Macroeconomic Policies for Wartime Ukraine

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Foreword

This is the second title in CEPR's *Rapid Response Economics* series, which is designed to publish research on major policy issues with the utmost speed.

Macroeconomic Policies for Wartime Ukraine, by Torbjörn Becker, Barry Eichengreen, Yuriy Gorodnichenko, Sergei Guriev, Simon Johnson, Tymofiy Mylovanov, Maurice Obstfeld, Kenneth Rogoff and Beatrice Weder di Mauro, sets out to recommend and outline macroeconomic policies that would put the Ukrainian economy on a sustainable trajectory for the duration of the war. As with the first volume in the series, this project has been put together in a remarkably short period of time and is witness to the vision of Yuriy Gorodnichenko and the outstanding team of authors he has assembled.

We feel that this short publication is a significant contribution to the broader project of providing further and more detailed analysis on how best to support and reconstruct Ukraine.

CEPR, which takes no institutional positions on economic policy matters, is delighted to provide a platform for an exchange of views on this crucially important topic.

Tessa Ogden
August 12th 2022

Executive Summary

For over 160 days, Ukraine has been resisting Russian aggression. A prolonged war is increasingly likely, a prospect that calls for a recalibration of the country's macroeconomic strategy. Specifically, the current policy mix, which relies on running down foreign reserves and other temporary measures, is progressively untenable. Unless altered, this course will result in a major economic crisis that will cripple Ukraine's ability to sustain its war effort over an extended period. This report outlines macroeconomic policies to put the economy on a sustainable trajectory for the duration of the war.

Our recommendations build on four key elements.

First, the government must mobilise more resources to improve its fiscal position so that the country can fund huge military expenditures and maintain basic public services in an economy ravaged by the war. The aim should be to increase the collection of tax revenues and for remaining shortfalls to be financed primarily through nonmonetary means: preferably through external aid, but if not, through domestic debt issuance, with much less reliance on seigniorage (printing money). Controlling and raising the effectiveness of nonmilitary spending is critical for keeping public finances sustainable. Foreign military aid remains vital, of course, and Ukraine's allies should radically increase economic aid and accelerate its disbursement.

Second, there is an urgent need for a durable nominal anchor. Heavy reliance on money printing to finance government deficits has been unavoidable in the first months of the war but if the current reliance on money finance is sustained, inflation, already over 20%, could easily drift much higher. The aim should be for relatively low inflation. In a time of national mobilisation, the main responsibility for attaining price stability falls on the fiscal authority, which can strongly influence inflation through the tools it chooses to raise resources from the domestic private sector. The government should aim to

enhance national savings rather than rely on monetary financing from the central bank. In coordination with fiscal authorities, the central bank should implement a flexible framework to support macroeconomic stability. A managed float of the exchange rate is consistent with this goal.

Third, external imbalances should be addressed through a combination of strict capital outflow controls, restrictions on imports, and some flexibility in the exchange rate to avoid jeopardising internal macroeconomic stability in the face of huge fiscal needs. A comprehensive standstill on external debt payments is essential.

Fourth, although wartime governments usually take over the allocation of resources, Ukrainian circumstances call for more market-based allocation mechanisms to ensure cost-effective solutions that do not overburden the state capacity, exacerbate existing problems (such as corruption), or encourage (untaxed) black market activities. To this end, the aim should be to pursue extensive radical deregulation of economic activity, avoid price controls, and facilitate a productive reallocation of resources

Ukraine's very survival – and Europe's future – is at stake. *Extraordinary challenges must be matched by extraordinary policies and extraordinary support from Ukraine's international partners.*

I. INTRODUCTION

To avert a crisis, Ukraine urgently needs a programme of immediate macroeconomic stabilisation. The country has no choice but to spend enormous sums on defence. The government is mobilising as many resources and as much revenue as it can, having reinstated import taxes suspended at the outset of the full-scale invasion. It has cut non-military spending to the bone. Yet independent estimates, such as that of Moody's, project a budget deficit of 22% of GDP, or $50 billion, for this year. Macroeconomic stress is rising, with higher inflation in store and the fixed exchange rate of the hryvnia under pressure despite the currency's recent devaluation. The government can hope for foreign aid in necessary amounts, but this may be wishful thinking: the moral support for Ukraine is only partly translating into a strong financial lifeline.

The recommendations in this report will help Ukraine adjust to this reality. We emphasise at the outset that Ukraine's crisis is not a setting for a typical macroeconomic adjustment programme. The country's very survival – and Europe's future – is at stake. This key constraint should condition the design of any programme. Extraordinary challenges must be matched by extraordinary policies.

Going forward, any macroeconomic strategy should meet the government's fiscal needs while conserving foreign exchange reserves and avoiding unnecessary inefficiencies in domestic resource allocation. The former goal requires constraints on certain foreign payments and some flexibility in the exchange rate. The latter requires (as a necessary condition) a moderate and stable rate of inflation. In a time of national mobilisation, fiscal dominance (that is, a situation when the central bank accommodates public deficits set by the fiscal authority irrespective of how these deficits influence inflation) is inevitable, but this does not mean that price instability is also inevitable.

Instead, the main responsibility for attaining price stability falls on the Ministry of Finance. In this report, we describe measures the Ukrainian fiscal authorities should take to stabilise inflation while securing the resources needed to resist Russian aggression and receiving support from the central bank to achieve these goals.

