Kiel Report

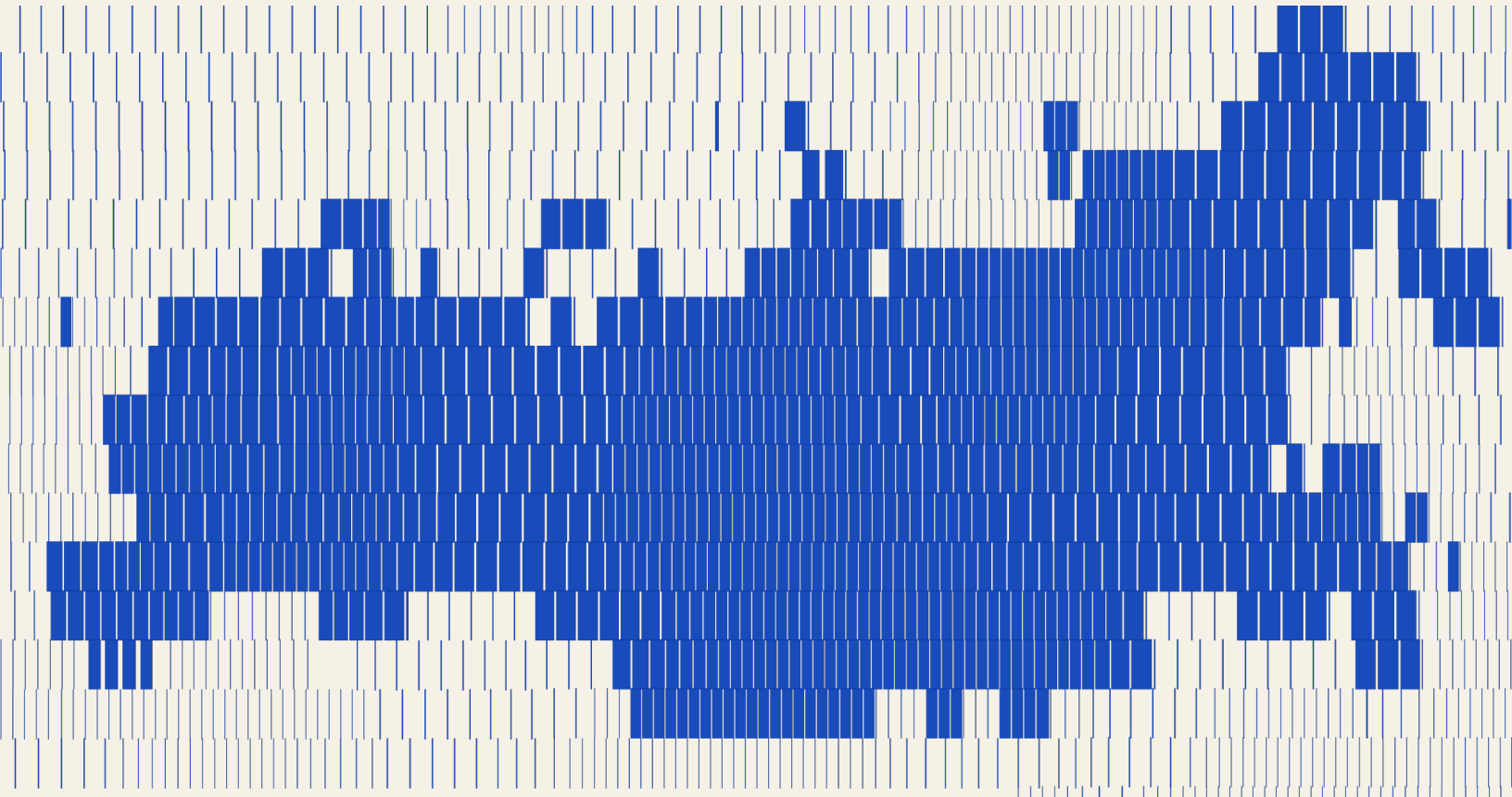
June 2026

Endgame

The State of the Russian Economy

Edited by
Torbjörn Becker and Moritz Schularick

No. 9, ISSN 2944-0785
Kiel Institute for the World Economy



KIEL Institut

STOCKHOLM SCHOOL OF ECONOMICS

STOCKHOLM INSTITUTE OF TRANSITION ECONOMICS

Overview

- The contours of a genuine economic endgame are coming into view for Russia. The economy has not collapsed, but the structural foundations have eroded fast. Economic growth has come to a standstill and fiscal buffers are largely exhausted. Higher oil prices as a result of the war in the gulf will likely only bring temporary fiscal effects, as Ukrainian “drone sanctions” have been effective in reducing export volumes.
- Russia's current macro stance is not sustainable. High interest rates are stifling the economy, while loose fiscal policy and quasi-fiscal operations are propping up the defense sector. The Q1 2026 budget deficit exceeded the full-year target in just three months. The choice now is between fiscal consolidation or monetary accommodation resulting in even higher inflation. Going forward, export revenues from the sale of raw materials remain the decisive variable for the economic outlook: With fiscal buffers spent, Russia's war capacity is more than ever directly coupled to hydrocarbon export income.
- The war has made Moscow increasingly dependent on China. While both countries have derived tangible benefits from the partnership, it is not a coalition of equals, but an increasingly unbalanced arrangement in which China is accumulating structural advantages. China now accounts for 35 % of Russia's total trade and 76 % of the increase in its supply of banned critical military components. On its own exports of raw materials, Russia accepts deep discounts as a captive supplier with no alternative buyers.
- China also plays the key role when it comes to supplying Russia with sanctioned products, especially the products most likely to contain so-called critical military components. China supplies more than 60 % of all critical components while the remaining non-sanctioning countries within the top 10 together amount to only 15 %.
- Domestically, Russia's full-scale war against Ukraine has led to greater convergence of wages and incomes. Many poorer regions have benefited from a much higher budget for military procurement as well as higher salaries paid for those willing to sign up for the military. However, fiscal stress is mounting at the regional level too. More than two-thirds of Russia's 89 regions ran budget deficits by autumn 2025.
- With Russia's economic weaknesses at a critical point, the window of opportunity for consequential Western action is open. Europe's task is to have the tools in place to convert economic pressure into a durable change in Russia's strategic calculus. The past months have shown that enforcement of the sanction regime makes a real difference and more must be done with respect to monitoring of the shadow fleet and the imposition of secondary sanctions. Export controls must be tightened with a particular focus on the role of Chinese firms, potentially linking access to the European market to compliance with export controls. Europe should also use its asymmetric negotiating position and impose a tariff on the remaining trade with Russia. The revenues from this Ukraine Support Tariff could be used to support Ukraine.

Authors

Torbjörn Becker
Stockholm Institute of Transition Economics
torbjorn.becker@hhs.se

Konstantin Egorov
University of Antwerp
konstantin.egorov@uantwerpen.be

Alicia García-Herrero
Bruegel, Hong Kong University of Science and Technology
alicia.garcia-herrero@bruegel.org

Matthew C. Klein
The Overshoot
mck@theovershoot.co

Iikka Korhonen
Bank of Finland
Institute for Emerging Economies
iikka.korhonen@bof.fi

Elina Ribakova
Peterson Institute for International Economics, Bruegel, Kyiv School of Economics
eribakova@kse.org.ua

Lucas Risinger
KSE Institute
lrisinger@kse.org.ua

Moritz Schularick
Kiel Institute for the World Economy
president@kielinstitut.de

Executive summary: Russia's economic endgame

Torbjörn Becker and Moritz Schularick

Four years into Russia's full-scale invasion of Ukraine, the contours of a genuine economic endgame are coming into view. The Russian economy has not collapsed, but the structural foundations have eroded faster than the headline numbers reveal. The economy contracted by 0.3% in the first quarter of 2026 despite a 44% year-on-year increase in government spending registered in March 2026.

The 2026 growth forecast has been slashed to 0.4% by the government. And even this number might prove optimistic in light of growing evidence of labor scarcity and supply shortages. There are serious doubts about the accuracy of official growth numbers, and if inflation is understated as many assume, this would bring down real growth numbers even further. The two-track structure of the economy, i.e., war-related industries expanding at the expense of a stagnating civilian sector, with fixed investment near standstill outside military priorities and trade volumes at a fifteen-year low, means that the headline numbers substantially overstate the health of the productive base. The aggregate picture is one of an economy operating at the limits of its productive capacity. At the same time, financial stability risks are mounting as rapid credit expansion to war-related sectors, weakening corporate balance sheets, and rising pressure on bank capital increasingly expose the financial system to a deterioration in asset quality.

The contributions in this volume, authored by leading economists with deep expertise in the Russian economy, paint a consistent picture: Russia's fiscal and financial buffers are largely exhausted, its asymmetric dependence on China is deepening in ways that are already costly and will become more so over time, and export revenues remain the single most important variable determining how long the Kremlin can sustain its war effort. These dynamics define the parameters of a true economic endgame: The window of opportunity for consequential Western action is open. Europe's task is to have the tools in place to convert economic pressure into a durable change in Russia's strategic calculus.

1 Russia's fiscal buffers are used up

Russia entered the war in 2022 with a substantial National Wealth Fund as a fiscal buffer designed to absorb oil price shocks. At the beginning of the war, it was equivalent to 6.5 % of GDP. By April 2026, the liquid assets of that fund had shrunk to 1.8 % of GDP, less than one third of the pre-2022 level. What was once a meaningful fiscal cushion is now barely adequate as a contingency reserve for a country that has no access to international capital markets.

The depletion of buffers extends well beyond the sovereign wealth fund. Russia's budget deficit in the first quarter of 2026 alone reached ₽4.6 trillion, already exceeding the full-year target of ₽3.8 trillion in just three months (BOFIT, 2026a).

Oil and gas revenues, which underpin Russia's fiscal arithmetic, collapsed by 45 % year-on-year in the first quarter of 2026 and by 38 % in the first four months, partly reflecting the effects of tighter sanctions on major Russian energy producers and Ukrainian drone strikes that disrupted export infrastructure, with up to 40 % of export refining capacity reportedly offline at certain points in March. The rise in oil prices triggered by the war in the gulf clearly helps in the short run, but owing to the large urals-brent spread and the ongoing destruction of exporting capacity the effect is likely limited if oil prices do not spiral upwards.

Matthew Klein's contribution to this volume documents in detail how the hidden war financing has moved off the government's formal accounts. Besides the budget the Russian government and the banking sectors have mobilized substantial additional funds for the defense sector. Corporate debt has surged by ₽34 trillion since the war began. This corresponds to roughly twice the accumulated government deficit over the same period. Much of this new credit has flown directly to war-related industries. Many large firms now carry interest payments that exceed their annual EBITDA, and overdue enterprise debt has reached ₽8 trillion, equivalent to 3.8 % of GDP, up from 2.4 % at the start of the war. Problem loans in the banking sector have risen to 11 % of the corporate loan stock, or ₽10.4 trillion in aggregate (BOFIT, 2026b). Five major Russian banks now have capital adequacy ratios below the 11.5 % threshold. The Russian central bank's key rate, while declining from a peak of 21 %, is forecast to average 14-14.5 % through 2026, with its own projections describing further cuts as "already close to their limit."

Torbjörn Becker's contribution highlights the central bank's inescapable dilemma: a policy rate implying double-digit real interest rates is set against official inflation running at around 5.5 % but inflation expectations embedded in consumer surveys of 13 %. There are many signs that actual price pressures are substantially greater than the official statistics acknowledge. The inconsistency between loose fiscal policy and tight monetary policy is a classic sign of mounting macroeconomic imbalances.

The regional dimension of this fiscal stress, documented in Iikka Korhonen's contribution,

adds a further layer. More than two-thirds of Russia's 89 regions ran budget deficits by autumn 2025. Federal transfers remained frozen at their nominal 2021 levels – implying a substantial real-terms cut while regions shoulder mobilization costs, military bonuses, and the social consequences of a labor market pulled to historic extremes. Unemployment has fallen to 2.1%, a record low, but this masks a severe labor scarcity that is simultaneously depressing civilian production and generating wage pressures that feed back into inflation. As the central bank governor herself observed, "when virtually the entire labor force is employed, the economy cannot grow faster than labor productivity" (Bank of Russia, 2026). The outlook for productivity gains is poor, however. Sanctions have also increased prices of production technologies and spare parts, as well as generally reduced their availability. The financial condition of many firms has been degraded by weak demand, high interest rates, increased wage costs and heavy tax burdens.

2 Growing dependence on China

Russia's pivot to China has provided a lifeline, but it is a lifeline that is steadily transferring leverage from Moscow to Beijing. Alicia García-Herrero, Elina Ribakova, and Lucas Risinger document this structural shift in detail and argue that Russia has become a captive supplier of commodities to a single dominant buyer at a deep discount, because the alternative of no buyer is worse. Beyond the short term, the Sino-Russian economic relationship has grown increasingly unfavorable for Moscow: Russian commodities flow east at a discount, while Chinese goods flow west at a premium. The result is a structural dependence on Chinese components that is now deeply entrenched in electronics, manufacturing, and industrial equipment.

China now accounts for approximately 35% of Russia's total foreign trade, up from 16% of exports and 30% of imports before the invasion; bilateral trade more than doubled from $104 billion in 2020 to $245 billion in 2024. The EU's share of Russian exports has fallen from roughly 38% before the invasion to just 7%.

The dependence is not only commercial. Russia's military-industrial complex now relies on China for over 80% of its dual-use imports, concentrated in electronic components, machine tools, and computing hardware. The contribution by Konstantin Egorov, using detailed customs data, demonstrates that China accounts for three quarters of the total increase in Russia's supply of banned critical military components since 2022. On the one hand, China directly substitutes Western-origin goods; on the other hand, it serves as the primary hub through which sanctioned Western products are rerouted to Russia. In the case of microprocessors, the same Western brands that dominated Russian imports before the war still account for 97% of imports, but the shipments now arrive via China. China's share in Russia's dual-use imports rose from roughly 25% before the invasion to over 80% by 2025 (Risinger et al., 2026; Bilousova et al., 2024).

This dependence creates costs that compound over time. Russia is accumulating yuan rather than freely convertible hard currency from its exports, limiting its ability to diversify import sources or finance infrastructure with non-Chinese partners. Chinese banks have repeatedly curtailed payments from Russian counterparties in response to secondary sanctions threats, creating weeks-long bottlenecks and routing transactions through expensive intermediaries. Russian elites are aware of the dynamic: The language of "sovereignty" that permeates official communications is in significant part a response to growing anxiety about Chinese leverage. Moscow wants cooperation with Beijing, not dependence on it, but the structural trajectory of the relationship runs in one direction only.

3 The policy agenda: Tightening sanctions and introducing tariffs

Across all the contributions in this volume, one variable recurs as the central determinant of Russia's war capacity: access to export revenues. Becker's framework makes the mechanism explicit: Russian GDP remains tightly linked to oil price fluctuations. While the war economy has introduced new domestic dynamics, the fundamental dependence on hydrocarbon export revenues remains a fact. Matthew Klein's analysis of the fiscal accounts confirms the same: It is hard currency from energy exports that ultimately finances the import of critical inputs for the military-industrial complex. Egorov's customs data show precisely how the military-industrial complex depends on imported components that can only be paid for with foreign exchange. García-Herrero and colleagues document how Russia's terms of trade with China have deteriorated precisely because Moscow has no alternative export markets: a form of monopsony leverage that translates directly into reduced war-financing capacity.

The practical implication is straightforward: Every dollar of export revenue constrained is a dollar less available to sustain the war. The dramatic deterioration in Russia's fiscal position in early 2026 showed how rapidly the system can unravel when revenues fall. With the wealth fund now effectively exhausted as a buffer, Russia's capacity to sustain war spending is directly and tightly coupled to current export income. There is no longer a meaningful cushion between revenue shortfall and operational constraint.

Clearly, the Iran price shock could provide a temporary revenue surge that will reduce fiscal pressure and buy time. The surge in oil prices following the closure of the Strait of Hormuz could generate between $84 billion and $252 billion in additional Russian export earnings depending on the conflict's duration (Hilgenstock et al., 2026), potentially covering the budget deficit and even replenishing the National Wealth Fund in a sustained high-price scenario. But this windfall has not altered China's commercial leverage over Russia. China continued to buy Russian hydrocarbons at deep discounts even during the global supply shock. The Iran episode thus illustrates both the continued centrality of export revenues

and the limits of what higher prices alone can achieve when the buyer holds the structural leverage.

Therefore, the analysis presented in this volume points toward a clear but demanding policy agenda for Europe and its partners. Three elements deserve particular emphasis.

First, the designation of major Russian oil producers demonstrated that targeted sanctions can cause measurable falls in export volumes. The EU's twentieth round of sanctions, adopted in April 2026, extended pressure on Russia's energy sector, financial system, and sanctions-evasion networks. But enforcement remains incomplete; Russia's shadow tanker fleet continues to move significant volumes, and the price cap is frequently circumvented. Renewed investment in real-time monitoring, tighter coordination with maritime insurance markets, and a willingness to impose secondary sanctions on financial institutions facilitating evasion are all necessary to make this channel work as intended.

Second, export controls must be tightened with China explicitly in view. Egorov's evidence makes clear that secondary sanctions on individual Chinese firms have limited effect as long as the broader incentive structure remains unchanged. More effective would be systemic measures, i.e., tying access to European markets for Chinese exporters to verifiable compliance with export control regimes and advancing the proposed BIS Affiliates Rule that would automatically subject entities linked to designated parties to the most stringent policy. The evidence suggests this approach works: Chinese state-owned companies adjusted their purchasing behavior rapidly in response to U.S. secondary sanctions designations.

Third, Europe should implement a *Ukraine Support Tariff*: a new levy on remaining European trade with Russia. The economic rationale is well established. Unlike a ban, a tariff on Russian exports both reduces the volume of trade and extracts a share of Russia's export rents for the imposing party rather than leaving those rents entirely with Moscow.[1] Applied to Russian energy exports, in particular LNG, chemicals, fertilizers, and other goods that still reach European markets, such a tariff would serve a dual purpose: further reducing the hard currency available to Russia for financing the war, while generating a dedicated, self-financing revenue stream for support for Ukraine at a time when Western fiscal support faces growing domestic political pressure. The tariff could be graduated and extinguished upon a verifiable settlement consistent with international law, creating a direct economic incentive for Russia to negotiate seriously. Revenue flows would be directed to the Ukraine Reconstruction Fund, reducing the vulnerability to annual budgetary appropriations that political disruption can interrupt.

This instrument is complementary to the use of frozen Russian assets and to conventional sanctions. While all three can support Ukraine financially, a tariff uniquely combines sustained pressure on Russian export revenues with a continuous and politically more durable funding stream for Ukraine. It converts Russia's residual access to European-adjacent markets from a free good into a mechanism for financing Ukraine's defense and recovery.

[1] Becko (2022). Also see related proposals in Brooks and Harris (2025).

References

Bank of Russia (2026). Elvira Nabiullina's speech at joint meeting of State Duma dedicated committees on Bank of Russia's 2025 Annual Report. Bank of Russia Official Press Release. http://www.cbr.ru/eng/press/event/?id=28437.

Becko, John Sturm (2022). "The simple economics of a tariff on Russian energy imports." In: *VoxEU.org, CEPR*. https://cepr.org/voxeu/columns/simple-economics-tariff-russian-energy-imports.

Bilousova, Olena et al. (2024). Challenges of Export Controls Enforcement. Tech. rep. https://sanctions.kse.ua/wp-content/uploads/2024/01/Challenges-of-Export-Controls-Enforcement.pdf.

BOFIT (2026a). Forecast for Russia 2026–2028. BOFIT Forecast for Russia 1. Bank of Finland Institute for Emerging Economies. https://www.bofit.fi/en/forecasting/latest-forecast-for-russia/.

— (2026b). "Growth in Bank Lending Slowed Last Year in Russia." In: *BOFIT Weekly* 11. Bank of Finland Institute for Emerging Economies. https://www.bofit.fi/en/monitoring/weekly/.

Brooks, Robin and Benjamin Harris (2025). Secondary Tariffs or Tighter Sanctions?: Strategies to End Russia's War in Ukraine. Russia Matters, Harvard Kennedy School. Belfer Center for Science and International Affairs. https://www.russiamatters.org/analysis/secondary-tariffs-or-tighter-sanctions-strategies-end-russias-war-ukraine.

Hilgenstock, Benjamin et al. (2026). