation and interdependence were considered major factors in preventing armed conflict. Instead, Ukraine's established economic ties with Russia have been used by the aggressor state as an additional lever of pressure and advancement of its political goals.

At the same time, Russian aggression also revealed the strengths of Ukraine's economy, which has shown a high level of resilience and adaptability. In particular, the recovery of GDP by the purchasing power parity measurement was achieved in less than 5 years (according to the World Bank calculations, in 2018 it amounted to USD 534 billion against USD 505.4 billion in 2013)<sup>1</sup>. Ukraine has accelerated the diversification of its economy and energy, responded to the growing need for social and defense expenditures, and dramatically accelerated its progress towards European and Euro-Atlantic integration.

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<sup>1</sup>GDP, PPP (current international \$). URL:

<https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD?locations=UA>

At the same time, the cost of Russian aggression is too high for Ukraine. Much of the losses (foreign trade, investment, human resources, transport infrastructure, etc.) can be offset mainly in the long run. The aggressive actions of the Russian Federation against Ukraine, which were transformed into a continual "siege" of our state in the following years and involved a wide arsenal of means of hybrid influence, have caused more than just visible losses of national wealth and economic potential. Over time, Russian aggression has taken new forms and tools of its implementation: it evolved and became more complex and varied. Preserving the risk of conflict escalation has been one of the key factors in slowing down Ukraine's economic growth, as it worsened expectations of business concerning the prospects of development in an aggressive neighborhood and made investing into the country carry high risks.

Shrinking development opportunities, restrictions on freedom of choice, and chronic risks of heightened domestic political and social tensions and external military threats have probably extracted strategically a much higher toll, which Ukraine has had to pay for the Kremlin's disproportionate geopolitical ambitions.

**Countering hybrid aggression in Ukraine has largely depended on the success of concentrating efforts on the economic potential of national sovereignty, adherence to national economic interests, achieving sustainable balanced dynamic economic and social development based on strengthening competitiveness and economic openness.**

This report provides a comprehensive assessment of the economic and social losses that Ukraine suffered between 2014 and early 2022 due to Russia's hybrid aggression. It accounts for both direct losses and the destruction of opportunities for further development due to the loss of economic potential, constrained actions to compensate for losses and adapt to new risks, a narrower window of opportunity for necessary reforms due to higher internal and external risks.

**Our examination of the consequences of Russia's hybrid aggression against Ukraine quite clearly shows that a difficult test of independence that Ukraine has been made to stand since 2014 was not least due to indecisiveness and procrastination in Ukraine's own policies.** With regard to the building of a capable army, identification of geopolitical priorities, reforms for economic stability, sustainability, balance and dynamic progress, modernization of the economic structure, building a strong foundation of democracy and the rule of law as well as formulation of modern cultural and ideological narratives, an awareness of the price that Ukraine had to pay back then will be a sufficient incentive to develop an effective policy of sovereign development in the future.

## 2. ECONOMIC AND SOCIAL LOSSES OF UKRAINE DUE TO HYBRID RUSSIAN AGGRESSION

### 2.1. Available loss estimates and methodological approaches to strategic assessment

Local and foreign experts have attempted to gauge the total cost of the occupation of Crimea and the individual districts of Donetsk and Luhansk oblasts for Ukraine, or at least specific losses in certain areas since 2014. Different methodological approaches have been used, which vary primarily with the indicators of hypothetical development of Ukraine in the absence of occupation. These estimate indicators are compared to the actual ones. Therefore, estimates of losses differ significantly.

Assessment of the losses caused by the occupation of Crimea is usually much more straightforward. As early as the end of April 2014, the Ministry of Justice announced that Ukraine's losses were estimated at UAH 950 billion (USD 84 billion at the exchange rate at the time). The Interdepartmental Working Group on Damages under the Ministry of Justice has revised the estimate and raised it to UAH 1.2 trillion (USD 106 billion)<sup>2</sup>.

The results of the study of the Atlantic Council published in 2018 were much more moderate. The Atlantic Council estimates that Ukraine has lost about USD 100 billion due to Russian aggression al total, both in Crimea and in the eastern regions of the country<sup>3</sup>.

In 2021, the Center for Economic Strategy published a more comprehensive estimate of losses caused by the occupation of Ukrainian territories, which is USD 135 billion. The largest components of this amount are minerals (USD 52.3 billion), residential real estate (USD 42.8 billion) and assets of private enterprises (USD 18.5 billion). These three items account for 84% of the total losses<sup>4</sup>. These data do not take into account the lost benefits, i.e. economic flows that the Ukrainian economy will have not received in the following years due to the temporary occupation of Crimea.

Expert estimates of losses from Russian hybrid aggression in Donetsk and Luhansk oblasts are much more diverse.

In particular, the Deutsches Institut für Wirtschaftsforschung (Berlin) estimates the loss of Ukraine's GDP per capita at 15.1% per year during 2013-2017. The calculation is made by extrapolating the interdependencies of indicators identified on the basis of multifactor analysis of 1995–2012 and by comparing the data with a number of similar countries<sup>5</sup>.

The Center for Economic Strategy (Kyiv) sets the bottom line for estimating the losses of Donetsk and Luhansk oblasts due to hybrid aggression, which is USD 51 billion in 2014-2018, or USD 13.5 billion only in 2018<sup>6</sup>. Experts assume that in the absence of aggression, the annual change in GRP of Donetsk and Luhansk oblasts would be on average the same as in other regions of Ukraine. Therefore, for the entire period of 2014-2018, the region lost about 10% of GDP produced by Ukraine overall.

A study by the Centre for Economics and Business Research (UK)<sup>7</sup> takes into account the total losses of Ukraine's economy in 2014 – 2020. The actual numbers are compared with the Centre's forecast made before the crisis (1.4% growth per year in 2013 – 2017) and adjusted in 2018 – 2019 (up to 2% growth per year) and in 2020, due to the impact of the COVID-19 crisis

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<sup>2</sup> <https://www.irf.ua/wp-content/uploads/2021/07/finale-crimea-losses-report-clean.pdf>

<sup>3</sup> Ukraine lost \$ 100 billion due to Russian aggression in Crimea and the East, according to a study by the Atlantic Council

<https://uacrisis.org/uk/67317-report-atlantic-council>

<sup>4</sup> ASSESSMENT OF UKRAINE'S ECONOMIC LOSSES DUE TO THE TEMPORARY OCCUPATION OF THE CRIMEAN PENINSULA. The Center for Economic Strategy, July 2021

<sup>5</sup> Julia Bluszcz and Marica Valente. The War in Europe: Economic Costs of the Ukrainian Conflict. DIW : Berlin, 2019.

<sup>6</sup> How much did Donetsk and Luhansk oblasts lose due to the armed conflict with Russia? URL: <https://ces.org.ua/how-much-did-donetsk-and-luhansk-oblasts-lose-due-to-the-armed-conflict-with-russia/>

<sup>7</sup> Cost to Ukraine of Conflict with Russia. A CEBR report. 2022. London: Centre for Economic and Business Research. URL: <https://cebr.com/reports/cost-to-ukraine-of-conflict-with-russia/>

(minus 4% growth). The conversion of hryvnia indicators into dollars was carried out at the rate of 2021.

Annual GDP losses amounted to USD 280 billion at 2021 prices, or 19.9% of GDP (USD 40 billion) annually. In particular, the loss of USD 8.3 billion is attributed to the illegal annexation of Crimea. per year and USD 14.6 billion to the occupation of Donetsk and Luhansk oblasts. Another USD 17 billion of GDP losses per year are due to overall losses in exports and investment.

The general estimated indicator of GDP increase is applied to individual components of GDP. This method was used to estimate the annual loss of exports at USD 20.3 billion per year, or 162 billion in 2013-2020 (USD 14.9 billion per year in the pessimistic scenario); losses of gross fixed capital formation at USD 10.3 billion (USD 7.3 billion under the pessimistic scenario).

The Vienna Institute for International Economic Studies focused on assessing the estimated cost of the reconstruction of Donbas, which can be considered a mirror image of the damage caused. According to estimates made in 2020, the cost of recovery was USD 21.7 billion. At the same time, the recovery of physical capital required USD 9.5 billion (44%), human capital expenditure amounted to USD 8.6 billion (40%) and the mitigation of environmental threats amounted to USD 3.6 billion (16%)<sup>8</sup>. This estimate correlates with the assumption of the Ministry of Interior Affairs of Ukraine, i.e. USD 20-30 billion in the course of 10 years<sup>9</sup>.

Each of the above estimates is not flawless due to the initial assumptions. In fact, it can be explained by the complexity of the object of evaluation and the equivocality of alternatives for comparison with the actual indicators. So, we do not question any of the above assessments, while acknowledging the possibility of a wide variety of approaches in this area.

In our view, the choice of evaluation methodology should rest on an understanding of the purpose of the evaluation. Determination of the specific cost of losses, especially calculated cumulatively over the years of hybrid aggression, is important for recording the scale of criminal actions by the Russian Federation towards Ukrainian society. To sort out the best ways to rehabilitate macroeconomic and social resilience and the capacity for dynamic development, it is important to identify channels of negative impact and vulnerability zones.

In this study, the authors did not attempt to provide an overall cost estimate of the damage inflicted on Ukraine at that time, the cost of aggression was determined by specific, fundamentally important for development areas in kind or in monetary terms (at comparable prices). Usually, a one-time loss of capacity was estimated during 2014-2015, taking into account the impact of the temporary occupation of part of Ukraine's territory. Where possible, the effect of stopping the movement of goods across the line of contact in 2017 was also taken into account, although it is difficult to single out its impact.

To determine the amount of losses, a comparison was made with the pre-crisis 2013. That is, the authors started with the assumption that in subsequent years the level of a particular indicator did not change in real terms, which gave grounds, with a high probability, to provide the lowest possible estimate of losses. The use of 2013-level prices to determine real changes is feasible because this year is the base year for measuring the crisis decline of indicators.

The application of such a moderately neutral assumption makes sense, given that the dynamics of economic and social processes in 2014 – 2021 were determined not only by the impact of Russian aggression, but also by the systemic crisis of 2013 – 2014, which, as proved<sup>10</sup>, was primarily internal in nature. Therefore, it cannot be considered reasonable to assume that in the absence of the assessed factor (Russian aggression) the development of events would occur as a

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<sup>8</sup>Havlik P., Kochnev A., Pindyuk O. 2020. Economic Challenges and Costs of Reintegrating the Donbas Region in Ukraine. Research Report 447. Vienna: Institute for International Economic Studies. URL: <https://wiiw.ac.at/economic-challenges-and-costs-of-reintegrating-the-donbas-region-in-ukraine-p-5351.html>

<sup>9</sup>Money for the ruins: how much will a major overhaul of Donbas cost (documents). URL: <https://glavcom.ua/economics/finances/rujini-ta-groshi-skilki-koshtuvatime-velikiy-remont-donbasu-dokumenty-547636.html>

<sup>10</sup>Zhalilo, Y. A., Kononenko, K. A., Yablonsky, V. M. et al. 2014. Systemic Crisis in Ukraine: Preconditions, Risks, and Ways to Overcome It: Analytical Report. NISS.

continuation of the pre-crisis trend or according to the forecasts made in the pre-crisis period. Hence, for the purposes of this study, it is assumed that the loss of growth dynamics is a consequence of the systemic crisis, while the decline compared to the status quo in 2013 is mostly due to Russian hybrid aggression.

The study focuses on the strategic assessment of the impact of Russian hybrid aggression on Ukraine's economy in the form of a qualitative assessment of systemic changes that have occurred because of this impact and will continue to be important for socio-economic processes and government policies.

## 2.2. Loss of territory and natural resources

The unlawful annexation of Crimea and the armed intervention in the Donetsk and Luhansk oblasts by the Russian Federation in 2014 inflicted heavy losses on Ukraine's economy. According to general estimates, this is **a loss of control over more than 7% of the territory of Ukraine** (the area of the occupied territories at that time was 44 thousand km<sup>2</sup>, including 27.1 thousand in Crimea) and a fifth of the country's economic capacity.

According to experts from the Center for Economic Strategy, the total value of assets temporarily lost by Ukraine in **the Autonomous Republic of Crimea** is USD 135 billion<sup>11</sup>.

The value of agricultural land on the Crimean peninsula is estimated at USD 3 billion. According to the State Statistics Service, in 2013 the sown area in Crimea was 755 thousand hectares (28% of the total area of Crimea).

The estimated value of the lost proven mineral deposits is USD 52.3 billion (Table 1). Energy minerals are the greatest value in Crimea. On the sea shelf, significant deposits of hydrocarbons have been explored and they are more promising than deposits on the mainland. According to the State Service of Geology and Subsoil<sup>12</sup>, the promising resources in the areas prepared for deep drilling and undiscovered layers of the explored deposits in Crimea as of January 01, 2014, included 919 770 million m<sup>3</sup> natural gas and 13 736 000 tons oil. Although the current gas production at the time of the unlawful annexation was 1.8 billion m<sup>3</sup> and it was used entirely for the needs of the peninsula, in the future, it was estimated that the shelf could provide up to half of Ukraine's hydrocarbon production. Gradual development of these deposits was seen in Ukraine as an effective way to reduce dependence on gas supplies from Russia. In particular, there were plans to increase gas production<sup>13</sup> from 1.8 to 5 billion m<sup>3</sup>. As of the end of 2013, Ukraine has exploited only 4% of the total capacity of those deposits<sup>14</sup>.

According to geological maps, a lignite deposit is also located in the south of the peninsula. It must be mentioned explicitly that Russia blocks Ukraine's access to its unconventional hydrocarbon reserves in the Black Sea, namely methanohydrate deposits, the economic evaluation of which has not been conducted. Estimated gas hydrate reserves<sup>15</sup> in Crimea are between 7 and 60 trillion m<sup>3</sup>.

Table 1

Mineral resources of the Crimean peninsula		
Fossil	Resources	Cost, USD billion
Natural gas	63 billion m <sup>3</sup>	18.805
Oil and condensate	12 million tons	3.744

<sup>11</sup>Estimation of economic losses of Ukraine due to the temporary occupation of the Crimean peninsula: an analytical report. Center for Economic Strategy. URL: <https://ces.org.ua/wp-content/uploads/2021/07/Finale-Crimea-losses-report-clean.pdf>

<sup>12</sup>Letter of response from the State Service of Geology and Subsoil of Ukraine to the request of the National Institute for Strategic Studies "On the state of reserves of mineral deposits located in the temporarily uncontrolled territory of Ukraine." № 1755 / 01-1 / 05-22 dated February 16, 2022..

<sup>13</sup>About the systemic consequences of the temporary occupation of Crimea in the economic sphere: an analytical report. National Institute for Strategic Studies. URL: <https://niss.gov.ua/doslidzhennya/ekonomika/schodo-sistemnikh-naslidkiv-timchasovoi-okupacii-krimu-v-ekonomichniy-sferi>

<sup>14</sup>About the systemic consequences of the temporary occupation of Crimea in the economic sphere: an analytical report. National Institute for Strategic Studies. URL: <http://www.niss.gov.ua/articles/1535>

<sup>15</sup>Prospects and problems of methane extraction from gas hydrates in the Ukrainian sector of the Black Sea: an analytical report. URL: <https://niss.gov.ua/doslidzhennya/nacionalna-bezpeka/perspektivi-ta-problemi-vidobuvannya-metanu-iz-gazogidrativ-v>

Construction limestone	1,246 billion tons	16.584
Flux limestone	992 million tons	13.190
Total		52.323

*Source:* Geoinform of Ukraine, State Statistics Committee, CES.

As a result of the Russian intervention in **Donetsk and Luhansk oblasts** at the beginning of 2022, about 40% of the territory of these regions was occupied, which is almost 17 thousand km<sup>2</sup>. According to the Ministry of Reintegration, another 7 thousand km<sup>2</sup> of the government-controlled part of Donbas at the time were temporarily unfit for commercial use due to a significant number of mines and explosives<sup>16</sup>.

Until 2014, Ukraine did not depend on **thermal coal** supply due to extracting its sufficient quantities and even partially exporting it. Only a certain amount of coking coal for metallurgy was imported. In 2013, the country produced 64.4 million tons of coal, with about 2/3 of this amount used for electricity. Because of Russian hybrid aggression, coal output fell to 24.2 million tons in 2017, or 2.7 times, and has not increased since. Overall, according to the Ministry of Energy and Coal Industry, there are 85 mines of all forms of ownership in the occupied territories, which is 57% of their total number in Ukraine, including 100% of anthracite coal deposits, which at the beginning of 2017 accounted for more than a third of Ukraine's total heat consumption<sup>17</sup>.

Ukraine has suffered significant **environmental losses** since the start of combat in the east of the country. The most significant repercussion was the contamination of terrestrial and underground sources of drinking water supply with chemicals from destroyed industrial enterprises and waste storage facilities, including flooding of mines. More than 35 mines are currently flooded<sup>18</sup>. Among them is the Young Communist mine, where an underground nuclear explosion took place in 1979<sup>19</sup>. It poses a threat to the pollution of aquifers and the loss of drinking water quality, waterlogging of soils, and, consequently, the impossibility of economic use of the territory, the location of settlements or infrastructure facilities in large areas.

17% of forests and 24% of steppes suffered ecological losses<sup>20</sup>. For example, two sites of the nature reserve fund of Donetsk Oblast, the Regional Landscape Park "Donetsk Ridge" and the National Nature Park "Holy Mountains", lost about 14 billion UAH due to combat<sup>21</sup>. A total of 33 nature reserves were affected<sup>22</sup>. Hundreds of hectares of agricultural land were damaged as a result of hostilities in 2014 – 2021, the location of military and auxiliary units, and mine contamination, which will require special reclamation to return to circulation.

### 2.3. Direct financial losses

In 2013, payers in the Autonomous Republic of Crimea and the city of Sevastopol paid UAH 11.7 billion to the **consolidated budget**, which was controlled by the SFS, including UAH 9.4 billion in tax payments and UAH 2.3 billion in customs payments. Revenues from the single

<sup>16</sup>Ministry of Reintegration: about 7 000 km<sup>2</sup> of Donbas are "critically contaminated with mines". URL: <https://www.radiosvoboda.org/a/news-donbas-rozminuvannia/31052815.html>

<sup>17</sup>Coal industry of Ukraine during the hybrid war: an analytical report. URL: <https://niss.gov.ua/doslidzhennya/nacionalna-bezpeka/vugilna-promislovist-ukraini-v-umovakh-gibridnoi-viyni-analitichna>

<sup>18</sup>Environmental damage assessment and priorities for environmental restoration in Eastern Ukraine. OSCE. URL: [https://www.osce.org/files/f/documents/6/3/362581\\_0.pdf](https://www.osce.org/files/f/documents/6/3/362581_0.pdf)

<sup>19</sup>The State Environmental Inspection checked the radiation background in Donbas. URL: <https://www.kmu.gov.ua/news/derzhkoinspekciya-perevirila-radiacijnij-fon-na-donbasi>

<sup>20</sup>Lychenko I. O. Problems of environmental safety of the temporarily occupied territories of Donetsk and Luhansk oblasts and organizational and legal foundations of their solution. URL: <https://deis.menr.gov.ua/lib/?showarticle/ua/16>

<sup>21</sup>Donbas: the state of the environment and new environmental threats. The Press Service of NASU. URL: [https://www.nas.gov.ua/text/pdfnews/vasyliuk\\_radiointerview\\_donbas\\_nature\\_war.pdf](https://www.nas.gov.ua/text/pdfnews/vasyliuk_radiointerview_donbas_nature_war.pdf)

<sup>22</sup>Most of the protected areas in the anti-terrorist operation zone were damaged by the war. *Ecology. Right. Man.* 2018. URL: <http://epl.org.ua/environment/bilshist-zapovidnyh-terytorij-v-ato-poshkodzheno-vijnoyu/>



social contribution amounted to UAH 8.1 billion. In January – April 2014, the consolidated budget received UAH 1.9 billion, and the single social contribution amounted to UAH 1.5 billion. Since May 2014, revenues have stopped. The Law of Ukraine "On the Establishment of the Free Economic Zone in Crimea and on the Specificities of Economic Activity in the Temporarily Occupied Territory of Ukraine", which entered into force on September 27, 2014, determined that no national taxes were levied; however, it enabled the exchange of goods between the mainland and the peninsula.

Financial ties with the temporarily occupied part of Donbas have remained in place for some time. Under the threat of physical violence by the militants of the so-called DNR and LNR, small and medium-sized enterprises of the temporarily occupied territory were forced to pay "taxes" to the "government" of the self-proclaimed "republics" during 2014 – 2015. Large enterprises for some time resisted the pressure and paid taxes to the state budget of Ukraine. In March 2017, tax and customs payments to the budgets as well as the single social contribution were almost completely terminated (*Fig. 1*).

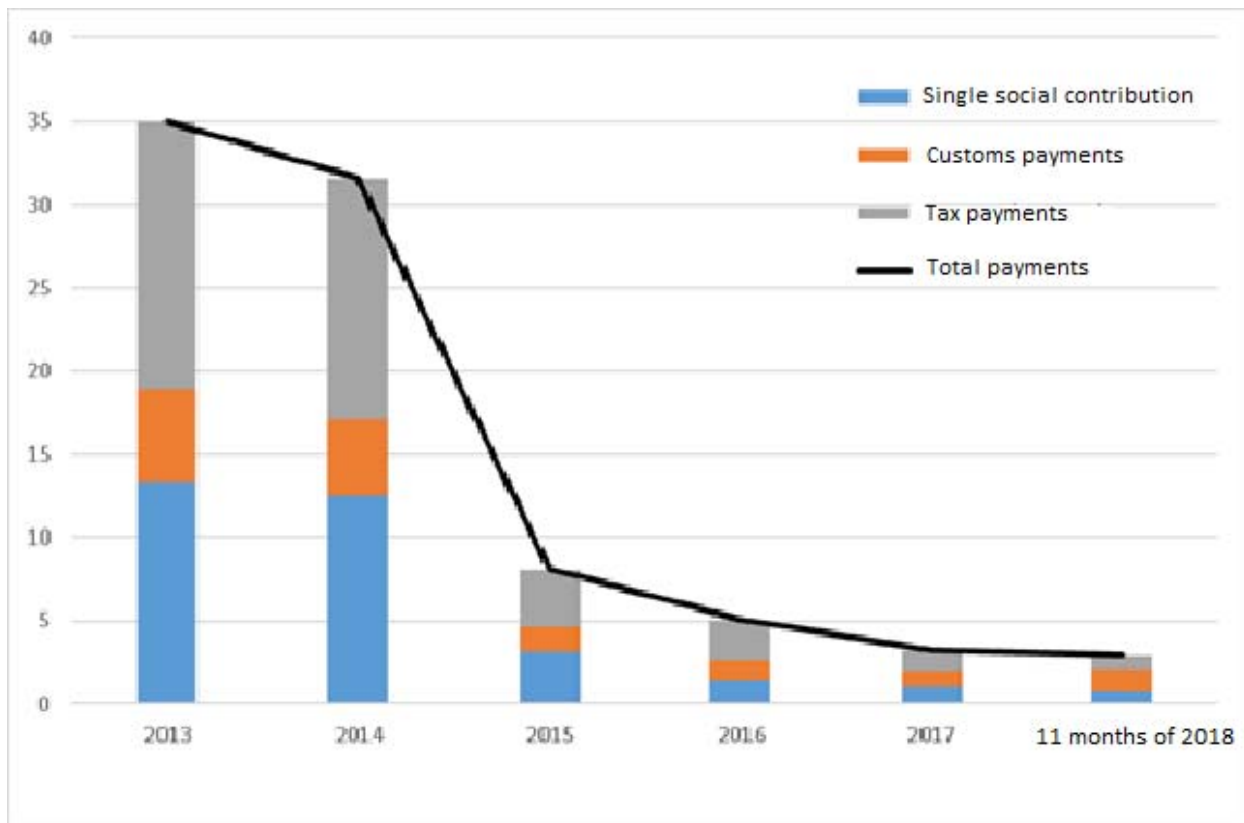
According to a comprehensive macroeconomic assessment by the Center for Economic and Business Research (UK), the loss of tax revenues in Ukraine in 2014 – 2020 due to the war amounted to USD 48.5 billion, or UAH 1 300 billion, which in annual terms amounted to USD 6.9 billion, or UAH 191.0 billion<sup>23</sup>.

The shortfall was to some extent offset by "savings" in budget expenditures. For example, in 2013, UAH 13.3 billion were allocated to support coal mining enterprises to partially cover the costs of finished commodity coal products, whereas in 2014, they received UAH 8.7 billion and in 2015, UAH 1.2 billion respectively. Expenditures for the maintenance of the Council of Ministers of the Autonomous Republic of Crimea and the city of Sevastopol as well as judicial authorities in these territories have not carried out from the second quarter of 2014; expenditures on the Donetsk and Luhansk regional state administrations decreased almost twice in 2014 – 2015.

The Pension Fund of Ukraine estimated the loss of its own funds in the territories not under the control of the Ukrainian government since the beginning of the anti-terrorist operation as of mid-2018 at UAH 70.4 billion, including UAH 5.5 billion in 2014, UAH 14.1 billion in 2015, UAH 20.3 billion in 2016, UAH 20.7 billion in 2017, and UAH 9.8 billion in the first half of 2018.

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<sup>23</sup>Cost to Ukraine of Conflict with Russia: A CEBR Report. 2022, pp. 36–37. URL: <https://cebr.com/wp-content/uploads/2022/02/Cost-to-Ukraine-of-Conflict-with-Russia-a-Cebr-report-February-2022.pdf>



*Fig. 1.* The dynamics of payment by taxpayers registered in the settlements of Donetsk and Luhansk oblasts, where public authorities temporarily do not exercise their powers, and the settlements located along the line of contact, to the Consolidated Budget of Ukraine and the single social contribution in 2013 – 2018, billion UAH.

*Source:* State Fiscal Service of Ukraine <sup>24,25</sup>.

**Simultaneously with the loss of part of tax revenues, there was an urgent need for additional budget expenditures.**

- Ukraine was forced to significantly increase spending to support the security and defense sector. In the 2015 State Budget, the expenditures of the Ministry of Defense were increased 3.5 times compared to 2013 to UAH 49.1 billion, and the expenditures of the Ministry of Internal Affairs were increased 2.3 times (up to UAH 36.5 billion). Since 2015, spending on security and defense has exceeded 5% of GDP (before hybrid aggression, it did not exceed 3.5% of GDP). According to the Center for Economic and Business Research (UK), additional military expenditures were USD 14.9 billion<sup>26</sup> in 2014 – 2020.
- At the end of 2014, a decision was made to suspend budget funding for social benefits in the occupied territories. At the same time, retirees residing in these territories have retained the opportunity to receive retirement benefits in case of re-registration in the

<sup>24</sup>Letter of response from the State Fiscal Service of Ukraine No. 1415/2 / 99-99-07-02-02-10 dated 19.12.2018 to the appeal of the People's Deputy of Ukraine V. Voytsitska. URL: [https://www.slideshare.net/Julia\\_Kasperovich/ss-165126295](https://www.slideshare.net/Julia_Kasperovich/ss-165126295)

<sup>25</sup>The Ministry of Revenue started the administration of the single social contribution in October 2013, so full data for 2013 are not available upon request. Assumptions about the amount of payment of the single social contribution for 2013 were made on the basis of data for the fourth quarter of 2013 (UAH 3.8 billion), which is usually 28-29% of the annual amount of payment of the contribution.

