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From Invasion to Recovery: Evaluating the Macroeconomic Implications of Russia's War in Ukraine and the Way Forward

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Excecutive Summary

The full-scale military invasion of Ukraine by the Russian Federation in February 2022 has created unprecedented challenges, resulting in enormous loss of human life and reducing social stability and economic activity. Ukraine has suffered temporary occupation of certain territories, the destruction of productive facilities and infrastructure, widespread land contamination by mines and reduced incomes for millions of people. Nonetheless, Ukraine's economy showed signs of recovery in the third quarter of 2022, thanks to the liberation of Ukrainian land, businesses adapting to new conditions and the results of the Black Sea Grain Initiative.

The government of Ukraine redirected the country's public sector expenditure to military goals and undertook the level of social expenditure required to support the livelihoods of the population. In the short term, the reduced security risk alongside the resumption of full port operations, increased harvests and improved logistics and domestic demand will contribute to economic growth.

Domestic demand will be the main driver of economic growth in 2023 but gross fixed capital formation will be restrained by security risks. However, the growth rate is expected to increase in 2024¬–25 as security risks decline, logistics improve and domestic demand increases. Ukraine's budget for 2023 focuses on defence, security and social protection, but there is a significant budget deficit of 21% of gross domestic product (GDP). Cooperation with the International Monetary Fund (IMF) and international aid will help to finance the budget deficit and maintain reserves.

Additional investment will be needed to address the aftermath of Russia's armed aggression. Ukraine should focus on post-war recovery, the repatriation of displaced persons, the reconstruction of infrastructure and creating a stable environment for investment. Achieving successful reforms will require sustained political will and cooperation from all sectors of society. In the coming years, Ukraine has the potential to become a key player in the region and an appealing destination for investment and trade.

Estimated Damage in the Year Since the Full-Scale Invasion

The Russian full-scale invasion of Ukraine have led to unprecedented levels of destruction. In what is the largest-scale conflict in Europe since World War II, the devastation of Ukraine has been staggering. According to the Kyiv School of Economics,[1] the total cost of documented damage to residential and non-residential real estate and other infrastructure as of February 2023 was USD 143.8 billion. In the year since the start of the full-scale invasion, the housing sector incurred the most significant damage, at USD 53.6 billion, but all sectors of Ukraine's economy have suffered losses. The assets of enterprises and industrialists sustained damage

1 The Kyiv School of Economics is collecting, evaluating, analysing and documenting information on direct losses to civilian infrastructure in connection with Russian aggression. Data as of February 2023 is available at https://kse.ua/russia-will-pay/.

of USD 11.3 billion, and the agro-industrial complex and land resources suffered damage amounting to USD 8.7 billion. These estimates may be too low as there is incomplete information about the state of Ukrainian enterprises in the temporarily occupied territories and there is no detailed information on the damage to the country's energy infrastructure. Many enterprises have ceased operating due to the immediate military threat or blocked access to markets or raw materials.

Macroeconomic Consequences for Ukraine

The full-scale war has not only caused severe damage to residential buildings, enterprises and social institutions, but also led to significant civilian casualties and the displacement of millions of people. In addition, disruption to logistics, supply chains and production means that economic activity has ground to a halt. The invasion has dealt a heavy blow to all levels of Ukraine's economic, social and financial system, leaving the country struggling to cope with the aftermath of the crisis. GDP forecasts for 2022 were significantly influenced by the impacts of a reduction in economic activity linked to the continuation of the conflict, such as the destruction of production and transport infrastructure, logistical complications and the external migration of a large proportion of the population.

It is difficult to find a sector in the country that has not suffered losses, either directly or indirectly, from Russia's war. Most industrial enterprises in the east and south of Ukraine have suffered extensive damage to their production complexes. According to preliminary estimates from the Ministry of Economy[2] GDP was expected to have fallen by 30.4% [±2%] by the end of 2022. This is the largest decline since independence but a little better than expected because the negative effects of the war were somewhat mitigated by gradual adaptation to new operating conditions.

After the initial shock, the country's economy slowly began to recover by the third quarter of 2022 thanks to the further liberation of Ukrainian land, businesses' adaptation to new conditions and the Black Sea Grain Initiative, with Turkey, the Russian Federation and Ukraine as parties,[3] which has allowed significant volumes of commercial food to be exported from Ukraine's ports. While the initiative has positively impacted GDP, obstacles to economic recovery remain. Material and technical issues, especially in metallurgy, as well as capacity destruction, particularly in the energy sector, and reduced real incomes for the population continue to hinder progress. According to the State Statistics Service of Ukraine,[4] almost all industrial activities faced decreases in production compared to 2021: the mining industry by 27.1% and manufacturing by 40.3%, while some sub-sectors such as coke production and oil refining declined by over 60%. The supply of electricity, gas, and steam and conditioned air fell by a combined 27.9%.

The agricultural sector had a significant negative impact on real GDP in 2022, due to lower

2 Official statement of the Ministry of Economy of Ukraine on preliminary estimates of the fall of GDP in 2022 at the level of 30.4% (5 January 2023). Available in Ukrainian at: https://www.me.gov.ua/News/Detail?lang=uk-UA&id=4470bafb-5243-4cb2-a573-5ba15d9c8107&title=MinekonomikiPoperedno

3 United Nations Join Coordination Centre statement on the "Black Sea Grain Initiative". Available at: https://www.un.org/en/black-sea-grain-initiative

4 Data from the official website of the State Statistic Service of Ukraine. Available at: https://www.ukrstat.gov.ua/

crop yields, reduced planting areas linked to ongoing hostilities and the significant issue of landmines. According to Ukraine's Ministry of Agrarian Policy and Food,[5] the sector, which accounted for almost 40% of the country's export revenue before the war, produced around 60 million tonnes of grain and oil crops in 2022, almost half of what was harvested in 2021.

While there was a fall in demand for goods and services in the spring of 2022 linked to the destruction of enterprises, the occupation of territories and the migration of people to other countries, this infrastructure destruction across a large area, as well as the breakdown of logistics chains and the persistence of external factors such as high energy and food prices, put upward pressure on inflation. Despite these challenges, however, consumer inflation did not experience hyperinflationary surges. Moreover, consumer inflation in Ukraine performed better than expected in 2022, because of the weak consumer demand, a restrictive monetary policy, frozen tariffs on housing and communal services, and a stable foreign exchange market. Improving inflation expectations also played a role. Prices in Ukraine therefore increased by 26.6% in 2022.[6]

An essential factor in maintaining economic stability was early implementation of an official fixed exchange rate for the hryvnia. This measure helped to control exchange rate expectations and alleviate market pressures, despite the significant uncertainty faced by businesses at the time. At the beginning of the war, the National Bank of Ukraine[7] temporarily moved away from its flexible exchange rate policy, fixing the rate at 29.25 hryvnias to the US dollar. Since 21 July 2022, the exchange rate for the dollar has been fixed at 36.57 hryvnias per US dollar, devaluing it by 25%.

Ukraine recorded a current account surplus of USD 8.6 billion in 2022. The main factors contributing to the surplus were grants received from international partners and a reduction in investment income payments. However, the negative balance of trade in goods and services increased due to a sharp decline in exports by 29.9%, while imports decreased by only 3.9%. The main factor in this decline was a 62.6% reduction in exports of black and non-ferrous metals. Exports of food products decreased by 15.5% due to a 26.2% decrease in grain exports. Exports of other product categories also saw a decline.

The blockade of maritime trade routes by the Russian Federation and other logistical problems led to a decline in exports to Asian countries by USD 13.4 billion in nominal terms in 2022, or 58.2%. Their share in Ukraine's export of goods decreased from 36.4% in 2021 to 23.4% in 2022. At the same time, exports to EU countries increased by USD 1.9 billion, or 8.5%, and their share in Ukraine's exports rose from 36.2% in 2021 to 60.6% in 2022.

The import of goods decreased by 20.3% over the year, to USD 55.6 billion. Energy imports fell by 8.9% and non-energy imports by 23.2%, in particular import of machinery production fell by 32.3%, chemical industry production by 34.4%, of food products by 22.7%, and black

5 Data from the official website of the Ministry of Agrarian Policy and Food of Ukraine. Available at: https://minagro.gov.ua/en

6 Data from the official website of the State Statistic Service of Ukraine. Available at: https://www.ukrstat.gov.ua/

7 Official statement of the National Bank of Ukraine "NBU Fixes Official UAH/USD Exchange Rate at a New Level and Takes Additional Measures to Balance the FX Market and Support Resilience of Economy during the War" (21 July 2022). Available at: https://bank.gov.ua/en/news/all/nbu-zafiksuvav-ofitsiyniy-kurs-grivni-do-dolara-ssha-na-novomu-rivni-ta-vjiv-nizku-dodatkovih-zahodiv-dlya-zbalansuvannya-valyutnogo-rinku-ta-pidtrimannya-stiykosti-ekonomiki-v-umovah-viyni

and non-ferrous metals by 40.7%. In 2022, the largest decrease in nominal terms was in imports from the Union of Independent States countries (by 66.7%).[8]

Full-Scale War: The Impact on Ukraine's Public Finances

The complicated economic situation caused by the war, not least significant damage to key infrastructure and the directly negative structural effect of the Russian invasion, has had a significant impact on Ukraine's fiscal position. The war led the government to take priority measures to redirect public spending to military goals and to implement priority social expenditure to support the livelihoods of the population and internally displaced persons, while also ensuring the functioning of critical infrastructure. At the start of the full-scale invasion, all non-critical budget expenditure ceased.

Defence and security spending in Ukraine increased by a staggering nine times compared to the relatively peaceful year of 2021. Importantly, these expenses are fully financed by Ukraine's own budget revenue. At the beginning of the war, 42% of spending was on salaries, 77% of which was financial support for military personnel.[9] The mobilization of the population has significantly increased the size of Ukraine's military forces and its salary costs. In addition, 23% of expenditure was dedicated to payments for goods and services, of which 56% went to provide the armed forces with military equipment, weapons, ammunition and defence products. Social security payments, including pensions, aid and scholarships, accounted for 20.4% of total expenditure.

After 24 February, war shock made the revenue situation more complicated and it became difficult to accumulate the revenues needed to finance the record growth in expenditure, especially as 80% of all tax and non-tax revenues, excluding the contributions of international partners, was being spent on defence. International aid in the form of grants and preferential loans became a key resource to cover social expenditures. Since 24 February 2022, Ukraine has received USD 38.4 billion in international aid:[10] USD 32.1 billion in 2022 and USD 6.2 billion in 2023.[11] As a result, the average monthly budget deficit in March 2022 to February 2023 was USD 2.5 billion. In order to finance the budget deficit, the debt burden by December, 31 2022 was 75.4% of GDP.[12]

60% of the external debt now consists of borrowings from international financial institutions and governments of countries, which are provided on preferential terms with a maturity of up to 35 years, as well as grace periods for maintenance and low-interest rates. This allows the Ministry of Finance to assert control over the financial situation in terms of deficit and debt management.

8 Information from the Ministry of Finance of Ukraine on the implementation of the State Budget of Ukraine for 2022. Available in Ukrainian at: https://mof.gov.ua/uk/budget_2022-538

9 Data from the official website of the Ministry of Finance of Ukraine "Since the beginning of the war in 2022, expenditures of the general fund of the state budget amounted to UAH 2.2 trillion" (17 January 2023). Available in Ukrainian at: https://mof.gov.ua/uk/news/minfin_z_pochatku_viini_u_2022_rotsi_vidatki_zagalnogo_fondu_derzhbiudzhetu_stanovili_22_trln_grn-3802

10 Data from the official website of the Ministry of Finance of Ukraine on the Ukraine's state budget financing since the beginning of the full-scale war (15 March 2023). Available at: https://mof.gov.ua/en/news/ukraines_state_budget_financing_since_the_beginning_of_the_full-scale_war-3435

11 As of February 2023

12 Information from the Ministry of Finance of Ukraine on the implementation of the State Budget of Ukraine for 2022. Available in Ukrainian at: https://mof.gov.ua/uk/budget_2022-538

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In addition to international aid, the Ministry of Finance has issued Wartime Domestic Government Bonds[13] as an investment tool to support Ukraine's state budget during the difficult times of the invasion. These are available to citizens, businesses and foreign investors. These bonds have also been purchased by the National Bank of Ukraine, up to UAH 400 billion (USD 11 billion) in 2022, effectively carrying out money supply creation to cover the urgent need to finance priority expenditures.

Ukrainian Plans: 2023 and Beyond

Ukraine has shown remarkable resilience not only on the military front, but also on the economic and financial fronts during what has undoubtedly been the most challenging year in its history. Despite facing numerous obstacles, Ukraine has managed to weather the storm and is now moving forward with renewed confidence.

Domestic demand will remain the main driver of GDP growth in 2023. However, growth in gross fixed capital formation will be restrained by security risks, to which investment activity is highly sensitive. At the same time, the loss of foreign demand will harm GDP growth in 2023. Real import growth will be high due to high levels of consumption and limited domestic production. In addition, opportunities for export recovery will be restrained by logistical restrictions and the physical destruction of the fixed assets of certain enterprises in the export industries.