II. ECONOMIC LANDSCAPE

The war has affected sectors and geographical areas very unevenly. The economy of Eastern Ukraine is largely destroyed (some of the largest steel mills were in Mariupol), while Western Ukraine is more lightly damaged. For example, construction of new housing has been resumed on only 2% of sites in the Kharkiv region (Eastern Ukraine), while the corresponding share is 81% in the Lviv region (Western Ukraine). There is also major differentiation across production sectors. For example, Russian missiles have destroyed *all* major oil refineries and many industrial construction projects are frozen (owing to uncertainty, the high cost of capital, workers being drafted into the army, and other war-related factors), but the IT sector remains strong (for instance, the number of vacancies is similar to pre-war levels).

The labour market is under enormous stress. According to estimates by the National Bank of Ukraine (NBU), more than a million workers have been dismissed from previous employment and more than half of firms have cut *nominal* wages (in many sectors by 50%) since the war started. Many firms report operating under reduced hours. Again, losses of employment and wages are unevenly distributed across sectors and geography. Millions of working-age people have left the country, although the outflow has slowed in recent months. Available data suggest that vacancies declined by approximately

80% and that the rate of unemployment reached 35% in June 2022. The NBU projects that real wages will fall 33% by the end of the year relative to December 2021.

With the initial shock of the war, imports and exports declined by similar magnitudes, but subsequently, imports rebounded faster than exports. The trade deficit ran at about $2 billion in June 2022. This deficit reflected several factors: (i) an overvalued hryvnia, (ii) destroyed productive capacity (for example, for gasoline, which now has to be imported rather than produced domestically), (iii) cancelled import taxes (e.g. imports of motor vehicles exceed pre-war levels), (iv) and importantly, Russia's blockage of Ukrainian ports (the main transportation hubs for Ukrainian exports such as metals and agricultural products). Ukraine's inability to export commodities like metals and agricultural products by sea has devastated export-oriented sectors – for example, metals production is expected to fall by 50% in 2022. Adding to the balance of payments drain, Ukrainian refugees in the EU and other countries withdrew approximately $2 billion in April 2022, which exceeds $1 billion per month in remittances to Ukraine. Official lenders provide a lifeline to cover the foreign exchange outflows, but a tenuous one.

The banking sector was well-capitalised and posted strong profits before the war. Despite huge stress in the early days of the war (the financial stress index spiked to a level not seen since debt restructuring following the Russian invasion in 2014), banks and the payment system continued to function. Elevated credit risk has been the main challenge for the financial sector. The share of non-performing loans has been increasing and stands at nearly 30% as of July 2022 and the NBU estimates that banks could lose 20% of their credit portfolios. Despite these massive potential losses, banks largely maintain operational profitability and the NBU estimates they have sufficient

capital to withstand asset losses up to 25%. Liquidity and foreign exchange risks remain limited. Nonetheless, vigilance against financial instability is warranted, as is a cushion of precautionary government resources.

In sum, the economy is gradually recovering from the initial shock, but its output is still projected to decline by 30% or more in 2022. Inflation is running at about 20% but, according to NBU forecasts, it will accelerate to 30% by the end of 2022. Of course, inflation is extremely difficult to predict in a situation of wartime budgetary duress, so any inflation prediction is contingent on the government's ability to contain expenditures, increase taxes, and find new sources of aid.

III. INITIAL POLICY RESPONSE

In response to the Russian invasion, the Ukrainian government adopted a series of policies aimed at addressing the massive shock to the economy. The NBU fixed the exchange rate at the pre-war level to forestall panic and provide a nominal anchor (that is, a nominal variable that ties down the price level or the rate of inflation). To protect domestic credit and payments, the central bank introduced capital controls and eased macroprudential regulations. In pursuit of the same goal, the government raised the maximum insurance limit threefold and, for the duration of the war, insured all retail deposits. The government suspended some taxes (or substituted existing taxes with alternative taxes; for example, smaller businesses were allowed to switch from VAT to a sales tax) and introduced holidays for various payments (e.g. mortgages, utility bills) to provide households and businesses with liquidity to sustain their operations. The government's liquidity needs were met by the central bank, which directly transferred resources to the Ministry of Finance.

The general approach of this initial response was to use reserves to absorb the shock and to fix some prices to limit instability. These measures were adequate in the short run, but, given limited reserves and growing imbalances, they are unlikely to provide a sustainable economic foundation to support the war effort over an extended period.

The contradictions of the current policy mix are increasingly clear. The fiscal deficit is running at about $5 billion per month (approximately 30% of pre-war monthly GDP). Approximately one-third of government spending is covered by tax revenue, loans, and grants from international organisations. Ukraine's allies cover another one-third[1], and the central bank prints money to cover the final third (note that the government does not borrow significant sums from the internal capital market). The NBU raised the policy rate to 25% on 1 June 2022. The NBU spent $3.4 and $4 billion of its foreign exchange reserves in May and June respectively to defend the exchange rate, but the central bank then devalued the hryvnia by 25% on 21 July 2022 to align the official exchange rate with the cash rate in the market and limit the need for continued intervention on this scale. The banking system is saturated with liquidity, but government bonds offer below-inflation interest rates, which makes these bonds unattractive to domestic investors (on 26 July 2022, the government could raise only 3.7 million hryvnias (approximately $0.1 million) in two-year bonds paying 14%). This approach undermines the monetary transmission mechanism and hence the ability of the central bank to stabilise the economy. In short, with limited reserves, the central bank *cannot at the*

1 For example, the IMF provided 1.4 billion in emergency financing support in early March under the Rapid Financing Instrument but further funding via a 'normal IMF' programme is not in the cards. The US government has announced several packages of emergency funding for Ukraine, including $40 billion allocated roughly equally between humanitarian and military aid. The UK announced $3.5 billion in humanitarian aid and grants for Ukraine.

same time print money, defend the hryvnia, and maintain macroeconomic stability. Continuation of the current policy will result in a crisis (high inflation, a currency crisis, or a banking crisis).

Ukraine is effectively excluded from international capital markets. Until 22 July 2022, the government strongly indicated that government bonds and the debt of state-owned enterprises (SOEs) would be serviced in full, placing a significant burden on the government budget and foreign exchange reserves. (This approach was maintained in the hope of ensuring the early resumption of market access.) In a reversal, Naftogaz (an SOE energy giant) defaulted on its debt and the government started talks with its foreign creditors to delay government debt payments by two to three years. If successful, the resulting $6 billion in savings for the government and SOEs over 2022-2023 would be helpful, but this will go only a small way toward closing the fiscal gap.

The prospect of a prolonged war suggests that macroeconomic policies must be adjusted to ensure that the domestic economy can provide a much larger share of the resources necessary to finance the war.

IV. PRINCIPLES

The vital imperative for the government is to pay for extraordinary military expenditures and maintain the economy ravaged by the war. We propose several principles for the macroeconomic framework built on this imperative.

Fiscal policy: The focus is on mobilising resources to support the war effort. The mix usually includes higher tax revenues, borrowing, seigniorage (printing money), external aid, as well as a reduction in non-military spending. The aim should be to increase the collection of tax revenues and finance the remaining shortfalls through external aid rather than debt, with decreasing reliance on seigniorage over time.

Monetary policy: Although financing fiscal war-time needs will remain an imperative in the very short run, the central bank should implement a flexible framework to support macroeconomic stability. This framework should aim to absorb shocks, stabilise prices, and maintain a functioning financial system. There is a need for a durable nominal anchor. The aim should be for relatively low inflation and low seigniorage.

Regulatory policy: The war is a massive reallocation shock. Although wartime governments usually take over the allocation of resources, Ukrainian circumstances call for more market-based allocation mechanisms to ensure cost-effective solutions that do not overburden the state capacity, exacerbate existing problems (such as corruption), or encourage (untaxed) black market activities. To this end, the aim should be to pursue extensive radical deregulation of economic activity.

External trade and capital flows: With no financial inflows from private sources, imports must be financed with exports, foreign official aid/loans, and liquidation of external assets (i.e. foreign exchange reserves). Nevertheless, some reasonable level of reserves must be maintained as a precautionary cushion. The aim should be to address external imbalances through a combination of strict capital outflow controls and adjustment of the exchange rate to avoid jeopardising internal macroeconomic stability while meeting huge fiscal needs.

V. FISCAL POLICY

To support the war effort, Ukraine needs to radically improve its fiscal position. Although the ability of the government to fund a *long* war ultimately boils down to the capacity of the government to raise tax revenues and control spending, countries rarely rely exclusively on taxes to pay for wars. The mix usually includes higher tax revenues, borrowing, seigniorage (printing

money), external aid, and reductions in non-military spending. We present these options in the order that reflects our recommendation for how to pay for the war.[2]

As we noted above, the all-out national mobilisation that the war has forced on Ukraine leads to fiscal dominance until hostilities conclude. Fiscal deficits become endogenous to the needs of war and basic public services, with the preceding modes of finance filling the budgetary gap. In this setting, price stability becomes the responsibility of the fiscal authority, which can strongly influence inflation through the tools it chooses to raise resources from the domestic private sector. In short, the government should aim to enhance national savings rather than rely on monetary financing from the NBU.

A. Foreign aid

With limited resources and constant Russian strikes, the Ukrainian government faces tough trade-offs. For example, it must balance adverse effects on the economy (from broad fiscal consolidation) with negative effects on morale (from lower salaries for soldiers). Foreign aid can relax budget constraints and provide a short-term solution to internal and external economic imbalances. Furthermore, social expenditures for health, education, food, shelter, and heating could be 'outsourced' to foreign donors using a donor coordination platform.

Since the start of the full-scale war, Ukraine has received external support on the order of $2.5-3.0 billion per month. This is a significant sum, but it is well below what is needed to cover the many costs of the war. The composition and delays in transferring aid to Ukraine exacerbate the situation. For example, the EU had proposed an urgent macro-financial assistance programme of €9

2 In theory, the government can also raise revenue by privatising state-owned enterprises and selling other assets. Given extreme uncertainty and fire-sale prices, Ukraine is unlikely to raise significant sums from privatisation. Ukraine could get a better deal by selling its assets abroad (aircraft, vessels, real estate, etc.) but the sums are likely small

billion in May but has only managed to mobilise €1 billion by July, with the remaining €8 billion still locked in discussions. Furthermore, according to the Kiel Institute for the World Economy, the share of grants in the EU aid programme is only 1% (for comparison, the corresponding share for the US is 87%). To avert economic calamity, *Ukraine's allies should disburse larger amounts immediately.* Given debt sustainability concerns, grants are strongly preferred, but if the choice is a loan versus no money, then a loan should be given and taken.

The base of donors should be broadened. It should include not only governments but also non-governmental organisations (NGOs) and the corporate sector, many of which claim to have environmental, social, and governance (ESG) objectives. For example, Jamie Dimon, CEO of JPMorgan Chase, recently argued that there should be a 'business solidarity contribution' to the Ukrainian budget. This contribution can be monetary or in-kind. For example, PayPal has waived fees for transfers to Ukraine. SpaceX donated StarLink terminals to ensure stable internet access and communications. Perhaps businesses that provide meaningful help to Ukraine can receive 'points' that they will be able to cash in at the reconstruction stage.

Just as coordination of military aid is vital, coordination of economic aid is of paramount importance. The 26 April 2022 meeting of Ukraine's allies at the Ramstein US airbase in Germany was a breakthrough for committing and delivering weapons to Ukraine. Subsequent monthly meetings of Ramstein participants provide a platform for continued coordination. There is an urgent need to set up a similar platform where finance ministers and other officials can regularly coordinate their steps to ensure an uninterrupted flow of necessary economic support.

B. Debt

The point of debt financing for wars is simple: the government shifts money from the future when resources are relatively abundant to the present (wartime) when they are scarce. This approach is less distortionary and contractionary than massive immediate hikes in tax rates. Clearly, the government should structure borrowing such that debt issuance is front-loaded while pay-outs are stretched far into the future (for instance, zero-coupon bonds with long maturities). Then, the key question is how to structure debt policies to mobilise huge resources now, keep the level of debt sustainable, and avoid a deluge of redemptions after the war.

Historically, governments use a mix of policies to borrow. First, governments appeal to patriotism to encourage purchases of war bonds. For example, the US government had an aggressive campaign with many celebrities advertising war bonds (the famous series E) during WWII. As a part of this programme, purchases of bonds should be made easily available (simple design, direct access, low denominations, automatic payroll deductions, and the like) to any citizen. This will help to broaden the base for subscriptions and make it a mass movement. Ukraine has not explored this resource to any significant degree.[3]

Second, the government should provide a financial incentive for investing in war bonds. This could be a preferential tax treatment of war bonds or a relatively high interest rate. For example, if the government raises personal income tax rates during the war but the bonds purchased pre-tax are redeemed at a later date when tax rates are lower, there is effectively a higher return on war bonds. During WWII, the interest rate on war bonds in the US was 2.9%, which was slightly below the rate of inflation (on average approximately 3.6%

3 The patriotic sentiment is strong. For example, as of 2 August, Ukrainians *donated* 19 billion hryvnia to the government via a dedicated NBU account. However, the government needs to offer attractive interest rates to complement this sentiment and make this source of funding sustainable.

between April 1942 and June 1946). This experience suggests that Ukraine should aim for a modest (perhaps slightly negative) real rate of return on its debt. Currently, however, the real rate of return is approximately -15%.

Third, the government can resort to forced saving, which can take several different forms. For example, Keynes famously proposed paying workers, in part, with war bonds that could be redeemed only after the war.[4] He further suggested that repayment of such deferrals could await a cyclical downturn, when they would provide both needed social insurance and countercyclical stimulus. Another option is to rely on financial repression (for instance, requiring banks to hold some fraction of their assets in government bonds). Such options need to be used with care to avoid undermining financial stability. Other tools might include rationing some goods (i.e. effectively limiting the consumption of households) and delayed payments to veterans (for instance, the US government paid a bonus to WWI veterans in 1936; after WWII, there was implicit deferred compensation in the form of the GI Bill).

Government borrowing should be at long maturities (for instance, series E war bonds had a ten-year maturity), but debt instruments should offer enough flexibility to appeal to potential investors. This would particularly apply to the high military compensation that has been promised (where the deferred component would, of course, go to surviving families if need be). Pay-outs should be gradual and phased – it would be a mistake to give consumers a huge gift of cash immediately when hostilities end, as this would exacerbate balance of payments and supply-chain issues.

Debt sustainability and market access after the war are important considerations. Issuing bonds indexed to inflation or in foreign currency can limit the space for manoeuvring after the war and hence should be avoided.

4 For example, if a worker's salary is 10,000 hryvnias, this salary may be paid in cash (say 8,000 hryvnias) and war bonds (2,000 hryvnias). See John Maynard Keynes, *How to Pay for the War: A Radical Plan for the Chancellor of the Exchequer* (London: Macmillan, 1940).

Because the speed of post-war economic recovery is uncertain, issuing GDP-linked debt (especially for foreign creditors) can provide a form of risk sharing and make the pay-outs commensurate with the capacity of Ukraine's economy to service debts. After the Russian invasion in 2014, Ukraine had some experience with issuing such bonds ('warrants') as a part of its debt restructuring. The government can build on this experience to develop better designs for GDP-linked bonds (such as lower caps on pay-outs, back-loaded pay-outs, and a higher GDP threshold to trigger pay-outs).

Because Ukraine is shut out from the global capital market, the only realistic source of fresh borrowing at present is the domestic market. Hence, Ukraine should aggressively look for ways to minimise pay-outs on external debt, ideally without excluding access to the global capital market in the future when the country will need resources for reconstruction. A comprehensive standstill on external debt is critical.

C. Raising tax revenue

Raising tax revenues involves three basic elements. First, a stronger, larger economy provides more resources for taxation. High military spending already gives a powerful demand-side stimulus. This makes it all the more important to explore supply-side policies, which we discuss in section VIII.

Second, the government can broaden the tax base. This means introducing new (ideally, easy to administer) taxes but also eliminating exemptions and loopholes. For example, with zero import duties in April-June 2022, Ukraine imported light vehicles worth about $1 billion, which cost the government budget approximately 25 billion hryvnias in lost tax revenue. This loophole was closed subsequently, but there is more work to be done. For example, a large share of Ukraine's workforce (approximately two million in 2021) is operating as private entrepreneurs, which allows workers to minimise their tax liability.

The government can try to close this loophole, at least for some businesses for the duration of the war. More generally, the government should tax the shadow economy as households and businesses increasingly rely on cashless payments in light of elevated security risks associated with using cash. The government should also refrain from offering tax holidays, reductions, and other forms of 'tax expenditures'. For example, the government recently passed a law offering tax exemptions to industrial parks to stimulate the economy, even though Ukraine's previous experience with industrial parks is largely negative (by and large, these parks were used to avoid taxes rather than create new jobs). The government also introduced a moratorium on tax inspections and relaxed requirements for tax reporting which effectively suspended tax enforcement. To provide a point of reference for the need to broaden the tax base, the number of US households paying income taxes increased from four million in 1939 to 42 million in 1945.

Third, the government can raise tax rates, excises, duties, and fees. It should make taxes more progressive so that the burden of the war falls more on those who have more resources. This is desirable on both equity and social-solidarity grounds. For example, the Roosevelt administration set a 90% tax rate for the top income bracket during WWII. Ukraine has a flat personal income tax with a rate set at 18%. The existing military levy (introduced in 2015) is also a flat 1.5% of income. If the government cannot make these taxes progressive, it can introduce a progressive 'war surcharge' (for example, the surcharge would apply only to income or capital above a certain threshold) that may be easier to accept politically and could be rolled back after the war. Higher taxes on luxury items can also help to make taxation more progressive. The tax rate increases should apply to other direct (for example, corporate profit tax) and indirect taxes (for example, value added tax, excises on alcohol and tobacco).

D. Controlling government spending

The government is pressed not only to shoulder huge military spending but also to expand social programmes to ameliorate home, job, and other losses. Because we do not have enough information to make recommendations on military spending, we focus our discussion on non-military items.

Prudence and restraint should be the leitmotiv in this context. Consistent with the objective of reallocating resources intertemporally, the government should temporarily curtail development budgets. For example, *regular* maintenance of roads, bridges, and other infrastructure can be postponed until the war is over. Unless critically necessary, capital projects should be postponed. In this way, the government should effectively borrow from the future by allowing the existing stock of capital to depreciate.

The need to provide safety nets is urgent and clear: the UN estimates that approximately 12 million Ukrainians need humanitarian assistance. Still, the government can be more efficient in its provisions. For example, it recently decided to fix prices for utilities and other public services. Apart from undermining the financial health of state-owned enterprises and private firms that provide these services and goods and creating a need to recapitalise these providers, this blanket approach is costly because it effectively subsidises households and businesses that can afford higher prices, and because it creates disincentives for saving energy and other critical resources. Current financial assistance to refugees and internally displaced people roughly corresponds to providing basic income. While this approach was adequate in the early chaotic days of the war, the cost of basic income is high. There is no differentiation between vulnerable and relatively well-off refugees, for example. Furthermore, this type of assistance does not create an adequate incentive for refugees to look for jobs, while getting displaced workers back

into the labour force should be a priority for the government. To this end, the government can tie continued assistance to job search and employment in public works.

The government can also shift the cost of some services that are normally covered by the public sector to external parties. Countries routinely donate and receive emergency aid (equipment, fuel, and food) in response to natural disasters. Ukraine can invoke relevant treaties – or otherwise appeal to its allies – to get equipment for firefighters, ambulances, and the police. Doctors Without Borders can provide basic medical services, while the UN and Red Cross can provide (and pay for) medical supplies. Spending on cultural programmes (such as protecting museums and galleries) can be covered by international organisations and NGOs. For example, the World Monuments Fund could repair and preserve national heritage sites. The Ukrainian government can also coordinate with host governments (for example, share information on recipients) to take over more funding for Ukrainian refugees. In a similar spirit, municipal authorities can call on their counterparts in sister cities to get more help with refugees.

Although military spending is the highest priority and hence must be protected from budget cuts, the government may need to re-examine other currently protected items of spending categories. Furthermore, spending should not be tied to pre-war guidelines or objectives (e.g. X% of GDP should be allocated to Y). For example, given that many children and young adults have left the country, the number, locations, and budgets of schools and universities can be recalibrated, freeing up resources for other uses.

E. Seigniorage

Printing money to pay for military expenditures can provide temporary relief for government finances but if taken to excess it stokes inflation and can undermine the economy in the medium-to-long run. The government is currently printing roughly 30 billion hryvnias per month while a sustainable level of seigniorage is likely to be less than 2% of GDP. This is a relatively small sum that is extracted at the price of a high and accelerating inflation as well as regressive taxation and greater misallocation. With the prospect of a long war, the risks of the economy being ravaged by high inflation outweigh the benefits of seigniorage revenue. Less than 10% of wartime US spending during WWII came from seigniorage. *We strongly advise against reliance on seigniorage* as a significant source of revenue for the government.

VI. MONETARY POLICY AND THE EXCHANGE RATE

Fiscal dominance over monetary policy tends to be unavoidable in wartime. But fiscal dominance undermines the independence of the central bank and limits its ability to stabilise the economy. In current Ukrainian circumstances, this reality has created a number of challenges in terms of governance and macroeconomic stabilisation (for example, the Ministry of Finance effectively sets seigniorage plans and interest rates but takes no responsibility – at least legally – for price stability). Taking fiscal dominance as given, we propose a framework for an 'accord' between the monetary and fiscal authorities.

A. Nominal Anchor

Macroeconomic stability requires establishing a nominal anchor for the economy. One option is to focus on inflation targeting and let the exchange rate float. On the other side of the spectrum is a fixed exchange rate with

other variables adjusting to support the exchange rate. Although inflation targeting is normally a better option for small open economies like Ukraine, the wartime conditions are more nuanced.

