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## Russian economy on war footing: A new reality financed by commodity exports

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### 1 INTRODUCTION

The Russian full-scale invasion of Ukraine in 2022 is the most critical juncture for the global economic and security order since World War II. Not only has Europe not experienced this hostilities of this intensity since 1945, but also security is increasingly questioned – and tested – in other parts of the world. After more than 800 days of Russian aggression, it is clear that the war of attrition is a key element of the conflict. Hence, to assess the prospects, one has to understand the economic capacity of each side to continue the war effort. In this Policy Insight, we examine the state of the Russian economy and provide an outlook.

This is a difficult task because economic data are incomplete and possibly manipulated by the Russian government (e.g., Starostina 2022, Demarais 2023) and so we have to rely on a variety of sources and proxies for economic activity. As a result, some of our analysis is tentative and our projections are more uncertain. Furthermore, the outlook is clouded by the uncertainty associated with the future course of sanctions imposed on Russia. Despite these challenges, we identify several key features that characterise the Russian capacity to continue this war of aggression.

First, available data show that the Russian economy is progressively being militarised. Economic activity is dominated by increased government spending and supported by high revenues from energy exports. At the same time, the economy is approximately at full capacity so that further increases in military production will likely to be met with high inflation or decreases in the civilian economy. Furthermore, uneven growth across sectors and regions due to the exploding military spending creates distortions not only for the current economy but also for future dynamics.

Second, economic sanctions have constrained the Russian government in its ability to wage war, but the design and implementation of the sanctions have blunted their effectiveness. For example, restrictions were incomplete and phased in gradually. Some Russian banks continue to have access to SWIFT, a bank messaging system. Europe's deadline for stopping imports of Russian oil was in December 2022 rather than in February when the invasion began, and the oil price cap neutralised some of the effects of the embargo, which originally included an embargo on the provision of services for Russian seaborne oil. These deficiencies gave the Russian government ample space to find workarounds and exploit loopholes. The limited nature of sanctions thus achieved a limited impact. However, Russia's ability to finance the war

critically depends on energy exports and thus remains vulnerable to future sanctions. Furthermore, the Russian economy continues to rely heavily on Western technology, a potential choke point. Finally, secondary sanctions can significantly tighten the screw and inhibit Russia's economic and military capabilities.

Third, although forecasts for the Russian economy are sensitive to assumptions about volumes and prices of energy exports as well as the tightness of sanctions, the long-term outlook is dim even under best-case scenarios. Russia will not be an attractive destination for investment. One can anticipate that most of the investment will be done by the government or at the direction of the government. The working-age population is projected to decline. Technological transfer will likely be limited and distortions in the economy will weigh on productivity growth. As the boost from military spending wears off, supply-side factors will constrain economic growth. We predict that long-run economic growth for Russia will be less than 1% per year.

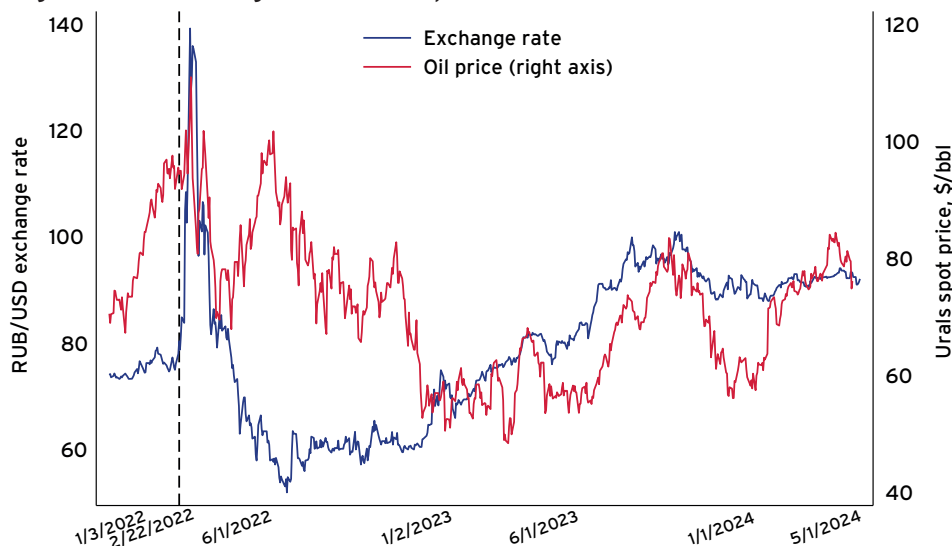
The rest of this Policy Insight is structured as follows. Section 2 summarises macroeconomic developments in the Russian economy since the invasion. Section 3 provides details on the sanctions and their effects. We also discuss forces that helped Russia to weather sanctions. Section 4 is focused on the long-run outlook. We examine professional long-term forecasts and do a basic growth accounting exercise to assess the long-run trajectory for the Russian economy.

## 2 MACROECONOMIC LANDSCAPE

### 2.1 Structure of Russia's economy changing rapidly

Immediately after Russia's invasion of Ukraine in February 2022, economic activity contracted and the country was close to a financial crisis as households queued to withdraw cash from banks. The ruble lost more than 40% of its external value in a matter of few days (CNBC, 2022; see Figure 1). The Russian central bank raised its key rate to 20% and introduced capital controls as well as limits on deposit withdrawals. These measures, alongside the substantially higher current account surpluses as commodity prices skyrocketed but trade sanctions were not yet imposed, were enough to calm the situation during the next few months.

Figure 1 Exchange rate and oil price

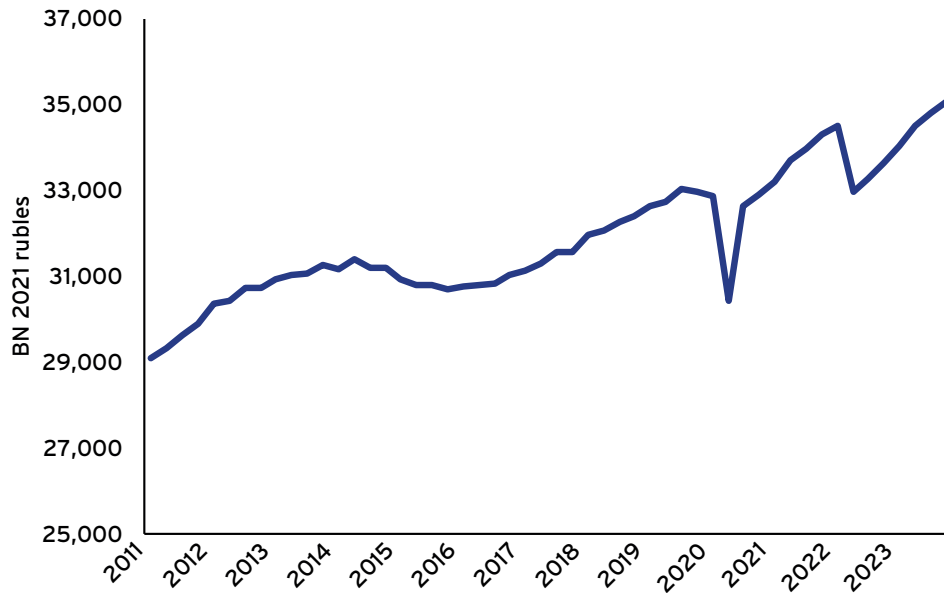


Notes: Urals spot price is Europe CFR Spot.

Figure 2 plots seasonally adjusted real GDP up to the last quarter of 2023. First, we can observe the effect of sanctions and general uncertainty immediately following the invasion of February 2022. In the second quarter of 2022, GDP contracted by 4.4%. In recent years, the only comparable experience was in the second quarter of 2020 when COVID-19 disruptions led to a decline in GDP of 7.4%. Second, we can observe Russia's GDP recovery starting from the third quarter of 2022, when it became apparent

that military action would be (mostly) limited to the territory of Ukraine and when Russia's public sector started an aggressive programme of military procurement. By the second quarter of 2023, GDP was on the same level as in the first quarter of 2022, so in this sense Russia has recovered from the most immediate effects of sanctions and the war. In the fourth quarter of 2023, Russia's GDP was almost 2% higher than in the first quarter of 2022. Looking at annual GDP numbers, in 2022 Russia's GDP declined by 1.2%, whereas in 2023 growth was 3.6%.<sup>1</sup>

Figure 2 Quarterly GDP, seasonally adjusted



Source: Rosstat.

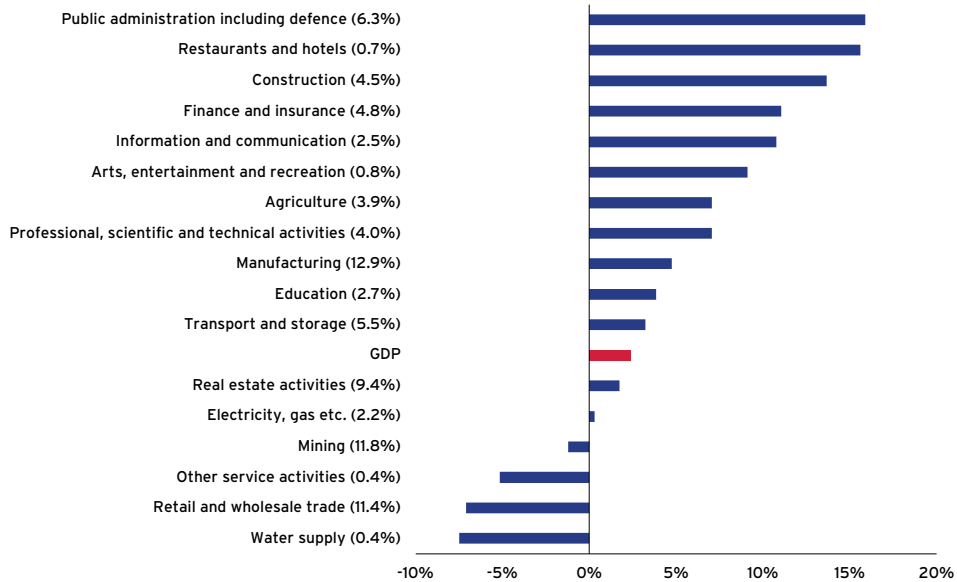
This recovery in Russia's GDP has been accompanied by large changes to the structure of its economy. Some of these changes have been driven by economic policies, and some are most probably caused by sanctions and Russia's decoupling from a large share of the global economy. The overriding theme has very much been a move towards a more war-time economy.