<sup>26</sup>Cost to Ukraine of Conflict with Russia.

territory controlled by Ukraine<sup>27, 28</sup>. As of August 2014, there were a total of 1,278.2 thousand retired persons in the territories that were temporarily not controlled by the Ukrainian authorities. From August 2014 to May 2018, UAH 66.5 billion was paid to retirees residing in the uncontrolled part of Ukraine<sup>29,30,31</sup>.

- There was a large-scale expansion of "specific" social spending. Thus, in 2014, UAH 18.4 million was allocated for the partial payment of the cost of temporary accommodation of persons displaced from the temporarily occupied territory and the ATO area, as well as the occupied territories of the Autonomous Republic of Crimea, and a total of UAH 21,3 billion were allocated in 2015 – 2021. Social expenditures related to the need to support ATO participants were also made.

At the time of the armed conflict in Crimea, according to the NBU, there were 1 022 branches of **Ukrainian banks**, 11 affiliated divisions, 53 representative offices and 2 local banks. The assets of these banks exceeded UAH 22 billion, of which UAH 16 billion were credit liabilities<sup>32</sup>.

In Donetsk and Luhansk oblasts, the State Savings Bank (Oshchadbank), was forced to close 418 branches, and the First Ukrainian International Bank (FUIB) was forced to suspend 31 branches located in the area of the anti-terrorist operation. According to the Prostobank.ua portal, as of August 6, 2014, the largest 50 Ukrainian banks in Donetsk and Luhansk alone had 430 and 190 branches, respectively. Given these figures, experts estimate the total number of forcibly closed bank offices in Donetsk and Luhansk oblasts at 1.3 thousand<sup>33</sup>.

An analysis of the NBU statistics on the structure of the loan portfolio and borrowed funds of the banking system by region revealed that during the period of active hostilities between April 2014 and August 2015, Ukrainian banks in the Donetsk region lost: 61% of borrowed funds (UAH 37.1 billion), in particular 58% of attracted funds of the population (UAH 24 billion); 67% of attracted funds of legal entities (UAH 13.1 billion); and 45% of the loan portfolio (UAH 27.6 billion). In Luhansk Oblast, Ukrainian banks lost 66% of borrowed funds (UAH 9.9 billion), including 67% of attracted funds of the population (UAH 7.7 billion); 63% of attracted funds of legal entities (UAH 2.2 billion); 3% of the loan portfolio (UAH 0.2 billion). Thus, the total losses of the banking system in the two oblasts amounted to UAH 47.0 billion of borrowed funds and UAH 27.8 billion of the loan portfolio.

Losses in the banking system also include the loss of customers who stopped using Ukrainian banks. According to the analysis of open sources on the dynamics of active payment cards in the regions of Ukraine for 9 months of 2014, the leaders in terms of reducing their number were Donetsk Oblast (-670 thousand active cards, or 20% compared to early 2014) and Luhansk

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<sup>27</sup>Some issues of financing budget institutions, making social payments to the population and providing financial support to individual enterprises and organizations of Donetsk and Luhansk oblasts, as well as other payments from accounts opened with the Treasury: Resolution of the Cabinet of Ministers of Ukraine No. 595 of 07.11.2014. URL: <https://zakon.rada.gov.ua/laws/show/595-2014-%D0%BF#Text>

<sup>28</sup>On the decision of the National Security and Defense Council of Ukraine of November 4, 2014, "On urgent measures to stabilize the socio-economic situation in Donetsk and Luhansk oblasts": Decree of the President of Ukraine No. 875 / 2014 of 14.11.2014. URL: <https://zakon.rada.gov.ua/laws/show/875/2014#Text>

<sup>29</sup>Minutes No. 27 of the meeting of the Board of the Pension Fund of Ukraine dated December 2, 2016. Kyiv: Pension Fund of Ukraine. URL: <https://www.pfu.gov.ua/31732-p-r-o-t-o-k-o-l-27-zasidannya-pravlinnya-pensijnogo-fondu-ukrayiny-vid-2-gradnya-2016-roku/>

<sup>30</sup>Kasperovych Y.V. 2018. Methodical approaches to the assessment of fiscal losses of Ukraine due to the hybrid war of the Russian Federation. *Economy and the State*. 12, pp. 8–15. URL: [http://www.economy.in.ua/pdf/12\\_2018/4.pdf](http://www.economy.in.ua/pdf/12_2018/4.pdf)

<sup>31</sup>Kasperovych Y.V. Security dimension of fiscal policy in the process of reintegration of occupied territories and support of IDPs: an analytical report. National Institute for Strategic Studies. URL: <https://niss.gov.ua/doslidzhennya/ekonomika/bezpekovi-vimir-fiskalnoi-politiki-v-procesi-reintegracii-okupovanikh>; [https://niss.gov.ua/sites/default/files/2018-08/1\\_Kasperovych\\_Bezpekov-2d157.pdf](https://niss.gov.ua/sites/default/files/2018-08/1_Kasperovych_Bezpekov-2d157.pdf)

<sup>32</sup>The National Bank of Ukraine estimates the losses of Ukrainian banks in Crimea at UAH 22 billion. URL: <https://www.unian.ua/economics/finance/930037-natsbank-otsinyue-vtrati-ukrajinskih-bankiv-u-krimu-v-22-mlrd-griven.htm>

<sup>33</sup>Horbulin V. P. et al. (Eds.). 2015. Donbas and Crimea: the Cost of Returning. Kyiv: NISS.

Oblast (-417 thousand active cards, or 26%, compared to early 2014). Thus, as a result of hostilities in the east of the country, the banking system in two oblasts lost at least 1 million individual clients.

Losses of the banking system due to the unlawful annexation of Crimea and hostilities in Donetsk and Luhansk oblasts significantly affected the banking crisis in 2014, which significantly worsened the financial and economic condition of the country during this period.

#### *2.4. Loss of production capacity*

Hostilities, loss of part of the territory, destruction of production chains and unfavorable conditions for entrepreneurship have led to significant **losses of economic capacities of businesses**. According to the State Statistics Service, as of 2013, 131 large enterprises, 2 247 medium-sized enterprises and 37 738 small enterprises were registered in Donetsk and Luhansk oblasts. As of 2018, their number dropped to: 33 large enterprises, 706 medium and 12441 small enterprises. Also, as of 2013, there were 13 large, 830 medium and 19673 small enterprises in Crimea. Under the Law "On the Establishment of Crimea Free Economic Zone" a transitional period was set until January 1, 2015, during which companies that decided to relocate to the mainland of Ukraine could do so without customs duties and without fear of penalties. According to the SFS, at the beginning of February 2015, 1 956 taxpayers used the re-registration procedure on the mainland, including 829 legal entities and 1 127 natural persons-entrepreneurs.

One of the factors contributing to losses of business entities was a sharp **deterioration of their financial situation in the conditions of complex risks**. In particular, in 2014 the net loss of enterprises in the country exceeded UAH 590 billion, and in 2015 it amounted to UAH 373.5 billion. Only since 2016, the situation has stabilized in some way, which allowed companies to generate a small profit of UAH 28.6 billion.

For Ukrainian **industry**, which for many decades developed in close cooperation and foreign economic relations with Russia, the destructive effects of Russia's economic aggression began to manifest themselves long before the active phase of armed conflict. They intensified in 2013 with the development of systematic restrictions by Russia concerning Ukrainian exports<sup>34</sup>, which caused significant losses to basic industries: metallurgy, mechanical engineering, and food industry. A significant number of high value-added manufacturing industries, focused mainly on the Russian market, have stopped as a result of the inability to diversify sales markets.

As a result of the occupation of parts of Donetsk and Luhansk oblasts and the Autonomous Republic of Crimea, **a significant part of the industrial capacity of the fundamental industries**, including metallurgy, chemistry and coke chemistry, as well as mechanical engineering, was lost. **The destruction of production chains with enterprises in the occupied areas**, the further introduction of foreign trade restrictions on Ukrainian industrial products and the blocking of transportation in the Sea of Azov, which transported about a third of Ukrainian metallurgical exports, led to reduced industrial exports of major metallurgical and engineering products. As the coal-coke-metal chains were broken, even those metallurgical plants that kept working in the unoccupied part of Ukraine experienced difficulty in supplying raw materials.

Whilst in 2014 – 2016, a certain part of the broken production chains was maintained due to the maintenance of commercial ties with enterprises in the uncontrolled territory, these chains were completely broken after their "nationalization" by the "authorities" of the so-called DNR and LNR and the implementation of the decision of the National Security and Defense Council of Ukraine dated March 15, 2017, on the temporary cessation of movement of goods across the line of contact in the ATO zone.

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<sup>34</sup>In July 2013, after the refusal of the Russian side to prolong the Agreement concluded in 2011 on the regulation of the supply of steel pipes, Ukrainian pipe products have been subject to anti-dumping duties, which reached 40% of customs valuation for some types of pipes; in July 2013. The Sanitary Service introduced a ban on the import of Ukrainian confectionery products to Russia. At the end of September 2013, certificates for Ukrainian-made freight cars were suspended for a long time, and special duties were introduced on tableware and kitchen porcelain imported to the territory of the Customs Union, from which Ukrainian producers suffered the most.

In 2013, the volume of sold products of the Crimean industries amounted to UAH 26.5 billion (2% of the total industrial products of Ukraine), and a total of UAH 293.3 billion (21.7%) in Donetsk and Luhansk oblasts. In 2014, the share of these two oblasts decreased to 15.5%, and in 2015, to 12.0%. **At comparable prices, the industrial production of Donetsk and Luhansk oblasts in 2014 decreased by 36% compared to the previous year (the loss amounted to UAH 104.8 billion in terms of 2013 prices, or 7.8% of Ukraine's industrial production). In 2015, the industrial production of these regions was already 2.2 times less, and in 2016, 2.6 times less than in 2013 (UAH 182 billion less in terms of 2013 prices, or 13.4% of the all-Ukrainian indicator in 2013) (Fig. 2).** An additional decrease of 1.8 times in industrial production due to the cessation of movement of goods across the line of contact in the ATO zone in 2017 was recorded only in Luhansk Oblast.

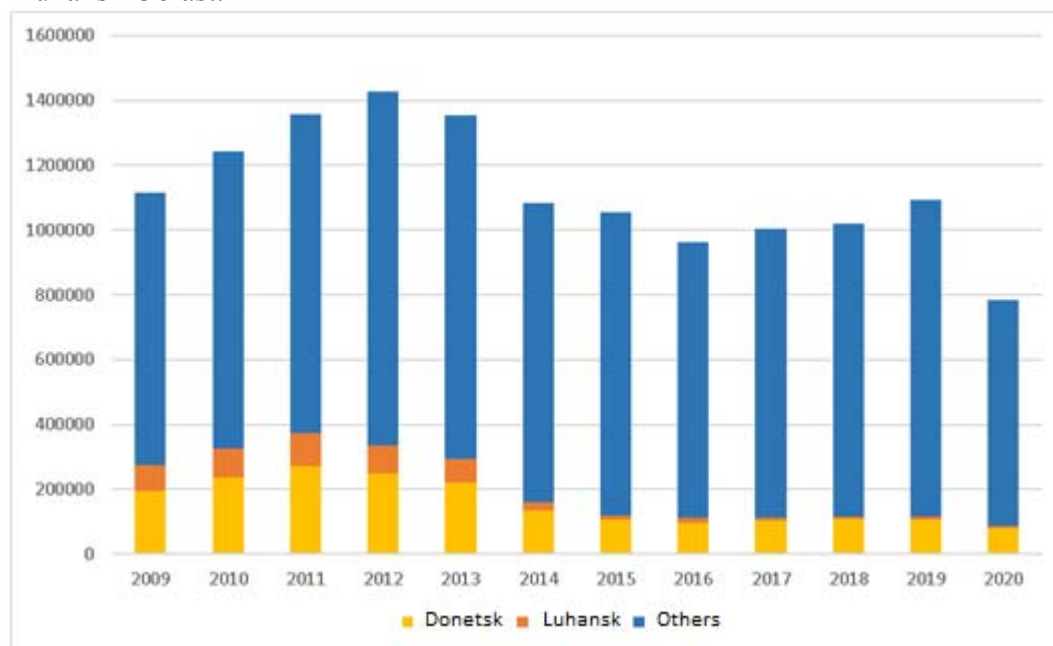


Fig. 2. Volume of sold industrial products, UAH million at 2013 prices  
Source: Based on data from the State Statistics Committee

In occupied Crimea, Ukraine lost, in particular, the Crimean Soda Plant in Krasnoperekops, which is the only soda plant in Ukraine that continued to operate; Balaklava Ore Bureau, which is a producer of limestone and raw materials for metallurgy (two other limestone producers in Ukraine are located in the temporarily occupied territory); Crimean Titanium, which is the largest producer of titanium dioxide in Eastern Europe.

In addition to destroying and exporting more than a third of Ukraine's industrial capacity immediately after the conflict<sup>35</sup>, the governments of the self-proclaimed "republics" actively exploited Ukraine's industrial capacity through direct supplies of raw materials and componentry from Russia. **In particular, the list of "nationalized" enterprises included Donetsk Metallurgical Plant, Khartsyzsk Pipe Plant, Alchevsk Metallurgical Plant, Yenakiyev Metallurgical Plant and its branch in Makiyivka, Makiyivka Coke Plant, Yasynivka Coke Plant, Komsomolsk Ore Bureau and many other companies.**

**At the same time**, according to the Donbas Public Union<sup>36</sup>, the Luhansk Machine-Building Plant, the Luhansk Locomotive Works (Luhanskteplovoz), the Luhansk Pipe-Rolling Plant, the Luhansk Aircraft Repair Plant, the Yunost space industry defense enterprise, and the 100th Plant

<sup>35</sup>Poroshenko, P. .One third of the industrial capacity of Donbas was carried away to Russia. URL: [https://gazeta.ua/articles/np/\\_dorosiyyi-vivezli-tretinu-promislovogo-potencialu-donbasu-poroshenko/620472?mobile=false](https://gazeta.ua/articles/np/_dorosiyyi-vivezli-tretinu-promislovogo-potencialu-donbasu-poroshenko/620472?mobile=false)

<sup>36</sup>What enterprises the Russian invaders destroyed and looted in Donbas / CityNews. URL: <http://www.citynews.net.ua/news/48317-kakie-predpriyatiya-v-donbasse-unichtozhili-i-razgrabili-rossiyskie-okkupanty-spisok.html>

manufacturer of electronic equipment, and the Donetsk enterprise on cultivation of crystals for the microelectronic industry were dismantled and smuggled to Russia.

The damage caused to the national defense industry is significant due to the loss of control over a number of defense enterprises in the occupied territories, as well as the suspension of supplies of Russian military and dual-use products, which came within the Ukrainian-Russian interstate cooperation and inter-factory cooperation.

Important enterprises producing ammunition, explosives, special chemicals and special materials, as well as aircraft repair works were located in the occupied part of Luhansk and Donetsk oblasts. According to Ukrainian intelligence services, in 2015 – 2016, militants in cooperation with the Russian invaders dismantled equipment from a number of defense companies, including the Topaz Donetsk Plant, known for developing military electronic warfare systems. A number of defense enterprises important for shipbuilding and ship repair, aviation and tank building were lost in occupied Crimea. Currently, they are involved with the implementation of the defense order for the Russian Federation. The Ukrainian defense industry suffered significant personnel losses due to the departure of employees of these enterprises from the combat zone. The Russian Federation motivated Ukrainian highly qualified engineers and workers to work at Russian plants.

**The stability of the energy sector has been disrupted** and control over part of the assets of the fuel and energy complex of Ukraine has been lost.

In particular, **as a result of the temporary occupation of the Autonomous Republic of Crimea**, the aggressor seized public and private power generating capacities, including a number of thermal power plants (TPP) with a total capacity of 144.5 MW, wind power plants (WPP) with the capacity of over 60 MW, solar power plants (SPP) with the capacity of over 224 MW as well as power lines (main and secondary) and distribution lines. The total value of assets lost on the territory of the ARC by Ukrenergo alone is estimated at almost USD 1 billion<sup>37</sup>.

Ukraine has suffered the most painful economic losses in Crimea from the seizure of oil and gas assets. PJSC “Chornomornaftogaz”<sup>38</sup> included: production equipment and production infrastructure (10 offshore gas production platforms, 4 self-elevating drilling rigs<sup>39</sup>), transportation and storage infrastructure (a gas transmission system with 1 200 km of main gas pipelines and 45 gas distribution stations, as well as Hlibovske underground gas storage).

**As a result of hostilities in Donetsk and Luhansk oblasts**, significant capacities of Ukraine's fuel and energy complex were lost due to the destruction of energy infrastructure facilities and the expropriation of energy assets by the occupying power, including the largest energy assets Starobeshivska TPP (2 300 MW) and Novoazovsk WPP (79.3 MW).

In addition to the massive destruction of distribution networks across a large area, Luhansk TPP (1.4 GW), Vuhlehirsk TPP (3.6 GW) and Myronivsky TPP (0.2 GW) were repeatedly shelled during 2014 – 2015, which led to damage to the equipment, substations and power lines. Due to the destruction of electricity distribution networks during the entire period of the armed conflict, Luhansk TPP performed load allocation only for Luhansk Oblast, not being able to cover the power deficit of Ukraine's UES. The destruction and blocking of transport infrastructure made Luhansk TPP dependent on coal supplies from Russia.

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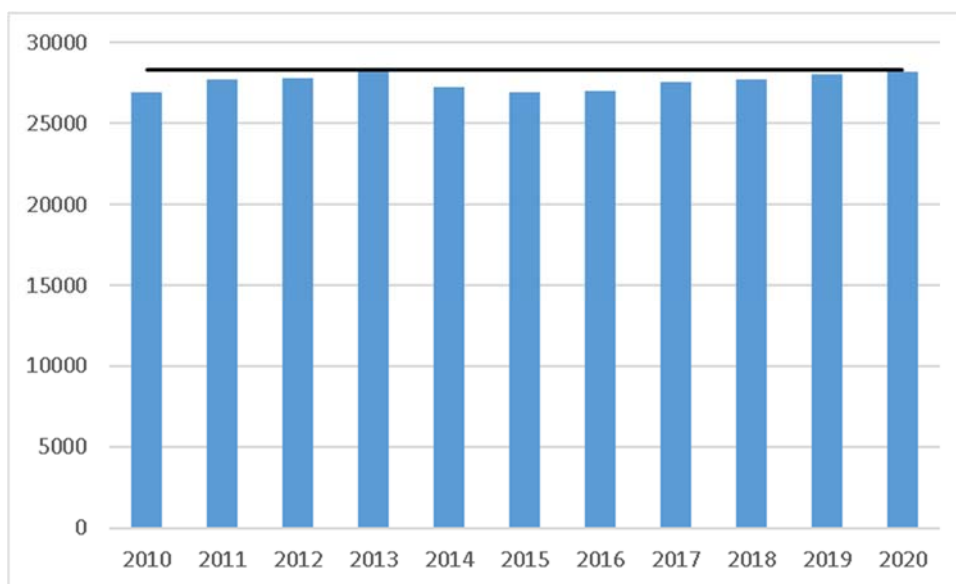
<sup>37</sup>Ukrenergo estimates the assets lost in Crimea at USD 800 – 900 million. URL: <http://economics.unian.ua/energetics/1529388-ukrenergo-otsinyue-vartist-vtrachenih-aktiviv-u-krimu-v-800-900-milyoniv.html>

<sup>38</sup>How the enterprise was misappropriated in a matter of hours, URL: <http://ukrpravda.net/index.php?topic=4286.msg97921#msg97921>

<sup>39</sup>The self-proclaimed Crimean authorities seized the scandalous "Boyko towers". URL: [http://gazeta.ua/articles/economics/\\_samoprogoleshena-vlada-krimu-zahopila-skandalni-vishki-bojka/546919?mobile=true](http://gazeta.ua/articles/economics/_samoprogoleshena-vlada-krimu-zahopila-skandalni-vishki-bojka/546919?mobile=true)

In addition to the destruction of energy facilities, Ukraine did not receive payment for the energy and energy resources consumed in the occupied territories<sup>40</sup>. By April 2015, the debt for consumed electricity exceeded UAH 3.9 billion<sup>41</sup>.

As a result of the hybrid aggression of the Russian Federation against Ukraine, the agricultural sector suffered a number of losses, which ultimately had a negative impact on the macroeconomic performance of the industry and revenues to the state and local budgets. **Compared to the period before the hostilities, more than 750 thousand ha were lost in the Autonomous Republic of Crimea, about 590 thousand hectares in Donetsk and Luhansk oblasts**, which affected the size of crop areas in Ukraine (*Fig. 3*). The total sown area in the controlled territories of Donetsk and Luhansk oblasts in 2020 accounted for 76.8% of the sown area of the region in 2013.



*Fig. 3. Sown areas of agricultural crops in Ukraine, thousand ha*

The reduction of sown areas affected the harvest of crops. Production of grain crops in parts of Donetsk and Luhansk oblasts under the government amounted to 2.6 million tons (74% of production in 2013) in 2020, and production of sunflower to 1.0 million tons (72.4% of production in 2013). In 2020, the volume of livestock and poultry in the government-controlled territories of Donetsk and Luhansk oblasts decreased to 56% out of the region's production in 2013<sup>42</sup>.

The agricultural sector of the Autonomous Republic of Crimea was focused mainly on food supply for the local population and seasonal travelers (except for the cultivation of early vegetables and fruits, which were sent to the mainland). The wine industry played a special role: as of 2013, there were 25.2 thousand ha of vineyards on the peninsula, or 37% of their total area in Ukraine, and Crimean companies produced more than half of all bottled wine in Ukraine.

In Crimea, Ukraine lost two fishing ports and fishing fleets in Sevastopol and Kerch, which, in particular, caught ocean fish, a fish-freezing fleet, and a number of large fish farms. The catch of aquatic bioresources in the Black Sea basin of Crimea reached about 80 thousand tons per year, or 65% of the total catch in the Azov-Black Sea fishery basin of Ukraine. Its loss is estimated to

<sup>40</sup>The Prime Minister reminded that Ukrainians residing in the occupied territories do not pay for utilities to the budget of Ukraine. URL: [http://dt.ua/ECONOMICS/ukrayina-vitratila-1-mlrd-dolariv-na-gaz-i-elektroenergiyu-okupovanomu-donbasu-yacenyuk-170066\\_.html](http://dt.ua/ECONOMICS/ukrayina-vitratila-1-mlrd-dolariv-na-gaz-i-elektroenergiyu-okupovanomu-donbasu-yacenyuk-170066_.html)

<sup>41</sup>Zhebrivsky specified the sum of ORDLO's debt for electricity. URL: <https://ubr.ua/ukraine-and-world/society/zhebrivskij-nazval-summu-dolha-ordlo-za-elektrichestvo--3845926>

<sup>42</sup>An analysis of problems of economic development of Donetsk and Luhansk oblasts. A diagnostic report. Project: UA2002 - Economic Transformation Strategy Support. February, 2021. URL: <https://ces.org.ua/wp-content/uploads/2021/04/UA2002-Diagnostic-report-on-the-current-state-of-Donbas-February-2021.pdf>

have brought the import dependence of seafood consumption in Ukraine to 95%<sup>43</sup> (in fact, this figure was about 85% in 2016 due to a sharp decline in fish consumption due to declining effective demand).

**Control over compliance with land users' requirements for protection and rational use of land is lost in agricultural lands of the occupied territories of Donetsk and Luhansk oblasts, which creates risks of deterioration of agro-landscape ecology.** In addition, agricultural lands were adversely affected in the areas where active hostilities took place, and their quality has deteriorated significantly. Many fields in Donetsk and Luhansk oblasts are mined, encumbered with fortifications and broken military equipment, and therefore cannot be used for sowing crops, which affects farmers and the agricultural sector in the region as a whole. In the future, significant funds will need to be allocated for the reclamation of such lands in order to actively cultivate them again. Thus, according to expert estimates<sup>44</sup>, to demine all the territories in Donetsk and Luhansk oblasts, it will take about 4 years and more than USD 5 billion.

Due to the aggression of the Russian Federation, the **transport sector** of Ukraine lost a significant number of infrastructure facilities and rolling stock; the integrity of the transport network was violated, and certain directions of freight transport were cut off from traditional transport routes. **The loss of transported cargo since 2015 has been steadily more than 100 million tons per year, or about 16% of pre-crisis cargo in 2013 (Fig. 4)**, which allows us to associate it mainly with the consequences of aggressive actions of the Russian Federation. **Passenger traffic has also decreased: during 2015–2019 (before the coronary crisis) compared to 2013 by more than 30%, or 2 billion passengers annually (Fig. 5)**. Transport and logistics expenditures of enterprises have increased, the competitiveness of the transport sector in the global market of transport services has fallen, and the profitability of transport enterprises and their ability to carry out much-needed modernization projects in the industry have deteriorated.

JSC Ukrainian Railways (Ukrzaliznytsia) has lost a significant number of infrastructure facilities, traction and rolling stock, as well as qualified personnel. **The total value of assets lost by Ukrzaliznytsia due to hybrid Russian aggression is UAH 13.6 billion (at 2019 prices)**, including UAH 11.4 billion in the temporarily occupied territories of Donetsk and Luhansk oblasts. 637 railroad cars were left behind in Crimea and in the uncontrolled territories in the east of Ukraine including more than 20 thousand freight cars, almost 6 thousand passenger cars and more than 300 locomotives<sup>45 46 47</sup>. In total, almost 10% of the total operational length of public railways was lost, of which 629 km in Crimea and 1182 km in Donetsk and Luhansk oblasts. All total, 800 sites of railway infrastructure have been damaged.

Due to the deterioration of railway logistics caused by the occupation of Donetsk and Luhansk oblasts, part of the transportation of products was reoriented to road transport. In particular, in Donetsk Oblast, the share of road transport in freight traffic increased from 64% in 2013 to 71% in 2018, and the share of rail transport decreased from 36% to 29%<sup>48</sup>, respectively. Along with the intensive military cargo traffic, this has led to accelerated wear and, in some cases, the actual destruction of the road surface.

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<sup>43</sup>Regarding the systemic consequences of the temporary occupation of Crimea in the economic sphere: an analytical report. URL: <http://www.niss.gov.ua/articles/1535>

<sup>44</sup>An analysis of the agricultural sector of Donetsk, Luhansk and adjacent districts of Zaporizhzhya oblasts. URL: [https://www.prostir.ua/wp-content/uploads/2017/07/FINAL\\_2017\\_07\\_27\\_DNLU-Research-Final-Report\\_210x297\\_UKR.pdf](https://www.prostir.ua/wp-content/uploads/2017/07/FINAL_2017_07_27_DNLU-Research-Final-Report_210x297_UKR.pdf)

<sup>45</sup>Ukrzaliznytsia lost UAH 13 billion due to the Russian occupation. URL: [https://socportal.info/ru/archive/ukrzalznitsja\\_vtrabila\\_13\\_mlrd\\_given\\_iz\\_zi\\_rosijskoji\\_okupatsiji/](https://socportal.info/ru/archive/ukrzalznitsja_vtrabila_13_mlrd_given_iz_zi_rosijskoji_okupatsiji/)

<sup>46</sup>Before the annexation, Ukrzaliznytsia managed to evacuate 12 locomotives and 9 electric locomotives from the Crimea. URL: [https://lb.ua/economics/2016/03/22/330886\\_ukrzalznitsya\\_uspela\\_vivezti.html](https://lb.ua/economics/2016/03/22/330886_ukrzalznitsya_uspela_vivezti.html)

<sup>47</sup>Ukrzaliznytsia has declared a threat to national security due to the Supreme Court's decision on the debt of its Donbas branch. URL: <https://www.radiosvoboda.org/a/news-ukrzalznitsya-borhy/30690465.html>

<sup>48</sup>Challenges and the potential of social cohesion in Donetsk Oblast. A field report following up on regional consultations. 2021. Kyiv: UCIPR.



