

UKRAINIAN ECONOMY IN WAR TIMES: NOVEMBER 2022



German
Economic
Team

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Conclusions in this paper are those of its authors and do not necessarily represent the views of the supporting organization.

INTRODUCTION

The Ukrainian armed forces managed to liberate from the occupiers the entire right bank of the Dnipro river, including Kherson. The first trains have already gone there; national companies are resuming their work - primarily the post office, telecommunications, and banks. It will be more difficult for other spheres, including those that provide essential services. In retreat, the enemy stole or destroyed everything that it could. As the occupation lasted for some time, they managed to proceed significantly with this. In particular, electrical networks were damaged more than expected; thus, the restoration will take from two to three weeks.

In addition, the aggressor continued to destroy energy infrastructure throughout the whole territory of Ukraine. Over the past month, there have been several waves of massive missile strikes, each more powerful than the previous. And although the effectiveness of air defence is increasing, some missiles are reaching their targets. Energy companies had to tighten consumption even more than before. But businesses and the public have shown remarkable resilience and have begun to adapt to the situation. Foreign partners also helped, both with money and directly with equipment.

Frequent power outages have already influenced business expectations and macro indicators. For the first time since the resumption of National Bank surveys, the Business Activity Expectations Index has declined in all four spheres — trade, industry, construction, and services. According to preliminary data, the GDP in October decreased more than in the previous two months, which has already forced the authorities to revise the macroeconomic forecast for the current year.

Against this background, the extension of the Grain Deal for another 120 days, which was to expire on November 19, was enormous progress. Unfortunately, it did not work out with a more considerable extension - for a more extended period and with expansion to other ports - but the agrarians are grateful even for this format. After all, grain exports in October approached the pre-war level because of the ability to transport products by sea. And the lack of port capacity was gradually offset by the expansion of the land routes capacity. It gives hope that the farmers will continue to sow their fields and that the following year's harvest will be at least at the level of this year.

1. WAR UPDATE

In the midst of Ukraine's military successes, Russia has intensified its missile terror against civilians. Regular Russian shelling targets Ukrainian energy infrastructure: power generation facilities and distribution networks, as well as gas production facilities. The purpose of terror is explicit: Russia deliberately destroys civilian facilities to punish the Ukrainian authorities for their unwillingness to capitulate.¹

The liberation of Kherson and the entire occupied right bank of the Kherson region in the first half of November was a significant success of the Ukrainian Defense Forces. The Ukrainian military operation lasted several months, its important component secured the complication of Russian logistics across the Dnipro. In the end, the Russians made a retreat, while fighting back, from all the territories on the right bank of the Dnipro. Before that, they looted Kherson, having taken almost everything valuable — from fire trucks to art museum archives — and blew up important infrastructure facilities.

The end of the occupation of Kherson is also symbolic as a turning point in the war: Ukraine has already liberated 52.5% of the maximum amount of territory occupied by Russia after February 24, 2022.²

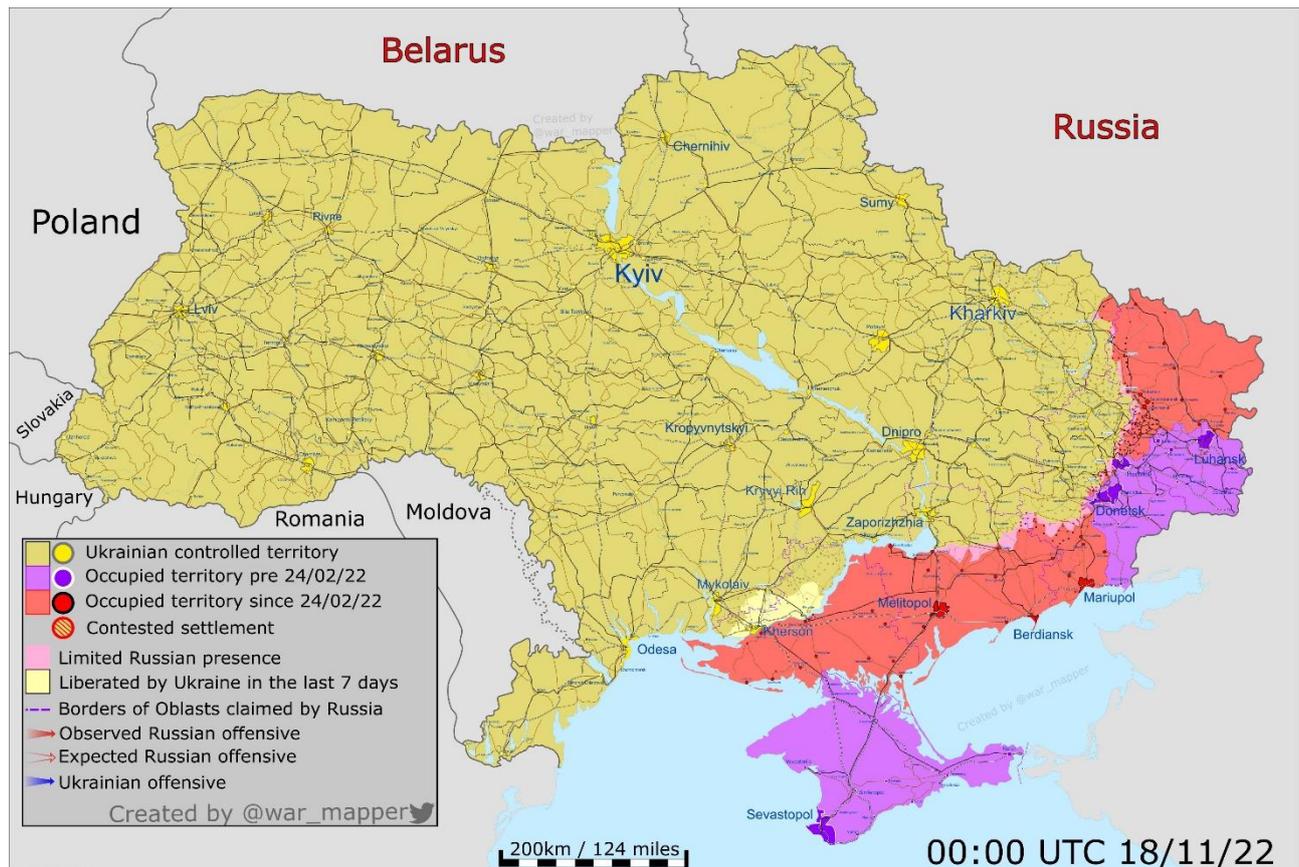
On the morning of October 29, Russian warships, some of which are used to launch missiles at Ukrainian civilians, were attacked at their base in occupied Sevastopol. Naval and aviation drones were able to break through the defenses of the harbor and hit several ships of Russia's Black Sea Fleet. The outraged Russians retaliated by announcing their withdrawal from the Grain Export Deal, yet after the groundless move was ignored by Türkiye and the UN, quickly recalled their withdrawal. On November 17, the Grain Export Deal was extended for another 120 days.

An incident in the Poland-Ukraine border area on November 15 caused great concern. Two people died from an explosion that occurred during a massive Russian missile attack on Ukraine. With reference to witnesses, the explosion of two missiles was first reported: a Russian cruise missile and a Ukrainian anti-aircraft missile. An explosion of a Russian missile on NATO territory, even an accidental one, could potentially lead to significant consequences. However, in the end, the incident was explained to have happened due to a Ukrainian anti-aircraft missile that failed to hit a Russian missile over Ukraine and whose self-destruct mechanism malfunctioned. The investigation, to which Ukrainian specialists were admitted, continues.

1 <https://www.washingtonpost.com/world/2022/11/17/ukraine-missile-strikes-grain-deal/>

2 According to @defmon3 <https://twitter.com/DefMon3/status/1592055085391319042/photo/1>

Figure 1. Russian invasion as of November 18, 2022



Source: @war_mapper based on information from open sources

War damages. Direct damages to Ukraine from the war were estimated at USD129.7 billion by the beginning of October. This is USD 2.3 billion more compared to the estimate a month ago. The increase is a result of new destruction and methodology adjustments. The most significant changes occurred, inter alia, in the housing sector (revised by USD 2 billion). Losses are estimated at another USD 162.6 billion (increase of USD 0.8 billion). This is a loss of revenue and additional recovery costs. The estimated recovery needs are USD 234.3 billion (an increase of USD 5.5 billion) and includes building new assets and resuming the activity³.

Table 1. Damages, losses and recovery needs

Property type	Damages, USD bn	Losses, USD bn	Recovery needs, USD bn
Residential buildings	53.5	7.6	76.9
Infrastructure	35.6	14.8	51.3
Agribusiness and land resource	6.6	34.1	23.4

³ The first component is calculated as the amount of damages adjusted by potential price increases and the Build Back Better principle. This principle provides that the assets will not be rebuilt the same, but considering the latest requirements to safety, energy efficiency, inclusiveness, etc. The second component consists of the full amount of extra costs and needs to replenish the working capital to restore the lost volumes of activity.

Corporate Assets, Industry	10.1	30.6	20.2
Education	8.2	2.1	9.8
Mine clearance		8.6	8.6
Energy	3.6	11.6	7.3
Social protection	0.2	6.4	6.6
Financial sector	0.1	6.0	5.9
Culture, tourism, sport	2.1	8.1	5.8
Vehicles	2.7	0.4	5.1
Retail trade	2.4	24.4	4.4
Public utilities	2.3	3.5	3.7
Health	1.7	2.7	2.6
Administrative Buildings	0.8	0.1	1.2
Digital Infrastructure	0.6	1.1	1.0
Environment	1.5		
Total	129.7	162.6	234.3

Source: KSE/ "Russia will pay" project, as of 05.10.2022

However, Russia has massively intensified its attacks on Ukraine's energy infrastructure from beginning of October. Therefore, the current damage assessment underestimates the true damages.

2. ECONOMIC UPDATE

Economic activity. Due to the security situation and challenges with the electricity supply, the attitude of entrepreneurs has aggravated for the first time since the onset of the full-scale invasion. In October, the Business Activity Expectations Index, which is calculated by the National Bank (NBU) based on surveys, dropped to 44.9 points (out of 100), compared to 46.1 in September. Indicators worsened in all four sectors, but their ranking remained at the level of previous months. The most optimistic ones include trade (48.9 points) and industry (45.8), the least optimistic ones – the service sector (42.2) and construction (38.2).

Falling GDP. According to preliminary data from the Ministry of Economy, due to shelling of the energy infrastructure (details are below), in October, the real GDP of Ukraine decreased by 39% yoy compared to 35% in September and in August. After falling by a total of 30% in nine months, this means that the economy based on the year-end will shrink at least by 33-35%, not by 30-32% yoy as previously expected. At the same time, the Ministry noted that the Ukrainian economy was rather adaptive and flexible.

Metallurgy. In January-October of this year, Ukraine reduced foreign exchange earnings from the export of ferrous metals by 64%, from USD 11.5 billion to USD 4.2 billion. This slightly exceeds 11% of the total value of Ukrainian exports for this period. At the same time, the export of metal products decreased not so significantly, by only 12%, to USD 0.9 billion.

Two of the four iron ore enrichment works of Metinvest Group resumed operation – Northern and Southern Iron Ore Enrichment Works (in addition to Central Iron Ore Enrichment Works, which continued to work all the time, albeit with partial load). The operations there were closed down in July. After a short break that was caused by the shelling of the energy infrastructure, the Ferrexpo Group enterprises, in particular, Poltava Mining, resumed their operation. The Sukha Balka mine of DCH Group is operating. As for the metallurgy directly, Zaporizhstal and Kamet Steel (Metinvest) are operating, and the Dnipro Metallurgical Plant (DCH) has switched to work with customer-supplied raw materials.

Energy and fuel. Russia continued its bold missile attacks on energy infrastructure. In addition to the actual impact on the ability to transport electricity, both reactors of Khmelnytskyi NPP and one of the four reactors of Rivne NPP also had to be shut down. As a result, Ukrenergo had to limit the consumption of electricity by population and enterprises. Kyiv City, Kyiv and Kharkiv regions have been affected the most. While at first Kyiv faced stabilisation power outages of up to four hours, later their duration increased to five to six hours, and emergency power outages were further introduced. Due to the onset of cold weather and as a result an increase in consumption, there is a risk that the outages will be extended.

Business demonstrates readiness to take the task of diversifying electricity supply into its own hands. Ukrtelecom provided the automatic telephone exchanges of Kyiv and the region with generators and diesel fuel stocks for them. Kyivstar is working on additional options for powering cell towers, since currently reserve capacities are sufficient for only 20% of cell towers. OKKO gas station chain has announced the purchase of 105 diesel generators, in addition to the existing 270. A third of Silpo supermarkets can operate during outages. Rozetka online retailer has started equipping the product delivery points with generators. MHP has started to provide partners with refrigerators.

The population is keeping up with them. According to Allo trading network, sales of generators, charging stations and power banks in September-October increased tenfold compared to the same period last year. The demand for stand-alone solar power plants has increased by exactly the same number of times, according to

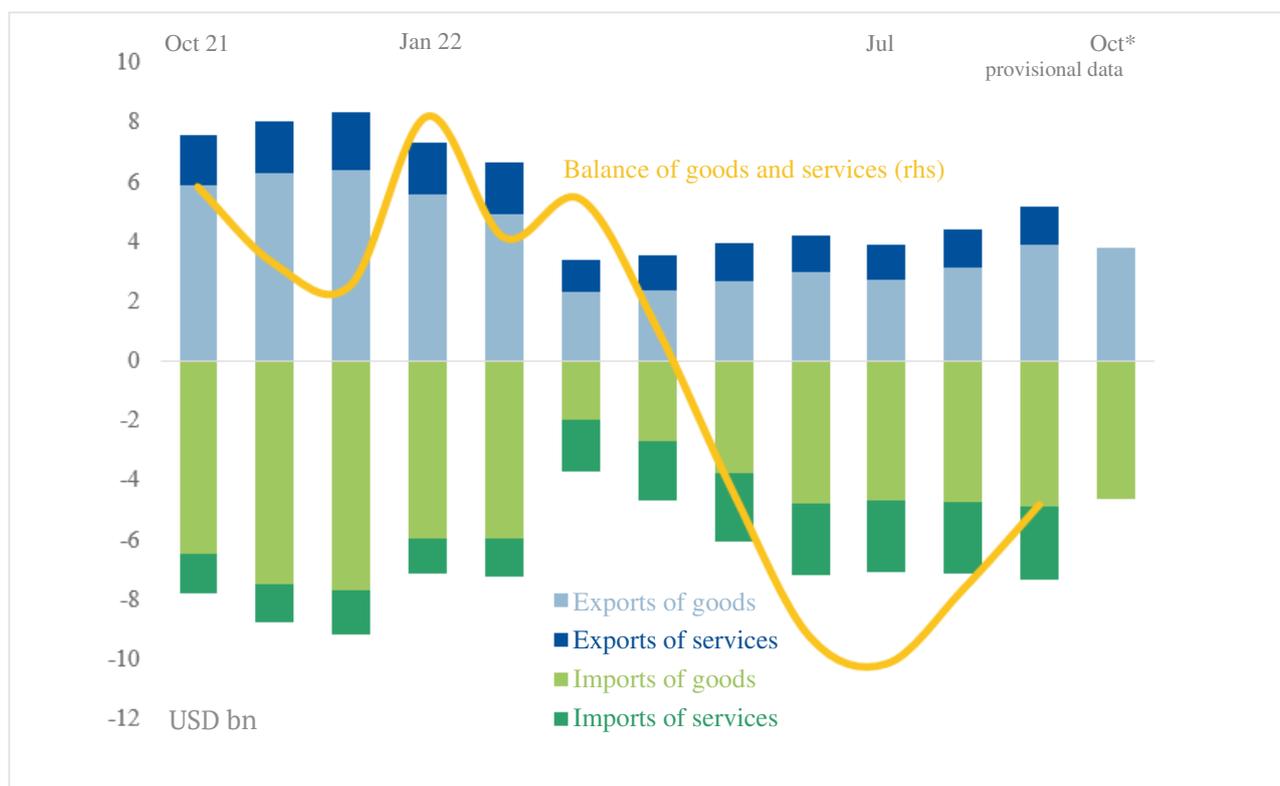
data from the Solar Energy Association of Ukraine (ASEU). To make it easier for both the population and business, the Cabinet of Ministers exempted the import of such equipment from import duty and VAT.

International partners also help, both in kind and in cash. Over the entire period of aggression, German business has provided almost 40 metric tons of repair equipment. The Lithuanian electricity transmission system operator Litgrid has sent equipment for the repair of substations worth EUR 100,000. Through the mechanism of civil protection, 17 EU member-states have sent 500 generators to Ukraine. Ukrzaliznytsia will install generators at 31 stations and water heaters at 79 stations provided by the Red Cross.

In turn, the United Kingdom will provide Ukraine with GBP 10 million to restore the energy system. The European Bank for Reconstruction and Development (EBRD) promised Ukrenergo to lend EUR 300 million for the restoration of power grids, as well as to provide grants for the same purposes. Similar programs are being negotiated with the World Bank.

External sector. After a record positive balance in August (USD 3.2 billion), in September the balance of payments again shifted to deficit (USD -0.75 billion). This happened despite unprecedented exports since the start of the invasion (USD 3.9 billion). The reasons included a temporary decrease in foreign financial aid (receipts under the item "secondary income" decreased instantly by USD 1 billion) and the worst state of the financial account since the beginning of the year (minus USD 2.6 billion).

Figure 2. The trade balance, USD billion



Sources: NBU, Ministry of Economy

3. MONETARY AND FINANCIAL SECTORS UPDATE

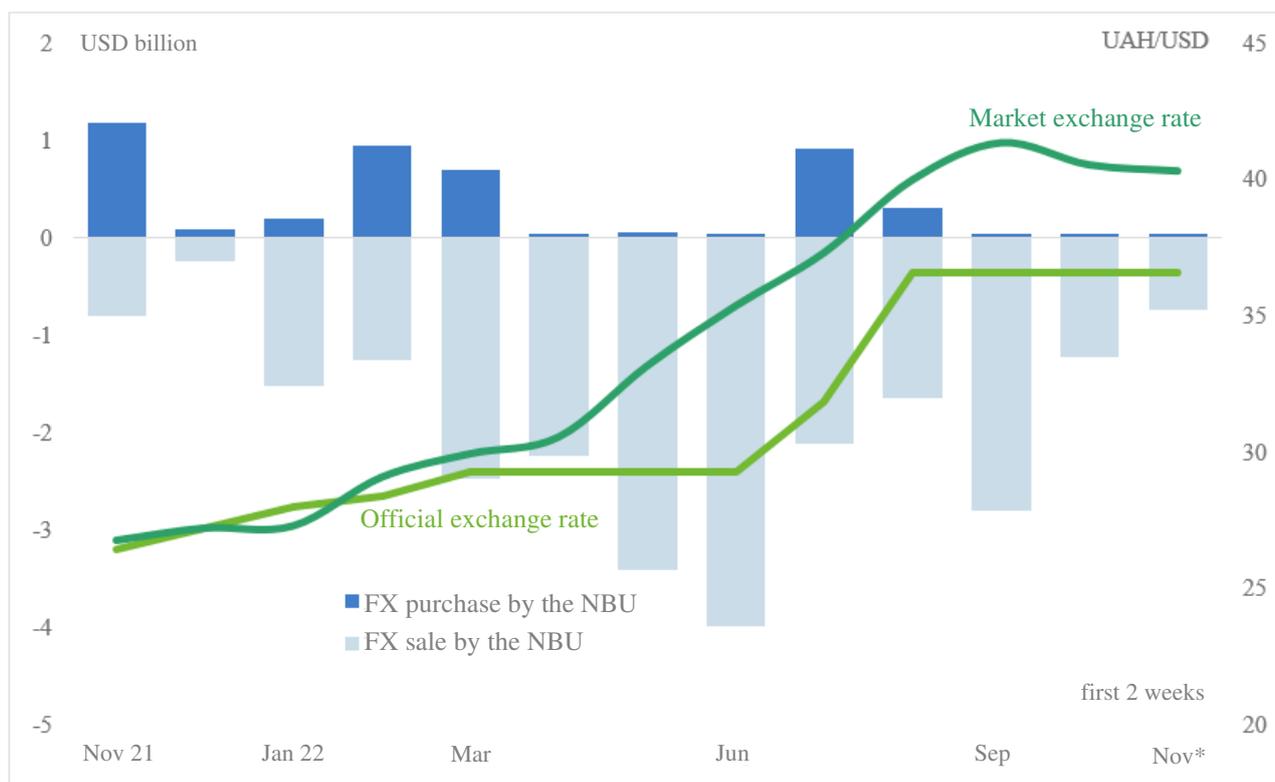
The impact of the full-scale war remains the key factor in the growth of inflation. Indeed, prices increased more strongly in October than in September: by 2.5% on a monthly basis in October, compared to 1.9% in September. In annual terms, consumer prices increased by 26.6% in October (compared to 24.6% in September). The prices of food products increased (35.7% on a year-to-year basis) — in particular, prices of fruits and, as usual, eggs; demand increased for various non-food items — primarily heaters, stoves, lanterns, etc., all that is needed during power outages, and this also affected the accelerating inflation.

However, according to the NBU, inflation rates do not cross the forecasted limits. The expectations of the NBU remain unchanged: inflation will reach 30% by the end of 2022.

The official exchange rate in October remained fixed at the level of 36.57 UAH /USD. The NBU carried out foreign exchange sales for the amount of USD 2 billion in a month — that is less than in September. The scope of foreign exchange purchases by the NBU remained low and amounted to USD 48 million in October. The gold and foreign exchange reserves of the NBU increased by USD 1.3 billion, from USD 23.9 billion to USD 25.2 billion. This was rendered possible by higher foreign aid inflows (USD 3.7 billion), which, although smaller than expected, came in the second by volume after August (USD 4.7 billion).

On the cash market, hryvnia slightly strengthened from 40.75-40.95 UAH /USD as of October 15 to 40.55-40.7 UAH /USD as of November 15. Given the overall positive outcome at the front, the extension of the Grain Export Deal and significant volumes of expected foreign aid inflows in November-December, there are currently no reasons for significant exchange rate fluctuations.

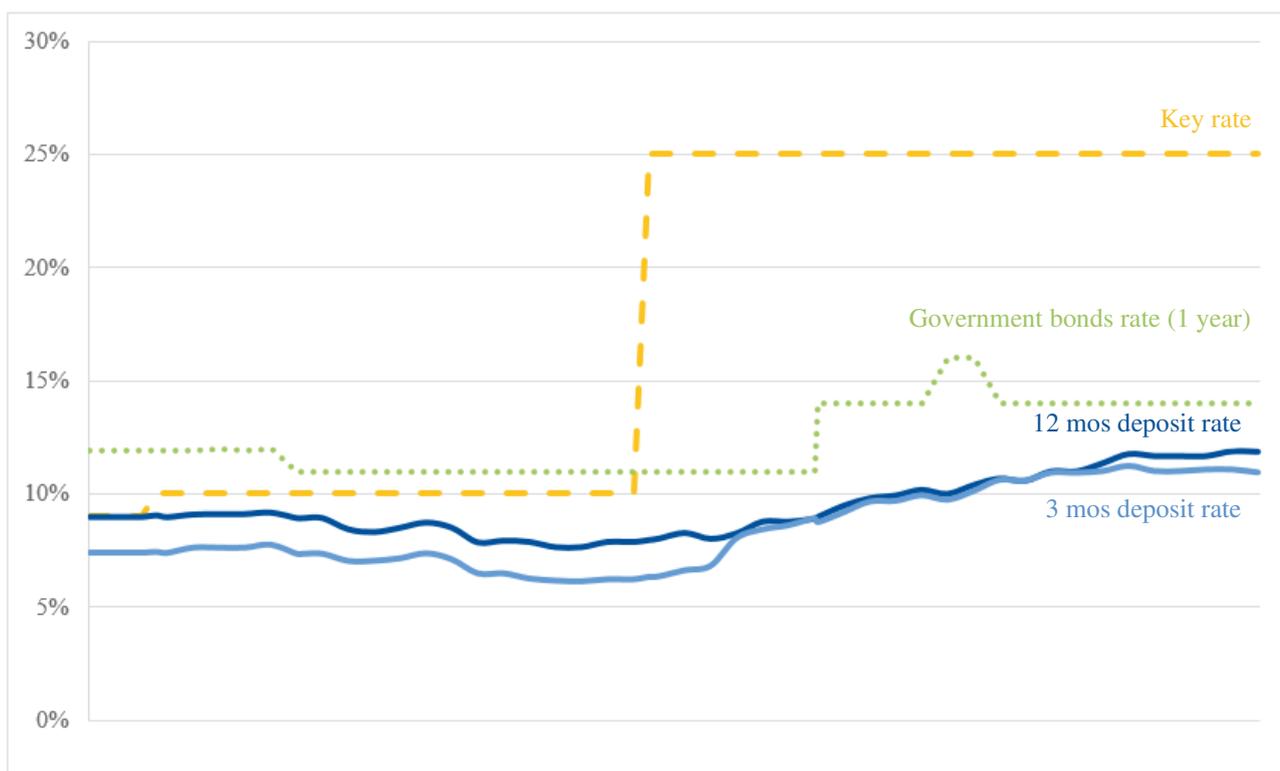
Figure 3. NBU foreign exchange interventions, in USD billion, and weighted average official and market exchange rates UAH/USD (the right scale)