Figure 3 shows the change in value-added by sector from 2021 to 2023. We can immediately note the very large increase (+15.9%) in the value-added of public administration, which includes the military. This is of course a direct result of higher public spending. Indirect results of higher public spending can be found in all sectors of the economy.

Construction activity has grown strongly. In 2022, both housing construction and "other construction" activities grew significantly. Housing activity was up partly due to the government's generous subsidies for mortgage borrowing (BOFIT, 2023). "Other construction" includes transport infrastructure projects especially in Russia's Far East, where increased trade with China demands more capacity. However, it also includes construction activity in regions bordering Ukraine. Most likely, higher construction activity, including fortifications, is actually taking place in the occupied regions of Ukraine. Simola (2024) documents how, in 2022, construction – especially construction other than housing – constituted more than three-quarters of nominal growth in fixed capital investment. In 2023 the focus of investments changed, and investment in war-related industries in particular took a priority.

<sup>1</sup> While GDP is normally related to the welfare of population, this relationship may be less clear during war. For example, when an old Soviet tank is retrieved from storage, fitted with new electronics and optical equipment, sent to Ukraine and destroyed there, Russia's GDP increases. It is not obvious what has happened to the welfare of Russians, although workers upgrading the tank have of course been paid. One can expect that welfare would be higher if the government just transferred wages to workers (and other input providers) without asking them to produce anything.

Figure 3 Change in sectoral value-added, 2021 to 2023

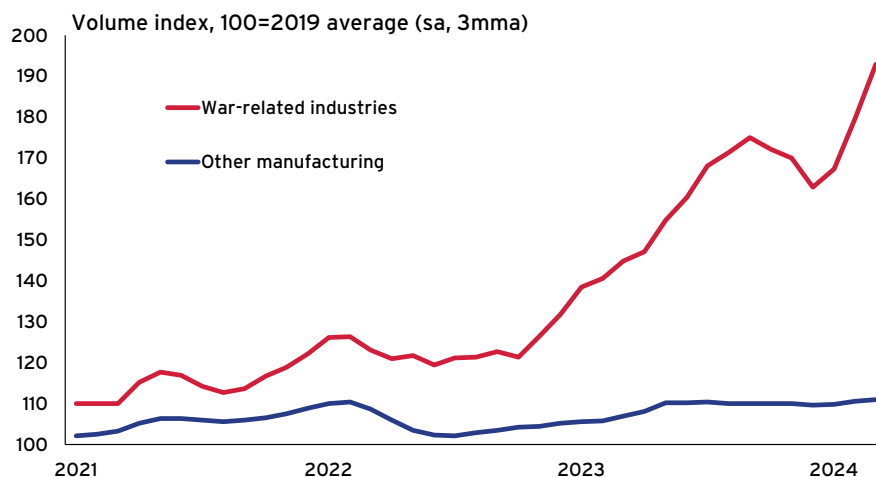


Notes: The sectoral shares in 2021 GDP are in parentheses.

Source: Rosstat

Manufacturing value-added is also clearly up. However, there is significant variation across subindustries. Simola (2023) shows how subindustries directly related to Russia's military (manufacturing of fabricated metals, manufacturing of computers, electronic and optical equipment, and manufacturing of other transport equipment) have grown much faster than other branches. Figure 4 shows the evolution of production in these sectors compared to all other subindustries of manufacturing. In the first quarter of 2024, production in war-related industries was some 60% higher than before the invasion, while production in other industries was flat in comparison to the beginning of 2022. In 2023, war-related industries accounted for the bulk of industrial growth. This is another indicator of Russia moving towards a war-time economy.

Figure 4 Production by sub-industries of Russia's manufacturing



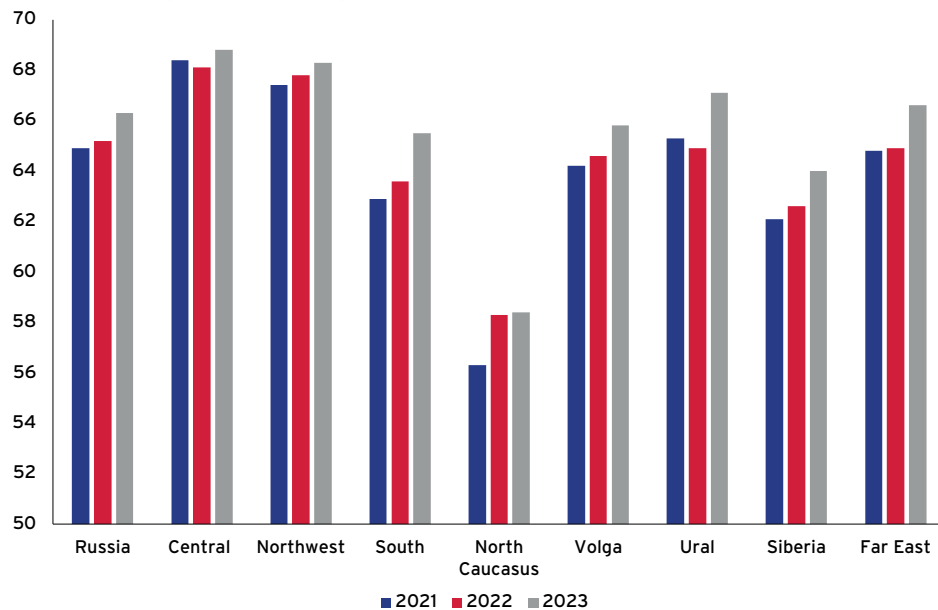
Source: Updated from Simola (2023).

Both mining and especially retail and wholesale trade saw declines in value-added between 2021 and 2023. This is a significant development because these sectors are large, accounting for 11% to 12% of GDP. Mining activity declined especially because sales of natural gas to EU countries have collapsed; OPEC+ restrictions on crude oil production have contributed to the decrease. Value-added of trade contracted by more than 7% over two years. The interpretation of this decrease is obvious: resources have been shifted from private consumption to sectors related to fighting the war against Ukraine.

Kurbangaleeva (2024) assesses the economic performance of different Russian regions after the February 2022 invasion. She notes that regions with large concentrations of machine-building industries in particular have benefited from drastically increased public procurement of military equipment. In addition, some poor regions in Russia's Far East have benefited from an increase in transport infrastructure investment, as Russia tries to redirect its foreign trade more towards China. Public procurement is not the only channel through which public spending reaches households in different regions. Solanko (2024) documents how bank deposits have risen much more in the poorer regions, which have sent proportionally more people to the military. Soldiers' salaries are higher than what these people used to earn in their home region, which boosts deposits. In addition, the families of those killed or seriously injured in action receive substantial payments from the government. These payments then show up in household deposits.

Figure 5 depicts the employment rate (which includes workers in war-related industries) in Russia's federal districts. Districts that were already relatively more affluent, like the Central and Northwest districts, saw only very small increases in employment. On the other hand, Ural and the Far East experienced much larger employment increases for reasons outlined above. These regional developments reflect higher public spending post-invasion. For many households in Russia's regions, the war and the spending increases associated with it have resulted in higher employment and income levels.

**Figure 5** Employment rate in Russia's federal districts  
(percent of employed 15-72-olds)



Source: Rosstat

## 2.2 Fiscal policy much looser than before

A key driver of Russia's economic growth since the invasion of February 2022 has been the increase in public spending. Military expenditures have increased and are set to increase much more in 2024, but other types of public spending have witnessed increases too. In 2022, consolidated public expenditure (federal, regional and municipal budgets as well as state social fund budgets) rose 17% compared with 2021. Nominal spending grew faster than inflation, and so there was a clear increase in real expenditures as well.

In 2023, growth of nominal consolidated public expenditure was 14%, while inflation was approximately 6%. Real growth in public expenditure accelerated last year. The budget deficit was approximately 2% of GDP both in 2022 and 2023. These deficits were financed by domestic borrowing and drawing down on the National Welfare Fund (NWF), Russia's reserve fund. At the end of 2021, the liquid portion of the NWF

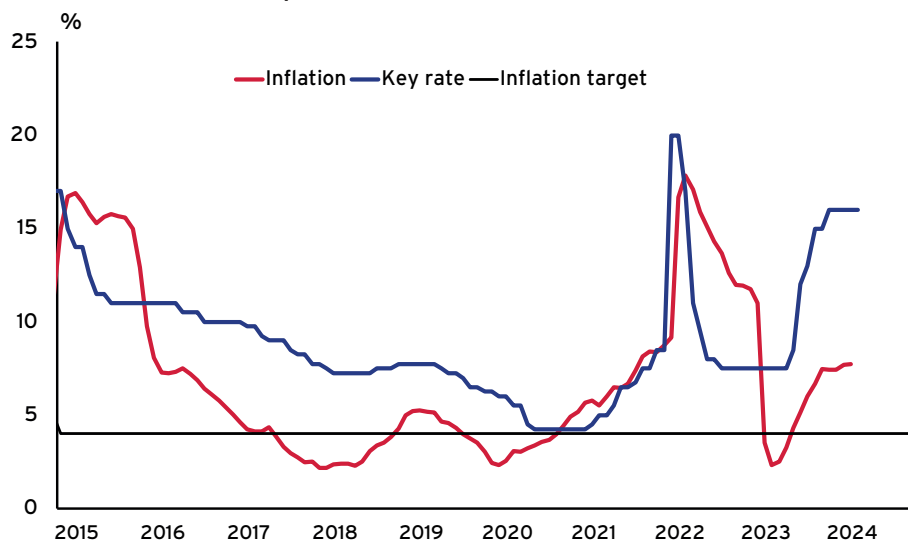
was \$113.5 billion (6.5% of Russia's GDP), while in March 2024 the liquid funds were only \$55 billion (2.8% of GDP). However, given Russia's very low public debt (~14% of GDP at the end of 2023), the government can continue to finance deficits experienced in 2022 and 2023 for many years.

Much of the expenditure increase has been concentrated in defence and internal security. In 2024, spending in these areas is set to increase further. Total federal expenditure is budgeted to increase 13% in 2024, but military expenditures by are set to grow by almost 70%. Military spending will account for almost one-third of federal expenditure. Increasing purchases of military equipment have led to much more activity in war-related industries, as noted before, but obviously they have boosted activity in other sectors as well.

### 2.3 Strong increase in wages and prices

After the initial shock of Russia's invasion and sanctions, Russian consumer prices jumped up. In April 2022, 12-month inflation reached 17.8%, compared with 8.4% in December 2021. Prices increased partly as a response to the sharp depreciation of the ruble (see Figure 1) and partly as a response to hoarding of many staples. To stabilise inflation expectations and halt the slide of the ruble, the Central Bank of Russia was forced to hike its key interest rate to 20% and to introduce many restrictions on capital movements.

Figure 6 Annual changes in consumer prices and the Central Bank of Russia's key rate



Source: Rosstat and Bank of Russia.

Figure 6 shows how inflation decelerated after its initial spike in the spring of 2022, which also allowed the central bank to lower its key rate – by September 2022 it was 7.5%. However, in the summer of 2023 inflation started to creep up as public expenditure growth strengthened. To counter this, the central bank started to increase its key rate again and it currently stands at 16%, significantly above the current inflation rate, which has oscillated between 7% and 8% for several months. All in all, Russia's consumer prices have increased some 25% since the beginning of 2022.<sup>2</sup> Higher interest rates are also needed to prop up the external value of the ruble, even though many restrictions on capital movements remain. Russia has a current account surplus, but very few capital inflows.

<sup>2</sup> One may expect that this estimate understates the rate of inflation in Russia. The quality of many consumer goods has been downgraded (for example, German cars have been replaced with Chinese cars) and, to the best of our knowledge, quality adjustments have not been made in official statistics. This also means that the real interest rate may be lower.

A very tight labour market manifests itself in many ways. Unemployment is at an all-time low and, as noted above, employment has clearly increased, especially in areas where it used to be lower. Moreover, real salaries have increased substantially. This increase first occurred mostly in sectors receiving state orders, but over time other sectors have also increased their salaries to attract workers. Since summer 2023, the nominal increase in average wages has usually been above 15% year-on-year, and in the first months of 2024 wage increases have been around 20%. Therefore, Russia's war economy is currently giving providing Russians with significantly higher real wages than before.

As long as public expenditures continue to grow at the current pace and the labour market remains very tight, inflation will remain high.

### 3 SANCTIONS ON THE RUSSIAN ECONOMY

International sanctions against Russia did not begin with the full-scale invasion of Ukraine on 24 February 2022 – some measures, including by the US and the EU, date back to Russia's illegal annexation of Crimea and instigation of armed conflict in Eastern Ukraine in 2014 – but they took on an entirely different magnitude following the full-scale invasion. The EU adopted the first of the now 13 sanctions packages on the eve of the invasion and in response to Russia's recognition of two separatist republics (European Council, 2024). The US imposed its first sanctions on 21 February 2022, followed by the UK on the next day (Brown, 2023).

Since 2014, Russia has been subjected to sanctions following its invasion of Crimea and other territories of Ukraine. Initially, the US and the EU primarily employed financial sanctions, aiming to compel Russia to withdraw from Ukraine and reintegrate into global financial markets. Financial sanctions proved particularly impactful, imposing significant costs on Russia while having a negligible effect on the economies implementing them. Given the inadequacy of its domestic financial markets, Russia relied heavily on global financial markets to support its oil and gas companies in global commodity markets. Simultaneously, Russia's limited share in global markets meant that its exclusion had minimal repercussions on the broader markets. The 2014 sanctions imposed a cost on Russia's economy but failed to change its behaviour. Korhonen (2019) summarises economic research on the effects of earlier sanctions on the Russian economy. The sanctions had contributed to lower GDP levels, with the effects coming most likely via both lower foreign trade and the decoupling of Russia's financial system from the rest of the world. In addition, Russia's own counter-sanctions had led to lower consumption level in the country.

In response to Russia's 2022 full-scale invasion of Ukraine, the US, the EU and over 30 other countries responded with a significant escalation in sanctions. A coalition of countries opposing Russia's actions imposed a comprehensive package consisting of financial sanctions, unprecedented export controls, restrictions on Russia's exports (including energy), and individual sanctions. This multi-pronged approach reflects a concerted effort to exert pressure and signal strong disapproval of Russia's war on Ukraine.

The sanctions imposed against Russia in 2022 were unparalleled in several aspects. First, they sought to isolate an economy deeply entrenched in global commodity markets. Second, they ventured into highly liquid global product markets such as oil and technological components, where none of the coalition countries held an absolute advantage. This stands in stark contrast to financial markets, where US-based systems and the US dollar unequivocally enjoy a leading position. Third, these sanctions were executed with remarkable coordination, representing unprecedented multilateral cooperation.

The multilateral approach has been a key hallmark of the sanctions implemented following Russia's 2022 invasion of Ukraine. Historically, the US has not consistently pursued multilateral actions, occasionally causing friction with its partners. However,

the dynamics changed significantly in 2022. Moreover, while the EU has traditionally deemed the extraterritorial application of sanctions as illegal (European Commission, 2024), recent months have witnessed a noticeable shift in the ongoing debate on this matter.

### 3.1 Key measures: Finance, technology, and energy

#### *Financial sanctions were implemented shortly after the invasion*

The arsenal of remaining financial hard-hitting measures was quickly exhausted. Most of the measures were either used or telegraphed in 2014, allowing Russia to prepare. A notable exception was freezing Russian reserve assets, which took Russian authorities by surprise and limited their policy space, forcing the Bank of Russia to resort to capital controls.

Restrictions on the Russian financial sector were adopted shortly after the start of the full-scale invasion and include prohibitions on transactions with several large Russian banks – essentially cutting them off from the US and European financial systems – as well as their disconnection from the SWIFT global financial messaging system (Institute of International Finance, 2022a; 2022b). In addition, coalition countries immobilised reserves of the Russian central bank under their jurisdictions – around \$300 billion, according to the latest estimates (Hilgenstock et al., 2024a). Financial sanctions also included restrictions on trade with Russian sovereign debt, some of which had been in place since 2014 and were progressively tightened thereafter in the context of Russia's interference in the 2016 US presidential election and the poisoning of Sergej Skripal in the UK in 2018 (Congressional Research Service, 2019; Institute of International Finance, 2020). These measures aimed to erode the banking system's ability to provide credit to the private sector and fund the government via purchases of domestic debt.

Nonetheless, the Russian financial system is still not comprehensively sanctioned, with many banks and types of transactions exempt from sanctions. Key institutions such as Gazprombank are exempt due to their critical role in Russia's foreign trade. Furthermore, restrictions are not consistent across coalition jurisdictions. It is also important to highlight that money is much more fungible than physical goods and, thus, can find its way via financial centres in third countries (e.g., Hong Kong, Singapore, Dubai) that are not part of the sanctions coalition (Hilgenstock et al., 2024b).

#### *Unprecedented export controls but difficulties in enforcement*

In the aftermath of Russia's full-scale invasion of Ukraine, a coalition of countries – including EU member states, the US, the UK, Japan, and South Korea – imposed unprecedented export controls on the Russian Federation, including on dual-use goods (Bilousova et al., 2024). The objective of these measures was to deprive the country's military industry of important inputs needed for weapons production. Export controls are not a new element of economic statecraft. During the Cold War, a comprehensive approach was implemented in the form of the Coordinating Committee for Multilateral Export Controls (CoCom) to limit the Soviet Union's (and its allies') access to critical technology (Mastanduno, 1992).

The sanctions regime against Russia has fundamentally changed the scope of export controls, however (Bilousova et al., 2024; Hilgenstock et al., 2024b, Ribakova 2024a). In contrast to Soviet times, Russia was well integrated into the global economy when the full-scale invasion started. It had access to and used modern Western technology. Thus, this is a real test case of 21st-century export controls – or, more broadly, technology sanctions – and, as such, holds a place of critical importance beyond the specific case of Russia's unjust war against Ukraine. After all, such measures are rightfully seen as a new frontier in economic statecraft (Demarais, 2023; Miller,



2022). However, the scale of export controls and the new innovative rules applied on the scale of an entire country also mean that implementation and enforcement are challenging (Ribakova 2024a).

#### *Energy sanctions introduced in 2023*

Russia depends on its exports of oil and gas for macroeconomic stability and government financing. Thus, restrictions on these goods are perhaps the key measure to limit funding available for the war – in the form of foreign currency inflows into the economy as well as of budget revenues. In addition, these measures aim to erode overall macroeconomic stability, trigger painful policy trade-offs, and change Russia's risk calculus regarding future conflicts.

Several countries, among them the US and UK, banned Russian oil and gas in early 2022, but the most important measures in this sphere did not materialise until December 2022 and February 2023, when the EU embargo and G7 price caps on crude oil and petroleum products, respectively, took effect (Brown, 2023). In the year before the full-scale invasion, EU member states accounted for nearly 50% of Russian crude oil and over 50% of petroleum product export – by far the most important market for these goods (Babina et al., 2023; Hilgenstock et al., 2023a). With these measures, energy sanctions finally began in earnest.

Russian natural gas exports are still not under sanctions by the EU or other key buyers. Instead, these countries diversified suppliers to end strategic dependencies on Russia. Restrictions on foreign investments in Russia's oil and gas extraction industry have been in place since 2014 and deprived the sector of important investments for development of new fields. The US has also imposed extraterritorial sanctions on parts of Russia's export infrastructure, including the Nord Stream 2 natural gas pipeline (Congressional Research Service, 2022) and the Arctic LNG 2 project. Finally, imports of Russian coal have been banned by coalition countries, including by the EU (Brown, 2023).

#### *Additional restrictive measures*

Coalition countries have restricted imports of additional goods that generate substantial foreign currency inflows for Russia (e.g., diamonds) or play a role in Russia's geopolitical reach. Restrictions have also been placed on exports to Russia from coalition countries with regard to, among other things, luxury goods. Another key area are individual sanctions on members of the Russian government, the regime's propaganda apparatus, personnel of key companies, and oligarchs. These have a very different objective as they do not aim to erode Russia's ability to continue the full-scale invasion of Ukraine but rather target individuals involved in the conduct of the war. Finally, there have been steps taken to demonstrate Russia's pariah status, including bans on the participation of Russian athletes and sports teams in some international competitions as well as the exclusion of Russia from certain institutions.