According to the Donetsk and Luhansk regional state administrations, more than 1.8 thousand km of highways and 18 man-made structures (bridges, overpasses, interchanges, etc.) were also destroyed as of the beginning of 2016.

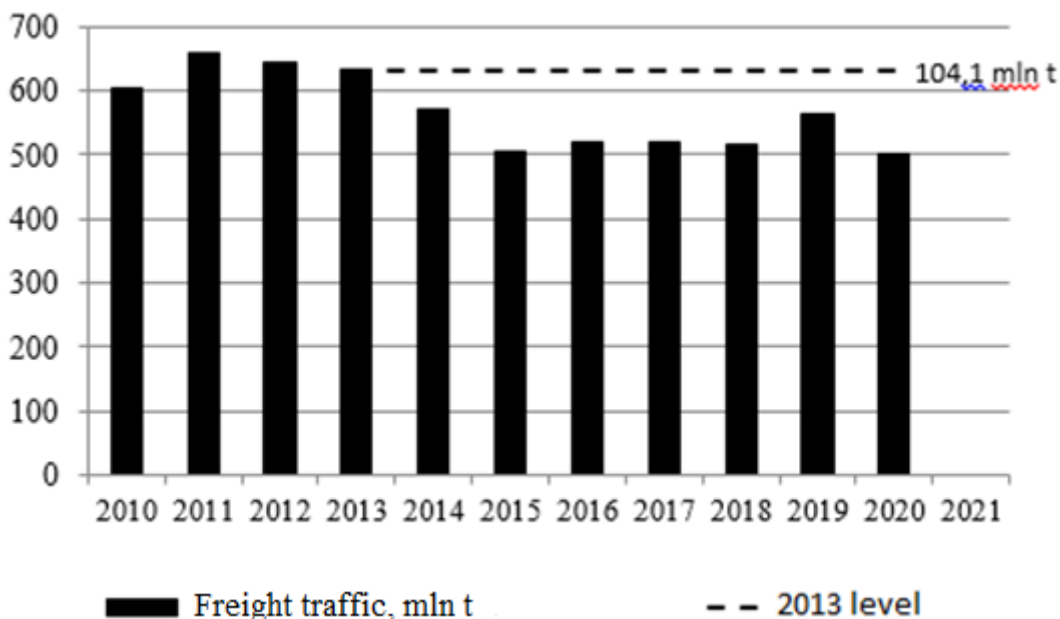


Fig. 4. Dynamics of freight traffic in Ukraine

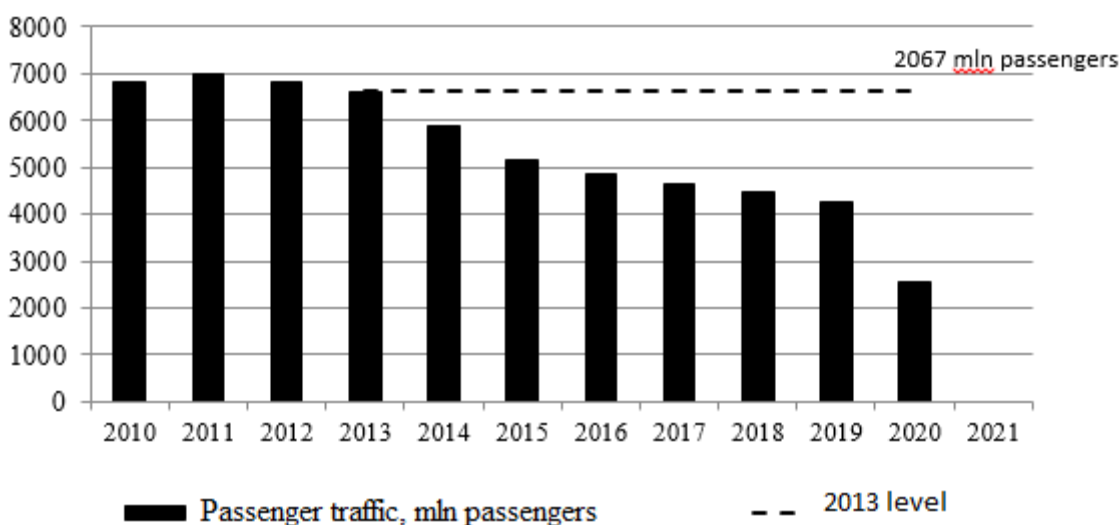


Fig. 5. Dynamics of passenger traffic in Ukraine

As a result of the temporary occupation of Crimea, the Yevpatoria, Kerch, Yalta, Feodosia and Sevastopol sea trade ports were lost, the share of which in the total volume of cargo handled by sea ports of Ukraine in 2013 was 7.6%. According to the State Administration of Sea Ports of Ukraine, assets worth UAH 120.3 billion were lost in occupied Crimea. Due to the construction of the Kerch Bridge, the Ukrainian ports of the Azov coast have lost the ability to accept deep draft vessels (over 8 m) and large surface dimensions (over 33 m above the waterline). Numerous violations by the Russian side of the UN Convention on the Law of the Sea by illegally restricting the freedom of navigation (forced detention and inspection) of Ukrainian merchant ships navigating the Kerch-Yenikale Canal have led to unjustified delays and downtimes. As a result, the time for the passage of the canal was artificially extended, the losses of Ukrainian carriers increased, contractual obligations were broken, and the cost of freight increased.

Consequently, the share of Mariupol Seaport and Berdyansk Seaport in the total volume of cargo handling by seaports of Ukraine decreased from 6.7% in 2017 to 5.7% in 2018 and 5.3% in

2019. In general, due to Russian aggression, losses of cargo flow in Crimean seaports are 13 million tons (the average value for 2012 – 2013<sup>49</sup>), and almost 7 million tons per year in ports of the Azov coast of Ukraine<sup>50</sup> (Fig. 6).

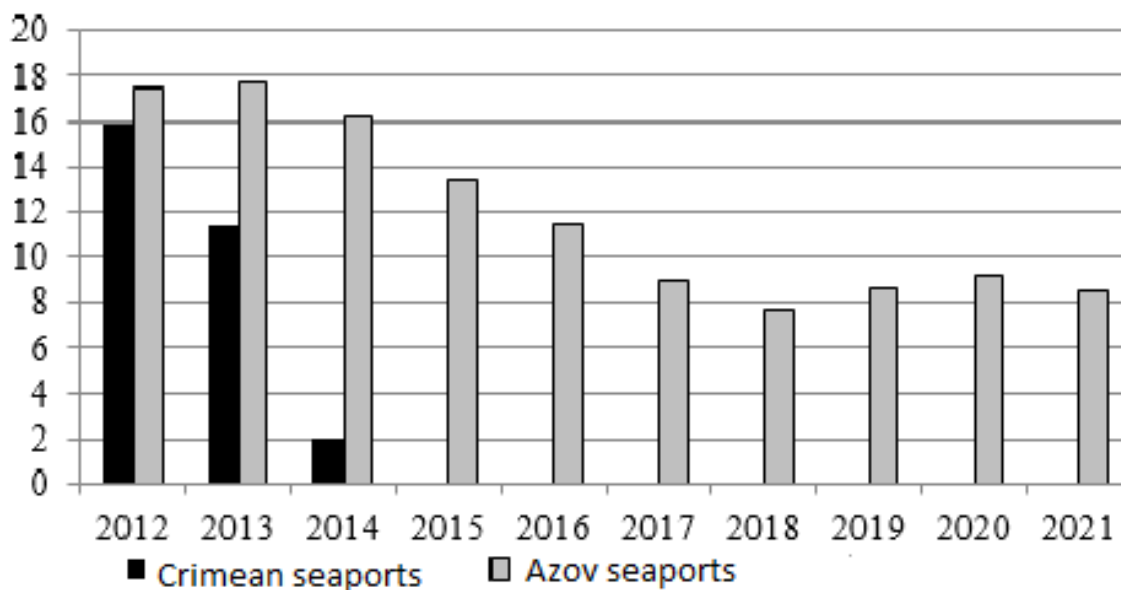


Fig. 6. Cargo handling by seaports in Crimea and on the Ukrainian coast of the Sea of Azov, thousand tons

Source: Ukrainian Seaports Authority

Transit cargo handled by all Ukrainian ports shrank 1.7 times in 2015 compared to 2013 mainly due to the loss of some Russian cargo. Its volume handled by four major Black Sea trading ports of Ukraine contracted by 27.3% in 2015<sup>51</sup>.

**In the aviation industry, five civilian airports (in Simferopol, Dzhankoy, Kerch, Donetsk and Luhansk) were lost along with the associated passenger traffic, which is estimated at more than 400 000 passengers per year.** A significant number of the population of Ukraine was deprived of convenient access to regional and international flights. Donetsk and Luhansk airports were completely destroyed. The need to bypass the airspace over the temporarily occupied territories required additional time and fuel, so airlines were forced to increase their service costs.

The crisis of early February 2022 showed the sensitivity of Ukraine's transport sector to hostile influences. Under the pretext of military exercises, the Russian Navy blocked significant areas of the Black and Azov Seas, which obstructed the traditional safe routes recommended for ships going to or from Ukrainian seaports. The movement of ships in the Black Sea could be carried out only with a significant deviation from the recommended routes along the new unscheduled corridors. Due to the threat of hostilities, the world's leading insurance companies recognized the Black and Azov Seas as high-risk areas, which resulted in augmenting insurance premiums for ship operators in the region. Also, for security reasons, a significant number of Ukrainian airlines were recalled by lessors. To avoid the procedure, the Government of Ukraine promptly provided state guarantees for UAH 16.6 billion. Not only did domestic air carriers suffer losses. Due to the threat of Russian invasion, shares of foreign airlines operating in the Ukrainian

<sup>49</sup>The Ukrainian Seaports Authority was established in 2013, so the data are available starting from 2012.

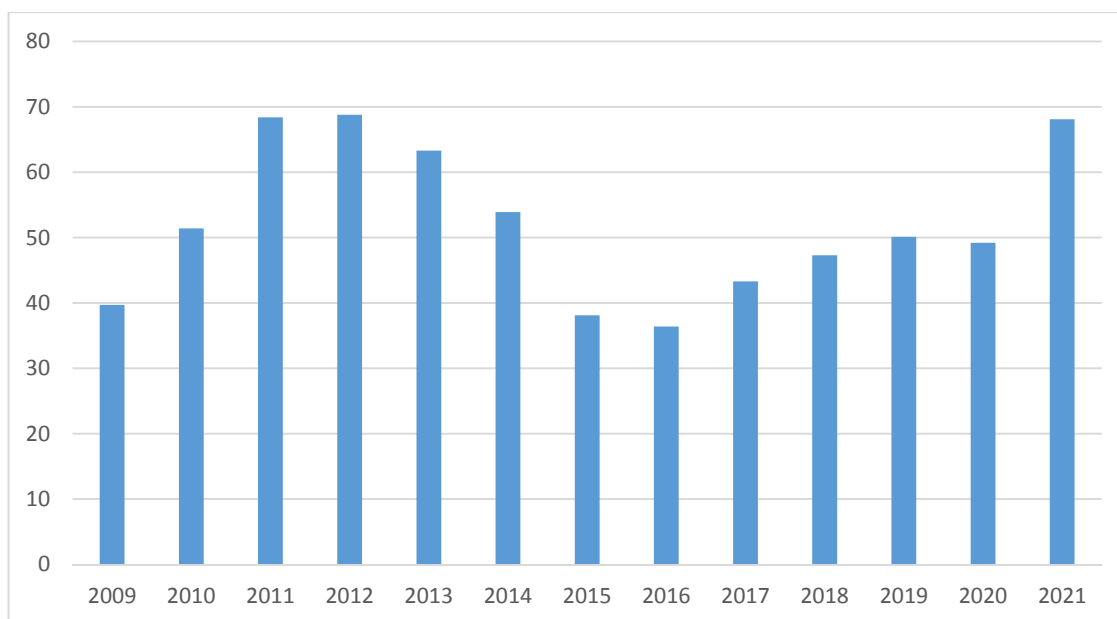
<sup>50</sup>Cargo handling losses by the ports of the Azov coast of Ukraine include the reduction of cargo handling volumes by Mariupol and Berdyansk seaports in 2014 – 2015 and in 2018 due to the commissioning of the Kerch Bridge.

<sup>51</sup>The volume of traffic of Russian cargo through the seaports of Ukraine in 2015. URL: <http://ports.com.ua/analitics/obem-perevozok-rossiyskikh-gruzov-cherez-morskie-porty-ukrainy-v-2015-godu>

market fell, including Wizz Air Holdings Plc (11%), Air France-KLM (7.6%) and Deutsche Lufthansa AG (6.1%)<sup>52</sup>.

## 2.5. Loss of international market positions

During 2012 – 2013, exports of goods from Ukraine decelerated rapidly. While in 2004 – 2013 the average growth of exports of goods was 13.7% per year,<sup>53</sup> in 2012, exports increased by only 0.6% and reached an all-time high of USD 68.8 billion dollars since 1991. Then in 2013, it decreased by 8% (USD 5.5 billion) (*Fig. 7*). That decline was largely due to Russia's deliberate actions to oust Ukrainian goods from its markets. Exports to Russia decreased by 11% in 2012 and by 14.6% in 2013. During those two years, exports to Russia from Ukraine fell at least USD 6.9 billion short.



*Fig. 7.* Exports of goods from Ukraine in 2009 – 2021, USD billion

During 2014 – 2016, under the influence of armed aggression and trade restrictions on the part of the Russian Federation, logistics difficulties on the country's eastern border, Ukraine's foreign trade in goods declined significantly, reaching its lowest level of USD 36.4 billion in 2016. Only in 2021, exports nearly reverted to the 2012 level of USD 68.1 billion<sup>54</sup>.

The main factor in the negative trends was the loss of export potential of Crimea and the temporarily occupied parts of Donetsk and Luhansk oblasts. According to the 2013 data, exports of goods from Crimea amounted to USD 0.9 billion dollars (1.4% of total exports of goods from Ukraine) and from Donetsk and Luhansk oblasts at USD 15.9 billion (25.2%). As a result of the aggression, exports from Donetsk and Luhansk oblasts fell to 10.3 billion dollars. US in 2014 and \$ 4 billion. US in 2015. **The total loss of export revenues from these two oblasts amounted to USD 17.5 billion in 2013 – 2015.** This figure is half of Ukraine's aggregate loss of export earnings during that period.

It is estimated that stopping the movement of goods across the line of contact in 2017 should have reduced foreign exchange earnings from exports by about USD 2 billion<sup>55</sup>. In fact, in

<sup>52</sup>Airlines Pull Services Back Further From Ukraine. URL: <https://www.bloomberg.com/news/articles/2022-02-14/airlines-pull-back-further-from-ukraine-as-tensions-dent-shares>

<sup>53</sup>The calculation is based on data from the State Statistics Service of Ukraine.

<sup>54</sup>According to the State Customs Service of Ukraine

<sup>55</sup>Temporary cessation of cargo movement across the line of contact within Donetsk and Luhansk oblasts: assessments, consequences, decisions: NISS analytical estimates. 2017. Kyiv: NISS.

2017, exports from Donetsk Oblast increased by USD 800 million (29.2%) and they decreased by \$ 200 million. (1.9 times) from Luhansk Oblast.

Hybrid aggression has negatively affected Ukraine's export capacity due to:

- the loss of logistics capacity, especially ports in Crimea; as for the cargo turnover of goods destined for export, the share of these ports in 2013 amounted to 5.4% of the total turnover of goods exported by Ukraine<sup>56</sup>;

- limitation on the use of the Kerch Strait for the export of goods from the ports of Ukraine in the Sea of Azov (primarily from Mariupol);

- narrowing opportunities for exports to the Russian Federation by restricting the admission of Ukrainian goods to the Russian market. The hybrid war began with Russia restricting access of Ukrainian agricultural products and food products to its territory: while in 2013 the export of agricultural and food products to Russia amounted to USD 1.9 billion, in 2014 it fell to USD 0.9 billion, and in 2015 to USD 0.3 billion. On January 1, 2016, the Russian Federation suspended the Free Trade Agreement for Ukraine, resuming import duty rates on imports of goods originating in Ukraine, and imposed an embargo on certain goods of Ukrainian origin, such as meat, fish, dairy products, vegetables, fruits, nuts and sausages<sup>57</sup>. It resulted in the actual suspension of exports of Ukrainian goods to Russia. In the following years, the Russian Federation imposed restrictions on the supply of a significant range of goods from Ukraine, which virtually deprived domestic exporters of access to its markets. **In general, in 2014 – 2015, exports from Ukraine to Russia decreased by USD 15.5 billion, and in 2015 was 3.1 times less than in 2013.** In 2014-2020, total exports from Ukraine to Russia decreased by 82.0% from USD 15.1 billion in 2013 to USD 2.7 billion in 2020;

- restraints on the use of the territory of the Russian Federation for the transit of goods from Ukraine and regular slowdown of Ukrainian goods at border customs points. In 2016-2019, the Russian Federation imposed restrictions on the transportation of Ukrainian products by road and rail, which negatively affected exports to Central Asia, China and Mongolia.

## 2.6. Loss of human and social potential

The most tangible social consequences entailed by the occupation of Crimea and part of Donbass were the losses, which manifested themselves in the reduction of the country's most valuable resource – human potential. As of January 1, 2014, the population of the Autonomous Republic of Crimea together with the city of Sevastopol was 2.4 million people. By 2014, almost 6.5 million people resided in Donetsk and Luhansk oblasts, or about 14% of the total population of Ukraine. In 2014 – 2017, according to the State Statistics Service and the administrations of the self-proclaimed "DPR" and "LPR", a total of about 3.8 million people lived in the occupied territories<sup>58</sup>. According to estimates as of the end of 2021, the number of people living in the government-controlled area in this region decreased to 1.9 million people in Donetsk region<sup>59</sup> (– 65%) and to 0.7 million people in Luhansk region<sup>60</sup> (–70%). To sum up, **as a result of Russian aggression, Ukraine's demographic losses due to various factors amounted to 6.3 million people, or 14% of the country's population as of early 2014.**

The irreparable human losses were the highest price that Ukraine has paid because of the hostilities. According to the Office of the UN High Commissioner for Human Rights, as of the

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<sup>56</sup> Ukrainian Seaports Authority. URL: <http://www.uspa.gov.ua/pokazniki-roboti/pokazniki-roboti-2013>

<sup>57</sup> Veremiy I. H. et al. 2021. Transformation of Ukraine's foreign economic relations with the Russian Federation in 2010 –2020: an analytical report. Academic online publication. Kyiv, NISS. URL: [https://niss.gov.ua/sites/default/files/2021-09/analytrep\\_05\\_2021.pdf](https://niss.gov.ua/sites/default/files/2021-09/analytrep_05_2021.pdf)

<sup>58</sup> Demographics in ORDLO. URL: <https://www.dsnews.ua/static/longread/donbas-ukr/demographiya-ordlo.html>

<sup>59</sup> Development strategy of Donetsk Oblast for the period up to 2027. URL: <https://www.minregion.gov.ua/wp-content/uploads/2020/04/doneczka-strategiya-rozvytku-doneczkoyi-oblasti-na-period-do-2027-roku.pdf>

<sup>60</sup> Development strategy of Luhansk Oblast for 2021-2027. URL: <https://www.minregion.gov.ua/wp-content/uploads/2021/11/strategiya-rozvytku-luganskoyi-oblasti-na-2021-2027-roky.pdf>

beginning of 2022, about 4.2 thousand Ukrainian servicemen were killed in Donbas including both combat and non-combat losses suffered by all military and law enforcement agencies and more than 10 thousand were wounded. The toll of the Russian proxy forces was estimated at 5.7 thousand dead and up to 14 thousand wounded. Civilian casualties on record include about 3.4 thousand dead and up to 9 thousand wounded.

Mass forced relocations have posed a grave socio-economic challenge. According to the Interdepartmental Coordination Headquarters for Social Security of Internally Displaced Persons (IDPs), more than 200,000 people were forced to leave their homes by the end of the summer of 2014, and their number reached 1 million by the end of 2015. According to the Ministry of Social Policy<sup>61</sup>, **the number of migrants from the territories not controlled by Ukraine hit a record high of about 1.8 million people in 2016. After 2017, it stabilized and at the beginning of 2022 amounted to 1.5 million people, or 3.5% of the population of Ukraine.** Most IDPs are located in Donetsk (500 000) and Luhansk (almost 300 000) oblasts, as well as in Kyiv and Kyiv Oblast (220 000 total). It is worth noting that as of the beginning of 2021, about 80% of the IDPs registered in Donetsk and Luhansk oblasts were children, people with disabilities and the elderly<sup>62</sup>.

Victims of the conflict, even previously relatively well-off people, found themselves in a situation of sudden poverty. According to sociology, only about 10% of families from the ATO / JFO zone (regardless of whether they moved to other regions or stayed in the affected areas) were able to maintain a relatively stable financial situation and did not need social support<sup>63</sup>. During the 19th round of the National IDP Monitoring System (March 2021), 50% of respondents assessed their financial situation as "enough money only for food" or "forced to save even on food". According to the monitoring, 54% of IDPs are forced to rely on state aid, which is their second largest source of income (after wages). After all, **the average per capita income of UAH 3 651 per person in IDP households as of March 2021 is one third lower than the average and lower than the cost of living in Ukraine (UAH 4 224 in March 2021)**<sup>64</sup>. IDPs are supported through a number of budget programs, including temporary housing and the purchase of permanent housing.

Because of the forced relocation, the production or business activities of IDPs were suspended, and they encountered serious job search problems in the resettlement areas. Hence, **the labor and intellectual potential of hundreds of thousands of people has been underutilized for some time** (according to statistics, more than 70% of IDPs have higher education). This led to negative consequences both for the IDPs themselves (loss of potential earnings and qualifications, dissatisfaction with their position and self-loathing) and for the country as a whole. Ukraine lost part of the potential added value and budget revenues and had to spend significant funds on unemployment benefits and financial support for low-income IDP families. According to the National IDP Monitoring System, the employment rate of persons belonging to this category is 49% as of March 2021, while the total population of Ukraine aged 15 – 70 is 56%.

Mass flows of forced migration necessitate the resettlement and integration of IDPs into new communities. This problem is complicated by the lack of proper coordination between central executive bodies, central and local authorities, regional communities and civil society organizations.

Opposition to Russian aggression has necessitated the strengthening of the security and defense sector, including an increase in the number of troops and other workers. For some time they stayed away from productive economic activities, some of them needed psychological and / or physical rehabilitation and treatment. According to the Ministry of Veterans' Affairs of Ukraine,

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<sup>61</sup>Based on data from the registration of IDPs carried out for the purpose of providing them with financial assistance to cover living expenses (established by a Government decision in October 2014).

<sup>62</sup>Challenges and potential of social cohesion in Donetsk region. Field report on the results of regional consultations. 2021. Kyiv: UCIPR.

<sup>63</sup>Horbulin V. P. et al. (Eds.). 2015. Donbas and Crimea: the Cost of Returning. Kyiv: NISS.

<sup>64</sup>National Monitoring System Report on the Situation of IDPs. URL: [https://www.iom.org.ua/sites/default/files/nms\\_round\\_18-19\\_eng.pdf](https://www.iom.org.ua/sites/default/files/nms_round_18-19_eng.pdf)

as of January 1, 2022, information on 440,000 combatants was entered into the Unified Register of Participants in the Anti-Terrorist Operation.

Forced relocations peaked in 2015, with up to 400,000 people seeking asylum in neighboring countries<sup>65</sup>. The number of asylum applications submitted by Ukrainian citizens to the EU exceeded 22 000, which was over 20 times more than in 2013<sup>66</sup>. A significant number of forced migrants from the conflict zone left for Russia. According to the Federal Migration Service of the Russian Federation, there were 273 thousand Ukrainian citizens who were granted refugee status and 311 thousand who used temporary asylum by the end of 2015. As Russian legislation was amended to make it much easier for Ukrainian temporary protection users to access resettlement support and acquire Russian citizenship, the number of registered refugees from Ukraine in Russia decreased in the following years, while naturalization of Ukrainian citizens increased. During 2016-2020, 978 thousand Ukrainians received Russian citizenship (the figure includes not only migrants but also those who stayed in the occupied part of Donbas). According to the Atlantic Council, the number of Ukrainians who left for Russia ranges from 500 000 to 1 million<sup>67</sup>. Mechanisms have been developed and put in place to encourage residents of the occupied parts of Donetsk and Luhansk oblasts to relocate to the Russian Federation.

**Russian aggression and related crises have exacerbated Ukraine's loss of human potential because of labor migration abroad.** According to the sociological monitoring of the Institute of Sociology of the National Academy of Sciences of Ukraine, the migration intentions of Ukrainians grew rapidly against the background of the economic difficulties caused by the war<sup>68</sup>. With a significant reduction in labor migration to Russia, migration to European countries, especially to Poland, has intensified. The number of applications from Polish employers for temporary (up to 6 months during the year) employment of Ukrainians, which in 2014 amounted to about 400 thousand, almost doubled in 2015, and reached 1.7 million in 2017. In the following years, due to some stabilization of the Ukrainian economy and restrictions on cross-border mobility due to the pandemic, the number of applications decreased, but remained significant, amounting to 1.3 million in 2020. The tendency to increase the length of stay abroad, with the transformation of part of temporary labor migration into permanent. In particular, 322 thousand citizens of Ukraine got the long-term migrant status in the EU in 2014 (issued after 5 years of residence), and 509 thousand received it in 2020. The composition of migrants has become younger, in particular due to the frequent departure of young people to study abroad, and the share of highly qualified professionals has increased. Unlike internal resettlement, the negative consequences of which are gradually becoming less acute due to the adaptation to the situation and integration of migrants in new places of residence, foreign migration of able-bodied, especially young and educated population, is a significant obstacle to resuming dynamic economic growth.

Because of systemic losses, the number of economically active population in the labor market of Ukraine (excluding residents of Crimea) decreased from 20.8 million people in 2013 to 18.0 million people in 2016, which allows us to estimate the loss of labor in Donetsk and Luhansk oblasts at 2.8 million people. Another 1.2 million economically active people have been lost in the unlawfully annexed Crimea. Therefore, **the total loss of the economically active population of Ukraine caused by Russian aggression amounted to 4.0 million people, or 18.3% of the 2013 level.**

Problems with labor, aggravated by the armed conflict, have led to a deterioration in the quality of the labor force, lower living standards and increased economic burden on workers, weakening motivation to work, reducing revenues to budgets and social funds. This has led to a decline in the living standards of employees and their families, and a limited access to social services. **In 2014 and 2015, the real wages of the working population in the country as a whole**

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<sup>65</sup>According to UNHCR.

<sup>66</sup>According to Eurostat.

<sup>67</sup>Kremlin Aggression in Ukraine: The Price Tag. Anders Åslund. Atlantic Council EURASIA CENTER, March 2018

<sup>68</sup> Ukrainian society: monitoring of social change. Issue 6 (20). Kyiv: 2019. P. 505. URL: <https://i-soc.com.ua/assets/files/monitoring/mon2019.pdf>

**decreased by 13.5% and 9.9% respectively, and the real disposable income by 11.5% and 20.4%.** The decline in real disposable income in these years occurred in all regions of Ukraine, and it was recorded in Donetsk, Luhansk and Dnipropetrovsk oblasts in 2016. Moreover, in 2015 the real income of persons residing in Luhansk and Donetsk oblasts decreased by 45%. The gradual resumption of positive dynamics with regard to the annual changes in real incomes of the population of Ukraine did not ensure a decent level of welfare in the following years.

A critical aspect of the loss of human potential is the impact of Russia's hybrid aggression on young people. **Currently, about 1 million children live in the uncontrolled territories of Donetsk and Luhansk oblasts, as well as in Crimea.** Of these, more than 450 thousand are school-age children, which is 10% of the total number of students in Ukraine<sup>69</sup>.

At the end of the 2020 – 2021 academic year, about 10.5 thousand 11th grade graduates received school certificates in Crimea, and 14.3 thousand in the uncontrolled territories of Donetsk and Luhansk oblasts. However, during the admission campaign in 2021, only 2,083 residents of the temporarily occupied territories became students of Ukrainian universities, of which 1,746 were residents of Donetsk and Luhansk oblasts, and 337 were residents of Crimea. That is, only about 8% of school graduates went to study in the territory controlled by Ukraine<sup>70</sup>. It can be assumed that this small percentage of young people connects their future with Ukraine. The human potential of the rest of the youth from the uncontrolled territories is most likely lost.

In Crimea, **social infrastructure enterprises** comprised about 18% of GRP and were the second driver of regional economic development after industry. Because of the unlawful annexation of Crimea, Ukraine has lost more than 600 sanatoriums and health resorts (including 123 sanatoriums and 121 boarding houses with healthcare services), 14 deposits of therapeutic mud, and more than 100 mineral springs<sup>71</sup>. 30% of all recreational resources of Ukraine, 154 sites of the nature reserve fund, more than 130 tourist sites, which not only brought significant income, but also belonged to the monuments of national and world heritage, were concentrated in Crimea. Numerous health facilities provided recreation and health services to 4 – 4.5 million Ukrainian citizens each year.

Because of hostilities, the social infrastructure of Donetsk and Luhansk oblasts suffered heavy losses. According to the monitoring of the Kharkiv Human Rights Protection Group, 2 574 social facilities were destroyed or damaged on the territory of the self-proclaimed "DPR"<sup>72</sup>, including 6 kindergartens, 28 vocational schools, 19 universities and 26 sports facilities. In Luhansk Oblast, 40 preschools and secondary schools were destroyed or damaged, and this damage is estimated at USD 4.9 billion.

In total, Ukraine lost about 1 400 secondary schools (including about 600 facilities due to the unlawful annexation of Crimea) and 10% of qualified educational personnel due to the Russian aggression in 2014.

According to the Ministry of Regional Development of Ukraine, **as of April 1, 2015, in Donetsk and Luhansk oblasts, 11 268 residential buildings were destroyed or damaged, which is 2% of the housing stock at UAH 716.3 million.** Despite the gradual restoration of infrastructure, the damage caused by its destruction remained significant. In particular, as of January 1, 2019, 6.1 thousand infrastructure facilities were destroyed or damaged in the

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<sup>69</sup>Destruction of national identity and militarization. What are the features of education in the occupied territories? URL: <https://www.radiosvoboda.org/a/osoblyvist-osvity-na-okupovanyh-terytoriyah/31144170.html>

<sup>70</sup>Lost agents of change: is Ukraine really doing everything to attract entrants from TOT URL: <https://zmina.info/articles/vtracheni-agenty-zmin-chy-spravdi-ukrayina-robyt-vse-dlya-zaluchennya-abituriyentiv-z-tot/>

<sup>71</sup>Socio-economic development of the annexed Autonomous Republic of Crimea and the city of Sevastopol and assessment of the losses of Ukraine's economy due to the annexation. URL: [http://old2.niss.gov.ua/content/articles/files/Vtrata\\_Krimu-3a502.pdf](http://old2.niss.gov.ua/content/articles/files/Vtrata_Krimu-3a502.pdf)

<sup>72</sup>Monitoring in territories not under the control of the Ukrainian authorities. URL: <https://khpg.org/1475592296>

government-controlled part of Ukraine, including 6 thousand residential buildings, 40 educational institutions, 16 medical facilities, 12 cultural and sports sites<sup>73</sup>.

**Significant losses were inflicted on the medical sector.** At the beginning of 2022, 296 health care facilities remained in the uncontrolled territory of Donetsk Oblast, including 67 polyclinics and outpatient clinics, 65 hospitals (including 11 that provided highly specialized medical care to the population of the region), 17 dispensaries, and 12 specialized centers. More than 52.2 thousand people worked in health care institutions in the uncontrolled territory of the “DNR”, including 9.2 thousand doctors and 18.3 thousand certified junior specialists<sup>74</sup>.

Almost all regional medical institutions with modern medical equipment remained in the territory of Luhansk Oblast not controlled by Ukraine. In particular, highly specialized medical care in the region has virtually ceased to exist. The network of territorial centers of social services for families, children and youth has sharply decreased (1 vs. 5 in 2014), territorial centers of social services or social services provision (14 vs. 30 in 2014), and centers of social rehabilitation (5 vs. 12 in 2014).

According to preliminary estimates as of the beginning of 2022, 60% of medical facilities in the Donetsk and Luhansk oblasts controlled by Ukraine were destroyed or damaged, with 70% in the temporarily uncontrolled territories. Medical equipment was lost, entrances to medical institutions were damaged, and the system of utilities was destroyed.

Of the 39 higher education institutions in Donetsk and Luhansk oblasts, which ended up in the uncontrolled territory, only 18 public and one private institution moved to the government-controlled part of Ukraine<sup>75</sup>. 19 research institutes remained in the uncontrolled territory of Donetsk Oblast. There are about 100 institutes, organizations and universities in the occupied Crimea that have worked in various fields of research, including the world-famous Crimean Astrophysical Observatory affiliated with Taras Shevchenko National University in Kyiv. 22 research institutions and organizations on the balance of the National Academy of Sciences of Ukraine were left behind in Crimea<sup>76</sup>.

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<sup>73</sup>Development strategy of Donetsk Oblast for the period up to 2027. URL: <https://www.minregion.gov.ua/wp-content/uploads/2020/04/doneczka-strategiya-rozvytku-doneczkoyi-oblasti-na-period-do-2027-roku.pdf>

<sup>74</sup>Revival of Donbass: assessment of socio-economic losses and public policy priority areas. URL: [https://iie.org.ua/wp-content/uploads/monografiyi/2015/2015\\_mono\\_Strategiya.pdf](https://iie.org.ua/wp-content/uploads/monografiyi/2015/2015_mono_Strategiya.pdf)

<sup>75</sup>See Resolution of the Cabinet of Ministers of October 13, 2015, No. 935 "Some issues of state higher educational institutions relocated from the area of the anti-terrorist operation"

<sup>76</sup>Economic losses of Ukraine due to the temporary occupation of the Autonomous Republic of Crimea and the city of Sevastopol by the Russian Federation: an information and analytical note / Representation of the President of Ukraine in the ARC, August 2020 P.21. URL: <http://www.ppu.gov.ua/wp-content/uploads/2020/11/Ekonomika-na-sajt.pdf>



### 3. STRATEGIC DEVELOPMENT RISKS

The complex impact of Russian aggression on the economy and society of Ukraine is not limited to direct economic and social losses. The long-term negative effect is significant and in some areas determining. It has dramatically diminished the country's development capacity, reduced the freedom to choose Ukraine's own path of development, forced Ukrainian society to direct its resources to goals that do not directly correlate with strategic development priorities although they have proved to be critical for restoring and maintaining sustainability, balancing economic and social development and achieving national security goals.

These systemic effects resulted in a deep economic downturn in Ukraine. **During 2014–2015, the country's GDP decreased by 15.8% (at comparable 2013 prices). Given the market rate of the US dollar, Ukraine's GDP losses over these two years amounted to more than USD 109.6 billion even under the assumption of zero increase in 2014–2015** (Fig. 8). Since 2016, the growth has resumed but at a very slow pace of slightly above 2% per year. At the same time, direct losses can be estimated at 8.9% in 2014 and 11.8% in 2015 due to the temporary occupation of part of Ukraine.

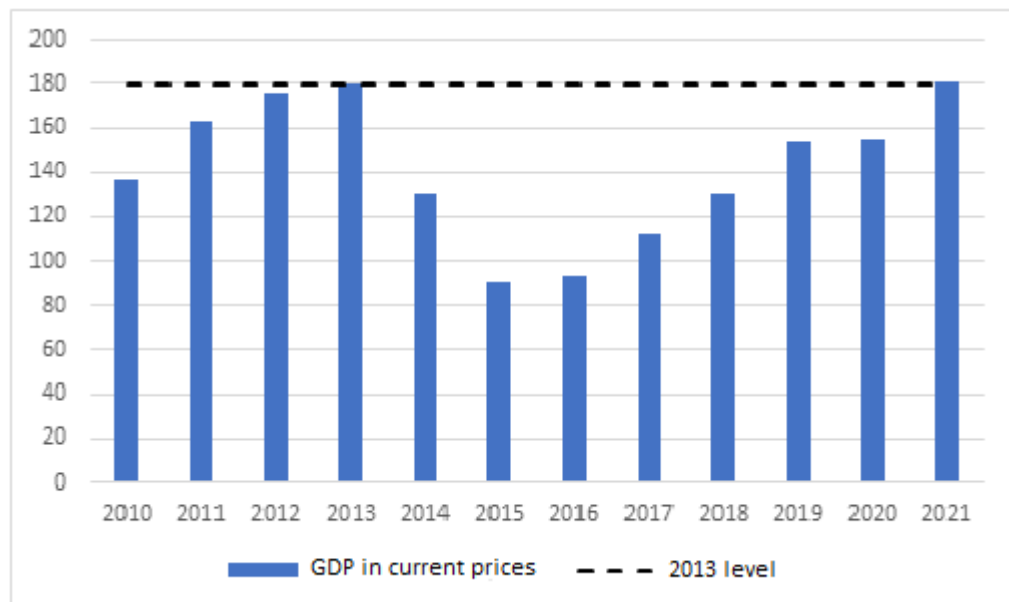


Fig. 8. Estimated GDP losses in Ukraine, USD billion

A German group of advisers in Ukraine estimated additional losses of the Ukrainian economy due to the cessation of movement of goods across the line of contact in 2017 at 1.6 percentage points of the GDP increase. At the same time, the actual effect was slightly smaller and, according to the NBU, amounted to 0.9 percentage points<sup>77</sup>.

#### 3.1. Lowered expectations and investment climate

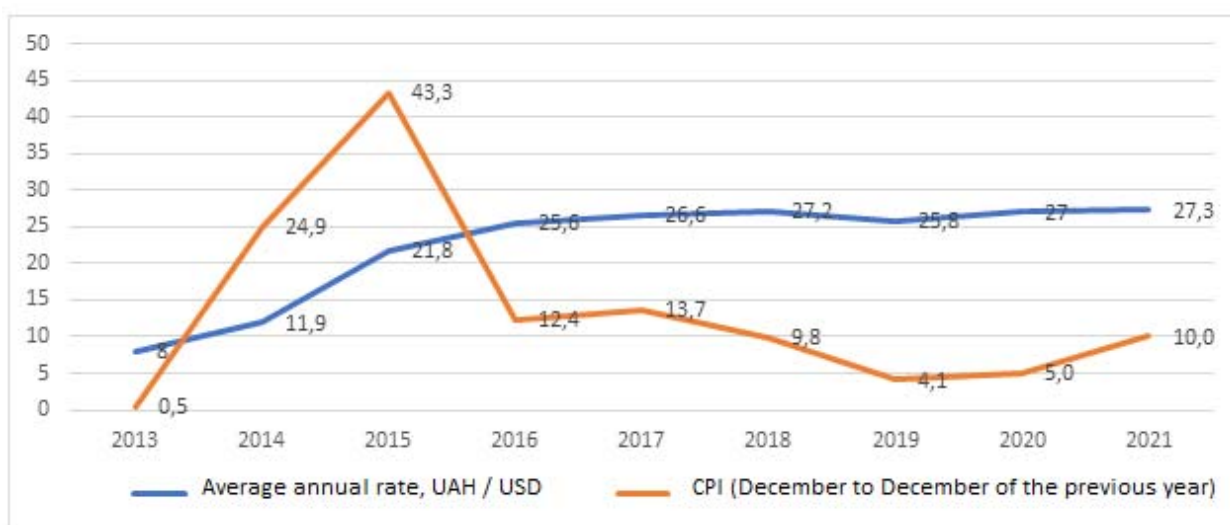
**External aggression and the general information background related to the escalation of military risks have had a fundamental negative impact on the business expectations of**

<sup>77</sup> Horbulin V. P. et al. 2017. Temporary cessation of cargo movement across the line of contact within Donetsk and Luhansk regions: assessments, consequences, decisions: analytical estimates by NISS. Kyiv: NISS.

**domestic entrepreneurs and foreign investors, while significantly spoiling the mood of citizens and households of Ukraine.** This dramatically increases financial risks, lowers Ukraine's credit ratings, and deteriorates access to and the cost of borrowings. Information waves about the escalation of aggression lead to situational fluctuations in currency demand, increased purchases of basic necessities and food, and so on. In turn, the changes above aggravate the exchange rate dynamics and intensify inflationary pressures in the domestic market.

In particular, the negative balance of the NBU's purchase of foreign currency on the interbank market amounted to USD 12.3 billion in 2014, and net purchases of cash currency by individuals was USD 2.4 billion. At the same time, the rush demand for currency on the part of businesses and the population led to a landslide reduction in the country's international reserves from USD 20.4 billion as of 01/01/2014 to a catastrophically low mark of USD 5.6 billion as of March 1, 2015. Only the financial support of international partners within this period enabled the country to avoid financial collapse and gradually restore the positive dynamics of international reserves.

The rising demand for foreign currency in 2014 – 2015 naturally led to the avalanche devaluation of the hryvnia from UAH 7.99 / USD as of 01/01/2014 to 16.6 UAH / USD as of 01/01/2015 and UAH 25.5 / USD as of 01/01/2016. At the end of February 2015, its peak values reached 33.3 UAH / USD. Given the high import dependence of the Ukrainian economy, exchange rate fluctuations have become a significant factor in rising inflation. The Consumer Price Index was 24.9% in 2014, 43.3% in 2015, and 12–14% during 2016 – 2017 (Fig. 9).



*Fig. 9. Dynamics of the average annual hryvnia exchange rate and inflation rate*

**One of the logical repercussions of the spread of negative expectations was the active withdrawal of deposits from banks, which, in turn, has triggered rapid deterioration of the financial situation of the latter.** In particular, in 2014 alone, retail deposits plummeted by UAH 58 billion (at that time, 23% of hryvnia deposits of individuals) and USD 9.3 billion. In 2015, they further dropped by UAH 7 billion and USD 5.0 billion respectively. Finally, gradual restoration of the resource base of banks began in 2016.

**Russia's aggression has led to a significant deterioration in the expectations of enterprises regarding the prospects for their development.** During the second quarter of 2014 – the first quarter of 2015, the Business Expectations Index calculated by the NBU deteriorated badly (Fig. 10). A significant increase in the optimism of companies occurred only in the second

quarter of 2016 against the background of reducing the severity of the armed confrontation and the resumption of a number of economic and socio-political reforms in Ukraine.

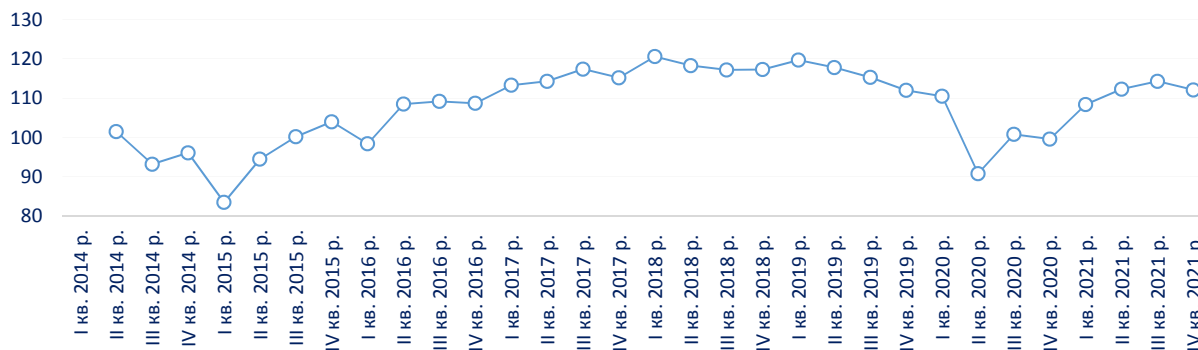


Fig. 10. Ukraine Business Expectations Index in 2014-2021.

Source: NBU. Business expectations of Ukrainian enterprises

Foreign investors see the armed conflict in eastern Ukraine as one of the main obstacles to investing in Ukraine (Fig. 11). After a period of stabilization in 2016 – 2019, its importance became especially evident in late 2021 – early 2022. Because of aggressive rhetoric, accumulation of military equipment and military exercises near the Ukrainian border, the hryvnia depreciated, inflation expectations increased, and non-residents withdrew the capital from domestic government bonds.

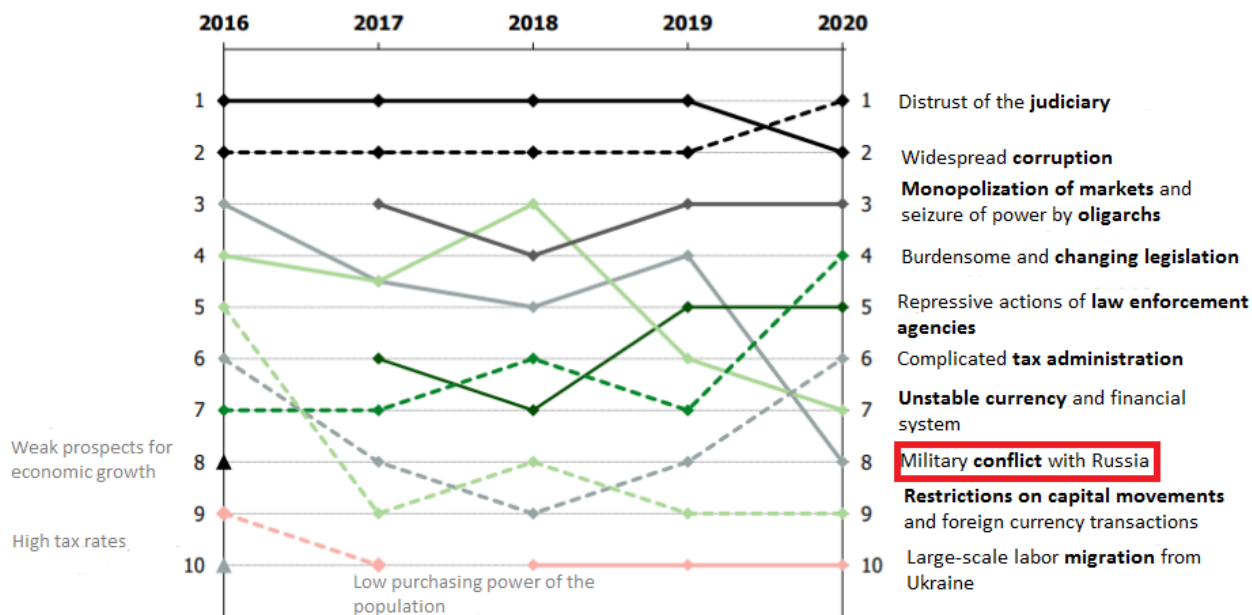


Fig. 11. Key obstacles to foreign investment in Ukraine in 2016 – 2020

Source: European Business Association (EBA), Dragon Capital, and the Center for Economic Strategy (CES)<sup>78</sup>.

**The accumulation of geopolitical threats leads to the debilitation of the national economy’s competing in the global capital market.** In a tense situation, not only does the inflow

<sup>78</sup> Distrust of the judiciary ranked first among obstacles to foreign investment. Center for Economic Strategy. October 09, 2020. URL: <https://ces.org.ua/distrust-of-the-judiciary-ranked-first-among-obstacles-to-foreign-investment/>

of foreign investment resources become more difficult, but also the motivation for the outflow of funds from the national economy increases.

The NBU was forced to impose a partial ban (from October 2014) and then a full ban (from early 2015) on the repatriation of dividends from Ukraine by non-residents to curb the crisis in the foreign exchange market, which has been partially lifted since June 7, 2016. Overall, dividends totaling USD 2.5 billion were withdrawn from Ukraine in 2016 – 2017. In 2018, the process of withdrawing dividends from Ukraine intensified and averaged USD 3.5 billion during 2018 – 2020. Due to the final lifting of restrictions on the repatriation of dividends on July 10, 2019,<sup>79</sup> the dynamics of capital withdrawal from Ukraine has significantly accelerated (Table 2).

Table 2

**Repatriation of dividends from Ukraine by non-residents, billion USD**

Years	2016	2017	2018	2019	2020	2021
Dividends	0,7 <sup>80</sup>	1,8 <sup>81</sup>	3,3	3,5	3,7	8

Source: NBU.

**The negative dynamics of Ukraine's ratings from leading international agencies was a manifestation of the country's growing risks.** In particular, on December 19, 2014, Standard & Poor's downgraded the rating of Ukraine's long-term debt obligations in foreign currency (to CCC-) and in national currency (to CCC +), short-term liabilities in national currency (to CC) and the country's rating on a national scale to the level of uaB +, while changing the forecast from "stable" to "negative". The positive dynamics of the S&P rating was restored only starting from October 19, 2015. Fitch Ratings has been lowering the country's sovereign ratings since August 22, 2014. In fact, the rating of long-term debt in the national currency was changed to CCC. However, positive dynamics of Ukraine's sovereign ratings has been improving since November 18, 2015. Moody's consistently downgraded Ukraine's long-term foreign and domestic currency ratings during 2014 – 2015 and restored the country's positive rating only on November 19, 2015<sup>82</sup>. In general, these circumstances significantly complicated the government's borrowing from foreign creditors, increased the value of these loans, forced to resort to strategically risky means of debt restructuring, one of which was the issuance of value recovery instruments (VRI) in late 2015. It resulted in a very burdensome scheme of debt burden on the economy, which intensifies along with the acceleration of economic growth and has a clear "cooling" effect on the economy.

Critical bottlenecks to doing business generate a high level of uncertainty fermented by difficulties in logistics operations, damage to energy and utility infrastructure, the need for prompt alternative replacement of suppliers of raw materials. Uncertainty was particularly high during the hot phase of Russian aggression in 2014 – 2015, but it continued in the following years, and remained consistently significant for the areas covered by the environmental protection zone.

<sup>79</sup> The dividend repatriation limit has been finally lifted. URL: [https://bank.gov.ua/control/uk/publish/article?art\\_id=98763614&cat\\_id=55838](https://bank.gov.ua/control/uk/publish/article?art_id=98763614&cat_id=55838)

<sup>80</sup> Foreign investors withdraw USD 700 million from Ukraine. URL: <http://finance.liga.net/economics/2017/1/27/news/51692.htm>

<sup>81</sup> Business withdrew USD 1.8 billion in dividends from Ukraine in the course of one year. The dividend repatriation limit has been finally lifted. <https://biz.nv.ua/ukr/economics/biznes-za-rik-viviv-z-ukrajini-1-8-mlrd-dividendiv-2443485.html>

<sup>82</sup> Dynamics of credit ratings of Ukraine (debt obligations) (2004 – September 2021). URL: <https://mof.gov.ua/uk/kreditnij-rejting-potochni-rejtingi-zagalna-informacija-istorichni-zmini>

Ukraine's focus on external threats is hampering quality reform in areas relevant to the investment climate, including judicial reform, anti-corruption, smuggling, the shadow economy, creating a predictable and transparent business environment, simplifying taxation, and more.

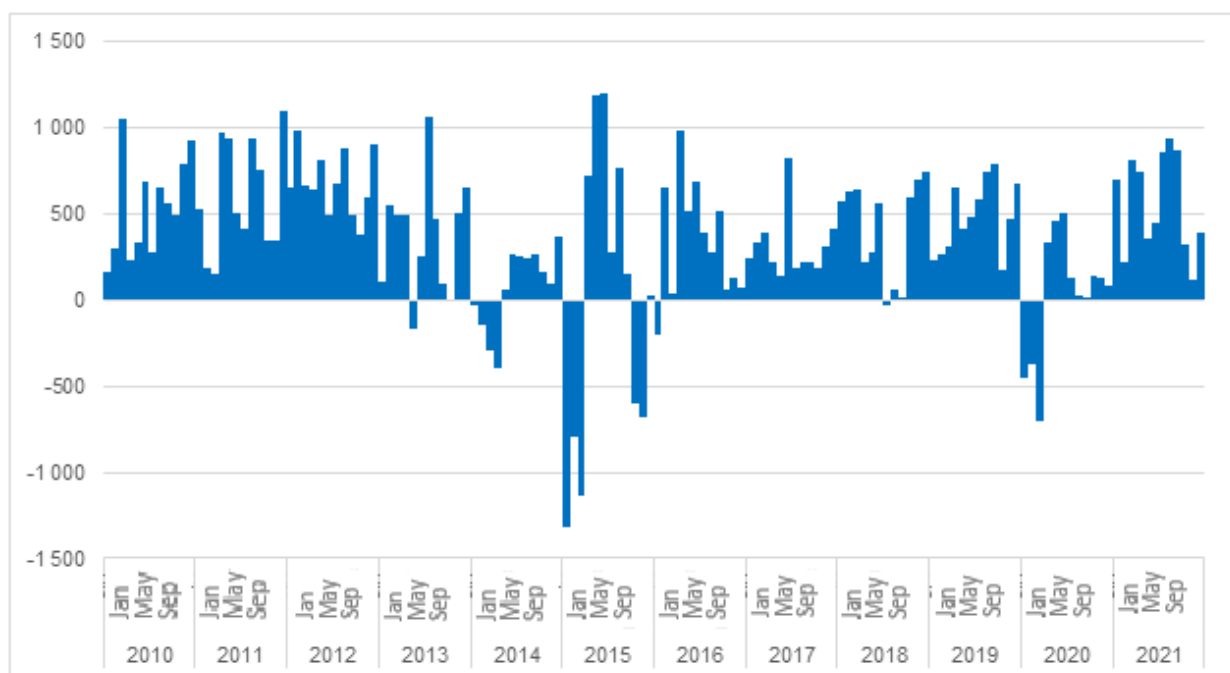


Fig. 12. Monthly FDI inflows to Ukraine during 2010 – 2021, USD million (according to the balance of payments)

Source: NBU

**High investment risks resulted in a significant deterioration of the dynamics of FDI inflows** (Fig. 12). Revenues in 2014 were much lower than in 2012 – 2013, and there was an outflow of direct investment of USD 198 million in 2015. The diminishing security risks in the following years helped to better the mood of investors. Over the period between 2015 and 2021, Ukraine attracted foreign direct investment in the amount of USD 25.5 billion, or USD 3.6 billion per year, which is extremely insufficient to achieve the goals of structural modernization of the national economy. For example, in 2015 – 2020, FDI in the Czech Republic amounted to USD 47.2 billion and in Poland to USD 77.1 billion.

### 3.2. Domestic market losses

The shrinking capacity of Ukraine's domestic commodity market as the main driver of economic development is an expected consequence of Russia's aggression against Ukraine and the loss of accessibility of the population living in the occupied territories. This loss has been exacerbated by the decline in the purchasing power of the population, which is synchronized with the economic downturn and the change in consumer sentiment in favor of insurance reserves formed in conditions of great uncertainty.

**In general, the volume of domestic consumption of goods and services in Ukraine decreased by 10.8% in 2014 and by 11.9% in 2015, and occurred mainly due to the household consumption declining.** In total, the loss of the latter (at constant 2016 prices) amounted to UAH 718 billion over two years of the hot phase of aggression, which is more than a third of the annual consumption before the crisis of 2013. Positive dynamics of domestic consumption began to recover in 2016 and almost reached the pre-crisis level in 2019 (Fig. 13).

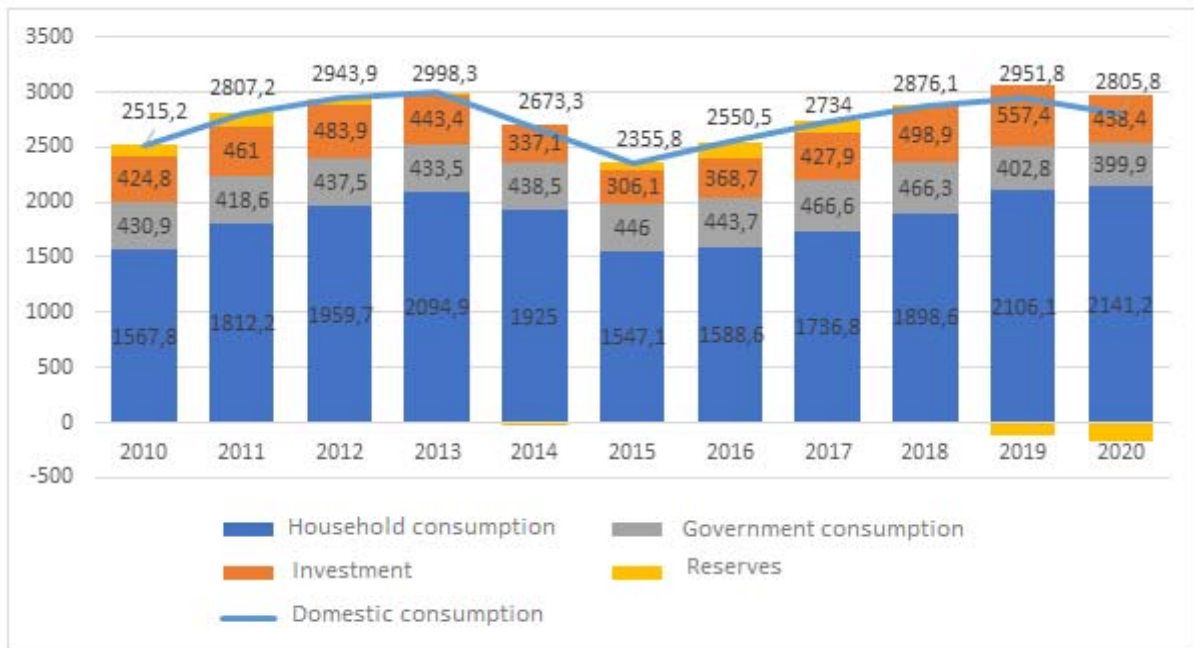


Fig. 13. Domestic consumption of goods and services in Ukraine in 2010 – 2020, UAH billion (at constant 2016 prices)

The dynamics of domestic consumption was evident in the fluctuations of domestic trade. **Retail trade turnover decreased by 8.9% in 2014 and by 20.7% in 2015. The decrease in retail trade turnover lasted for two years and was 27.8% at 2013 prices, or more than UAH 324 billion. The reduction of wholesale trade was symmetrical. In two years, it decreased compared to 2013 by 25% at 2013 prices, or 415 billion UAH.**

In the conditions of significant devaluation of the hryvnia, the reduction of effective demand primarily led to a decline in sales of imported products (Fig. 14). Lower investment demand on imports had a much stronger effect than that of consumer demand, due to the traditionally high share of imports of investment goods. At the same time, the resumption of domestic consumption growth since 2016 has given an incentive primarily for outpacing growth in the import component of the domestic market.

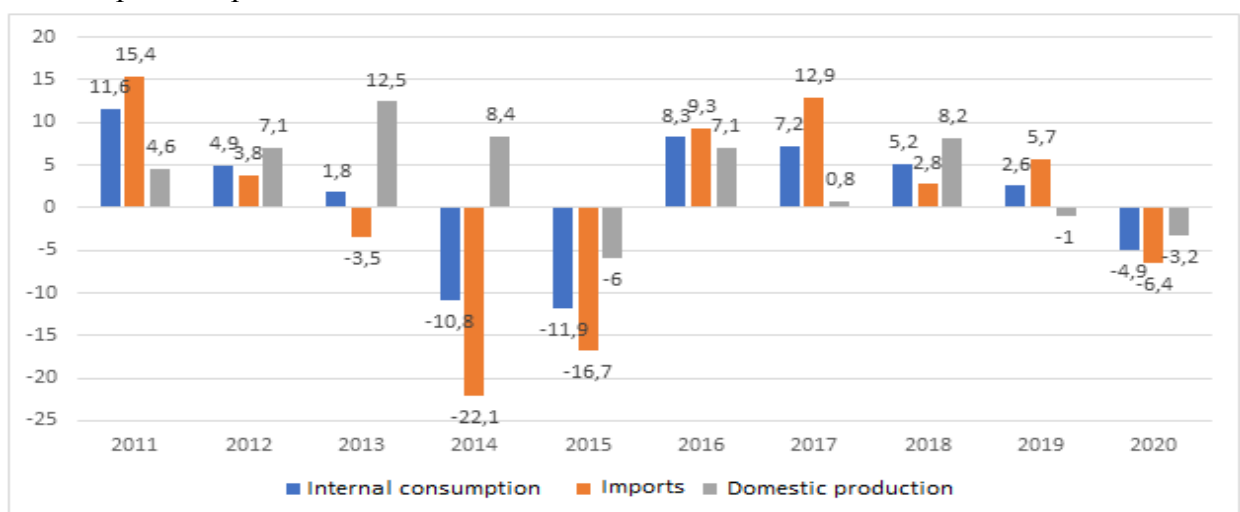


Fig. 14. Change in the components of internal consumption of goods and services in Ukraine in 2011 – 2020,% to the previous year

### 3.3. Risks due to the presence of Russian capital in the national economy

The significant need to stimulate and effectively support foreign investment in Ukraine does not undermine the importance of monitoring the activities of companies using FDI, which operate in sectors sensitive to national security. The primary source of risk is Russian investment in Ukraine, which has been used to harm the Ukrainian economy in the context of hybrid aggression. Defense, strategic sectors, economic infrastructure, critical infrastructure, energy, metallurgy, banking, media, artificial intelligence, microelectronics and robotics, as well as intellectual property or personal data assets have traditionally been sensitive to Ukraine's national security with regard to Russia's economic presence.

The share of Russian investments in Ukraine worth USD 3 billion, according to the State Statistics Service as of January 01, 2014, was relatively small, accounting for 5.9% of all FDI in Ukraine. Since 2015, balances on Russian direct investment instruments in Ukraine have declined significantly to USD 1.1 billion<sup>83</sup> (as of the end of the third quarter of 2021).

**According to experts, the real volume of Russian investment in Ukraine's economy is about twice the official statistics<sup>84</sup>.** In particular, it is difficult to correctly estimate the real share of Russian capital in investments from investor-friendly jurisdictions, especially Cyprus. Some of Russia's business strategies in the Ukrainian economy maintain a complex hierarchical ownership structure to complicate the identification of final beneficiaries. Some investment agreements are implemented by companies, which only imitate European and / or Ukrainian ones, acting as de facto Russian influencers. Such schemes also allow Russian owners to run their business while on the international sanctions list.

Unlike ordinary for-profit foreign investments, **the behavior of Russian investors may aim at promoting strategically unfavorable decisions that are detrimental to Ukraine's national security.**

In particular, the owner of Zhytomyroblenergo, Kirovohradoblenergo, Rivneoblenergo, Khersonoblenergo and Chernivtsioblenergo, critical for the livelihood of Ukraine's regions with 18% of Ukraine's territory coverage, is the VS Energy group, which belongs to Russian businessman and politician M. Voyevodin<sup>85</sup>.

In the financial sector, the remaining banks with Russian capital include the International Reserve Bank (MR Bank, a rebranding of Sberbank), Alfa-Bank, and Forward Bank. Representatives of the Russian banks in Ukraine have formed significant portfolios of borrowers including not only well-known Ukrainian companies, but also large state-owned enterprises, with a significant amount of cheap financial resources of parent companies. The purpose of this tactic could also be obtaining inside commercial information about the company and the management of state-owned companies. In particular, JSC "Ukrainian Railways" kept one third of its loan portfolio in Russian banks as of January 01, 2013.

Damage to the Ukrainian economy by Russian owners of Ukrainian industrial enterprises is exemplified through the situation in the aluminum industry, where the Russian owner for many years retained control over Mykolayiv Alumina Plant and Zaporizhzhya Aluminum Plant, Ukraine's only producers of alumina and crude aluminum. After the close-down of JSC

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<sup>83</sup> NBU. Direct investment in Ukraine: balances on direct investment instruments by regions, countries and types of economic activity. Direct investment in Ukraine: balances by country. URL: <https://bank.gov.ua/ua/statistic/sector-external/data-sector-external>

<sup>84</sup> Russian economic footprint in Ukraine: an analytical note. Center for Economic Strategy. URL: <https://ces.org.ua/russias-economic-footprint-in-ukraine/>

<sup>85</sup> Interfax-Ukraine. <https://ua.interfax.com.ua/news/general/721669.html>

"Zaporizhzhya Aluminum Plant", LLC "Mykolayiv Alumina Plant" lost the Ukrainian market and became completely dependent on Russia. Subsequently, Ukraine managed to regain control over 68% of the shares of JSC "Zaporizhzhya Aluminum Plant", but losses and Ukraine's budget shortfalls remain unreimbursed.

### 3.4. Energy dependence risks

A powerful source of instability, exacerbated by Russia's targeted aggression against Ukraine, is the dependence of Ukraine's fuel and energy complex on cooperation with Russia, because it was built as part of the former Soviet Union's energy sector.

For a long time, the Russian Federation has pursued a targeted policy of subordinating Ukraine with energy as an instrument of influence<sup>86</sup>. This goal was achieved through:

- creation of joint intermediary companies with local elites for the sale of Russian energy resources in Ukraine;
- control over important business entities through the purchase of assets of Ukraine's fuel and energy sector or creation of joint companies for asset management;
- blocking reforms in Ukraine's fuel and energy sector in order to preserve the Soviet-Russian model of governance;
- blocking Ukraine's energy integration projects into the EU energy space.

To formalize this process at the level of interstate relations, various intergovernmental agreements and exclusive contracts between business entities were concluded.

**By the end of 2013, Ukraine was almost completely dependent on Russia, in particular on:**

- supply of fresh nuclear fuel to Ukrainian nuclear power plants and export of spent nuclear fuel (95–100% of nuclear fuel was imported from Russia);
- supply of natural gas (on average, 75% of Ukraine's needs were met by gas coming from Russia);
- supply of oil (up to 70% of crude oil) and petroleum products (up to 70% came from Russian and Belarusian enterprises);
- Ukraine's oil refinery input (volumes of Ukrainian oil are enough to make only 8-10% of national refinery input);
- transit routes for transportation of natural gas and oil (there is a monopoly on natural gas and oil transit through pipelines of state-owned enterprises, with the Russian government suspending or allowing energy supplies through Ukraine's pipelines upon their decision);
- stability of the power and gas transmission systems (maintaining the frequency in the electricity system of Ukraine and the required pressure in the gas transmission system was achieved through the synchronized operation of the respective systems in Ukraine and Russia).

In addition, the temporary occupation of parts of Donetsk and Luhansk oblasts has created problems with coal supplies for electricity generation by Ukraine's thermal power plants (TPPs) and the needs of heat supply. Ukraine lost all its domestic resources for anthracite coal production and was forced to establish new supply routes, effectively becoming an importer of thermal coal for the first time in its history. Moreover, in 2021 Ukraine increased imports of coal and anthracite

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<sup>86</sup> Sukhodolya O.M. 2020. Energy weapons in the geopolitical strategy of Russia: an analytical report. Kyiv: NISS.



by 15.4% (2.3 million tons)<sup>87</sup>. Coal supplies from the Russian Federation (Table 3) consistently exceed 70% of total imports annually.

Table 3

**Energy resources imports from the Russian Federation, USD billion**

Year	Total coal	Specifically, anthracite	Crude oil	Petroleum products	Petroleum gases	Natural gas, separately	Electricity
2013	1,30	0,00	0,39	1,85	10,78	10,68	0,00
2014	1,15	0,17	0,13	1,22	4,08	3,94	0,00
2015	0,77	0,08	0,00	0,84	0,18	1,68	0,08
2016	0,91	0,05	0,00	0,54	0,25	0,00	0,00
2017	1,55	0,27	0,00	1,27	0,22	0,00	0,00
2018	1,82	0,41	0,00	2,07	0,25	0,00	0,00
2019	1,64	0,42	0,00	1,87	0,27	0,00	0,02
2020	1,04	0,27	0,00	1,23	0,27	0,00	0,01
2021	1,55	0,31	0,00	1,24	0,96	0,00	0,01

Source: <sup>88</sup>.

Ukraine has also kept its significant dependency on the supply of petroleum products produced in the Russian Federation or from Russian raw materials (especially in the Republic of Belarus). Hence, even in 2021, the aggressor state was able to block two-thirds of supplies of petroleum products needed by the Ukrainian economy.

### 3.5. Loss of drivers of regional growth

The clear territorial localization of open Russian aggression since 2014 has led to a significant localization of the negative effects of this aggression in the economic and social sectors.

**Russia's aggression has not only critically affected the economies of selected areas of Donetsk and Luhansk oblasts (which will be discussed in more detail below), but has also significantly worsened the development trends of a number of neighboring regions.** In particular, we are talking about Dnipropetrovsk and Kharkiv oblasts, which were most closely connected with the above-mentioned two regions by production ties, supply of consumer goods to the capacious market of these urbanized regions. The lost part of the consumer markets in the individual districts of Donetsk and Luhansk oblasts amounted to about 4.6 million people. Moreover, due to the specifics of sectoral specialization, the regions needed to import consumer

<sup>87</sup> State Customs Service : the official website. URL: <https://bi.customs.gov.ua>

<sup>88</sup> See: URL: <https://bi.customs.gov.ua/uk/trade/> ;  
[http://www.ukrstat.gov.ua/operativ/operativ2014/zd/e\\_iovt/arh\\_iovt2014.htm](http://www.ukrstat.gov.ua/operativ/operativ2014/zd/e_iovt/arh_iovt2014.htm) ;  
[http://www.ukrstat.gov.ua/operativ/operativ2015/zd/e\\_iovt/ei\\_13\\_2015.rar](http://www.ukrstat.gov.ua/operativ/operativ2015/zd/e_iovt/ei_13_2015.rar) ;  
[http://www.ukrstat.gov.ua/operativ/operativ2016/zd/e\\_iovt/ei\\_12\\_2016.rar](http://www.ukrstat.gov.ua/operativ/operativ2016/zd/e_iovt/ei_12_2016.rar)

goods, food, light industry products, etc. (Imports from other regions are estimated to account for about 50% of domestic consumption.) There was also a significant increase in security risks and uncertainty due to the proximity to the combat zone, curtailing transport and transport services, and so on. **In 2014 – 2015, along with the reduction of GRP of Donetsk Oblast by 56.7p% and in Luhansk Oblast by 73.1%, GRP was also reduced in Dnipropetrovsk Oblast by 12.6% and Kharkiv Oblast by 9.1%** (Fig. 15).

The regions related to the temporarily annexed Crimea also experienced a similar effect. However, due to the lack of direct military risks, the systemic consequences for them were different.

**The hybrid aggression has had a negative impact on the economies of a number of other regions of Ukraine, which depended heavily on trade with the Russian Federation.** In 2012, exports to Russia accounted for more than a third of total merchandise exports in 5 regions, more than half of which were in Sumy Oblast (52.6%) and Kharkiv oblasts (65.3%) contaminate to Russia. In 2016, the level of dependence on this geographical area decreased significantly. Sumy and Kharkiv oblasts remained the most Russian market-oriented, but their shares decreased to 30.7% and 29.1% respectively. During this time, the share of exports to Russia from Kyiv Oblast decreased from 32.8 to 5.8%, Poltava Oblast from 30.2 to 5.2%, Khmelnytsky Oblast from 40.2 to 9.6%, Lviv Oblast from 22, 3 to 3.1% (Fig. 16). The loss of annual exports in 2016 compared to 2012 amounted to USD 2.5 billion for Donetsk, USD 2.2 billion for Dnipropetrovsk, USD 1.7 billion. for Luhansk, USD 1.2 billion for Zaporizhzhya, and USD 1 billion each for Kharkiv and Poltava oblasts.

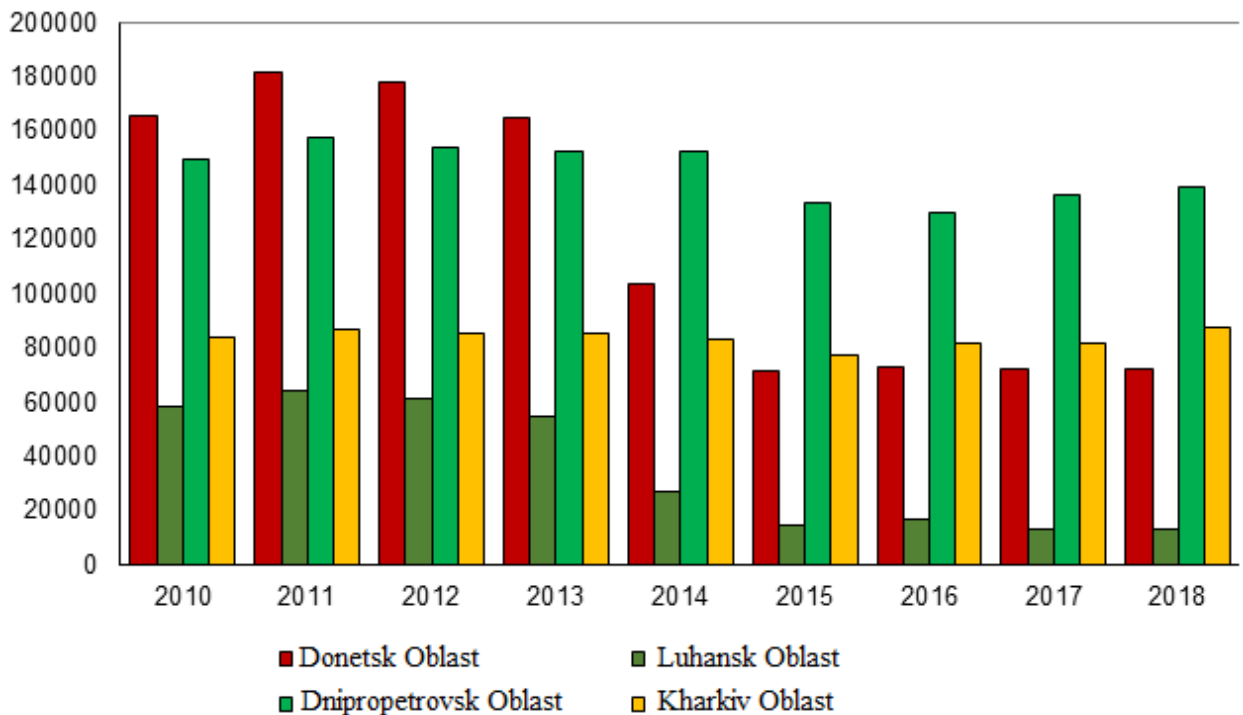


Fig. 15. GRP of old industrial regions, UAH million (at 2013 prices)

It is significant that fluctuations in GRP volumes did not lead to changes in the levels of interregional differentiation. The gap between the highest and lowest GRP indicators remained at 11.5 times in 2016, which is insignificantly less than in 2013 (12 times), with a slight trend of weakening the disparity associated with the loss of leadership by Donetsk Oblast, which was second to Dnipropetrovsk Oblast. Since 2016, the city of Kyiv and Kyiv Oblast have been showing

consistently higher growth rates, which is obviously due to the re-registration of enterprises and the relocation of their management from the conflict zone. As a result, the share of Kyiv and the Oblast in the total GRP increased from 23.7% in 2012 to 28-29% in 2016 and beyond.

As of 2013, 25% of the total industrial output of Ukraine was produced in **Donetsk and Luhansk oblasts**:

- 78.5% coal, including 2/3 of coking coal;
- 43.7% metallurgical products of Ukraine, including 58% steel production;
- 42.8% coke and petroleum products;
- 28.8% chemical industry products, including key volumes of mineral fertilizers and ammonia;
- 22.7% machine-building products, including 100% railway locomotives and cars, the vast majority of machines and equipment for the metallurgical and chemical industries, hoisting and transport equipment and machinery<sup>89</sup>.

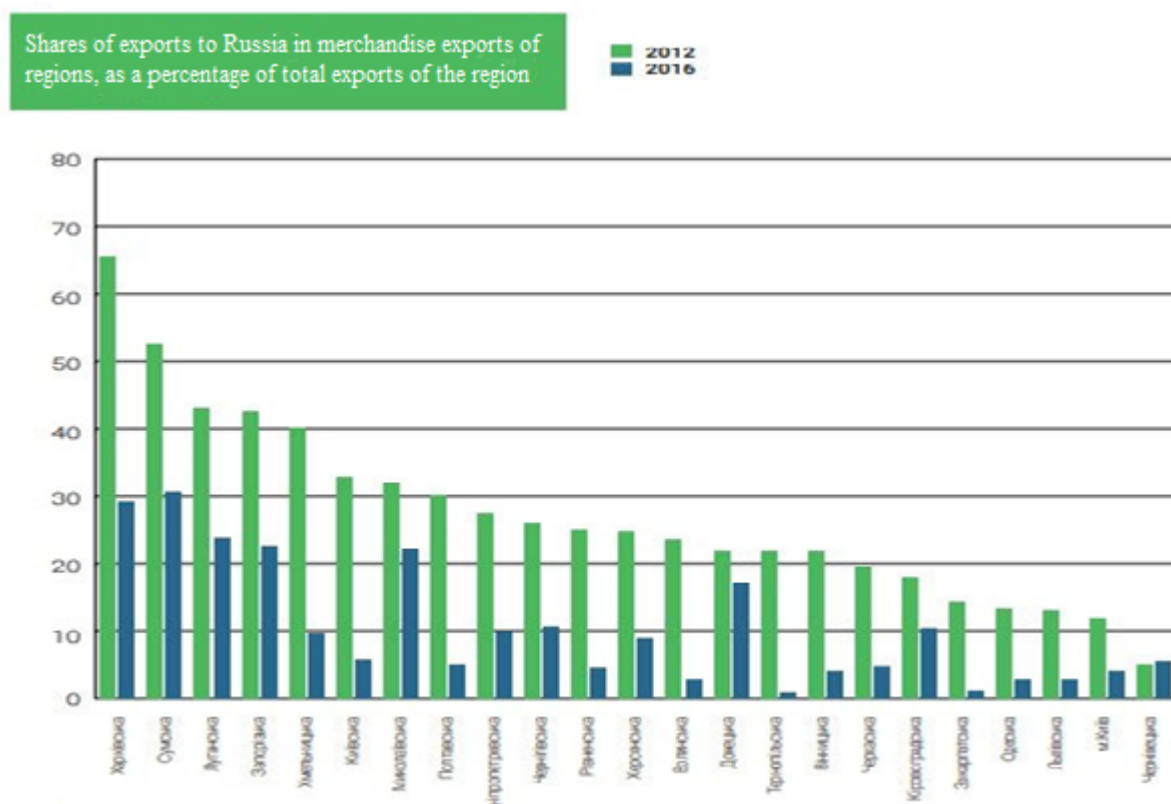


Fig. 16

**Deterioration of economic dynamics of Donetsk and Luhansk oblasts began in 2012. In 2012 – 2013, GRP of Donetsk Oblast decreased by 9.1% and Luhansk Oblast by 3.1% against the background of generally positive indicators of economic growth nationwide.** The main driver of the deteriorating economy was a rapid decline in exports. Moreover, the decline in exports of Luhansk Oblast, which had a high share of exports to Russia, was due to the closure of the Lysychansk oil refinery: according to the Russian owner, it was closed due to its unprofitability. The economy of Donetsk Oblast with its geographically diversified exports has been negatively affected by the recession in world metallurgical markets. The influence of the

<sup>89</sup> Zhalilo Y. et al. 2017. A new regional policy for the new Ukraine: an analytical report. Kyiv: Institute of Socio-Economic Research.

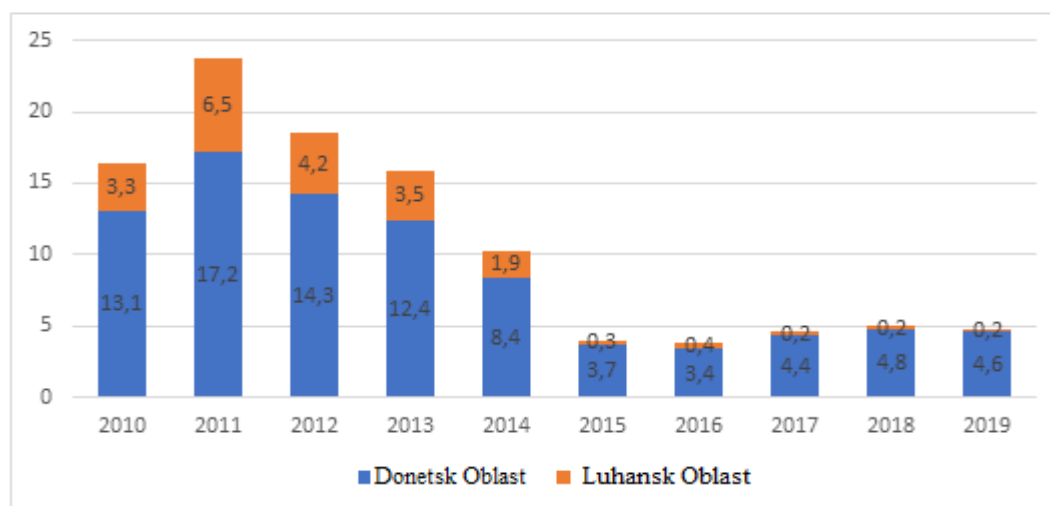
Russian Federation's increase in trade restrictions on Ukraine also began to be felt, with machine-building enterprises in the Donetsk and Luhansk regions affected the most. **After the peak of 2011, exports from Donetsk Oblast in 2013 decreased by USD 4.8 billion and from Luhansk Oblast by USD 3.0 billion, jointly by 32.7%.** Such trends, against the background of growing systemic contradictions inherent in the old industrial regions, have created favorable conditions for the Russian Federation to launch a hybrid strike in Donetsk and Luhansk oblasts.

The demarcation line disrupted internal trade and logistics chains, cut off electricity and utility networks, left a separate section of the railway branch in Luhansk Oblast, which is the only coal supply channel to Luhansk TPP in Shchastya, made Mariupol and surrounding areas dependent on water supply from the temporarily occupied territory. The network of road and rail connections, torn apart by the demarcation line, has made transportation very complicated within the territories of these oblasts controlled by the Ukrainian authorities. Because of the armed conflict, the volume of freight transportation dropped 3.5 times in Donetsk Oblast and 1.7 times in Luhansk Oblast.

**Due to the armed aggression of the Russian Federation, Donetsk Oblast lost 40% and Luhansk 70% of their industrial capacity.** According to the State Fiscal Service of Ukraine, as of 2014, about 600 enterprises in these two oblasts were completely destroyed and could not be rebuilt.

**In Donetsk Oblast in 2014 – 2015, the output of the industrial enterprises registered in the government-controlled part of Ukraine fell 2.2 times.** The chemical industry suffered the greatest losses: due to the closure of a number of large enterprises, production fell 4 times. The consumer demand-related food industry fell 3.7 times. Production in metallurgy and mechanical engineering decreased 1.9 times in two years. Opportunities for the development of the metallurgical industry of Donetsk Oblast were complicated by the problems of coking coal supplies and coke production as well as sufficient production of electricity. **In 2014 – 2015, the industrial output in Luhansk Oblast fell 5.1 times.** The deepest failure occurred in metallurgical production and mechanical engineering.

Reduction of production capacity entailed the loss of export positions by Donetsk and Luhansk oblasts. Exports of goods in Donetsk and Luhansk oblasts in 2016, compared to 2013, fell more than 4 and 8 times, respectively (*Fig. 17*). **In total, the loss of export revenues in Donetsk Oblast amounted to USD 12.7 billion and in Luhansk Oblast to USD 4.9 billion in 2014 – 2015 as compared to 2013.**



*Fig. 17. Exports of goods from the conflict zone, USD billion*

**The armed confrontation led to the destruction of significant transit capacity of Donetsk and Luhansk oblasts**, especially transport routes linking Ukraine and the south of Russia. The development of European class A routes was disrupted including: E58 (Vienna – Chisinau – Odesa – Mariupol – Rostov-on-Don), E97 Kherson – Kerch – Novorossiysk – Sukhumi – Poti – Batumi – Trabzon – Ashgabat) and E105 (Kirkines – St. Petersburg – Moscow – Simferopol – Yalta). Accordingly, a number of important international infrastructure projects that would be essential for the development of the respective regions have been dropped. In particular, transport corridor project called the Black Sea Ring Highway as well as the Motorways of the Sea project, aimed at the development of cooperation between port administrations to improve coherence and facilitate the transition from one mode of transport to another. They were planned to be implemented within the framework of the Black Sea Economic Cooperation (BSEC).

Significant relocation of residents of Donetsk and Luhansk oblasts from the temporarily occupied territories was accompanied by permanent difficulties in acquiring / obtaining housing, access to primary and secondary education, and increased pressure on health care facilities in IDP concentration areas. **Deteriorating quality of the social sphere along with high military risks have led to active migration from the region, especially the economically active population, deprived of the opportunity to adequately realize their entrepreneurial or labor potential.** Confirmed migration losses of Donetsk and Luhansk oblasts during 2014 – first half of 2015 exceeded 1.5 million people<sup>90</sup>. The evacuation of most research institutions and higher educational institutions to other regions of Ukraine has undermined education and training opportunities in the region.

**The loss of key drivers and limited resources for the economic development of Donetsk and Luhansk oblasts have atrophied the prospects for structural transformations in the region.** The imperative of modernization and the loss of weight of basic old industries, diversification of the structure of the economy based on "smart" specialization as conditions for further development of these areas has been scientifically proven<sup>91</sup>. Currently, the region is actively losing human potential, which hinders the prospects for the implementation of strategically oriented structural changes.

**Because of the temporary occupation of Crimea, the territorial structure of the country de facto lost a fairly powerful region with human and economic potential, which significantly affected the surrounding regions.** Its negative impact on the drivers of socio-economic development of Ukraine's southern regions was further exacerbated by hostilities in the south of Donetsk region, which blocked transit flows along the coast and significantly weakened the recreational potential of the Sea of Azov. The loss of Russian export markets has also been felt. In 2012, Russia got 32% of exports from Mykolayiv Oblast and 25% from Kherson. **During 2014 – 2015, merchandise exports from Kherson Oblast fell 35.4% and Mykolayiv Oblast by 26.3%.**

At the beginning of the temporary occupation of the Crimean peninsula by the Russian Federation, about 80% of goods were estimated to be imported into its territory from mainland Ukraine. In particular, in the pre-crisis period, 100% of local sugar consumption, about 70% of milk, 60% of pork and beef, and so on were imported to Crimea, mainly from the neighboring regions. This share was gradually declining, and at the time of the civil blockade of the supply of goods to Crimea in September 2015, it was about 40%, with the vast range of products entering

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<sup>90</sup> Horbulin V. P. et al. (Eds.). 2015. Donbas and Crimea: the Cost of Returning. Kyiv: NISS.

<sup>91</sup> Snihova O.Y. 2020. Management of Structural Changes in the Old Industrial Regions of Ukraine. Kyiv: KNEU.

the markets<sup>92</sup>. **The loss of the capacious consumer market of Crimea, the volume of which increased many times in the summer months due to the influx of vacationers, has led to a significant change in trade flows in the surrounding regions**, primarily from Kherson. In particular, in 2016, with a total increase in vegetable production in Ukraine by 2.2%, their harvest decreased in 5 regions: it fell 20.4% in Odesa Oblast and 10.0% in Zaporizhzhya Oblast. The oblasts involved in the food supply of Crimea also became "anti-leaders" in meat production: its production (live weight) decreased in Kherson Oblast by 14%, in Zaporizhzhya Oblast by 9.8%, in Odesa Oblast by 5.3%, and Mykolayiv Oblast by 4.6%. This indicator grew 0.7%<sup>93</sup> overall in Ukraine.

It should be borne in mind that traditionally Ukraine's southern regions focus on food production: food industry makes 33.8% of industrial production in Odesa Oblast, 34.2% in Mykolayiv Oblast, 41.9% in Kherson Oblast<sup>94</sup>. Food production in Kherson Oblast showed a declining trend in 2015–2018 with the total reduction of 16%.

**The rapid contraction of tourist flows to Crimea not only cut the profits of Ukrzaliznytsia and aviation companies, but also made the infrastructure along the roads leading to the temporarily occupied peninsula unprofitable.** Equally important for the profits of local communities are enterprises in the areas of trade, catering and related services.

The development of the ports of the Sea of Azov (Berdyansk and Mariupol) was at risk due to their proximity to the combat zone and uncertainty about the security of passage through the Kerch Strait. It was very important to promote the recovery of the economies of Ukraine's eastern regions and the formation of new cargo flows due to changes in the sectoral specialization of this region. **Cargo turnover was transferred to other ports, primarily Odesa, Chornomorsk, Mykolayiv, as evidenced by the increase in cargo handling of the Black Sea ports of Ukraine even during the crisis:** 4.1% in 2014 and 1.9% in 2015, mostly due to the increased grain exports.

The southern regions of Ukraine also face additional economic and environmental risks:

- transformation of the exclusive maritime economic zone of Ukraine around the temporarily occupied Crimea into a "gray zone" in which the norms of international maritime legislation do not apply;
- obstruction of navigation due to restrictions on the movement of vessels in certain areas. Examples include Russia's establishment of areas closed to shipping in the Black and Azov Seas due to alleged military shootings;
- construction of facilities that restrict navigation and / or negatively affect the environment (e.g., the construction of the so-called Kerch Bridge by Russia);
- obstruction or impending of fishing activities;
- obstruction of the exploration and production of hydrocarbons on the Black Sea shelf;
- pollution of the coastal sea waters, as well as waters in the exclusive maritime economic zone of Ukraine around the temporarily occupied Crimea and pollution of Syvash (a system of inlets on the administrative border with the temporarily occupied Crimea) caused by emissions from the titanium industry.

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<sup>92</sup> Tyshchenko Y. Kazdobina Y. Dyachuk M. 2016. Crimea. Annexed property. Kyiv: UCIPR.

<sup>93</sup> Zhalilo Y. et al. 2017. A new regional policy for the new Ukraine: an analytical report. Kyiv: Institute of Socio-Economic Research.

<sup>94</sup> Data are given for January – December 2020. Source: sites of the main departments of statistics in the relevant areas.

There were changes in the directions and volumes of passenger flows due to the exclusion of the seaport of Yalta, which operated as a rather powerful international passenger terminal. Failure to provide cruise liners with access to Crimean ports has significantly reduced their interest in sailing to the Black Sea in general, which has also indirectly affected the decline in passenger traffic in the port of Odesa. 106 cruise liners arrived in Odesa in 2013, 32 cruise liners in 2014, 13 cruise liners in 2015, only 4 cruise liners in 2016, 1 cruise liner in 2017, and none in 2018.

**To sum up, the temporary occupation of Crimea and hostilities in the east of the country negatively affected the socio-economic development of southern Ukraine. Certain regions, first of all parts of Kherson, Zaporizhzhya and Donetsk oblasts, have turned from supply and transit oblasts into “new frontiers” with signs of deadlock periphery.** The problems of depression in the communities adjacent to the temporarily occupied territories have become more acute.

### **3.6. Risks of social tension and problems of cohesion**

Radical changes taking place in Ukrainian society under the influence of Russian aggression lead to the accumulation of social tensions, which further manifest themselves in worsening expectations, narrowing horizons of vision of the future, lowering mutual trust, spreading social aggression, etc. **The high military risks of 2014 – 2015 led to the consolidation of society to confront the enemy. Subsequently, aggravation of social tensions began to play a disintegrating role and posed a great risk to social cohesion as the ability of people to come together to share common development goals.**

A fertile breeding ground for the escalation of social tensions was the deep institutional crisis of 2013 – 2014, which culminated in Euromaidan and the change of government in Ukraine<sup>95</sup>. The institutional crisis has led to the destruction of stable institutional ecosystems<sup>96</sup>, the corresponding change or temporary loss of identity of significant sections of society. The gradual post-crisis construction of renewed social networks and hierarchies has been slowed down by a number of systemic internal reforms, with the decentralization reform being the most influential. **The “points of tension” that inevitably arose in the course of transformation were skillfully used by the aggressor to fuel contradictions in Ukrainian society.**

On this basis, the resultant risks to cohesion have increased including:

- deteriorating economic situation and negative trends in the living standards of those employed in sectors and regions directly or indirectly affected by Russian aggression;
- permanently high security risks due to the threat of escalation of the armed confrontation, which peaked in February 2022;
- forced change of identity by individuals and social groups, including communities due to significant territorial movements (primarily IDPs<sup>97</sup>, strengthening migration movements) and changes in social status (in particular, ATO / JFO veterans and servicemen);

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<sup>95</sup> Zhalilo, Y. A., Kononenko, K. A., Yablonsky, V. M. et al. 2014. Systemic Crisis in Ukraine: Preconditions, Risks, and Ways to Overcome It: Analytical Report. NISS.

<sup>96</sup> Hashimoto T., Nishibe M. Theoretical model of institutional ecosystems and its economic implications. *Evolut Inst Econ Rev.* 2017. № 14, p. 1–27. URL: <https://doi.org/10.1007/s40844-017-0071-8>

<sup>97</sup> *For example:* Starobilsk, Luhansk Oblast, with a pre-war population of 17 thousand people, also became home to 29 thousand IDPs, of which 8 thousand people reside there permanently and the rest visit the town periodically. (See.: Peace in Ukraine (III): The Costs of War in Donbas / International Crisis Group – Europe Report No. 261. 2020. 3 September).

- the lack of proper communication of the Center's decisions in the regions and local communities, as well as the lack of feedback and involvement of community in decision-making; to some extent this may be due to the lack of self-government in both oblasts and communities where the local civil-military administrations operate. Under these conditions, the ability to provide public, social and infrastructural services to residents improves, while the tools of electoral and participatory democracy are atrophied<sup>98</sup>;

- the preservation of significant political and ideological confrontations, which are periodically reflected in the results of presidential, parliamentary or local elections and systematically fueled by Russia's information aggression. Unfortunately, Ukraine has not yet formed a holistic policy of building and integrating common narratives in the political, humanitarian, social and economic sectors to forge a modern pan-national identity. There is no relevant information policy. Creating these narratives is possible based on the opinion polls (2021), although residents of Donetsk and Luhansk oblasts avoid defining their identity as "Ukrainian", while preferring the neutral concept of "a citizen of Ukraine". It is significant that the identity of "a citizen of Ukraine" in Donetsk and Luhansk oblasts is higher (5.5-4.4 points) than the average in Ukraine (3.7 points)<sup>99</sup>;

- targeted impacts related to the components of hybrid aggression, including imposing conflict decisions, inciting social discontent, spreading misinformation, distorting or blocking the Center's policies and so on;

- the lack of a common vision of the future and plenty of room for information manipulation due to incomplete "road map" for reintegration of the region.

**Insufficient cohesion leads to complex repercussions, which concern both organizational and managerial relations in communities, and in general opportunities and prospects of their economic and social development<sup>100</sup>, such as:**

- losing self-organization capacity and maintaining the expectation to get support from the Center on part of the communities, especially those formed by administrative decisions in 2020; this overburdens higher-level bodies of power and leads to tarnishing significant problems that need to be addressed, which increases social tensions;

- establishing control over communities by local corporate entities (or parts of large corporations operating in the area), by subordinating the communities' development to corporate interests and demotivating decentralized economic activities; the same can happen to communities gravitate toward large cities, with the latter sucking out the community resources;

- slowing down the institutionalization of local self-organization instantiated by public organizations that could fill the gaps in self-governance;

- forming patterns of behavior that do not consolidate the local economy around community development goals, lead to the loss of synergy in using local resources, including tax evasion, shadowing of economic activities, corruption, lack of social responsibility, unscrupulousness with partners, uncompensated use of communal property, infrastructure, natural resources and so on;

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<sup>98</sup> Social Cohesion: Directions of Policy Development in Donetsk Oblast. Policy Development Proposals. 2021. Kyiv: UCIPR.

<sup>99</sup> Social Cohesion: Directions of Policy Development in Donetsk Oblast. Policy Development Proposals. 2021. Kyiv: UCIPR.

<sup>100</sup> Khymynets V. V. et al. 2021. Economic principles of promoting community cohesion: an analytical report. Kyiv: NISS.



- social exclusion of certain groups from social and economic life resulting in the loss of their labor and civic capacities<sup>101</sup>;
- weakening the ability to mobilize community resources to achieve social or economic goals, the weakness of the territorial identity of the business and its low participation in socially significant projects;
- poor implementation of regional and local development strategies and programs based on a consolidated vision of the future and joint responsibility, loss of prospects for the integration of regional development goals into national strategies and programs;
- difficulty in applying democratic management procedures, in particular forms of economic democracy: participatory budgeting, democratic control over the use of communal property, public-private partnerships and so on;
- reduction of resistance to unforeseen risks, the overcoming of which requires the coordination of actions regarding the environment, security, epidemic and disaster risks among others.

**Regional "failures" of cohesion create a favorable ground for the spread of the impacts of Russian hybrid aggression.**

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<sup>101</sup> Khymynets V. V. et al. 2021. Economic principles of promoting community cohesion: an analytical report. Kyiv: NISS.

## 4. FORCED STRUCTURAL CHANGES AND ADAPTATION TO RISKS

Prolonged high uncertainty due to the unpredictability of hybrid aggression by Russia, as well as the steady loss of Ukraine's economic and social capacity have made the national economy, public administration and business gradually adapt to operating in the new context. The need to counter risks and reduce sensitivity to the real cost of Russian aggression have often accelerated long-overdue reforms, stimulated the search for effective solutions that shape the new model of Ukraine's economy.

### 4.1. Restructuring of production chains

**The degree to which enterprises were integrated into the joint Ukrainian-Russian production and distribution chains as well as their energy dependence has determined the adaptive capacity of industrial manufacturing in the context of Russian aggression.** That is why the consequences of the armed conflict were the most severe for the machine-building and chemical industries, whose shares in industrial sales fell from 8.6% and 3.7% in 2013 to 6.1% and 2.5% in 2020 respectively. A significant part of machine-building enterprises was focused on the Russian market and failed to refocus on more competitive foreign markets. It resulted in a decline of high value-added products (machinery and equipment, railway and aviation products supplied mainly to Russia) in Ukrainian exports of machine-building products against the background of a growing share of low value-added assembly products (electrical equipment for cars, communication equipment and household appliances supplied to the EU)<sup>102</sup>. The loss of strategic capacity and low workload of the chemical industry due to significant dependence on Russian gas has weakened the position of Ukrainian producers in domestic and foreign fertilizer markets, resulting in a significant increase in import dependence.

On the other hand, more diversified foreign economic relations and stronger investment potential of the metallurgical industry have helped to overcome the crisis faster. In particular, in metallurgy the volume of investments per ton of steel produced in 2010 – 2015 was USD 23, and increased to USD 29.2 in 2016 – 2020. At the same time, in the last five years, almost 60% of metallurgical investment projects concerned primary redistributions<sup>103</sup>. The production-oriented food, pharmaceutical, and woodworking industries, whose share in industrial production slightly increased, grew at a faster pace due to stable domestic demand.

Radical changes in the vector of Ukraine's foreign economic policy after the signing of the EU-Ukraine Association Agreement in 2014 against the background of the deployment of Russia's armed aggression against Ukraine gave also a powerful impetus for the modernization of Ukraine's industry. **The beginning of the active phase of trade wars and the inevitability of reorientation of some goods to the European market forced companies to intensify investment programs to modernize production following European standards.**

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<sup>102</sup> Machine-building industry in Ukraine: capacity and opportunities for export expansion until 2021: Analytical material by Ukrpromzovnisheksperyta. URL: <https://www.me.gov.ua/Documents/Download?id=79ea6e19-5253-41b8-b2ce-eaccdee61116>

<sup>103</sup> GMK Center: An overview of investment activities by Ukraine's metallurgical companies. URL: [https://gmk.center/wp-content/uploads/2021/11/2021\\_GMK-Invest.pdf](https://gmk.center/wp-content/uploads/2021/11/2021_GMK-Invest.pdf)

The positive impact of forced restructuring on the investment process is evidenced by the recovery of Ukraine's economic growth in 2016, unlike the previous post-crisis recoveries, began with the resumption of positive dynamics of investment in fixed assets. In 2016, the investment increase in industry and agricultural production was 55%.

The need to restore the lost defense potential contributed to the accelerated development of the defense industries, the production of dual-use goods for the purposes of the army. There was a wider involvement of private defense companies in fulfilling national defense contracts. Public-private partnerships in the defense industry have acquired a new meaning. **The forced "remilitarization" of the Ukrainian economy has become one of the important stimuli for economic growth.**

The new defense-industrial policy enabled an active introduction of new technologies, launching and development of joint projects for the development and production of modern weapons and military equipment with EU and NATO member states following only best international and European standards, first and foremost NATO standards. It has laid the foundation for increasing the export attractiveness of Ukrainian enterprises.

**Important changes have occurred regarding the diversification of energy and technologies supplies to eliminate the risks of dependence on supplies from Russia.**

**Russia's aggression has forced Ukrainian society and the government to launch a real reform of the energy sector and take steps to integrate into the European electricity and natural gas market, including synchronization of Ukraine's electricity network with ENTSO-E and Ukraine's gas system with ENTSO-G.** In particular, the laws of Ukraine on the natural gas market<sup>104</sup> and the electricity market<sup>105</sup> were adopted, thus introducing a modern European model for the energy sector.

Given the risk of losing revenues from gas transit, the Ukrainian GTS management has developed ways of maintaining transit, increasing the number of new services for international and Ukrainian customers, introducing new forms of transportation and using natural gas. The steps towards the simplification of cross-border gas trade taken by Ukraine have been yielding results. The number of non-resident shippers who now import gas to Ukraine is gradually growing. In 2021, 50 traders ordered gas transportation from the EU to Ukraine, with 25 of them being Ukrainian companies and 25 foreign ones.

Ukraine has been able to avoid buying natural gas from Gazprom, thus eliminating one of the instruments of pressure used by Russia. The number of suppliers of natural gas to Ukraine's domestic market has increased significantly, with the supplies made exclusively from the European market. Ukraine is taking the effort to expand cross-border gas interconnectors with Romania, Hungary and Poland, with the aim of diversifying supply sources and, as a result, strengthening Ukraine's energy security. In addition, the contract base of guaranteed (permanent) natural gas supplies to Ukraine from EU countries has been expanding.<sup>106</sup>

A promising supply route for liquefied natural gas (LNG) is being developed through Polish terminals (including Swinoujscie) in the Baltic Sea, with such suppliers as Qatar, the United

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<sup>104</sup> Law of Ukraine on the Natural Gas Market of April 09, 2015, No. 329. URL: <http://zakon5.rada.gov.ua/laws/show/329-19>

<sup>105</sup> Law of Ukraine on the Electricity Market of April 13, 2019, No. 2019. URL: <http://zakon5.rada.gov.ua/laws/show/2019-19>

<sup>106</sup> Ukraine's total capacity of gas imports from the EU is 287.2 million m<sup>3</sup> of gas per day, of which 252.2 million m<sup>3</sup> is intermittent capacity, which cannot be used in the absence of transit.

States and Norway (especially after the completion of the Baltic Pipeline<sup>107</sup> connecting the Norwegian pipeline system with the Polish one). In order to establish this route, the capacities of gas pipelines<sup>108</sup> on the Polish-Ukrainian border are being expanded to further increase the volume of gas supplies to Ukraine.

In fact, due to the incorporation of EU energy directives into the local legislation and the implementation of projects expanding cross-border flows, Ukraine is integrating its gas market into the EU gas market. Cooperation with EU countries and cross-border trade as well as optimization of gas supply routes following market needs are among the priorities not only for Ukraine but also for EU countries set to reduce the gas cost for consumers.

Due to the shortage of anthracite coal in 2015, the National Security and Defense Council of Ukraine decided to reconstruct TPP and CHP units using anthracite coal to ensure that they use domestically produced gas coal<sup>109</sup>. A total of seven Ukrainian anthracite-fired TPPs have been converted to gas coal, which is mined in the Ukrainian government-controlled area. As a result, the consumption of anthracite coal in Ukraine, which amounted to 9.2 million tons in 2016, fell to about 3 million tons in 2020. At the same time, the total consumption of thermal coal (anthracite and gas) is about 20 million tons<sup>110</sup>.

In order to achieve energy independence, Ukraine has taken a number of practical steps towards the diversification of fuel supplies for nuclear power plants. Between 2014 and 2017, a program of experimental operation of nuclear fuel made by Westinghouse (USA) at Ukrainian nuclear power plants was implemented<sup>111</sup>. Currently, four Zaporizhzhya NPP power units and two South Ukrainian NPP power units use Westinghouse nuclear fuel. Upon the full completion of safety inspections, the share of electricity generated with Westinghouse's nuclear fuel is expected to increase to 50%. In 2020, the diversification project was expanded by signing a contract under which nuclear fuel is supplied for WWER-440 reactors with the possibility of localizing the production of some accessories in Ukraine. In 2021, an agreement was also signed with Westinghouse Electric Company for the supply of AP1000 reactors at Ukrainian NPPs<sup>112</sup>, which will provide diversification of both nuclear fuel supplies and nuclear technologies.

At the same time, in order to eliminate Ukraine's dependence on Russia in the field of spent nuclear fuel storage, the Centralized Spent Fuel Storage Facility (CSFSF) was built. It will store Ukrainian spent nuclear fuel from Rivne, Khmelnytsky and South-Ukrainian NPPs for the next century. The repository has already received a certificate from the State Architectural and Construction Inspectorate on the readiness of the facility for operation and it is ready for commissioning<sup>113</sup>.

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<sup>107</sup> Expected to be commissioned in 2022, which will ensure the transportation of Norwegian gas to Poland.

<sup>108</sup> Ukraine already has two connections with the Polish GTS (Drozdovychi and Hermanovychi). These connections will be ready to receive up to 6.6 billion m<sup>3</sup> of gas per year into the Ukrainian system. With the required amount of gas and pressure on the Polish side, it is possible to ensure the use of the full capacity of these connections.

<sup>109</sup> On the state of implementation of the decision of the National Security and Defense Council of Ukraine of November 4, 2014 "On the state of energy security and urgent measures for sustainable heating season 2014/15" and additional measures to ensure domestic energy supply: Decision of the National Security and Defense Council dated May 06, 2015. URL: <https://zakon.rada.gov.ua/laws/show/n0009525-15#Text>

<sup>110</sup> Energy balance of Ukraine (products). URL: [http://www.ukrstat.gov.ua/operativ/operativ2014/energ/en\\_bal\\_prod/arh\\_prod\\_2012.htm](http://www.ukrstat.gov.ua/operativ/operativ2014/energ/en_bal_prod/arh_prod_2012.htm)

<sup>111</sup> Implementation of new modifications of nuclear fuel. URL: <http://www.energoatom.kiev.ua/ua/mobileactvts/implementation/>

<sup>112</sup> Energoatom and Westinghouse promote clean energy throughout Central and Eastern Europe. URL: <https://info.westinghousenuclear.com/ukraine/news-insights/>

<sup>113</sup> Ukraine is carrying out test runs to the world's first Centralized Spent Fuel Storage unloaded from reactors made in Russia. URL: <http://surl.li/bmdwe>

Since 2014, Ukraine has taken practical steps to synchronize with the European Network of Transmission System Operators for Electricity (ENTSO-E). An agreement on the conditions for the future integration of Ukraine's energy system with the continental European energy system was signed in Brussels in June 2017<sup>114</sup>. The conditions were met by 2020. In 2022, testing of the United Energy System of Ukraine (UES) in isolation, i. e. the ability of Ukraine's energy system to provide sustainable electricity supply to consumers, while disconnected from all other systems, including Russia's energy system. According to the plan, the full synchronization of the UES with ENTSO-E is scheduled for the first quarter of 2023. Joining ENTSO-E will reorient Ukraine's energy system toward Europe and create opportunities for the diversification of the electricity supply.

#### 4.2. Foreign trade realignment

**Loss of access to the Russian market and the desire to get rid of the uncertain prospects of Russian supplies have stimulated domestic companies to seek new markets and establish competitive production, including by adapting to European standards, certification rules and control procedures, as well as modernize their production.**

The conclusion of the Agreement on the Deep and Comprehensive Free Trade Area, which became part of the EU-Ukraine Association Agreement between, enabled Ukraine to increase its trade turnover with the EU from USD 43.8 billion in 2013<sup>115</sup> to USD 56.4 billion in 2021<sup>116</sup>. At the same time, the main growth was in exports of goods (from USD 16.8 billion to USD 26.8 billion). The share of the EU in Ukraine's trade turnover during this period increased from 31.2% to 39.9% (Fig. 18). Note that the latter figure no longer takes into account exports to the UK, which was another 1.6%.