A reduction in security risks, along with the resumption of fully operational ports, increased harvests, a gradual recovery in production capacities, improved logistics and increased domestic demand, including the return of forced migrants, will contribute to economic growth in 2024–25. The National Bank of Ukraine[14] expects a slight increase in real GDP of 0.3% in 2023, 4.1% in 2024 and 6.4% in 2025. Inflation is also expected to fall significantly, to 18.7% in 2023, 10.4% in 2024 and 6.7% in 2025. The main risks remain long-term, full-scale military aggression by Russia and further destruction of critical infrastructure.

Ukraine's 2023 budget has been formulated with a focus on addressing the country's most pressing needs. Given the current situation, the budget prioritizes spending on defence, security and social protection. However, there is a significant budget deficit of 21% of GDP. International support and cooperation with the IMF will enable a significant budget deficit to be financed and maintain international reserves at a sufficient level. With the announced volumes of international aid and progress in negotiations with the IMF, the total amount of

13 Presentation of the Ministry of Finance of Ukraine "Local Bonds Issued during the War Time". Available at: https://mof.gov.ua/en/local_bonds_issued_during_the_war_time-572

14 Data from the National Bank of Ukraine Inflation Report, January 2023 (2 February 2023). Available at: https://bank.gov.ua/en/news/all/inflyatsiyniy-zvit-sichen-2023-roku

official financing required in 2023 could exceed USD 38 billion.[15] This will avoid money creation to finance the budget deficit in 2023 and maintain international reserves at a sufficient level, even under conditions of prolonged security risk. The country's international reserves, which stood at USD 28.5 billion as of January 1, 2023,[16] are expected to continue to grow, providing a cushion against future economic shocks.

Despite the challenging circumstances, the government of Ukraine has established a special fund within the state budget to channel external financial resources for the immediate repair and reconstruction of critical infrastructure: the Fund for Liquidation of the Consequences of Armed Aggression.[17] This fund will initially be funded from half of the National Bank of Ukraine's profit transfer for 2023 and confiscated Russian assets. The fund currently amounts to USD 1 billion, which falls far short of the amount required for the overall needs for recovery.

This suggests that while Ukraine has prioritized certain areas of spending, there is still a significant need for increased investment to address the ongoing consequences of the armed aggression. At the same time, meaningful fiscal support will stimulate consumer demand and investment in the reconstruction of Ukraine.

Conclusions

Russia's full-scale invasion has had far-reaching consequences beyond the military and political, affecting the economy too. The Ukrainian government's expenses increased at a faster rate than its revenues, even though tax revenues remained relatively stable and covered military expenditure. The budget deficit has grown dramatically as a result, but the government has taken an adaptive approach to addressing the challenges for its public finances.

The key takeaway from 2022 is that all crucial expenses were funded, but this would not have been possible without the aid of international partners and the issuance of war bonds. Budget stability was maintained, which lays the groundwork for positive developments in 2023. The Ukrainian government will logically keep defence and security spending as its main priority, together with the social sphere. Defence spending will continue to be financed by domestic revenue, while international aid in the form of grants and loans can be allocated to non-military expenditures.

To maintain budget stability and ensure economic growth, the country will need to focus on post-war recovery, bringing forced migrants home, reconstruction, rebuilding infrastructure and creating a stable environment for investment. Attracting capital and creating jobs will require significant effort on the part of the government and the private sector.

15 Official statement of the Minister of Finance of Ukraine for CNN "Ukraine Expects to Start Discussions on Full-fledged IMF Program in the Coming Weeks" (23 February 2023). Available at: https://mof.gov.ua/en/news/ukraina_rozrakhovuie_rozpochati_obgovorennia_povnotsinnoi_finansovoi_programi_za_pidtrimki_mvf_vzhe_v_naiblizhchi_tizhni_sergii_marchenko_dlia_cnn-3854

16 Information from the Ministry of Finance of Ukraine on the implementation of the State Budget of Ukraine for 2022. Available in Ukrainian at: https://mof.gov.ua/uk/budget_2022-538

17 The Law of Ukraine dated 19 October 2022 No. 2700-IX "On Amendments to the Law of Ukraine "On the State Budget of Ukraine for 2022". Available in Ukrainian at: https://zakon.rada.gov.ua/laws/show/2700-IX#Text

Finally, Ukraine's progress towards EU membership will require substantial reform. Successful implementation will require sustained political will and cooperation from all sectors of society. However, if Ukraine can successfully rebuild and reform, it has the potential to become a key player in the region and an attractive destination for investment and trade.

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