Source: NBU

The key policy rate remained at 25% p.a. and the yield on hryvnia government bonds mostly remained unchanged at 14%. The Ministry of Finance offers 1.5-year government bonds at auctions with a yield of 18.5%. Average rates on retail deposits (UIRD) continued to creep up slowly and reached 11.5%. Banks do not feel the need to attract household funds due to almost zero lending; therefore, they have no incentive to significantly increase their deposit rates.

Figure 4. The NBU discount rate, rates on hryvnia consumer deposits (12- and 3-month) and weighted average level of yield on hryvnia government bonds, %, p.a.



Source: NBU, UIRD

According to the NBU, in 9 months of 2022, banks have received UAH 7.4 billion in net profit, which is much less than during the same period last year when the amount of net profit amounted to UAH 51.4 billion. The return on capital of the banking sector for January–September 2022 amounted to 4.3% (compared to 32.1% for 9 months of 2021). This is primarily due to significant deductions to reserves: since the beginning of the year, banks have formed reserves of UAH 99 billion, including UAH 93.3 billion during the war months.

4. FISCAL SECTOR

At the time of preparation of this report, only preliminary data of the State Treasury Service on tax revenues for October were available, limited to the description of the main sources of budget revenues.

Table 2. State budget balance, UAH billion

	Aug22	Sep22	Oct22	% of Sep22	% of Oct214
Domestic VAT	16.4	22.0	14.2	65%	78%
Domestic VAT paid	25.9	23.6	25.1	106%	71%
Domestic VAT refunded	-9.5	-1.6	-10.9	681%	63%
VAT on imports	26.2	26.3	26.0	99%	59%
Excise duties on domestic production	6.0	7.6	7.4	n/a	n/a
Excise taxes on imports	2.4	2.2	n/d	n/a	n/a
Total taxes on consumption	51.0	58.1	47.6	82%	48%
Corporate income tax	17.4	1.4	3.2	229%	105%
Personal income tax	12.7	12.9	12.8	99%	87%
Total taxes on income/profit	30.1	14.3	16.0	112%	90%
Rent for subsoil use	8.2	7.0	4.4	63%	153%
Taxes on international trade	2.5	2.5	2.6	104%	66%
Total tax revenues	93.6	83.0	70.6	85%	57%
Non-tax revenues	20.3	63.6	4.8	8%	37%
Total revenues	114.8	146.1	75.4	52%	64%
as a percentage of expenditures	0.50	0.49	0.34	-	-
Grant financing	109.7	72.5	0.0	0%	n/a
Total expenditures	230.9	295.2	222.5	75%	160%
Deficit (+)/Surplus (-)	6.4	76.6	147.1	192%	-

Source: State Treasury Service

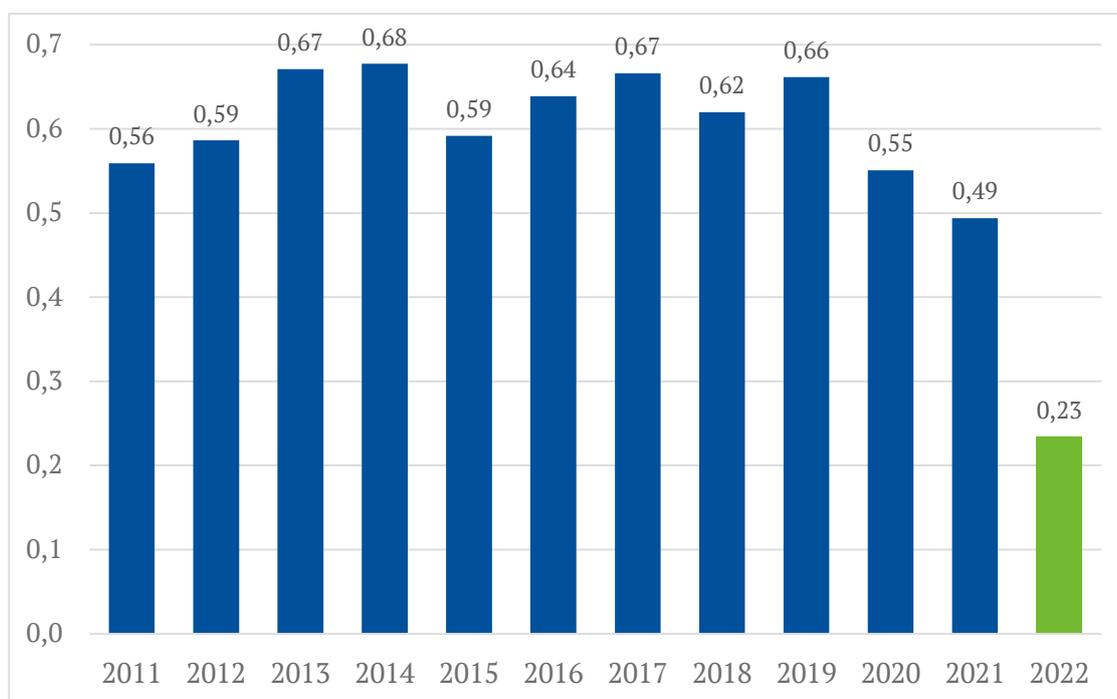
4 Adjusted for CPI year-on-year

VAT paid from domestically produced goods and services as well as from imports remains on the same level for the last three months. The VAT refund continues to fluctuate significantly, depending on the availability of funds on the Treasury account, as the Ministry of Finance prioritizes defense spending.

The last month was marked with numerous public complaints from business regarding difficulties with registering tax invoices and VAT credit in the VAT electronic administration system. This was caused by recent changes to the CMU Decree on VAT registration procedure, which tightened the risk criteria with the aim to alleviate the VAT fraud and led to increased suspension rate of VAT invoices and subsequent need to appeal such decisions.

It is notable that the ratio of VAT refund amount to domestic VAT paid for the 9 months of 2022 is significantly lower than historical average (see Figure 5). As the share of exports (subject to VAT refund) in GDP didn't change materially, this indicates significant tightening in VAT administration. The externalities of such policy are losses of working capital and increased administrative burden on business due to need to provide additional supporting documents and explanations to register VAT invoices and obtain VAT credit.

Figure 5. Ratio of VAT refund to domestic VAT paid for 9 months of respective year

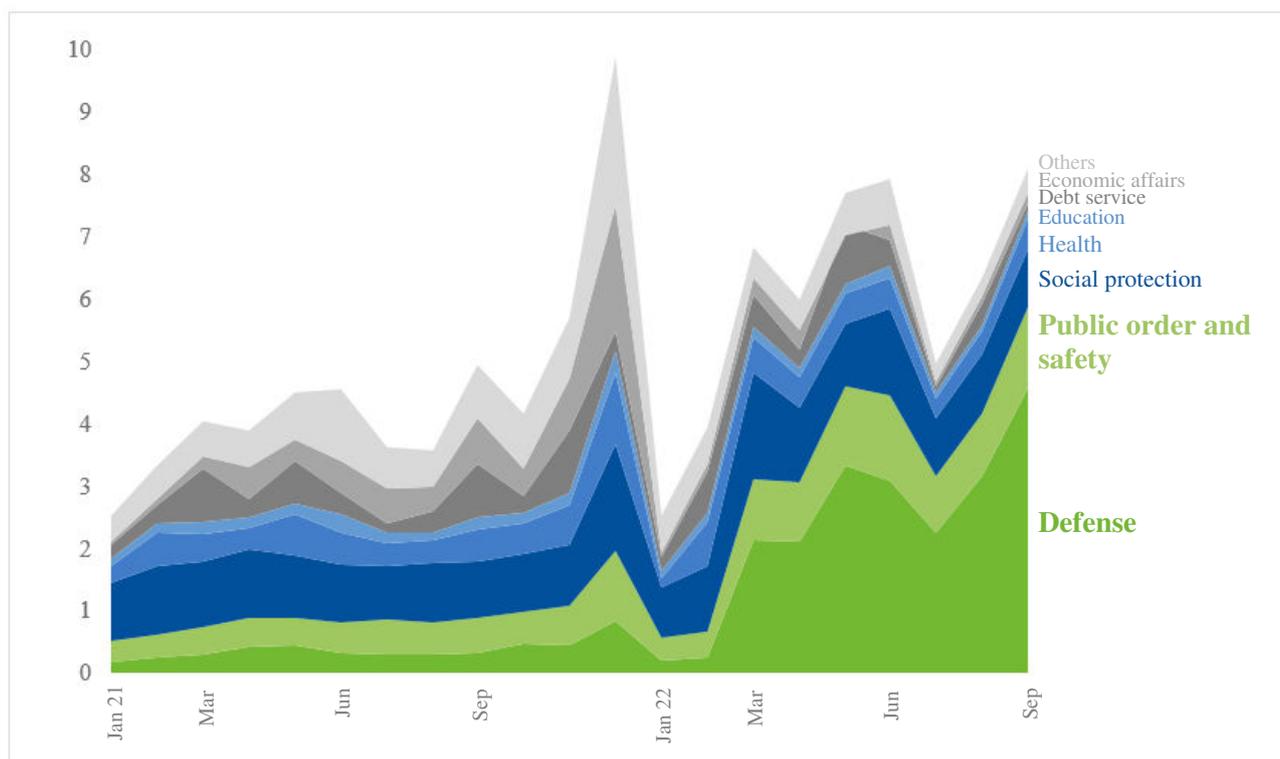


Source: NBU

Due to larger VAT refund in October (UAH 10.9 billion) and lower subsoil use rent the total tax revenues in October were only UAH 70.6 billion – 15% less than in September and 43% less year-on-year, if adjusted for inflation.

We expect low double digit percentage decrease in VAT and excise revenues in November, as the effect of blackouts will begin to take toll on the economy.

Figure 6. State budget expenditures by state functions, UAH billion



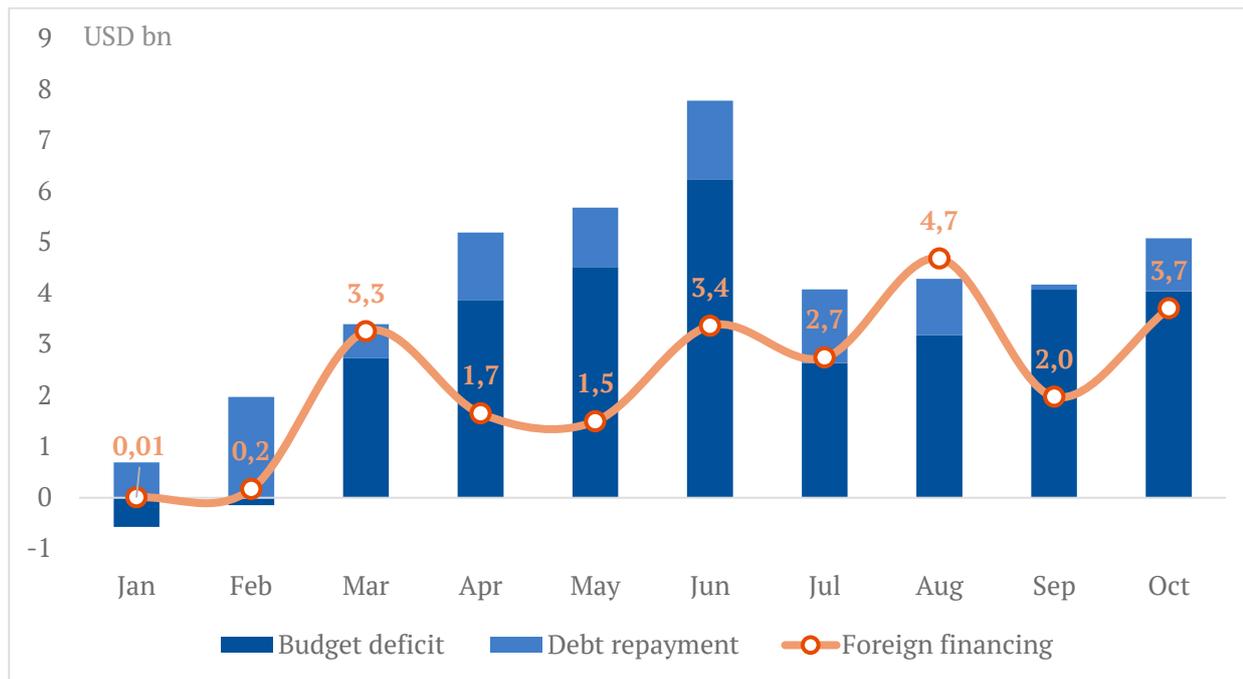
Source: NBU

After the decline in September, in October the volume of foreign inflows increased again and showed the second result for all time – USD 3.7 billion. In nominal hryvnia terms, foreign aid helped to cover 57% of additional budget financing needs from the onset of the full-scale war to November 16 (compared to 59% as of mid-October). Another 28% of needs were covered through the sale of government bonds of the NBU (UAH 355 billion), 15% – through the sale of government bonds to other buyers (UAH 186 billion). In October, the NBU issued only UAH 15 billion for the purchase of government bonds; in November, this amount has so far reached UAH 25 billion, which, however, fits into the announced limit of UAH 30 billion per month.

In October, Ukraine received USD 1.3 billion in credit financing from the IMF and a USD 500 million loan from the World Bank guaranteed by the United Kingdom. Ukraine also received another EUR 2 billion from the EUR 9 billion loan package from the EU that were committed six months ago. In general, of this amount, Ukraine has already received EUR 3 billion, is expected to receive another EUR 3 billion, and the remaining EUR 3 billion will come not this, but the next year, as part of a new financing package.

Work is being done to secure foreign financing for Ukraine in 2023. On November 9, the European Commission proposed to provide Ukraine with EUR 18 billion in loan funds during 2023. According to the plan, these funds will come in stable, foreseeable disbursements, the loan interest is to be covered by the EU member states, and Ukraine will start repaying the body of the loan no earlier than 2033. To coordinate this aid package, it is necessary to amend the EU legislation, which Hungary currently disagrees with.

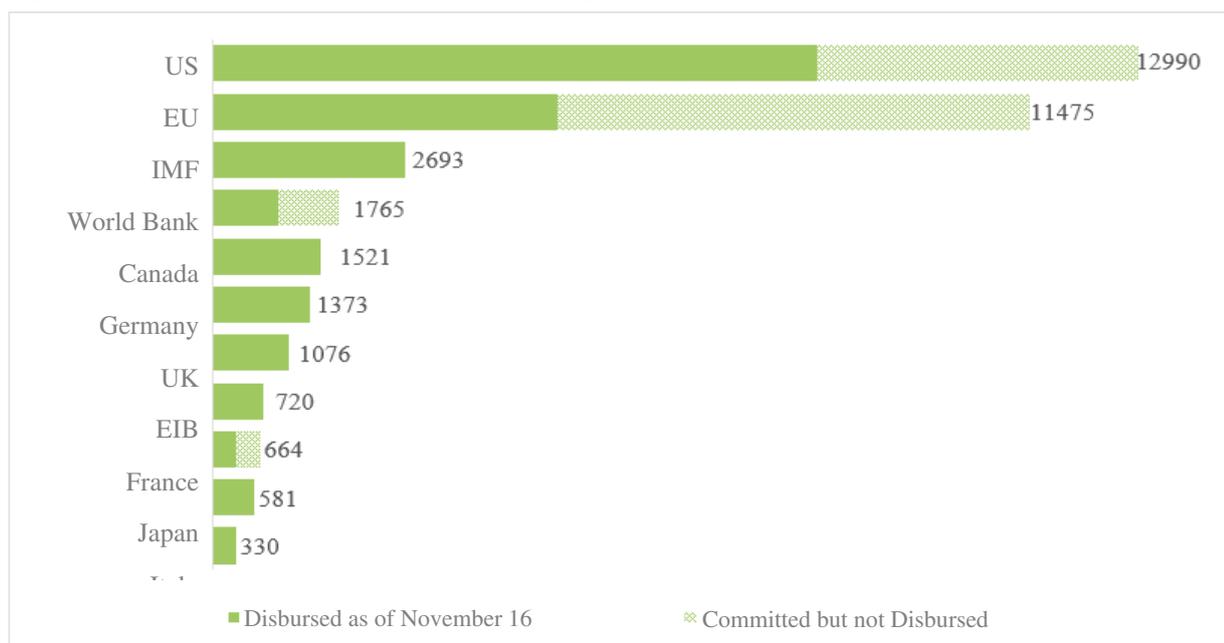
Figure 7. Inflows of foreign funds and financing needs, 10 months of 2022, USD billion⁵



Sources: Ministry of Finance, NBU, CES calculations (we consider the financing of the state budget of Ukraine at the expense of grants from international partners to be deficit financing, not a source of revenue).

According to the Ministry of Finance, the amount of the committed budget aid has not increased compared to September and reached USD 35.3 billion, including USD 23.1 billion of already transferred aid. The grant part of the promised aid is 42%.

Figure 8. Main foreign donors to the state budget of Ukraine, USD million⁶



Sources: Ministry of Finance, Kiel Institute for the World Economy, CES research

⁵ For the purposes of consistency and reconciliation, foreign grants were included in the budget deficit

⁶ The amount of the aid promised has decreased compared to the September overview due to data adjustments (avoidance of double counting of aid in the case of IFIs and guarantor countries) and removal of those aid packages, the allocation of which has not yet been finalized.

5. SPECIAL FOCUS: WHAT ARE THE CROPS THAT WE HAVE HARVESTED AND WHAT WILL HAPPEN NEXT YEAR?

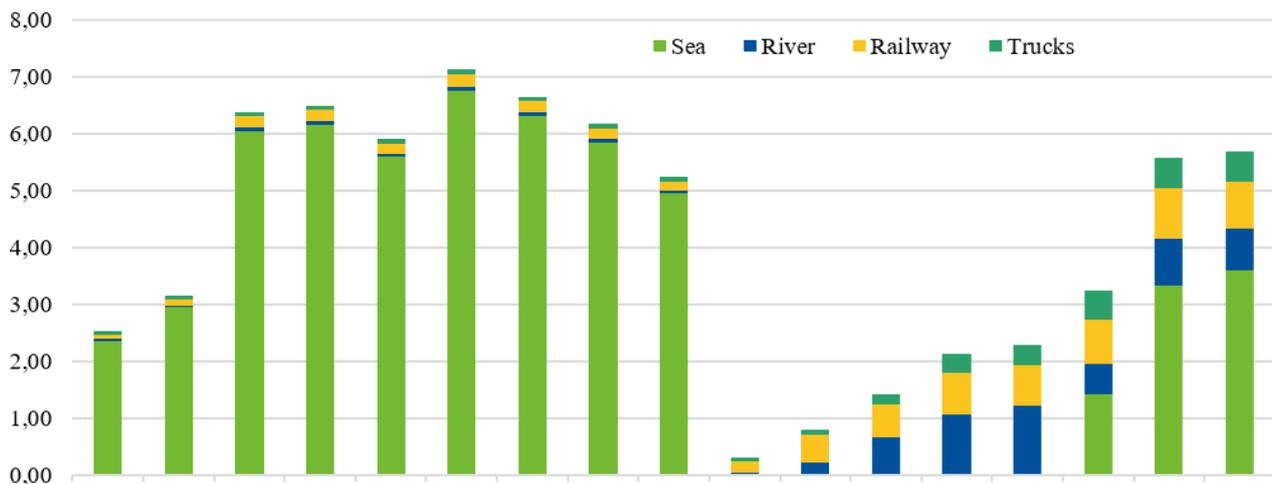
The 2022 harvesting is in progress. As of November 10, Ukrainian farmers harvested 36.1 million tons of cereals. Harvesting has been completed on 76% of the sown area, including 100% of wheat and barley, and 39% of corn area. Early crop yields are expected to be down 11% on a year-to-year basis compared to unprecedented 2021 levels, to 4.1 t/ha for wheat and 3.5 t/ha for barley. At the same time, the current corn yield decreased by 15% on a year-to-year basis to 5.8 t/ha. As for oilseed crops, farmers have already harvested 100% of rapeseed areas, with an average yield of 2.9 t/ha (+1% on a year-to-year basis). The sunflower was harvested from 93% of the sown area with an average yield of 2.2 t/ha (-8% on a year-to-year basis), soybeans were harvested from 91% of the area with a current yield of 2.4 t/ha (-9% on a year-to-year basis). Given the completion of harvesting of late crops, the total harvest of cereals and oilseed crops in 2022 may amount to about 70 million tons, which is 35% lower than the unprecedented figure of 2021.

Grain exports in October approached the pre-war level. In October 2022, the export of cereals and oilseed crops amounted to 5.7 million tons, which is only 3% below last year's level. The restoration of grain export volumes was rendered possible thanks to the intensification of traffic in the ports of Great Odesa that function within the framework of the Grain Initiative with the mediation of the UN. Thus, last month, 179 ships carrying approximately 3.6 million tons of cereals and oilseed crops left the ports of Odesa, Yuzhne and Chornomorsk (compared to 174 ships with 3.4 million tons of cereals and oilseed crops in September). Thus, last month, 63% of exports of basic crops were shipped through deepwater ports. In total, during the first four months of the 2022/2023 marketing year that commenced on July 1, the export of cereals and oilseed crops amounted to 16.8 million tons, which is 23% less than in the same period of the previous year.

The Grain Export Deal has been extended until March 19, 2023. The Grain Initiative, signed by Ukraine through the mediation of the UN and Türkiye for a period of 120 days, expired on November 19, 2022. According to the terms and conditions of the Deal, it can be automatically extended for the same period, unless either party gives notice of its intention to terminate or modify it. The UN and Türkiye have repeatedly emphasised their readiness to extend the Deal for a longer period thereby emphasising its role in ensuring world food security and price stability. During an online speech as part of the G20 Summit, the President of Ukraine Volodymyr Zelenskyi called not only to continue the Grain Initiative, but also to expand its effect to the ports of Mykolaiv and Olbia. However, the Russian Federation has repeatedly pointed to the "package" format of the Grain Initiative and insufficient progress in supporting the export of Russian grain and fertilizers.

As a result, the parties to the Grain Initiative failed to reach agreements on the expansion of the Grain Export Deal and its extension for a longer period before November 19. Therefore, the Deal was automatically extended for 120 days (until March 19, 2023), and its parameters remained unchanged. The export of Ukrainian grain, oilseeds and products of their by-products continues through the ports of Odesa, Yuzhne and Chornomorsk. However, the effectiveness of the implementation of the Deal, specifically the number of vessel inspections by the Joint Coordination Centre in Istanbul and the potential formation of lines of grain ships, remains in focus.

Figure 9. Export of cereals and oilseed crops (million tons)



Sources: State Customs Service of Ukraine, Ministry of Agrarian Policy and Food of Ukraine, UN

2023 crop expectations. There is currently significant uncertainty regarding the outlook for the 2023 crop. Winter sowing is currently coming to an end. As of November 15, farmers sowed 4.4 million hectares or 92% of the area planned for winter crops, including 3.7 million hectares for winter wheat and 0.6 million hectares for winter barley.

Compared to the area of winter crops for the 2022 harvest, the sown area for the 2023 winter crop harvest will decrease by approximately 40% on a year-to-year basis. However, considering that about 25% of winter crops were not available for harvesting this year due to hostilities and occupation, the area of winter crops before harvesting in 2023 may decrease by approximately 15%.

To keep the crops of cereals and oilseed crops at the level of 2022 (about 70 million tons), such a reduction in the area of winter crops must be compensated by an increase in the area of spring crops, primarily such as corn, barley, sunflower, and soybeans. However, the increase in the area of spring crops in the spring 2023 will be possible only under the condition of sustainable recovery of agricultural exports by sea, which will provide farmers with the necessary liquidity and guarantee the sale of grain.

Therefore, the expansion of the Grain Initiative to the ports of Mykolaiv and its extension for a longer period (a year or more) are important prerequisites for maintaining harvests at the level of 2022 and their further increase.