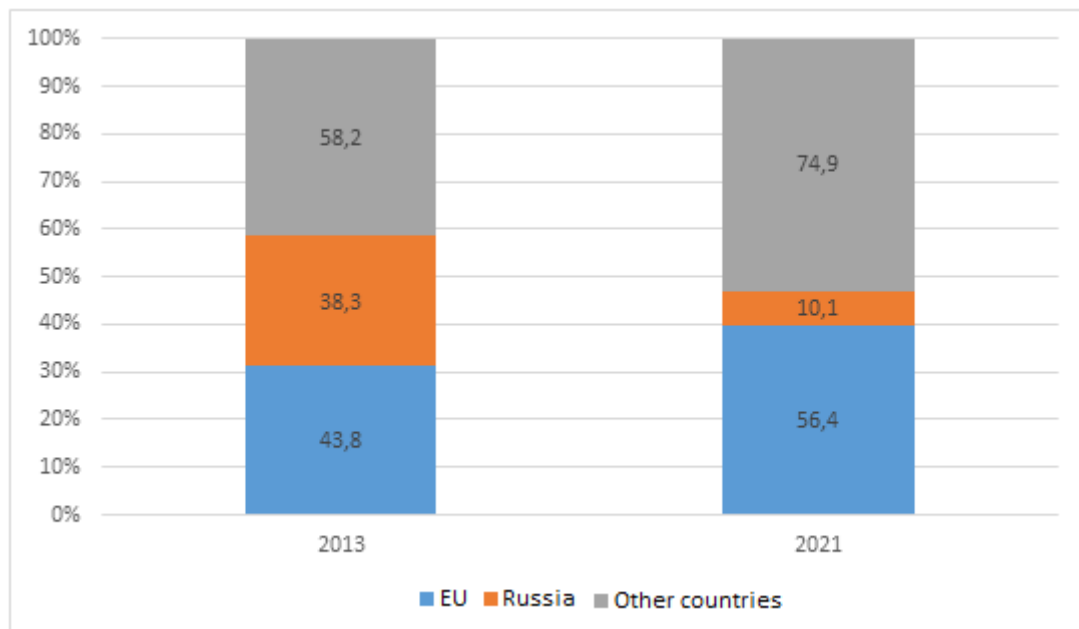


Fig. 18. The geographical structure of Ukraine's turnover in 2013 and 2021, USD billion

<sup>114</sup> Agreement on the future integration of Ukraine's and Moldova's energy systems with ENTSO-E has entered into force. URL: <https://ua.energy/osnovni-podiyi/ugoda-pro-umovy-majbutnogo-ob-yednannya-energosystem-ukrayiny-ta-moldovy-z-entso-e-nabula-chynnosti/>

<sup>115</sup> Calculated from the data reported by the State Statistics Service of Ukraine.

<sup>116</sup> Calculated from the data reported by the State Customs Service of Ukraine.

The loss of the Russian export market for agricultural products prompted to accelerate the mastering of European sales markets. In particular, in 2020, 25% of agrarian exports of Ukraine (groups 1-14 in terms of FEA Commodity Nomenclature) were headed to European countries. 380 Ukrainian enterprises secured their right to export their products to the EU in 2021. They included 162 food manufacturers and 218 manufacturers of non-food products<sup>117</sup>. At the same time, there are problems of ensuring compliance with the European standards, as the processes of harmonization and adaptation of legislation in the field of technical regulation and sanitary and phytosanitary norms require both time and significant material resources<sup>118</sup>. Another problem is the simplification of the agricultural production structure with the focus on grain and oil. First, it is easier to export these products. Second, their manufacturers belong to the circle of influence associated with large business, that is, they have access to better resources, which allows them to pay higher production costs and to meet the technical regulation requirements. Instead, vegetable and fruit gardening as well as the livestock industry drop their production to the scale of local markets because of the problems with the delivery of goods to end users.

However **an increase in trade volumes with the EU has become yet another factor in the realignment of foreign trade after leaving the Russian market**. The other factors include:

- concluding a number of agreements on free trade areas, primarily an agreement with Great Britain, which exited the EU. In addition, the Canada-Ukraine Free Trade Agreement came into force in 2017 and the Israel-Ukraine Free Trade Agreement came into force in 2021. Turkey and Ukraine a free trade agreement in 2022 but as of the end of February is has not been ratified yet. Also work on concluding similar agreements with Tunisia, Jordan and renewing the trade agreement with the United States is underway;

- joining multilateral agreements aimed at promoting trade expansion. First of all, Ukraine's accession to the WTO's Government Procurement Agreement in 2016 and the Pan-Euro-Mediterranean Regional Convention on preferential rules of origin in 2018;

- expanding trade cooperation with China. Since June 2020, container trains from China to Ukraine began to run on a regular basis, and in September 2021, the first direct container train with export cargo was sent from Ukraine to China. Further development of direct rail connections will contribute to the growth of trade between the two countries.

#### **4.3. Countering financial sector risks**

The increased risks associated with the permanent diversified hybrid influence on Ukraine by the Russian Federation have necessitated a reformatting of the financial system of Ukraine in order to strengthen the foundations of financial stability.

Given the high risk of budget shortfalls, the need for additional expenditures for the defense and law enforcement sector has increased (the need to provide for the corresponding expenditures at 5% of GDP has been regulated), support for the poor, IDPs and ATO / JFO participants. The task of preventing the inadequate growth of the budget deficit and public debt as well as maintaining a moderate fiscal burden on the economy has become urgent.

**Comprehensive systemic reforms in the field of public finance, which were intensified after 2014, have accelerated the legislative regulation and practical implementation of**

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<sup>117</sup> See: URL: <https://dpss.gov.ua/news/u-2021-roci-380-ukrayinskih-pidpriyemstv-mali-pravo-eksportu-vlasnoyi-produkciyi-do-yes>

<sup>118</sup> Rusan V. M. On the recovery of the livestock industry in Ukraine. URL: <http://www.niss.gov.ua/content/articles/files/tvarynnyctvo-3a8bd.pdf>

**medium-term budget planning in Ukraine, the full implementation of the program-target method at all levels, an increase of budget transparency, improvement of public financial control and audit, the efficiency of the main managers of budget funds, etc.** This, in particular, raised Ukraine's budget transparency score in the Open Budget Index Survey in 2019, when it was ranked 26th among 117 countries. In general, despite the significant negative effects of Russian aggression, the budget system has adapted to high levels of spending on defense, security, and public order. Ukraine managed to maintain and even reduce the level of redistribution of GDP to 40.6% through the general government expenditures in 2016 (from 44.8% in 2014). Specific modes of financing budget institutions, making social payments to the population and providing financial support to individual enterprises and organizations of Donetsk and Luhansk oblasts under the military-civil administrations (in the absence of local self-government bodies) were introduced in the parts of Donetsk and Luhansk oblasts controlled by the Ukrainian authorities.

The need to counter the hybrid war of the Russian Federation against Ukraine forced the Ukrainian government to increase the tax burden. During 2014 – 2015, rates were increased and the base of some existing taxes was expanded, as well as new ones were introduced. Effective as of now, there are VAT on the supply of medicines and medical devices at a rate of 7% (introduced on April 01, 2014), personal income tax on interest in the amount of current / deposit bank accounts at a rate of 18% (introduced on August 01, 2014 ) and military duty at the rate of 1.5% (introduced on August 03, 2014). At the same time, some innovations, such as the additional import duty (from February 25, 2015 to January 01, 2016), the fee for mandatory state retirement benefit insurance for foreign currency purchase transactions (from April 01, 2014 to January 01, 2017), the personal income tax and the military tax on medium and high retirement benefits (which had a low financial effect, did not correspond to world practice and was declared unconstitutional on February 27, 2018) were abolished within a few years. There was an increase in the low-progressive personal income tax scale from 15/17% in 2011 – 2014 to 15/20% in 2015 with the subsequent establishment of a single flat rate at 18% since 2016. The political crisis of 2013 and the beginning of the hybrid war of the Russian Federation against Ukraine in 2014 thwarted plans to reduce the corporate income tax rate. In addition, there was an increase in rent, excise and environmental taxes. The forced increase in the tax burden in 2014 – 2015 played a significant role in strengthening not only the financial but also, without exaggeration, the national security of Ukraine as a whole.

**In order to restore the debt stability of the state, the restructuring and partial write-off of state and state-guaranteed external commercial debt was carried out** in order to improve medium-term debt stability under the Memorandum between the Government of Ukraine and the IMF. As a result, in 2016 the amount of public and state-guaranteed debt was maintained within the planned limits, which had a positive impact on the recovery of economic growth and stabilization of macroeconomic indicators. After a long hiatus, IMF lending under the Extended Fund Facility resumed in 2017; Ukraine successfully returned to international capital markets due to the placement of USD 3 billion in foreign government bonds; the first active state debt management operation in the history of Ukraine was carried out through the redemption of foreign government bonds with maturities in 2019 and 2020 amounting to USD 1.6 billion. The Medium-Term State Debt Management Strategy for 2018 – 2020 was approved<sup>119</sup>. During 2017 – 2019, the relative state debt indicators in Ukraine gradually improved: the state and state-guaranteed debt

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<sup>119</sup> Medium-Term State Debt Management Strategy for 2018 – 2020: Resolution of the Cabinet of Ministers of Ukraine dated August 22, 2018, No. 883. URL: <https://zakon.rada.gov.ua/laws/show/883-2018-%D0%BF#Text>

relative to GDP decreased from a peak of 81% of GDP at the end of 2016 to 49.8% of GDP at the end of 2019. Further debt accumulation began in 2020 in the context of the COVID-19 crisis.

Removing troubled institutions from the banking system was an important step for restoring financial stability. During 2014 – 2017, more than half of the 180 commercial banks operating as of January 01, 2014 were withdrawn from the market<sup>120</sup>. **The elimination of troubled institutions from the banking system was accompanied by the strengthening of its capitalization with the gradual approximation of the requirements regarding capital to European standards.** In particular, the regulatory capital of the banking system after its reduction to UAH 93 billion in 2017 increased to UAH 212 billion as of January 01, 2022.

One of the most important monetary reforms, directly related to strengthening resilience in the face of the negative effects of external aggression, was the transition from a de facto fixed exchange rate for the hryvnia to the policy of inflation targeting. **Tight control over the money supply, at a time when there is a significant need for budget expenditures, prevented an inflationary spiral, which helped return inflation to single digits:** 9.8% in 2018, 4.1% in 2019, 5.0% for 2020.

#### 4.4. Restructuring of logistics

Awareness of the inevitable duration of the fragmentation of Donetsk and Luhansk oblasts in order to ensure the necessary connectivity of the territories controlled by the Government of Ukraine with each other and with other regions of Ukraine has led to a number of important decisions to improve transport logistics.

**Primarily, it is about restoring the integrity of the road network and the connectivity of the key economic centers of the region.** An illustrative example is the overhaul of the highway from Zaporizhzhya to Mariupol, completed in 2019, which overcame the actual "separation" of this important economic center from the central part of the oblast. In 2022, it is planned to restore the road to Starobilsk, Luhansk Oblast, which is the only means of communication of the north-eastern part of Luhansk Oblast with the center of the Oblast and the whole of Ukraine due to the lost railway connection. Transport connectivity is facilitated by the restoration of the highway M-14 Odesa – Melitopol – Novoazovsk, which is one of the longest in the country (over 700 km): it crosses five oblasts and connects the main ports of the country in the Black Sea and the Sea of Azov and is part of the European route E 58. In 2020, about 400 km of highways were restored in Donetsk and Luhansk oblasts within the framework of the Large Construction Program, and 870 km in 2021 (according to the preliminary data)<sup>121</sup>.

An important issue that needs to be addressed is the development of communications of the northern and eastern lands of Luhansk Oblast, which were "cut off" as a result of Russian aggression. A positive solution to this problem is the construction of a railway branch in Luhansk Oblast, which is envisaged in the Economic Development Strategy for Donetsk and Luhansk oblasts until 2030. This railway branch will connect the Kindrashivska-Nova – Lantrativka section with the Ukrainian railway network. The construction is expected to start in 2023 and last for three years, with the possibility of electrification of the site under consideration<sup>122</sup>.

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<sup>120</sup> Deposit Guarantee Fund. About the Fund: URL: <https://www.fg.gov.ua/pro-fond>

<sup>121</sup> Challenges and the potential of social cohesion in Donetsk Oblast. A field report following up on regional consultations. 2021. Kyiv: UCIPR.

<sup>122</sup> Construction of a railway branch in Luhansk Oblast: When they will start and how much it will cost. URL: <https://dn.depo.ua/ukr/severodonetsk/budivnistvo-zaliznichnoi-gilki-na-luganshchini-koli-pochnut-i-skilki-koshtuvatime-202112301407962>



**Modernization of the Ukrainian Black Sea ports and their access infrastructure will help optimize the logistics of sea freight transport.** In particular, within the framework of the Large Construction Program, five projects for the development of port infrastructure worth a total of UAH 5 billion are currently being implemented. In 2022, large-scale projects are planned in the country's largest ports including Pivdenny, Odesa, Mykolayiv and others.

An important step in the modernization of the Black Sea ports was the signing of a tripartite agreement between the Ministry of Infrastructure of Ukraine and the Ukrainian Seaports Authority with the European Bank for Reconstruction and Development on cooperation in public-private partnership in Chornomorsk Port<sup>123</sup>. According to preliminary estimates, the announcement of concession tenders for three projects is expected to be made in 2022. After attracting investment to Chornomorsk Port and modernizing the container terminal, its capacity should increase almost twice.

**The loss of transit capacity in the southern regions of Ukraine has led to an intensive search for alternatives in the southern and western directions.**

The reconstruction of the Odesa – Reni international highway, the opening of the ferry lines Orlovka – Isakcha (Romania), Skadovsk – Poti (Georgia) and Skadovsk – Zonguldak (Turkey), the construction of the Kyiv – Chisinau highway with a bridge over the Dniester create additional opportunities for the development of the country's transit capacity.

The ferry service between the ports of Skadovsk (Ukraine) and Zonguldak (Turkey) was recovered in 2016 and between the ports of Skadovsk (Ukraine) and Poti (Georgia) in 2021. Services at regional airports in the south of Ukraine have grown in volume. The reconstruction of the Kherson airport is close to completion, upon which it will be able to accept 4D class aircraft.

The formation of new transport corridors in Europe and the Black Sea region creates prospects for "resetting" the transit capacity of the southern macroregion. In particular, in 2013, the European Commission proposed a new transport strategy and a project to create international transport corridors connecting Western Europe with Central and Eastern Europe. The new infrastructure policy will unite the 27 EU Member States into a single Trans-European Transport Network (TEN-T). Nine transport corridors have been announced, each of which must connect at least three modes of transport and connect three states. The project is scheduled to be completed in 2030.

Two corridors directly concern Ukraine: the Mediterranean Corridor and the Rhine – Danube Corridor. The first will connect the Mediterranean countries (Spain, France, Italy, Slovenia, Croatia) with mainland Hungary (up to the border with Ukraine). The second is to connect Europe's five Danube countries (Germany, Austria, Slovakia, Hungary and Romania) by Europe's main waterway, as well as by the roads and railways running along it.

#### **4.5. Generating new drivers of regional development**

The protracted nature of the temporary occupation of the strategically important regions of Ukraine has formed the need to build integrated competitive regional economic systems, primarily within the territories currently controlled by Ukraine. The problem of losing important drivers of development of the regions and territories adjacent to the temporary occupied areas also needs to be addressed.

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<sup>123</sup> IFC and the EBRD will help prepare concession projects for the Chornomorsk seaport. URL: <https://mtu.gov.ua/news/33162.html>

For **Donetsk and Luhansk oblasts**, given the set structure of their economy (although the most industrialized part of them was temporarily occupied, 25% of the employed population worked in industry in Donetsk Oblasy and 19% in Luhansk Oblast in 2020, with the average of 15 % for Ukraine), **the defining direction of structural transformations is "new industrialization", focused on the modernization of traditional industries and the development of new modern industries as well as strengthening their competitiveness and suitability for global value chains.** The success of steps in this direction is evidenced, in particular, by the growing share of exports to the EU countries: up to 48.8% from Donetsk Oblast and up to 57.2% from Lugansk Oblast.

**The most promising reserves of coal located in the areas controlled by the Ukrainian government (Pokrovsk, Dobropillya, Vuhledar) strengthen opportunities for the development of the region.** Mines located in these areas are mostly "young", with the service life under 30 years. These mining enterprises have reserves of thermal and coking coal, and a significant number of them are considered promising, which enables technical re-equipment of major production processes through the introduction of new technologies and equipment. Prospects for further development of the industry, in the context of the global trend of "green transition", are possible only in case of the implementation of bold solutions aimed at changing the use of energy coal resources. In particular, the technology of underground coal gasification has recently been adapted and the energy efficiency of low-rank coal combustion has been improved. The introduction of new technologies will require cooperation with power engineering companies, including from other regions of Ukraine.

**The prospects for the development of the metallurgical industry have been facilitated by the preservation of production assets of the most powerful ferrous metallurgy enterprises with high-efficiency full-cycle production, which are located in the area controlled by the Ukrainian government,** as well as the industries that provide the main technological process of metallurgical production, namely the extraction and processing of non-metallic raw materials as well as the production of molded refractory products, refractory mixtures and dolomites. Positive factors include the concentration of consumers of metal products, i.e. metal-intensive industries (engineering, metalworking and construction) in the Donetsk and Luhansk areas controlled by the Ukrainian government, and the growing capacity of the domestic market of metallurgical products due to the need to recover the infrastructure and supply the defense industry and the engineering industry.

**The development of alternative energy in Donetsk and Luhansk oblasts is promising, taking into account global trends in reducing the share of thermal energy.** Donetsk and Luhansk oblasts are estimated to have some of the largest biomass energy capacity among Ukrainian oblasts, with their total economically feasible potential estimated at 1.7 million tons c. f. The most promising is sunflower and rapeseed biomass, as well as a significant amount of resources suitable for biogas, production of energy materials from wood chips, straw, energy crops and more. Priazovsky district of Donetsk Oblast and the south and the north of Luhansk Oblast are also among the most suitable for the construction of wind farms. In particular, JSC Kramatorsk Heavy Machine-Tool Building Works is the only plant in Ukraine manufacturing components for wind turbines.

**The loss of part of the industrial capacity has led to an increase in the weight of the agricultural sector in the economy of Donetsk, and especially of Luhansk oblasts.** In the latter, the share of agriculture, forestry and fisheries in 2019 was 19.6% of the total GVA of the oblast (compared to 6.9% in 2013). Moreover, the agricultural production of the oblast increased by 9.1%

in 2018 and by 14.4% in 2019; despite the decrease of the sown area by a quarter, the production of grains and legumes increased in physical terms in 2019 by 12% compared to 2013. Similar positive trends have been observed for sunflower, fruit and berry crops.

It should be borne in mind that the opportunities for diversification of the economies of Donetsk and Luhansk oblasts are currently significantly limited due to high military risks. This factor discourages the inflow of investment into the region, adds problems to the implementation of the intentions to create a special economic area in the parts of these oblasts controlled by Ukraine. The region's great prospects in the realm of recreation and tourism, in particular industrial tourism, have not been realized.

**Significant international support adds optimism about the prospects for economic and social revival in the region.** The largest donors to Ukraine have been the United States and the European Union. The governments of Canada, Germany, Great Britain, Sweden, Switzerland, Japan, Turkey, Denmark, and the Netherlands are actively helping Ukraine to rebuild and support the affected areas. Significant support is provided by UN organizations, the World Bank, the EBRD, the OECD, the OSCE, the PACE, and NATO. Partners and donors provide political, financial, economic and logistical assistance, including comprehensive assistance in the implementation of domestic reforms. In total, according to the ITA Monitoring, 60 projects aimed at the recovery of Donbas and the support of IDPs were launched in Ukraine in 2020, with Luhansk and Donetsk MCAs, communities in these regions and a number of central executive bodies being the main recipients<sup>124</sup>.

Attraction of international funds is currently coordinated by the major donors, but not all the recipients of this assistance are involved in dialogue, there are gaps in the coordination of support priorities among the donors themselves, which sometimes causes duplicating the objectives of different projects in the same areas. **For the affected regions of Ukraine, it is important to consider the international technical assistance in terms of a long-term impact on the dynamics of the region, as well as further capacity to ensure sustainable development.**

In February 2022, representatives of the United Kingdom, Canada, Sweden, Switzerland and the United States launched the new Partnership Fund for a Resilient Ukraine<sup>125</sup> aiming to bolster Donbas, with a budget of GBP 35 million. In 2022, it is planned to use its funds for energy efficiency and community capacity building projects.

Interregional forums, such as the Southern Development Strategy Forum, held in June 2021 in Kherson Oblast<sup>126</sup>, or the Azov Regional Development Forum<sup>127</sup> in Melitopol, have a significant impact on businesses in Donetsk and Luhansk oblasts.

Decentralization has meaningfully improved the local capacity to join forces to revitalize the region. Inter-municipal cooperation is being developed in the areas of municipal engineering modernization, provision of administrative and social services, environmental monitoring, household waste management and so on<sup>128</sup>. The proximity of the war zone and the difficulties in

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<sup>124</sup> ITA Monitoring. URL: <https://www.kmu.gov.ua/diyalnist/mizhnarodna-dopomoga>

<sup>125</sup> Five countries have set up a fund to help Donbas: Great Britain, Switzerland, Sweden, the United States and Canada. URL: <https://news.liga.net/ua/politics/news/pyat-stran-sozdali-fond-pomoschi-donbassu-velikobritaniya-shveytsariya-shvetsiya-ssha-i-kanada>

<sup>126</sup> See.: URL: <https://ustrategy.org/>

<sup>127</sup> See.: URL: <https://www.zoda.gov.ua/news/54346/azovskiy-forum-nadav-novogo-impulsu-rozvitku-melitopolshini.html>

<sup>128</sup> Zhalilo Y., Snihova O. 2021. Realization of the potential of interregional and intermunicipal cooperation within the policy of cohesion: an analytical report. Kyiv: UCIPR. URL: <http://www.ucipr.org.ua/ua/publikatsii/vydannia/>

establishing local democracy did not get in the way of implementing best practices of local self-government. In 2021, communities from Donetsk Oblast won the highest number of awards (six) among the 28 winners of the Best Practices of Local Self-Government Contest, which was held by the Ministry of Regional Development<sup>129</sup>.

**The temporary occupation of Crimea and parts of Donetsk and Luhansk oblasts created conditions for "resetting" some industries and finding new ways to develop the regions of southern Ukraine.**

**The loss of Crimea for Ukrainian vacationers and foreign tourists has led to significant structural changes in the use of recreational and tourist potential of the regions of southern Ukraine,** especially the coastlines of the Black Sea and the Sea of Azov in Odesa, Mykolayiv and Kherson oblasts. In particular, according to official data alone, 1.8 million people opted to go to Odesa for vacation in 2015, which was 1 million more than in 2014. In general, Odesa Oblast was a holiday destination for about 3 million people. 2.8 million tourists spent their holiday in Kherson Oblast in 2015, and 3.5 million in 2016. In 2014, 75% of tourists who visited Odesa were citizens of Ukraine, but in 2015 their share dropped to 57%, while 36% of guests came from Central and Western Europe<sup>130</sup>. In pre-coronavirus 2019, the number of officially served tourists in Mykolayiv Oblast was higher than in 2013 by 32.1%, in Odesa by 62.0%, and in Kherson by 74.4%.

The potential of the coastline of the Sea of Azov and the coastal areas allows for a full development of the resort industry by providing a full range of services of mud treatment, balneotherapy, healing benefits of mineral springs and more<sup>131</sup>. However, the region's recreational potential has been severely hampered by its proximity to the war zone and the temporary accommodation of IDPs in its facilities.

Likewise, **farmers in the south of Ukraine found new markets for their products, by establishing the cultivation and production of new products for the local markets and changing the logistics of their delivery.** Therefore, since 2016, the shock caused by the loss of supplies to Crimea has largely passed. It is worth noting that the regions of southern Ukraine have enough research capacity to develop innovative approaches to agricultural production, preparation of new cultivars and crops for cultivation in the context of climate change, which will encourage the development of the agricultural sector. In particular, there are Odesa, Mykolayiv and Kherson State Agrarian Universities, the Institute of Irrigated Agriculture, the Institute of Rice, the Institute of Oilseeds, Tairov Institute of Viticulture and Enology of the National Academy of Agrarian Sciences of Ukraine, the Selection and Genetics Institute – the National Center for Seed Science and Cultivar Research, Odesa National Academy of Food Technologies and others.

In general, the existing potential of the resort areas of southern Ukraine, provided proper infrastructure (roads, centralized water supply and sewerage), enables an increase in the reception of vacationers by an average of 4 times, and up to 10 times for some facilities and areas<sup>132</sup>.

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realizatsiya-potentsialu-mizhregionalnogo-ta-mizhmunitsipalnogo-spiv-robitnitstva-v-mezhakh-politiki-zgurtovanosti-analitichnij-zvit).

<sup>129</sup> 10 success stories of local communities: from job creation to skate parks. URL:

<https://www.radiosvoboda.org/a/prykłady-uspikhu-terytorialnykh-hromad/31631448.html>

<sup>130</sup> This year, by a record number of tourists visited Odesa: there were almost no Russians among them. URL: <http://dumskaya.net/news/v-etom-godu-odessu-posetilo-rekordnoe-kolichestv-052557/>.

<sup>131</sup> Перспективні напрямки розвитку господарського комплексу територій Азовського узбережжя : аналіт. зап. URL: <http://www.niss.gov.ua/articles/1586/>

<sup>132</sup> Zhalilo Y. et al. 2017. A new regional policy for the new Ukraine: an analytical report. Kyiv: Institute of Socio-Economic Research. URL: [http://iser.org.ua/uploads/pdf/big%20Reg%20politic%20na%20sayt\\_\\_.pdf](http://iser.org.ua/uploads/pdf/big%20Reg%20politic%20na%20sayt__.pdf)

However, currently the development of the tourism sector is mostly extensive, the improvement of services is slow, the weak development of transport and communal infrastructure and the unbalanced use of coastal areas get in the way. This, in turn, is a consequence of the significant shadowing of the recreational industry, which limits the resources of local budgets paying for infrastructure development.

The revival of demand for recreational and tourist services in the coastal regions of mainland Ukraine in 2015 - 2017 was explained not only by the redirection of "Crimean" vacationers, but also by the rise in prices for Ukrainians abroad due to the devaluation of the hryvnia. Quarantine restrictions on travel abroad in 2020 gave a new impetus to the development of the region's resorts. However, **the macro-region's recreational sector needs significant private and public investment to remain competitive.**

**The potential for deepening the diversification of development drivers in the south of Ukraine includes the development of transport infrastructure, including improving transport communications in the western and southern (sea transport) areas as well as expanding the use of river and mixed (river - sea) transport of passengers and goods.** This, among other things, will facilitate the possibility of including the macro-region's manufacturing enterprises in production chains along with foreign partners. Additional opportunities may occur due to cooperation within the framework of the European Union Strategy for the Danube Region (EUSDR), coordination of partners under this framework in international projects and involvement of international technical assistance, since Ukraine will chair EUSDR in 2022.

## **5. PROSPECTS FOR STRENGTHENING ADAPTIVITY TO THE RISKS OF RUSSIA'S HYBRID AGGRESSION**

For a long time, Ukraine's economy is imperiled to operate under constant pressure caused by the aggressive policies of the Russian Federation that has been increasing and diversifying destructive influence on the economic development in Ukraine. **The long-term nature of the threats generated by the aggressive behavior of the Russian Federation makes it impossible to build bilateral good-neighbor relations.**

In this situation, it is necessary to provide auspicious conditions for innovation-based economic development, an encouraging environment for investment, a stable basis for financial stability, effective tools for the country to implement its social functions under persistently high risks of external military threat and unpredictable hybrid challenges. Relevant policies should focus on overcoming key obstacles to the country's strategically oriented development induced by the consequences of Russian aggression.

The priorities of such a policy are as follows.

### **1. Capacity building of the real sector of the economy, overcoming export and import dependence on Russia, strengthening international competitiveness based on:**

- reducing the consequences of the rupture of industrial and scientific-technical cooperation with Russia, which creates conditions for attracting transparent foreign investment from other countries by diversifying tools to support investors, accelerated development of industrial and innovation infrastructure including industrial, science and technology parks, industrial zones and technology parks as well as regional innovation clusters;
- overcoming the entrenched export-import dependence on Russian markets, which requires strengthening the monitoring of imports of goods to Ukraine from Russia in order to speed up the detection and response to non-competitive actions; the diversification of sales markets with priority given to supplies to North Africa and the Middle East as well as strengthening ties with EU countries (under the Association Agreement);
- implementing the structural transformation of old industrial regions along with the modernization of traditional economic sectors for the purpose of recovering (when economically feasible) their competitiveness in world markets;
- introducing European industrial policy tools, strengthening Ukraine's subjectivity as an EU partner, synchronization of eco-modernization shifts in Ukrainian industries with European trends and initiatives, promotion of digitalization of Ukrainian industries;
- expanding the capacity and logistics infrastructure of the domestic transport system along the North-South axis to provide full transport services to both domestic consumers and transit cargo carriers;
- accelerating the integration of the Ukrainian transport system into global infrastructure projects, primarily the European TEN-T, the Trans-Caspian International Transport Corridor, the New Silk Road and others to ensure the sustainability and safety of Ukraine's transport.

### **2. Reduction of the dependence on trade with the Russian Federation in goods and services in strategic and sensitive areas and replacement of Russian markets by means of:**

- upgrading the Association Agreement with the EU, which should include guarantees of Ukraine's closer integration into the EU single energy market, as well as assistance in obtaining the necessary decisions by relevant EU bodies to improve access to industrial products;
- increasing the efficiency and simplifying customs clearance procedures.

### **3. Establishment of a physical route of gas supply to Ukraine independent of Russia, taking into account the possibility of Russia's influence on some EU gas suppliers that may stop the physical flow of gas to Ukraine, by means of:**

- concluding long-term contracts for gas purchases with companies from gas producing countries (USA, Norway, Qatar);

- negotiating contractual settlements of guaranteed pumping of natural gas to Ukraine with gas transmission system operators from other countries (primarily Poland, Romania, Bulgaria, Hungary, Croatia, Greece);
- expanding the network of interconnectors on the EU – Ukraine border to further increase the volume of gas supplies to Ukraine.

**4. Establishment of a physical route for coal and petroleum products supplies to Ukraine, independent of Russia, by means of:**

- concluding contracts for coal and petroleum products supplies with suppliers independent of Russia (on international exchanges);
- implementing projects to expand the transport capacity of rail routes due to the growth of freight traffic;
- protecting international maritime trade routes and Ukraine's Black Sea ports with the help of the international community.

**5. Introduction of fiscal incentives to recover the socio-economic development and to revitalize entrepreneurial, investment and innovation activities in the areas of Donetsk and Luhansk oblasts controlled by Ukraine by means of:**

- stimulating the implementation of large investment projects through the adaptation of the state support program for projects with significant investments (so-called "investment nannies") to the conditions of the region, as specified in the Economic Development Strategy of Donetsk and Luhansk oblasts for the period up to 2030, in particular with respect to reducing the requirements for the size of investment projects that could receive state support and for the number of new jobs created;
- introducing a special mode of economic activities on the priority development territory in Donetsk and Luhansk oblasts to implement the Economic Development Strategy of Donetsk and Luhansk oblasts for the period up to 2030;
- implementing tax incentives for the transformation of small mining towns of Donetsk, Luhansk and other oblasts over the closure of city- and budget-forming mines under the Law of Ukraine "On Amendments to the Tax Code of Ukraine and other legislative acts of Ukraine to ensure balanced budget revenues" from November 30, 2021, No. 1914-IX;
- creating the Consortium Financing Fund for investing projects in the development of transport, energy, utilities, social infrastructure, logistics and rehabilitation of depressed areas; the Fund should be formed at the expense of contributions from international institutional and private donors; mandatory financing from the State Budget of Ukraine; raising funds on the open market through the issuance of own securities.

**6. Strengthening measures to ensure the national interests of Ukraine and prevent risks to economic security by means of:**

- establishing systematic collection and processing of information, creating a single database of events in the temporarily occupied territories, including human and material damage, in order to determine the need to recover particular territories as well as the agenda for their reconstruction and economic recovery after reintegration;
- accumulating information on the actions of the Russian Federation aiming to undermine the sovereignty of Ukraine in economic and other realms, as well as developing compensation mechanisms for losses;
- institutionally improving the sanctions policy, in particular its legislative support, eliminating identified shortcomings in this area in order to improve cooperation between government agencies and civil society, creating favorable conditions for effective response to existing and potential threats to Ukraine's national security;
- establishing FDI screening, given the likely destabilizing potential of the impact of "unfriendly" foreign capital on important enterprises and industries.

**7. Improvement of the social policy tools aimed at overcoming the negative social consequences of Russian aggression by means of:**

- identifying priority mechanisms for an accelerated development of human capital of Donetsk and Luhansk oblasts' population, with the emphasis on education (including higher), health care and youth policy;
- implementing retraining and advanced training programs in accordance with the needs of the modern and prospect labor markets, promoting labor mobility to balance the demand and supply of labor in the context of significant displacement due to hostilities and the occupation of territories;
- guaranteeing mandatory standards for the provision of social services to citizens of Ukraine, regardless of their place of residence, while taking into account the specific needs and conditions, including of the population residing in the territories adjacent to the demarcation line in Donetsk and Luhansk oblasts;
- transforming the social benefits system for IDPs with an increased emphasis on their economic self-realization, activation of their labor and intellectual potential, their integration into recipient communities as well as the targeted benefits paid primarily to the least protected categories of IDPs (the disabled, children and the elderly);
- introducing modern methods of physical and psychological rehabilitation for ATO / JFO participants, ensuring the priority of their treatment and prosthetics.

**A de facto new regional model of development in Donetsk and Luhansk oblasts worked out after losing access to some territories and population due to the temporary occupation should be prioritized for the development of these regions.** Building an inclusive competitive economic system should be based on the needs of efficient use of the acquired economic potential, synergies of intersectoral relations and raising interest on the part of broad circles of regional business and international investors in the restoration and modernization of the region – in view of being in the vicinity of the occupied territories as a source of uncertain risks of military and hybrid nature, possibly for a long time.

The reintegration of Donbas into Ukrainian community as part of a single whole through the identification, consolidation and implementation of natural, man-made, human, institutional and geostrategic resources should become a state policy objective.

**A strategic vision of the directions of structural rehabilitation and overcoming the crisis of the old industries of Donetsk and Luhansk oblasts** as well as preparation for the harmonious reintegration of the temporarily occupied territories should be developed. The localized priorities formulated in the overall objectives and a vision of national economic and social development enshrined in sectoral development strategies and programs will contribute to productive interregional and intermunicipal cooperation within the region and with partner regions.

In this context, **inter-municipal and inter-regional cooperation should be seen as a powerful tool** to address three major tasks at the national level: promoting reintegration and consolidation of the country, ensuring its infrastructural integrity, and capitalizing, mobilizing and optimizing regional resources as the main source of social development<sup>133</sup>.

**Hence, it is necessary to correct the structural shortcomings of Donetsk and Luhansk oblasts by means of state policy, which should be aimed at solving the following tasks<sup>134</sup>:**

- stimulating the formation of new industrial centers, formed after the loss of part of the industrial capacity of the region in the occupied territories of Donetsk and Luhansk oblasts;
- overcoming logistical constraints that hinder the capacity utilization of the base industries in Donetsk and Luhansk oblasts due to the lack of transport and energy infrastructure (such projects include the reconstruction of the Lantrativka – Kondrashivka branch in Luhansk oblast, electrification of the railway from Zaporizhzhya to Mariupol; restoration of the network infrastructure and construction of new substations that will unlock three TPPs in the region);

<sup>133</sup>Zhalilo Y. et al. 2017. A new regional policy for the new Ukraine: an analytical report. Kyiv: Institute of Socio-Economic Research. URL: [http://iser.org.ua/uploads/pdf/big%20Reg%20politic%20na%20sayt\\_.pdf](http://iser.org.ua/uploads/pdf/big%20Reg%20politic%20na%20sayt_.pdf)

<sup>134</sup>Strategic principles of structural modernization of the Donbas economy: an analytical note. 2019. Kyiv: NISS. URL: <https://niss.gov.ua/doslidzhennya/ekonomika/strategichni-zasadi-strukturnoi-modernizacii-ekonomiki-donbasu>



- ensuring full infrastructural (transport, energy, information) independence from the territory not controlled by the Ukrainian government, reconstruction and development of transport infrastructure, new main transport networks that will provide quick access to the main economic centers of the regions formed in the new political and economic environment;
- changing (or introducing insured) supply chains of raw materials aimed at eliminating the consequences of blocking the flow of raw materials from Russia;
- initiating a number of pilot projects that can attract investment to the region, as well as technical assistance funds in the areas of business development and agricultural sector development based on European standards, energy efficiency modernization, overcoming environmental risks and so on;
- shaping a mechanism for effective involvement of international technical assistance resources for the implementation of systemic rehabilitation of the eastern regions of Ukraine on the basis of medium- and long-term development programs, coordination of activities of the public authorities, local governments, communities, enterprises, institutions and organizations;
- joining efforts of the government and relevant business associations to raise awareness of leading global corporations about scientific, technological and industrial capabilities of Donetsk and Luhansk oblasts, creating industry catalogs, supporting the participation of Ukrainian producers in specialized exhibitions abroad, holding their own specialized exhibitions and presentations in leading countries and so on;
- adjusting the economy of the region to an environment with increased long-term security (military) risks;
- establishing auspicious mechanisms for citizens to receive compensation for material damages caused by hostilities (in particular, housing in the currently uncontrolled territory after the restoration of constitutional order there);
- implementing information and communication policy pursuing the prevention of the negative impact of Russian information aggression, the formation of common values and strengthening good neighborly relations among all Ukrainian regions;
- developing and widely communicating a realistic "road map" for the reintegration of the temporarily occupied territories.

**The macroregion of the South of Ukraine needs to rethink its role in the country's economy and form a new ideology of integrated development**, which would include: a reorientation from vertical (Center - South - Crimea) to horizontal (South - South) lines of integration with access to European and Black Sea vectors of interaction; a focus on the efficient use of natural (including marine) and climate resources, significant transit potential and potential for cross-border cooperation, quality human potential, sectoral diversification of regional development, rebranding of tourism and recreation, overcoming the risks of increasing seasonality, achieving maximum inclusiveness of the recreational and tourist potential of the regions based on an extensive involvement of territorial communities in its planning and implementation<sup>135</sup>.

The current Strategies for the development of the southern regions of Ukraine through 2027 need to be refined to take into account the risks and threats posed by Russia's aggression against Ukraine and to define tasks and specific projects aimed at strengthening the resilience of these regions. It would be best to implement joint tasks for economic development based on interregional cooperation among Odesa, Mykolayiv, Kherson, Zaporizhzhya and Donetsk oblasts. This can be done based on a comprehensive development strategy for the South of Ukraine, or at least commence with the preparation and signing of a relevant regional development agreement.

The priority areas for the strategic development of the regions of southern Ukraine include<sup>136</sup>:

- organization of interregional cooperation on the implementation of coordinated measures aimed at the development of tourism and recreation, transport infrastructure, use of the

<sup>135</sup>Zhalilo Y. et al. 2017. A new regional policy for the new Ukraine: an analytical report. Kyiv: Institute of Socio-Economic Research. URL: [http://iser.org.ua/uploads/pdf/big%20Reg%20politic%20na%20sayt\\_.pdf](http://iser.org.ua/uploads/pdf/big%20Reg%20politic%20na%20sayt_.pdf)

<sup>136</sup>Рущії стратегічного розвитку регіонів Півдня України : аналіт. зап. URL: <https://niss.gov.ua/doslidzhennya/regionalniy-rozvitok/rushii-strategichnogo-rozvitku-regioniv-pivdnya-ukraini>

maritime economy, reduction of the environmental load on the coastal zone, introduction of modern technologies for processing and disposal of household and industrial waste and implementation of integrated coastal management;

- targeted development of alternative energy, with the identification of regional priorities regarding its specific types (wind, solar, biofuels);
- development of water freight and passenger transport (including coastal shipping and river-sea navigation); recovery of national maritime shipping, strengthening coordination between the ministries conducting maritime activities and local executive bodies; development of inland waterway infrastructure;
- recovery of the shipbuilding industry for own sea and river fleet building at the wharfs of Kherson and Mykolayiv;
- technical modernization and comprehensive technical re-equipment of the port economy in order to work toward meeting the world standards, using modern mechanisms of public-private partnership, creation of regional logistics centers in major maritime transport hubs, regional port clusters embracing enterprises of different types of activities related to handling of goods as well as a variety of services;
- expansion of international cooperation with the regions of other countries through the use of the cross-border cooperation mechanism and EU macro-regional strategies (including the EU Strategy for the Danube Region), active participation in European interregional organizations (the Assembly of European Regions, the Conference of Peripheral Coastal Regions), use of the potential of Black Sea cooperation (BSEC, GUAM);
- development of industrial agricultural production based on the implementation of the results of applied research carried out in the region, modern forms of business organization (clusters, agricultural cooperatives, smart specialization), the revival of agro-industrial clusters;
- the restructuring of transport logistics of coastal regions, which should ensure the connection of resort towns with each other and with the regional centers of Ukraine (including air transport between regional centers) and safe and comfortable local passenger transport;
- ensuring a greater inclusion of territorial communities in the planning and implementation of the increase of the recreational and tourist capacity of the regions;
- de-shadowing of the tourism sector through the simplification of the licensing system;
- development and implementation by territorial communities in resort areas of programs for the modernization of housing and communal services (primarily, water supply, sewerage and waste management), social facilities, transport infrastructure, in particular through international technical assistance;
- development of creative industries based on the realization of the tourist potential of the region, the use of the ethno-national diversity of the region, the creation of new tourist locations;
- conducting an advertising campaign in Ukraine and abroad on the tourist opportunities of the coastal regions of Ukraine, in particular for the spread of various types of tourism (recreational, educational, medical, conference, etc.);
- development and implementation of special measures to support the sustainable development of coastal areas, organization of the monitoring of sustainable development by united territorial communities;
- building the foundations of cohesion at the regional and interregional levels, taking into account the specificities of the areas densely populated by ethnic minorities;
- consistent formation along the administrative border with the occupied territory of the Autonomous Republic of Crimea of elements of transport, information, communication and legal infrastructure, retail facilities and so on to meet the needs of Ukrainian citizens living in the annexed territory.

## SUMMARY

Modern approaches to understanding the nature of the hybrid war identify the phased deployment of Russia's aggressive actions as part of a coherent strategy aimed at returning Ukraine to the realm of Russian political, economic and humanitarian influence. Taking advantage of the systemic crisis in Ukraine in 2013 – 2014, Russia, as an aggressor state, escalated aggressive actions, which led to the physical occupation of part of Ukraine and posed new threats to Ukraine's economic sovereignty.

The price of Russian aggression for Ukraine has been high and it continues to significantly affect the prospects for further development of the country. Because of Russian aggression **during 2014 – 2015, Ukraine lost** (*Fig. 19*):

- - 7% of its territory;
- - 14% of its population (6.3 million people reside in the occupied territories);
- - 18% of its economically active population (4 million people);
- - 12% of GDP (over USD 120 billion);
- - 12% of domestic consumption of goods and services;
- - 28% of retail turnover;
- - 14% of industrial production;
- - at least 20% of merchandise exports (a total of USD 17.5 billion);
- - assets in Crimea with an estimated value of USD 135 billion;
- - about 16% of cargo turnover;
- - 30% of passenger traffic;
- - more than 100 large, about 2.4 thousand medium and 45 thousand small enterprises;
- - more than 1.3 million hectares of sown areas;
- - more than a quarter of grain and sunflower production;
- - 63% of coal production and 100% of anthracite deposits;
- - 65% of the harvesting of aquatic bioresources in the Azov-Black Sea basin, two fishing fleets;
- - 5 sea trade ports;
- - 5 airports.

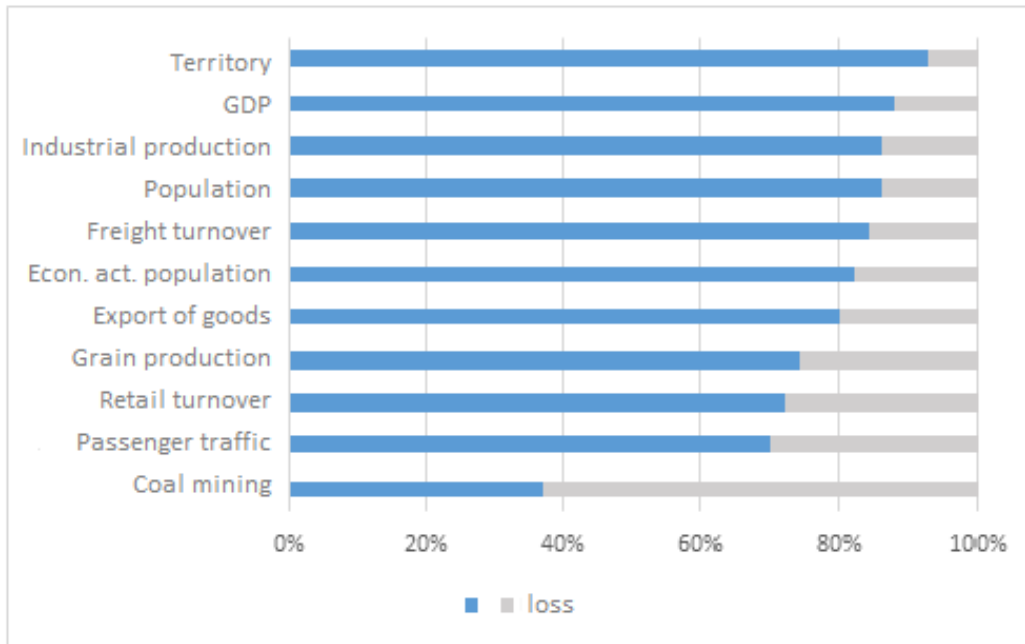
Ukraine's total economic losses estimated by different expert groups differ significantly; however, according to most researchers, the losses amounted to at least USD 100 billion for the period 2014-2018, and have been growing at least another USD 27 billion annually due to lost profits.

The aggressive actions of the Russian Federation against Ukraine, which, in the following years, were transformed into a constant "siege" of our state through a broad arsenal of hybrid means, have led to the loss of potential for further development and the restriction of freedom of choice as far as the direction of development is concerned, in the context of the chronic risks of increased internal instability and external military threat.

Concentrated efforts to combat external threats retard qualitative reform in the areas relevant to the investment climate, including judicial reform, the prevention of corruption, smuggling and the shadow economy, and get in the way of creating predictable and transparent conditions for business, tax simplification and more.

The high military risks of 2014 – 2015 led to the consolidation of society to confront the enemy. Meanwhile, high levels of social tension have begun to play a disintegrating role and pose a strong risk to social cohesion as the ability of people to come together to pursue common development goals.

External aggression and the general information background on the escalation of military risks have a fundamentally negative impact on the business expectations of local entrepreneurs and foreign investors as well as the mood of citizens. Information waves about the escalation of aggression lead to situational fluctuations in currency demand as well as increased purchases of basic necessities and food. In a tense situation, the inflow of foreign investment becomes more complicated, the motivation to drain funds away from the national economy increases, and the cost of borrowing on foreign markets grows.



*Fig. 19*

The significant share of Russian investment in Ukraine's economy, which is believed to be about double the official statistics, poses serious risks. Unlike ordinary for-profit foreign investment, the behavior of Russian investors may be aimed at promoting decisions that are strategically unfavorable and detrimental to Ukraine's national security.

A major source of instability is the dependence of the fuel and energy sector of Ukraine. For a long time, the Russian Federation has pursued a purposeful policy of subordinating Ukraine through the use of energy as a tool of influence. After 2014, Ukraine managed to eliminate its dependence on oil and natural gas imports, but in 2021 the volume of energy imports from Russia amounted to USD 3.8 billion.

Donetsk and Luhansk oblasts have endured the harshest negative impacts due to Russian aggression, with the loss of 40% and 70% of their industrial potential, respectively. In Donetsk Oblast, enterprises registered in the territory controlled by Ukraine reduced their industrial production by 2.2 times in 2014 – 2015. The volume of industrial production of Luhansk Oblast dropped 5.1 times in 2014 – 2015. The armed confrontation has also destroyed the region's significant transit capacity. The deterioration of the social sphere along with high military risks have led to active migration from the region, primarily of the economically active population. The loss of major drivers and the limitation of resources for the economic development of Donetsk and Luhansk oblasts have aggravated the prospects for structural transformation in the region.

Russia's aggression not only critically affected the economies of the parts of Donetsk and Luhansk oblasts directly involved in the war zone, but also significantly exacerbated negative development trends of a number of neighboring regions that were most closely linked to the two regions by industrial ties as well as consumer goods supplied to their markets. Other regions of Ukraine, which depended heavily on trade relations with the Russian Federation, have also suffered significantly.

The loss of the capacious consumer market of Crimea has led to a noticeable change in trade flows in the adjacent regions of southern Ukraine. The sharp decline of tourist flows to Crimea has made the infrastructure along the roads leading to the annexed peninsula unprofitable, therefore affecting the income of local communities and small, often unregistered businesses in trade, catering and related services. Cargo turnover was taken away from the ports on the Sea of Azov. As a result, certain areas of the southern regions have shifted from supply and transit to a "new frontier" with signs of a deadlock periphery.

The regional concentration of economic and social disparities and risks to cohesion creates a favorable ground for the spread of hybrid aggression by Russia.

**Long-lasting high levels of uncertainty due to the unpredictability of Russia's hybrid aggression as well as the steady loss of economic and social potential have led to the gradual adaptation of the national economy, public administration and business to operating in the new context.** Countering risks and reducing sensitivity to the real cost of Russian aggression have often accelerated social reforms and stimulated the search for effective solutions that shape Ukraine's new economic model.

The loss of access to the Russian market and the desire to eliminate Ukraine's dependence on the uncertain prospects of Russian supplies have stimulated domestic enterprises to intensify investment programs aiming to modernize production to European standards as well as to seek new markets.

Important changes have taken place with respect to the diversification of sources of energy supplies and technologies to eliminate the risks of dependence on supplies from Russia. The reconstruction of TPP and NPP power units has been carried out to reduce dependence on Russian fuel imports. An in-depth reform of the energy sector aimed at integration into the European electricity and natural gas market has been launched.

Comprehensive systemic reforms in the field of public finance, which intensified after 2014, have accelerated legislative regulation and the practical implementation of medium-term budget planning and full-scale implementation of the program-target method at all levels. They also increased budget transparency, improved public financial control and audit, and efficiency of the main managers of budgetary funds.

The restructuring and partial write-off of the state and state-guaranteed external commercial debt have been carried out to restore the debt stability of the country.

Tight control over the money supply in the context of a significant need for budget expenditures has prevented an inflationary spiral and stabilized price dynamics at acceptable levels.

**The protracted nature of the occupation of strategically important Ukrainian regions has formed the need to build integrated competitive regional economic systems, primarily within the territories currently controlled by Ukraine. It will also contribute to solving the problem of losing important drivers of development in the regions and territories adjacent to the occupied areas.**

The loss of transit potential in the regions in the south of Ukraine has led to an intensive search for alternatives in the southern and western directions. A number of important steps have been taken to improve transport logistics in order to restore the integrity of the road network and connectedness of the main economic centers of Donetsk and Luhansk oblasts. The modernization of Black Sea ports and their access infrastructure will help to optimize the logistics of sea freight transport.

Given the stable structure of the economies of Donetsk and Luhansk oblasts, the defining direction of their structural transformation is "new industrialization", focused on the modernization of traditional industries and the development of new modern industries as well as strengthening their competitiveness and suitability for involvement in global added-value chains. The region is opening up new opportunities for development due to the location of the most promising reserves of coal and relatively "young" coal mines in the areas controlled by the Ukrainian government as well as the full cycle of metallurgical production and prospects for alternative energy. The loss of part of the industrial potential has led to shifting focus to the development of the agricultural sector. Meanwhile, the opportunities for diversification of the economy of Donetsk and Luhansk oblasts are currently significantly limited due to high military risks. This discourages the inflow of investments into the region, the region's significant prospects for the development of recreational and tourist sectors have not been realized.

The temporary occupation of Crimea and parts of Donetsk and Luhansk oblasts created conditions for the "reset" of some industries and the search for new directions for the development of the regions of southern Ukraine. The loss of Crimea for vacationers has led to significant structural changes in the use of recreational and tourist potential of the regions of southern Ukraine, especially the Black Sea and the Sea of Azov. In the same vein, farmers in the south of Ukraine have found new markets. Deepening the diversification of drivers of development of the regions in Ukraine's south contributes to the improvement of transport communications in the western and southern directions,

expanding the use of mixed transportation of passengers and goods (river – sea), which will also simplify the involvement of macroregional enterprises in production chains with foreign partners.

**For a long time, Ukraine's economy has been imperiled by operating under constant pressure caused by the aggressive policies of the Russian Federation that has been increasing and diversifying its destructive influence on the economic development in Ukraine.** Accordingly, public policy should focus not only on overcoming the main impediments to the country's strategically oriented development caused by the repercussions of Russian aggression, but also on creating the preconditions for sustainable development against the background of high and unpredictable external risks.

In this situation, it is necessary to create favorable conditions for economic development driven by innovation, while comprehensively reducing economic dependence in all sectors of the economy, a favorable environment for investment, a stable basis for financial resilience and effective tools for the state to perform its social functions. A systematic assessment of the economic and social consequences of Russian aggression is essential for identifying potential risks that are sensitive to hybrid impacts, directions and priorities of sustainability policy.

**Determining the real scale of Ukraine's losses is important in order to reasonably envisage further action based on Ukraine's real capacities:**

- **economic** – as a foundation for the necessary actions in the areas of external commitments (including in the field of European integration), a "margin of safety" to resist external aggression, and economic and social sustainability in the implementation of sensitive reforms;
- **institutional** – as the ability to organize and ensure consistent policy implementation and achievement of declared priorities while maintaining social cohesion.

**Priorities that will strengthen Ukraine's capacity and consistently mitigate the damage inflicted by Russia's present and future acts of aggression shall determine national, sectoral and regional strategizing, the development of public policy practices, cooperation with foreign partners and the use of international technical assistance.** These priorities include:

1. Development and implementation of institutional mechanisms of **cohesion** based on the engagement of local self-government, expansion of local democracy and public dialogue, propagation of inter-municipal and inter-regional cooperation and more<sup>137</sup>.
2. Securement of economic and social resilience in the context of high security risks at the national, regional and local levels.
3. Recovery and strengthening of the infrastructural connectivity of Ukraine's regions (in terms of transport, energy, information infrastructure) with the emphasis on the regions adjacent to the occupied areas.
4. Securement of the country's energy independence by means of the diversification of supplies of basic energy resources and an increase of the share of domestically produced energy resources.
5. Recovery of the integrity of supply and sales as well as production chains disrupted because of the occupation of part of the territories, with the emphasis on optimizing the use of natural, material, economic and labor resources.
6. Structural diversification of the economy of the regions affected by aggression including, first of all, structural rehabilitation and addressing the crisis of the old industries in Donetsk and Luhansk oblasts, rethinking of the role of southern Ukrainian regions in the country's economy and the creation of a new ideology of integrated development with access to European and Black Sea vectors of interaction.

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<sup>137</sup> Khymynets V. V. et al. 2021. Economic principles of promoting community cohesion: an analytical report. Kyiv: NISS.