Indeed, inflation targeting relies on a monetary transmission mechanism with a mapping from policy rates to economic activity. Under extreme levels of uncertainty, the link between interest rates and economic activity may be weak (the war inhibits private lending; demand for credit may be insensitive to interest rates) and may result in volatile interest rates (the central bank may need large changes in the policy rate to achieve the desired results). Furthermore, capital controls blunt the sensitivity of the exchange rate to interest rates, thereby further diminishing the ability of the central bank to control the economy through changes in interest rates. Although a floating exchange rate can help address trade imbalances, the required variation can induce extreme volatility and uncertainty in an economy under duress. (When the National Bank of Ukraine was forced to allow the hryvnia to float during the 2014-2015 crisis, the hryvnia-dollar exchange rate jumped from 12 to 33 before stabilising at 20.) Under current conditions, inflation targeting may fail to provide a durable nominal anchor because inflation expectations in Ukraine are highly sensitive to variations in the exchange rate.

While a fixed exchange rate provides a salient nominal anchor, that exchange rate may become increasingly misaligned over time, subsidising imports and discouraging exports. At the same time, a policy regime with periodic devaluations is unattractive, because it creates expectations of future devaluations, making it hard for the central bank to hold the rate. Such a regime undermines the trust in the nominal anchor and raises inflation expectations.

More fundamentally, the imperatives of fiscal policy would clash with the central bank's attempts to control inflation through its normal policy interest rate instrument. Unless the fiscal authorities enact policies that call forth sufficient domestic savings to fund the government without an excessive attempt to extract seigniorage, high inflation will result, to the economy's detriment. It is up to the fiscal authority to define an inflation objective and implement consistent policies, thereby providing a nominal anchor. In particular, the Ministry of Finance, in coordination with the NBU, must calibrate the interest rates on its debt issuance so that *voluntary* private saving approximately covers the budgetary gap remaining after foreign aid, tax receipts, and any mandated private saving. The NBU should set its policy interest rate consistent with rates on government debt issuance and use its other tools to support this nominal anchor and price stability as well as financial stability. The NBU should take the lead in implementing exchange rate policy through foreign exchange interventions.

Although there is no perfect solution for the exchange rate regime in Ukraine's conditions, a managed float appears to strike a balance between the costs and benefits of these polar cases of floating and fixing. Market forces will guide the exchange rate, but the central bank can limit daily fluctuations (for example, after a necessary adjustment, the NBU can announce that the exchange rate cannot move by more than 0.1%, or another threshold, in either direction on a trading day). The central bank can also determine who can trade in the foreign exchange market (for example, exporters and importers only), thus using exchange controls as another tool to limit swings in the exchange rate. This regime permits more operational flexibility for the central bank to deliver some macroeconomic stabilisation by preserving competitiveness over time (for example, the NBU would not need political approval for changes in the exchange rate). Because the exchange rate can move in either direction

on a daily basis, this regime is less likely to elevate inflation expectations that could arise if a schedule of future increases were pre-announced such as under a crawling peg. In a similar spirit, the focus on limiting *daily* fluctuations rather than defining fixed indicative bands over long horizons into the future will be less taxing on the central bank's credibility. Swap lines with other central banks can help smooth variations in the exchange rate.

B. Capital Controls

Facing the prospect of massive capital flight, the National Bank of Ukraine introduced capital controls almost immediately following the invasion. Purchases of foreign exchange, cross-border transactions, and withdrawals of foreign exchange continue to be restricted. The current outlook (exports are projected to stay well below imports for the foreseeable future) suggests that *continued restrictions are necessary to safeguard foreign exchange reserves.* The government has the capacity to impose stronger controls: it can require exporters to sell a fraction (50% or more) of their foreign exchange receipts, require exporters to 'return' their receipts within 120 days (instead of 180 as currently), ban importers from using pre-payment for transactions above a specified threshold, or limit withdrawals by Ukrainians abroad to 150,000 hryvnias (approximately $4,000) per month per person (rather than per bank) as people can have accounts in multiple banks. Tighter controls should be imposed immediately to limit leakage. A standstill on external debt payments is an essential part of the effort to protect foreign exchange reserves.

By radically constraining choices for potential investment, tighter capital controls will also help the government to mobilise more resources at a cheaper price from the internal capital market.

C. Financial sector policies

The banking system, the key element of Ukraine's financial sector, posted high profits and reported strong capitalisation before the war. Since the Russian invasion, increased credit risk is the main threat to the stability of the banks. Although the NBU projects that the key banks can withstand large losses on their loan portfolios, future recapitalisation of the banks is a near certainty. Injections of capital during the war appear unlikely, given competing budgetary needs, but there should be a plan for recapitalisation of banks after the war to ensure the flow of credit during the reconstruction stage. Apart from providing advance preparations, this plan should help with maintaining confidence in the banking system.

After the 2014-2015 crisis, the NBU gave bank owners three years to recapitalise their banks and restore normative capital adequacy ratios (the NBU also threatened banks with penalties if they failed to recapitalise). With the anticipation of foreign aid for reconstruction, Ukraine should accelerate the process of recapitalisation by direct injections of capital by the government, as was done in the US with Troubled Asset Relief Program (TARP) funds during the Great Recession. Parent companies of foreign-owned banks (such as Raiffeisen and Crédit Agricole) should be encouraged to inject capital into their Ukrainian subsidiaries as part of their contribution to the defence-solidarity effort.

At the operational level, we would highlight several elements. First, to ensure that the banking system continues to function smoothly, it is important to maintain the operational profitability of the banking system even when credit losses cut into banks' core capital. Banks unable to do so would wind down their operations or even shut down, given that shareholders would be unlikely to provide fresh capital. Merging weak banks with strong banks is fraught

with challenges and hence should be avoided (for instance, the banking sector does not have much experience with mergers and acquisitions even in peacetime; asset valuation is unclear in the current conditions).

Second, the government should continue to support banks with credit programmes that effectively provide risk-sharing for the banks and thus make them more resilient to shocks and more willing to issue loans. For example, the government can use the infrastructure for its pre-war 5-7-9 programme of subsidised business loans to this end.[5]

Third, although banks do not have high exposure to exchange rate risk, the central bank has prohibited purchases of foreign exchange to cover positions that became open due to impairment of foreign currency assets. Because the hryvnia was devalued and other adjustments in the exchange rate are likely, the government should offer instruments to cover open positions. Government bonds in hryvnia that are indexed to movements in the exchange rate and are redeemable in two to three years can provide such an instrument.

Finally, given the risks associated with transactions in cash during the war, the government should further encourage electronic payments, bank deposits of pay checks, and the like. This will not only help with tracking economic activity and measuring risks, but it will also mobilise loanable funds.

The government urgently needs resources to pay for the war. Although the banking sector is a potential source of funding (approximately 100 billion hryvnias in banks' liquidity may be directed into government debt), banks are now net recipients of funds (that is, the government repays the banks more than it raises from them). Given the high uncertainty associated with the war, banks have a strong preference for holding large liquid reserves. Although the government prefers to finance its war needs with standard long-term

5 This programme was designed to lower the cost of loans for small and medium firms. Specifically, this programme covers part of the interest payments so that the borrower pays 5%, 7%, or 9% on their loans instead of the market (unsubsidised) rate.

bonds, it should take a more flexible approach. To enhance the liquidity of the government bond market, the Ministry of Finance should offer bonds across the whole range of the yield curve at rates consistent with the market and the NBU should strengthen the standing lending facility and minimise access restrictions, while also potentially increasing the frequency and breadth of liquidity support tenders if warranted.

The government and central bank should recognise that the interest rate on government bonds should be commensurate with the interest rate offered on NBU deposit certificates and other market rates. Forcing banks (especially state-owned banks) to purchase government bonds that will result in nearly certain losses is counterproductive and may result in failed banks and bank runs. Financial repression of this form is a way for the government to mobilise additional resources but at a considerable potential cost.

VII. EXTERNAL EQUILIBRIUM

Given the damage to productive capacity and limited ability to export (although the first ship with Ukrainian grain left Odesa on 1 August, Russia is likely to continue blockading Ukrainian ports), Ukraine is facing a persistent imbalance of trade. Limited access to international capital markets and the stock of foreign exchange reserves held by the National Bank of Ukraine constrain the country's ability to cover trade deficits. Although foreign aid can help to address external imbalances in the short run, government policy is still required to discourage imports and encourage exports.

A first step in this direction is to make the hryvnia more competitive. As discussed above, the 25% devaluation of the hryvnia on 21 July 2022 was a necessary adjustment, but a more durable answer has to rely on market forces.

A managed float can equilibrate the economy both internally (e.g. provide a nominal anchor) and externally (e.g. make domestically produced goods more competitive).

The government can also use other tools to accelerate the adjustment. For example, a binding list of critical imports should be introduced to limit imports to necessities. (The government recently removed the list of critical imports for goods but continued to use the list for services. This was a logical step insofar as the list became practically useless: it had come to cover nearly all goods and so became ineffective.) Import tariffs and duties should be increased (especially on luxury items) to discourage imports and raise more revenue for the government.

The key bottleneck for exports is the blockade of ports. As the government realigns the transportation network towards land-based means via Poland, Romania, Slovakia, and Hungary, it should boost not only military deliveries but also the capacity to export. Capital controls will reinforce these policy measures.

VIII. REGULATORY FRAMEWORK

With a rapidly changing economic environment and military needs, as well as the highly uneven impact of the war on economic activity, Ukraine needs a system to allocate resources quickly and cost-effectively. Historically, wartime governments have relied on a mix of central planning and market-based allocations. In many cases, governments had to play a critical role in the economy to mobilise resources to produce weapons and munitions, given market incompleteness and imperfections (and lack of confidence in the market mechanism during WWII, which occurred in the aftermath of the Great Depression).

But allocating resources through rationing and executive direction requires institutional capacity. Ukraine currently lacks such capacity to micromanage flows of goods and services to meet the needs of the defence and civilian sectors. Hence, the capacity of the government to direct the economy should be used sparingly to maximise effectiveness and minimise distortions (e.g. capital controls are easier to implement and enforce than the allocation of food). Market-based mechanisms could take longer to deliver results (people and business need to be incentivised rather than ordered), but these would be more cost-effective, an important consideration given limited resources. Furthermore, market-based mechanisms can be helpful in reinvigorating the economy, thus providing a larger tax base. To this end, the government should minimise regulation and other red tape that can constrain or slow down the reallocation of labour, capital, and materials in the economy.

On balance, market-based allocations are preferred.

A. Deregulation

As a result of the Russian invasion, some sectors and locations in Ukraine have little to no economic activity currently. The released resources must be employed elsewhere, and government policies should facilitate this large-scale reallocation of resources. The government has encouraged businesses to move to Western Ukraine, where security risks are lower, but this policy has had only modest effects (fewer than 1,000 firms have moved).

This problem can be addressed by a radical liberalisation of markets to accelerate the flow of the workforce and capital towards sectors/regions where the economy can operate robustly. For example, the government dramatically loosened labour market regulations (e.g. firms can fire workers relatively easily and unilaterally suspend elements of labour contracts; workers who would like to quit do not need to give advance notice to their employers).

This approach should be applied to other areas. Land regulation, access to electricity, and other infrastructure should be streamlined to allow easier reallocation for firms. Because many countries suspended restrictions on imports from Ukraine, deregulation of export-oriented sectors can provide an immediate economic boost. Electricity generation is an example: excess supply of electricity in Ukraine is now directed to the EU, which not only gives income to Ukraine but also helps the EU to address the energy crisis engineered by Russia. Perhaps, the government can appoint a high-level official (e.g. 'deregulation chief') to coordinate and push for deregulation.

B. Matching process

The government can also improve the allocation of resources by facilitating the matching process. For example, the Kyiv School of Economics estimates that 7% of housing stock has been destroyed or severely damaged in the war. Many internally displaced people (IDP) live in temporary housing (e.g. school gyms). On the other hand, more than five million people fled the war, thus leaving their homes vacant. There is the potential for utilising vacant housing for the IDPs, to both improve their living conditions and provide a source of income to those who are willing to rent out their homes. The success of Airbnb and similar platforms suggests that matching may be enhanced. The government can use its e-governance app Diia ('Дія') to support the matching process. The same approach may be used to match firms that would like to reallocate to safer areas that have the capacity to host them. More generally, establishing 'exchange' platforms for capital and labour should help with the reallocation of resources.

C. Management of seized assets

Since the start of the war, Ukraine has seized or arrested assets held by sanctioned Russian firms and individuals. This approach resulted in shutting down firms that were controlled by the Russians. Liquidating these assets will likely take time and, for the moment, bring limited revenue. A more productive approach was used by the US during the world wars. Specifically, the US government appointed custodians for assets controlled by German citizens or citizens of countries occupied by Germany (notably chemical plants operating in the US). Custodians could vest (seize) assets or impose supervision (typically in cases where German nationals had a minority stake). Custodians had powers to determine whether a business should be allowed to continue to operate or whether it should be liquidated. To ensure smooth operations, custodians could appoint directors with the same duties and responsibilities as the directors of any other business. Ukraine did something in this spirit in the banking sector: the NBU appointed external management to two Russian-owned banks and these banks continued their operations. This experience could be extended to other sectors; for instance, the government can appoint custodians to operate Russian-owned and other sanctioned assets. The Asset Recovery and Management Agency (ARMA) should play a more prominent role in this context.

D. Price controls

Because high inflation (and especially hyperinflation) is a threat to the economy, many governments have used price/wage controls during wars. While intuitive, this method of preventing price increases can be counterproductive. First, because the economy is constantly hit with shocks, fixed prices result in ever-increasing imbalances, deficits, rationing of goods, and the black market (Ukraine's attempt to regulate prices of gasoline during

the early months of this war resulted in major shortages of fuel). Official price setters inevitably have difficulty keeping up with these changes. Given Ukraine's already large shadow economy and corruption issues, price controls can overwhelm the capacity of the government to enforce fixed prices and amplify existing problems. Shifting economic activity into the shadow will reduce the tax base, thus limiting the ability of the government to pay for the war.

Second, price controls can blunt market-based mechanisms to reallocate/save resources. This dimension is especially important in Ukraine's case because the war has had a highly uneven impact on economic activity and there is an urgent need to restart the economy.

Third, price controls are often justified by the need to ensure solidarity and equal access to goods. However, governments during WWII and other wars lacked the technology to target aid to those most in need. The current level of digitalisation provides alternatives to price controls, such as targeted transfer payments, that can protect vulnerable groups of the population at a lower cost in terms of economic efficiency.

In short, the government should control inflation by limiting seigniorage rather than by fixing prices by decree.

IX. CONCLUDING REMARKS

The Russian war in Ukraine brings death and destruction at a scale not seen in Europe since WWII. Furthermore, the ripples of the war are felt everywhere—from the Ukrainian families who lost their loved ones to African countries that face the prospect of hunger. A long war rather than a blitzkrieg is progressively looking like a baseline scenario. In this case, victory depends not only on how brave and motivated armed forces are but also on who has a stronger economy, who can sustain waging a war effort at a high pace, and

who can muster more resources. This report outlines a set of macroeconomic policies that we believe are necessary to pave a way for Ukraine's victory in the long run.

The wartime experience of many countries – including Ukraine's in 2014-2015 – suggests that the government has to make a number of tough choices. The budget constraints are particularly painful and call for many sacrifices shared by every Ukrainian. The country will have to mobilise more resources to pay for enormous military expenditures as well as to help the population affected by the war. The marathon of this war requires prudence and caution in public finances, a durable nominal anchor, a resilient financial system, a careful management of external balances, and flexibility and efficiency in the allocation of scarce resources. Various branches of the government must coordinate their efforts to this end.

The current situation in the country is most challenging but Ukraine is not alone in this war. The support from Ukraine's allies is absolutely critical, not only for the survival of the country but also for the future of the global order and security. Economic and military aid to Ukraine is the best investment in peace. We call on the global community to support Ukraine in every possible way.

CENTRE FOR ECONOMIC POLICY RESEARCH

This is the second of CEPR's Rapid Response Economics, a new series which is designed to publish research on major policy issues with the utmost speed.

As the conflict in Ukraine continues on into the latter months of 2022, this book outlines macroeconomic policies to put the economy of Ukraine on a sustainable trajectory for the duration of the war. The authors emphasise at the outset that Ukraine's crisis is not a setting for a typical macroeconomic adjustment programme. The country's very survival—and Europe's future—is at stake. This key constraint should condition the design of any programme. Extraordinary challenges must be matched by extraordinary policies and extraordinary support from Ukraine's international partners.

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