Taking stock of the measures taken so far, we can draw some early conclusions. First, the most important measure remains restrictions on Russian energy exports, particularly oil. The fact that the measure was taken much later into the war and was somewhat watered down means that Russia had the critical policy space to adjust towards a war economy. Second, sanctions require constant modifications as their target adapts, which is evident in the Russian case. Third, multilateral coordination is critical for sanctions to be effective in the modern, highly interconnected world where usually no country has absolute control over any product or market. Finally, as Russia has adjusted towards a war economy, its new economy might itself end up prolonging the war (Ribakova, 2024b).

### **3.2 Impact of sanctions**

Clearly, Russia remains capable of inflicting terrible damage on Ukraine. Have sanctions failed? No. They have achieved what they could considering their limited nature, a macroeconomic environment supportive to Russia for an extended period,

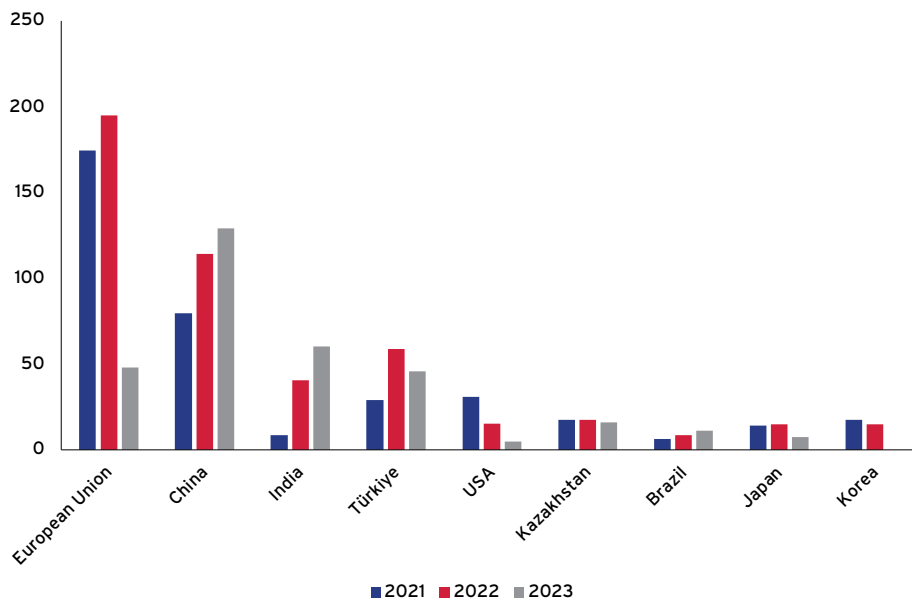
authorities' preparations in recent years and their policy response, as well as support for Russia from countries outside of the sanctions coalition. This section documents key economic developments over the last two years and discusses reasons for Russia's resilience.

#### *Less supportive external conditions*

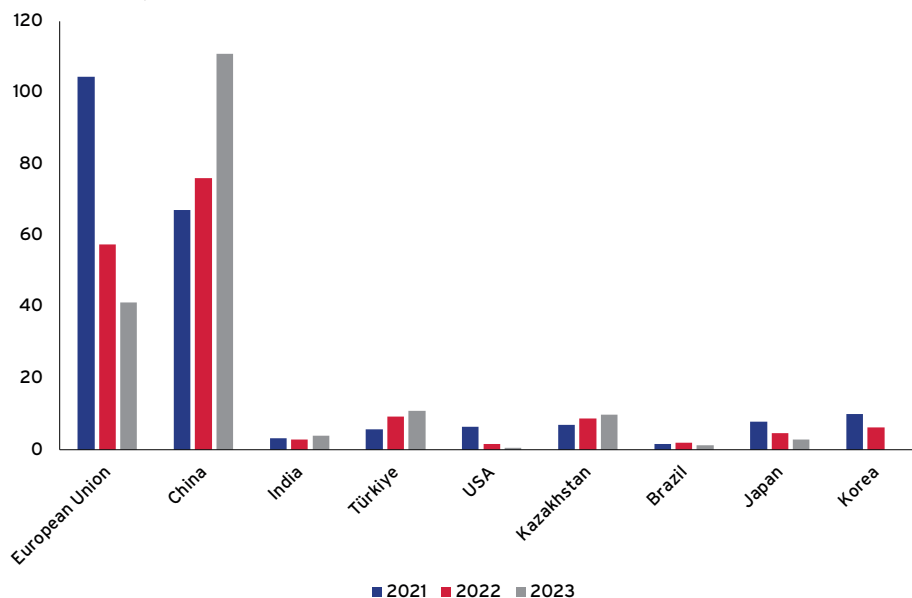
Russia's foreign trade is perhaps the area where sanctions have had the most fundamental impact on macroeconomic stability, but they did so with a significant delay. For most of 2022, Russia benefitted from soaring energy prices (Figure 1) and the slow phasing-in of restrictions on key exports. Global oil prices rose sharply in the immediate aftermath of the full-scale invasion as markets priced in geopolitical risks, while Russian export volumes remained stable. Furthermore, the Putin regime's attempts to weaponise natural gas flows led to soaring prices, especially in Europe. Consequently, Russian goods exports reached an all-time high of nearly \$600 billion. At the same time, imports remained suppressed for most of 2022, resulting in a trade surplus of \$316 billion and a current account surplus of \$238 billion – both the highest on record (Central Bank of Russia, 2024a).

**Figure 7** Russia's external trade

**A) Russia's exports (US\$ billion)**



**B) Russia's imports (US\$ billion)**



Source: United Nations Comtrade.

All of this changed with the taking effect of the EU embargo on Russian oil exports and the G7 price caps on crude oil and petroleum products in late 2022 and early 2023. Together, these measures delivered the intended stability in global energy markets while forcing Russia to accept sharp discounts to find alternative buyers. At the same time, Europe successfully diversified natural gas supplies, resulting in falling prices and sharply lower export volumes for Russia. While the sanctions regime is plagued by enforcement challenges and Russian attempts at circumvention (Hilgenstock et al., 2023b; 2023c), its impact is still visible. In fact, Russia is estimated to have lost more than \$110 billion in export earnings from oil due to sanctions (Dodonov et al., 2024).

#### *Weaker ruble and higher inflation*

The most visible result of a less supportive external environment is the significant depreciation of Russia's currency since the autumn of 2022. The ruble has lost around 40% of its value against the US dollar and even more against the euro. At times, the exchange rate even approached the psychologically critical level of 100 rubles per US dollar. Together with inflationary risks emerging with a weaker currency, this triggered a significant policy response by the Central Bank of Russia, which increased its key interest rate to 20% up from 9.5% before the invasion (Central Bank of Russia, 2024b). In addition, capital controls were reintroduced in recent months, including mandatory conversion of foreign currency by exporters. While these measures succeeded in stabilising the ruble and even reversing some of the depreciation, they constitute painful steps that will have negative medium-term consequences for economic activity. Driven also by domestic factors such as the large fiscal stimulus from military spending, inflation continues to rise. It will likely stay elevated, but not unprecedented compared to Russia's history of double-digit inflation.

#### *Limited pressure on the budget*

Throughout 2022, the Russian budget benefitted from high prices for key exports, including oil and gas. Despite war-related expenditures and the economic recession, Russia ended the year with a deficit of only around 2% of GDP (Ministry of Finance of the Russian Federation, 2024a). In early 2023, it looked as if this was changing, with energy sanctions weighing on revenues and the deficit widening rapidly. However, several factors led to a significant improvement: higher global oil prices, Russia's growing ability to work around the G7 oil price caps, the weaker ruble, an economic recovery driving a rebound in non-oil and gas revenues, as well as relative expenditure restraint. Ultimately, the full-year deficit of another ~2% of GDP for 2023 landed close to the original budget target (Ministry of Finance of the Russian Federation, 2024a). Importantly, the government was able to spend 10% more than planned due to revenue overperformance.

#### *Macroeconomic buffers remain*

The much-improved budgetary situation has allowed authorities to reduce withdrawals from Russia's National Welfare Fund (NWF) as well as domestic borrowing. This means that the NWF remains largely intact as a macroeconomic buffer, although all hard currency assets have now been sold and the remaining liquid funds consist entirely of yuan and gold (Ministry of Finance of the Russian Federation, 2024b). In addition, banks have ample room to step up the absorption of additional government debt should the need emerge to issue more.

In one critical area, however, sanctions have had a powerful impact on macroeconomic reserves. Coalition countries immobilised roughly \$300 billion of Central Bank of Russia assets abroad (more than 50% of total pre-February 2022 holdings) and what remains largely consists of yuan-denominated assets and gold, which are harder to convert at scale (Hilgenstock et al., 2024a). Current discussions about the confiscation of sovereign reserves aside, Russia will not regain access to these assets as long as

its war of aggression on Ukraine continues. That said, Russia's significant current account surplus in 2022 likely allowed it to accumulate new reserves outside the Bank of Russia, which is under sanctions.

#### *Continued access to critical imports*

Despite unprecedented export controls imposed on it with the objective of constraining the capacity of its military industry, Russia continues to be able to acquire imports essential for its war effort, including advanced microelectronics. Since restrictions were placed on military and dual-use goods after the start of the full-scale invasion, supply chains have adapted and most of the items in question now reach Russia via intermediaries in third countries, including, most notably, China. However, a large share of these imports ultimately stem from producers located in coalition countries, pointing to significant challenges regarding export controls enforcement (Bilousova et al., 2023; Bilousova et al., 2024). Fundamentally, companies producing these goods are not properly incentivised to control supply chains, and government agencies lack resources and experience to investigate transactions. At the same time, for many or even the most sanctioned goods and components, Russia's total imports are now below their pre-invasion levels (Korhonen and Simola, 2024). However, there is considerable variation regarding the recovery in Russia's imports, and in some goods imports are now even above their pre-invasion levels.

### **3.3 How Russia can carry on despite sanctions**

The performance of the Russian economy in 2022-23 – as well as the somewhat positive overall outlook for this year and beyond – pose the question of whether sanctions are failing to achieve their objective of reducing Russia's capacity to continue its war on Ukraine. The answer is, unsurprisingly, complex. In our view, several factors contribute to this outcome. First, the existing sanctions regime is far from comprehensive and important measures were phased in slowly over the past two years. Second, Russia has benefitted from an extraordinarily positive external environment for an extended period, which provided policymakers with a lot of policy space. Third, Russian authorities had prepared for potential sanctions for many years, and their management of the external shock has been competent. Fourth, the economy has been supported by a massive stimulus stemming from soaring military spending. Fifth, there are many countries that have not imposed sanctions on Russia and play a critical role as buyers of Russian goods that are no longer being exported to Europe and suppliers of inputs that Russia can no longer buy from its traditional trading partners. We will take a closer look at these factors below.

#### *Gaps in the sanctions regime*

The sanctions regime has provided Russia with ample opportunities to take advantage of loopholes and the slow phase-in of important measures. It is simply impossible to undermine the macroeconomic stability of a commodity-exporting country in times of soaring commodity prices if no decisive measures are taken to restrict export volumes. This is exactly what happened in 2022: European countries, which are the only ones within the coalition that truly matter for Russia's foreign trade, made the conscious decision to delay the oil embargo's taking effect as they themselves required time to prepare and find alternative suppliers. As a result, Russia found itself in the best of all worlds: energy prices rose sharply due to geopolitical risks, and volumes remained stable. The outcome was an all-time high current account surplus of \$238 billion in 2022. Another area where measures were far from comprehensive is financial sector sanctions. The coalition sanctioned several large Russian banks and disconnected many of them from the SWIFT global financial messaging system. But as no decision had been made to stop trade with Russia and Europe remained dependent on Russian energy, it was necessary to leave certain channels for cross-border transactions open. For example, Gazprombank, one of Russia's largest banks, and Raiffeisen Bank, a large Austrian bank, are exempted from sanctions. Not surprisingly, the Russian financial system has been able to adapt.

*A favourable external environment*

Russia experienced an extraordinarily positive terms-of-trade shock in 2022, which partially offset the effect of the war and sanctions. While Russian GDP contracted, many other commodity exporters saw strong growth (International Monetary Fund, 2023). For example, the GDP of Saudi Arabi grew 8.7% in 2022 and so one could have expected Russia to grow about 5% given the high energy prices. But, as mentioned above, soaring energy prices also drove up foreign currency inflows and provided Russian authorities with ample policy space to manage the economy, despite sizeable capital outflows (\$235 billion in 2022 alone) (Central Bank of Russia, 2024a). Specifically, the Russian central bank was able to simultaneously address monetary stability (i.e., strengthening the ruble and fighting inflation), by hiking interest rates, and financial stability (i.e., the health of the financial system), by providing banks with ample liquidity to continue to provide credit to the private sector and fund the government. This would not have been possible without the large FX inflows stemming from oil and gas sales. Finally, the supportive external environment also provided the government with extra revenues, although the strong ruble weighed on the local currency value of extraction taxes and export duties that are calculated in US dollars and then converted.

*Preparations and policy response*

Since 2014, when sanctions were first imposed over the illegal annexation of Crimea and the instigation of the military conflict in the Donbas, Russia's authorities have undertaken concerted efforts to prepare for additional measures and to insulate the economy from international sanctions (Hilgenstock and Ribakova, 2023; Institute of International Finance, 2020). First, policymakers committed to and invested in stronger macroeconomic management focused on stabilising the economy in the face of potential external shocks. The Central Bank of Russia introduced inflation targeting and the Ministry of Finance supported it through the re-instatement of the fiscal rule, which mandates purchases of foreign currency in the case of high oil prices to benefit the National Welfare Fund. Not only did this led to the build-up of significant macroeconomic buffers – at the end of 2021, NWF assets amounted to 13.6 trillion rubles (\$183 billion or 10% of GDP) (Ministry of Finance of the Russian Federation, 2023a) – but it also decoupled the ruble exchange rates from oil price swings. Second, the central bank improved its financial markets infrastructure, investing in a domestic alternative to SWIFT – the Financial Messaging System (SPFS) – and requiring foreign card issuers (e.g., VISA and Mastercard) to channel transactions through the domestic settlement system (Central Bank of Russia, 2024c). Finally, the central bank strengthened supervision and regulation of the banking system, as well as investing in the digitalisation of the financial industry, which expanded the system's credibility and prepared it for shocks (Central Bank of Russia, 2023a).

But not only had authorities prepared for the possible imposition of new restrictions, they also managed the ensuing stress episode in a competent fashion. The ruble quickly recovered from its dramatic depreciation in the early days of the full-scale invasion; inflation began to trend downwards within the first couple of months; the banking system remained stable and provided sufficient credit to support the economy's recovery; and the budget deficit was contained and its financing never became a challenge. The central bank achieved all this while being deprived of access to more than half of its reserves.

*Large war-related fiscal stimulus*

As we discussed above, Russia has switched to a war economy and soaring military spending is providing substantial fiscal stimulus. The government is estimated to have spent around 6.5 trillion rubles on defence in 2023 – an 80% increase over the pre-war (2021) level.<sup>3</sup> In 2024, Russia plans to significantly increase this once more

3 <https://twitter.com/jakluge/status/1701198242329805148>

to almost 11 trillion rubles (around \$100 billion) (Ministry of Finance of the Russian Federation, 2023b).<sup>4</sup> As we discuss later, we believe that substantial underlying vulnerabilities, such as the lack of foreign investment and insufficient supply of skilled labour, will weigh on activity in the medium run (Hilgenstock and Ribakova, 2023; Ribakova, 2023a). The large war-related stimulus has other, more immediate, negative consequences such as upward pressure on inflation from an economy that is close to overheating (Prokopenko, 2024).

#### *Russia's old friends and new partners*

Finally, the Russian sanctions regime is far from global. The share of world GDP in 2023 accounted for by coalition countries stands at around 58% (International Monetary Fund, 2023). Several large economies, including China and India, have not aligned their policies with the sanctions regime. As a result, they support the Russian economy by buying goods that are no longer reaching their traditional export markets in Europe and by supplying inputs that Russia can no longer acquire from coalition countries (Figure 7). An important example of the former is India's emergence as the second-biggest buyer of Russian crude oil (International Energy Agency, 2024). An example of the latter is China's role in the trade of advanced electronics, which Russia's military industry needs for the war effort (Bilousova et al., 2024). Furthermore, support is not only coming from state actors but also from companies that choose to remain in the Russian market. While many have decided to leave – and at times have written off their previous investments – others continue to do business in Russia (Onoprienko et al., 2024).<sup>5</sup> Their activities are not only contributing to the economy's recovery, but also result in tax payments (Stognei, 2023) to a regime that is waging a war of aggression in Europe. Clearly, their continued presence allows the regime to downplay the sanctions' effectiveness to the Russian population.

## 4 LONG-TERM OUTLOOK FOR THE RUSSIAN ECONOMY

Any long-term forecast requires humility and recognition of significant uncertainty. The fog of war amplifies this uncertainty for Russia's economy. As a result, our analysis is rather tentative, but we hope it highlights key elements needed to understand the possible trajectories for the Russian economy. In a first step, we examine the evolution of the economy after 2014, when Russia annexed Crimea and occupied parts of the Donbas and, as a result, faced modest sanctions from the West. We use this episode to understand the quality of professional forecasts (Consensus Economics) and to underscore challenges in forecasting the Russian economy. Then we examine the current long-term projects from professional forecasters. Finally, we do basic growth accounting for the next five to ten years.

### 4.1 Dynamics after 2014

Panel A of Figure 8 shows the average forecast for the growth rate of GDP at various points as well as the actual growth rate. As of September 2013 (that is, before the annexation of Crimea and the partial occupation of the Donbas), the Russian economy was projected to grow by about 3.5% per year in the medium to long run. In March 2014, when it became clearer that Russia was going to intervene in Ukraine, the forecast was revised down by approximately one percentage point. The closest post-annexation forecast (July 2014) projected essentially no growth in the short run but modestly raised the long-term forecast by about 10 basis points. The subsequent dynamics of forecasts and actual GDP were largely driven by the collapse of oil prices in the second half of 2014 rather than sanctions. Consistent with this observation, disagreement in forecasts – which can proxy uncertainty in forecasts – did increase after the annexation, but it was the negative oil price shock that pushed disagreement

<sup>4</sup> Looking ahead, a key question is what the Russian economy will look like once this stimulus is ultimately removed when the war ends.

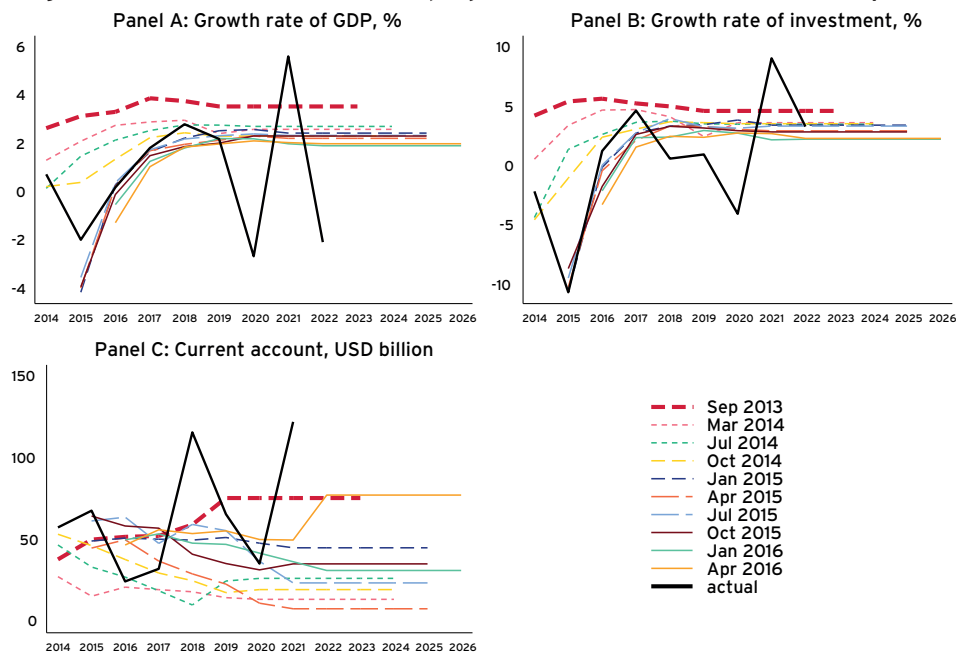
<sup>5</sup> See also <https://leave-russia.org/about-project>.

to a high level. As oil prices gradually recovered in 2016-2018, the Russian economy resumed growth. However, forecasters remained sceptical and reduced long-run growth projections to 2% per year from the 3.5% that they projected in the end of 2013.

We observe similar, but somewhat different, dynamics for the growth rate of investment (Panel B of Figure 8). The initial pre-Crimea/Donbas long-term forecast of approximately 5% per year was revised down in early 2014. The oil price drop in 2014 resulted in a significant contraction of investment (actual and forecast) followed by some recovery in 2015-2017. Then investment stagnated in 2018-2019. Interestingly, while professional forecasters somewhat underestimated short-term growth of the Russian economy in 2017-2018, they overestimated the growth rate of investment by approximately 2 percentage points. This pattern is consistent with the narrative that Russia struggled to attract investment and technology from abroad and, if anything, capital was trying to leave the country (net private sector capital outflows were around \$30 billion in 2017, around \$55 billion in 2015, and around \$150 billion in 2014). Furthermore, the Russian government tried on multiple occasions to launch national investment projects, but these are not necessarily success stories for sometimes hard-to-comprehend reasons such as bureaucrats being afraid of spending money (Bershidsky, 2019). When the dust from the Crimea/Donbas affair and the 2014 oil price shock settled, long-term growth for investment stood at ~2.3%, which is roughly half of the growth rate projected before these events.

In addition to the sanctions, a common theme across the forecasts and actual dynamics is Russia's oil revenues. Indeed, the boom-bust dynamics as well as deceleration/acceleration phases appear to be consistent with the dynamics of the current account (Panel C of Figure 8). This variable is obviously driven by fluctuations in energy prices and volumes of energy production and export. As a result, the forecast errors are large, which underscores another difficulty in projecting long-term growth for commodity-based economies such as Russia.

**Figure 8 Post-Crimea/Donbas projections for the Russian economy**



In summary, the post-Crimea/Donbas experience suggests that modest sanctions did not push the Russian economy into a recession but generated a tangible slowdown in the longer run. One can conjecture that this slowdown was due to the new, pessimistic investment climate created by sanctions existing at the time and, perhaps more importantly, the prospect of further sanctions in the future. In other words, this round of Russian aggression made Russia a less attractive place for investment and thus resulted in slower economic growth (Ribakova, 2023a). This episode also highlights

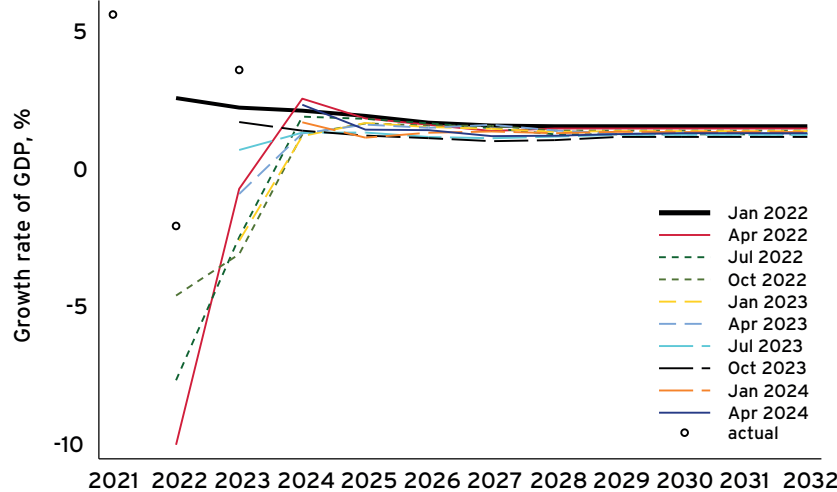
that the short-run dynamics for key macroeconomic aggregates are largely determined by energy prices. With the benefit of hindsight, we can also note that professional forecasters were roughly right in their projections: they projected a slowdown in the medium run and this prediction materialised.

#### 4.2 Long-term forecasts after the 2022 invasion

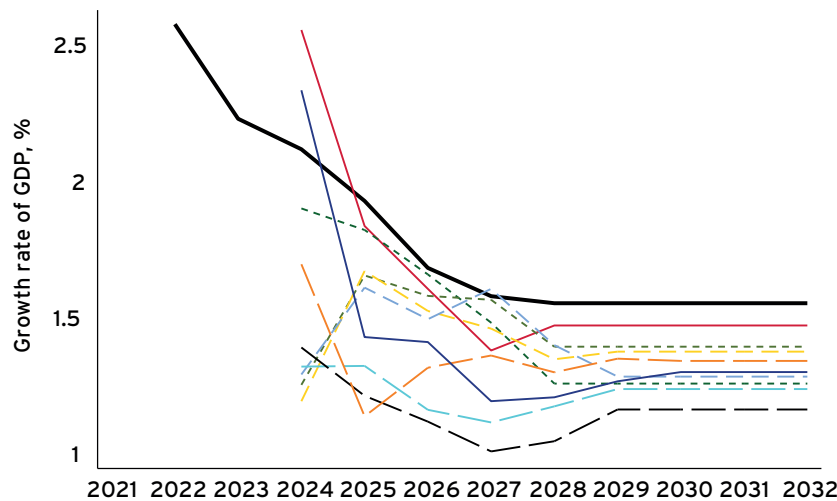
As a point of reference, we use long-term forecasts prepared in January 2022, i.e., shortly before the full-scale invasion of Ukraine. The projections suggested that the Russian economy would experience a slowdown and the long-term growth rate of GDP would stabilise at a little above 1.5% (Figure 9).

Figure 9 Actual and projected growth rate of GDP, 2022-onward

A) 2022-2032



B) 2024-2032



The April 2022 vintage of the forecasts (the first forecast following the launch of the invasion) painted a massive short-term contraction in output, some bounce-back in 2024 and a 10 basis point decline in growth rates at longer horizons. The short-term projection of a deep economic contraction did not materialise to a large extent for several reasons that we discussed earlier. First, energy prices shot up and gave Russia a giant current account surplus. Second, economic sanctions were rolled out gradually and, while some sectors of the Russian production were much affected (for example, car production plummeted), energy and other sectors were much less disturbed. The short-term projections were gradually revised up to predict some growth of the Russian economy, but predictions for the long-term growth rate were revised down. After more than two years of the full-scale Russian aggression in Ukraine, forecasts for long-term growth rates of output decreased by 20 basis points relative to the pre-

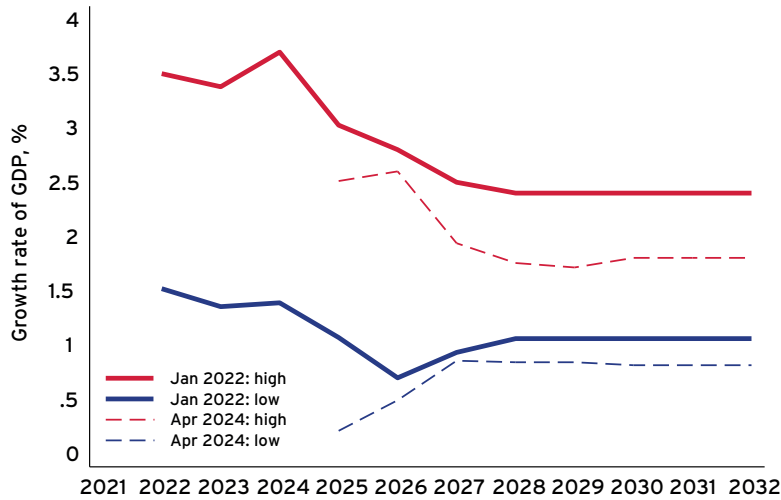


war forecast. This is a modest change but one should appreciate that it comes on the back of low growth projected before the war. To provide a benchmark, we note that Canada's economy, which is roughly similar in size to Russia's pre-war economy and is similarly dependent on commodity exports, is expected to grow at a rate that is 50 basis points higher, although Russia is much less developed than Canada and thus should have grown much faster.

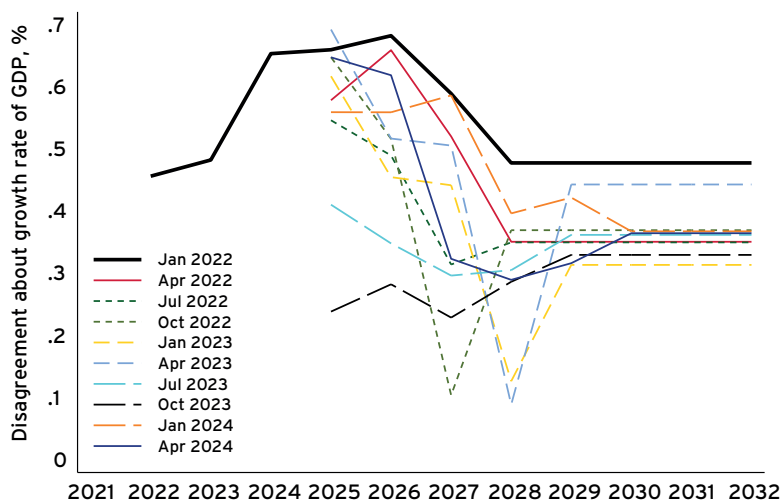
How much consensus do we have in the forecasts? Panel A of Figure 10 suggests that lower- and upper-end projections were revised down but the revision is larger for the upside. One may have expected that, given the uncertainty associated with the war, professional forecasters would have rather different views on the long-term outlook for the Russian economy, but there appears to be less disagreement now than there used to be before the war (Panel B, Figure 10). This consensus signals significant confidence in the depressed outlook.

Figure 10 Disagreement about Russia's economic growth

A) High versus low projections



B) Disagreement (st. dev.)

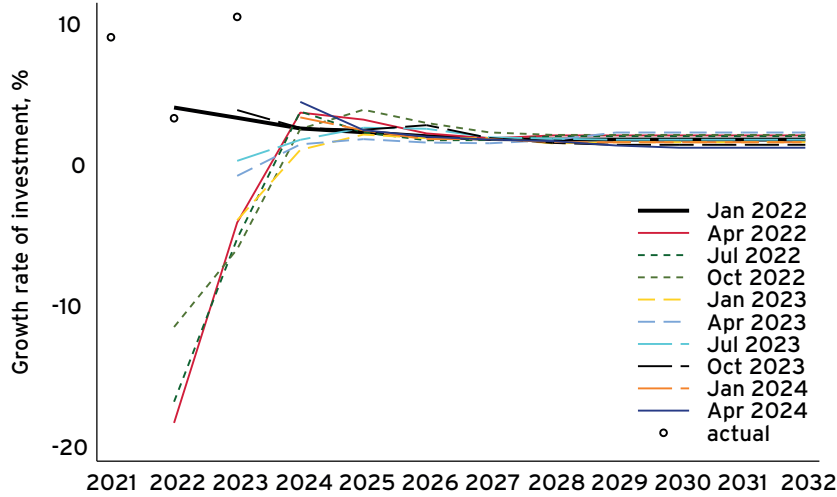


A low growth rate of investment is clearly a contributing factor to the low growth rate of output. Figure 11 shows that, similar to GDP, investment was initially projected to fall dramatically with some bounce back shortly after the collapse. At the same time, there were more up-and-down revisions in long-term growth rates. Fuelled by massive military spending and a current account surplus (Figure 12), investment did not fall in 2022 and then rose by more than 10% in 2023 (according to Rosstat, whose data have raised credibility concerns). The large revisions in long-term growth rates of investment appear to covary with large revisions in long-term projections for Russia's current account: larger projected surpluses are associated with higher

projected investment growth rates. This again underscores the dependence of the Russian economy on energy exports. The current thinking of professional forecasters about the future path suggests that although Russia may see a modest increase in the current account surplus relative to the current surplus, the growth rate of investment in the long run will be slightly above 1% per year, which is 60 basis points below the pre-war projections.

In summary, although in 2022 and 2023 the Russian economy fared better than predicted by professional forecasters, forecasters remain bearish on its long-term prospects. Specifically, while they do not predict a collapse in the long run, they do anticipate an era of slow growth, if not stagnation.

Figure 11 Actual and projected growth rate of investment, 2022-onward  
A) 2022-2032



B) 2024-2032

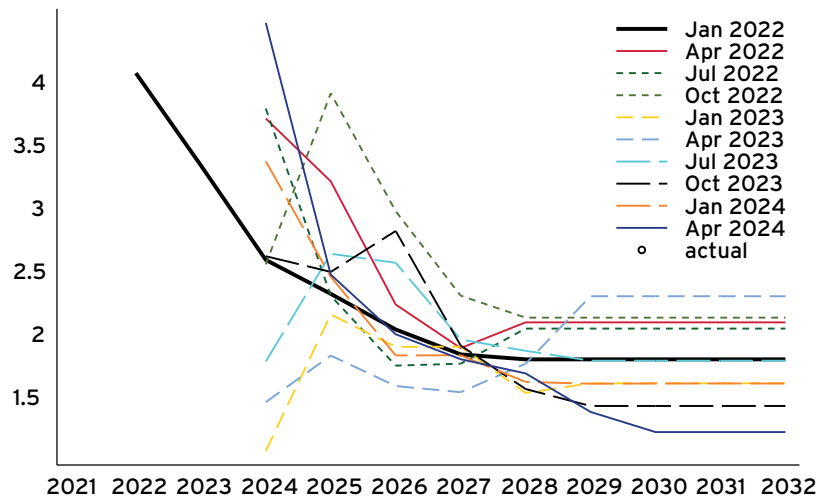
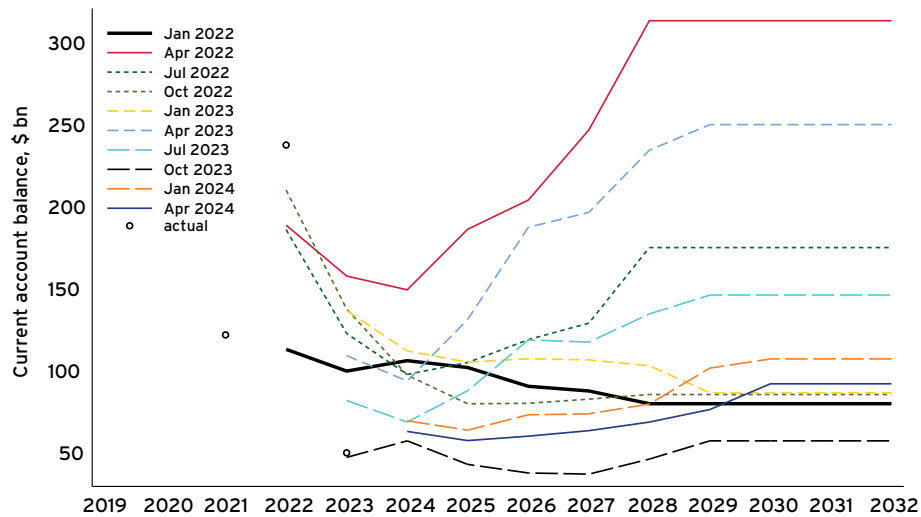


Figure 12 Current account balance, 2022-onward



### 4.3 Growth accounting

The enduring insight of the Solow growth model is that economists can use supply-side factors (capital, labour and productivity) to shed light on historical and future economic growth. In particular, the growth rate of output is given by:

$$dY_t = (1 - \alpha) \times dK_t + \alpha \times dL_t + dTFP_t$$

where  $dX_t$  is the percent change in variable  $X$ ,  $\alpha$  is the share of labour income in total income, and  $Y$ ,  $K$ ,  $L$  and  $TFP$  are output, capital, labour and total factor productivity (TFP). Given its simplicity, growth accounting offers a transparent way to make long-term predictions.

Shortly before the full-scale invasion, in September 2021, Korhonen (2021) used this framework to make long-term projections for the Russian economy. Consistent with the professional forecasts discussed above, his estimates suggested that Russia's GDP would grow at 1.5% per year in 2021-2025 but that the growth would slow to 1.2% in 2036-2040. These growth rates stem from low investment rates and a shrinking working age population as well as high productivity gains (about 2% per year). According to the United Nations (2019), the working-age population in Russia peaked at 97.2 million in 2006. Between 2006 and 2019, the working age population declined by approximately 1% per year. The United Nations estimated the working-age population at 87 million in 2019. Given the demographic trends in the country, the United Nations projected a further decline to 82 million in 2030 (a decrease of around 0.5% per year). The investment rate fell from 7.3% per year in 2000-2007 to 3.6% in 2008-2013, and to 0.9% in 2014-2019. Korhonen (2021) also projected a decrease in the growth rate of TFP from 1.5% in 2021-2025 to 1.2% in 2036-2040. The projected slowdown is consistent with 'Putinomics' running out of steam and the seeds of deceleration being planted well before even Russia's invasion of Georgia in 2008 (Guriev, 2023).

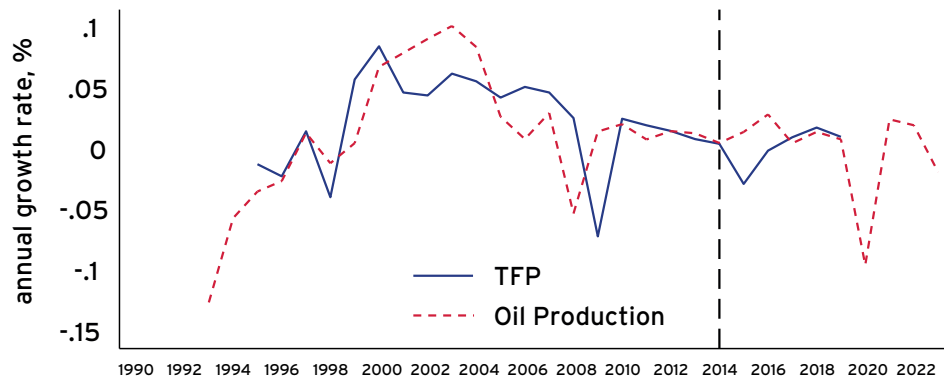
These negative pre-war trends are likely to be exacerbated during the war and beyond. For example, various estimates (e.g., *Economist* 2024) suggest that around 1,000,000 Russians (including around 100,000 IT specialists) left the country after February 2022.<sup>6</sup> More limited access to Western technology can reduce the growth rate (and perhaps even the level) of productivity. Effectively, Western capital markets and FDI are not available to Russia anymore.

<sup>6</sup> While the absolute magnitudes are astounding, even 1 million people leaving and 600 thousand killed and wounded do not impose a catastrophic cost on the Russian economy. These losses are around 2% of the labour force. With a 0.55 labour share, they account for less than a 1.5% decrease in the level of GDP.

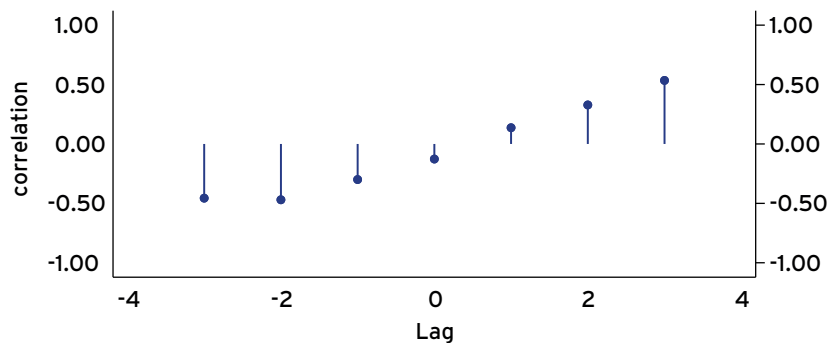
To make further progress, we examine the sensitivity of the growth components to oil production. Panel A of Figure 13 shows that, according to the Penn World Tables, the growth rates of TFP and oil production are strongly correlated for Russia ( $\rho = 0.56$ ), with a 1% reduction in oil production is associated with 0.5% decrease in productivity. Panels B and C of Figure 13 show that the growth rate of capital and employment are also strongly correlated with oil production, with growth in oil production leading to growth in employment and especially in labour. These historical patterns suggest that if oil production declines due to sanctions or limited access to Western technologies, one can expect decreases in all growth components.

Figure 13 Oil production and components of Russia's economic growth

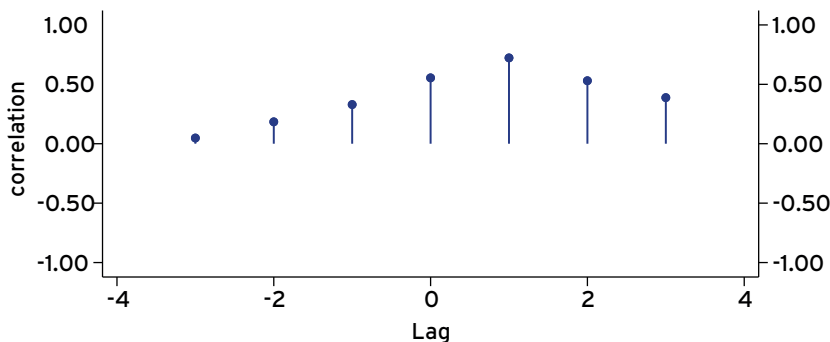
A) Oil production and TFP



B) Cross-correlogram for oil production and capital



C) Cross-correlogram for oil production and employment



To get a sense of magnitudes, we note that, according to the US Energy Information Agency (2023), production from an oil well declines by about 10% per year. If Russia cannot drill a sufficient number of new wells to replace the declining ones, oil production may fall. For example, during the chaos in the early 1990s with little investment in the sector, oil production fell by 5.8% per year between 1992 and 1996. It is perhaps unlikely that oil production will decline this much, but a decline of 1% per year does not seem impossible in the current context.

With this information, we entertain several scenarios. The first scenario ('pre-war') assumes that production inputs and productivity will roughly grow at the rates that Russia experienced in 2014-2019 (we use the Penn World Tables as the source of this information). The differences from the 2014-2019 actuals capture ageing of the population, and somewhat larger investment and productivity growth due to standard catch-up for less developed countries. With the labour share of 0.55 (this is the average for Russia in 2014-2019), we obtain the growth rate of 0.4% per year. This seems to be broadly in line with the lower bound projected by professional forecasters.

Table 1 Growth accounting

Scenario	Labour input	Capital services	TFP	GDP
Pre-war	0.0 %	0.4 %	0.2 %	<b>0.4 %</b>
Baseline	-0.5 %	0.5 %	0.0 %	<b>-0.1 %</b>
Moderately negative	-1.0 %	-0.5 %	-0.5 %	<b>-1.2 %</b>
Moderately positive	0.0 %	1.0 %	0.5 %	<b>0.9 %</b>
Actual: 2014-2019	0.1%	0.4%	0.1%	<b>0.3%</b>

Source: Authors' calculations. Actuals are from the Penn World Tables.

Note: The table reports growth rates in percent per year.

Our baseline scenario posits that labour will shrink by 0.5% per year due to the ageing of the population, emigration, and the military draft. For this scenario, we also assume that capital input will grow by 0.5% per year to capture the militarisation of the Russian economy (the government is expected to direct more investment to the production of weapons and so compensate potential decreases in the capital stock for civilian production). Zero growth in productivity is meant to capture technological stagnation: while some technology may flow into Russia through China and, more generally, evasion of sanctions, the inefficiencies of Putin's economy will continue to accumulate thus offsetting any improvement from technological transfers. In this scenario, GDP is projected to shrink by 0.1% per year.

The moderately negative scenario assumes that low rates of investment (recall that professional forecasters predict only 1.2% growth in investment and one can expect that the quality of investment good will fall due to Western sanctions) will not be enough to offset the depreciation of capital and oil wells. In addition, Russian oil refineries have been under attack recently and the oil sector appears to have difficulties repairing Western equipment. More generally, strikes on Russian production facilities can *directly* reduce capital stock or make it inoperational. We also consider a faster decrease in labour due to military losses, declines in health outcomes, lower fertility rates (due to the war and worsening economic conditions) and further emigration. For this scenario, we assume that sanctions on the Russian energy and more generally on technology transfer will become more binding so that TFP can be falling by about 0.5% per year. For comparison, the growth rate of Iran's TFP in 2012-2015, a period of significant sanctions on the country, was -3.3% per year (according to the Penn World Tables). With these assumptions, we obtain that GDP should fall by 1.2% per year.

Finally, we contemplate a moderate positive scenario situation where capital input grows at 1% per year and TFP grows at 0.5% per year. This scenario can capture a situation where oil prices are high (capital input and TFP grew by around 1% and 0.6%, respectively, in 2011-2013, a period of high oil prices) and economic sanctions are ineffective. We assume that labour input will be stable due to higher labour force participation, higher retirement ages and some immigration. However, even this moderately optimistic scenario predicts that the growth of GDP will be less than 1% per year.

Taking stock, we note that labour is not a likely source of economic growth for Russia for the foreseeable future. The negative demographic trends would be hard to overcome unless there is a radical change in the country. Productivity growth is always a big unknown, but for Russia it also seems unlikely to be a major source. The exodus of high-human-capital workers, increasing government intervention, international isolation, and poor protection of property rights are just some of the factors that weigh on productivity growth. Capital accumulation appears to be the only realistic engine, but this can critically depend on Russia's ability to finance and direct investment. One can anticipate that Russia will be largely excluded from global capital markets and thus the country will have to rely on internal, mostly government, sources to cover investment spending. Furthermore, given the increasing role of the government in the economy and specifically its militarisation, one can predict that capital for civilian production may stagnate or even fall. Upside scenarios rely on high oil prices. The balance of risks is such that one can hardly be optimistic about the long-term outlook for the Russian economy.

## 5 CONCLUSIONS

We have seen that sanctions and the uncertainty related to the war have had a detrimental effect on the Russian economy. At the same time, Russia's GDP has recovered to the levels seen before the invasion of February 2022. The structure of the economy has changed as more and more resources have been poured into waging the war. This means that some sectors and some regions have been winners in Russia's new war-oriented economy. This is especially true for some of Russia's poorest regions, where the war has offered many an upward social mobility that was not available in the preceding decades of Russia's reintegration into the global economy.

In addition, an emphasis on military spending and war-related industries has redistributed economic power. The departure of many foreign companies and the sale of their assets work in the same direction. This means that a new group of oligarchs could be emerging, oligarchs who very much benefit from the war continuing, or at least military spending continuing at its present level, and are likely to prove loyal to the current regime.

Russia has been willing to increase its public expenditures drastically in the recent past and this has boosted economic activity. Public finances have been in deficit since 2022, but so far financing of the deficits has not been a problem. The government has drawn down on the National Welfare Fund and borrowed domestically. Even if military spending increases some 60% in 2024, the resulting deficit can still be financed. Higher oil prices mean higher tax revenue, and in real terms expenditure in many other sectors is declining. Russia's public finances are not able to withstand similar expenditure increases in the coming years, but obviously the government's focus is on the current year. However, should Russia continue to benefit from strong export revenues, it will continue to be able to wage the war without a significant spike in inflation.

The lack of labour is increasingly becoming the binding constraint, which can also be seen in accelerating inflation. As the Bank of Russia is fighting inflation and inflation expectations with very high interest rates (the key policy rate is 16% at the moment), Russia's macroeconomic policy mix seems to emphasise shrinking the civil economy output in order to benefit the war economy. This war-oriented policy mix is likely also reflected in the external value of the ruble, which is much weaker and more volatile than otherwise could be expected with the present levels of crude oil prices. At the same time, Russia's current account surplus (2.5% of GDP in 2023) shields the ruble from excess speculative pressure.

What can affect the future course of the Russian economy? Clearly, the military and economic decisions of the Russian government play a central role. Oil prices are another key factor. Finally, we have the pressure of the global community on Russia

to stop its aggression. While the first two forces are beyond the direct control of the Western democracies, the third is certainty within their power. Hence, we conclude this report with a few reflections on the matter.

We find that sanctions as a key element of the economic statecraft toolbox can be effective when they have clear and limited objectives and are targeted in nature, hard to avoid, and measured against their objectives and adjusted if needed. Sanctions are therefore most effective when they are not imposed “slowly or incrementally as they may simply strengthen the target government” (Hufbauer et al., 2009). Sanctions are also not without costs to the countries imposing term. At this point, a comprehensive cost-benefit analysis of sanctions is critically important.

When it comes to the effectiveness of sanctions, the level of economic integration of the target is a critical factor. Previously, sanctions were largely used against smaller and more isolated economies – at least compared to Russia. Consequently, these economies were not able to replace lost export markets or suppliers of important goods, and the sanctions created the intended pressure. The Russia sanctions regime is clearly different in this regard. While this does not mean that sanctions will fail, Russia’s integration in the world economy and its continued support from countries such as China require a more innovate approach, in particular to deal with circumvention schemes. In our analysis, we have discussed several key challenges related to energy sanctions, financial sector measures, and export controls.

In 21st century economic statecraft, the private sector is key for the enforcement of sanctions. Many countries, first and foremost the United States, have long relied on overcompliance by corporates – especially banks – with regard to the actual implementation of sanctions. In the Russia case, this strategy has likely reached a limit and the overall credibility of the sanction regime is very much on the line (Ribakova, 2023b). Private sector entities need to be empowered and incentivised to play a role in tracking transactions and controlling supply chains. In effect, a new era of sanctions also requires a new era of corporate responsibility.

Looking ahead, we believe that a more structured approach has to be brought to the design and implementation of sanctions. Ideally, we need a coherent way to connect tools and objectives across disciplines, possibly through a structured, model-driven approach. Such a model should facilitate the selection of appropriate tools to achieve policy objectives. However, as a first step, we should develop models within economics and finance to assess the impact of sanctions on economies and global markets. While there is some research emerging (Hufbauer, 2009, Itskhoki and Mukhin, 2022, Ghironi et al. 2024), we are still at an early stage.

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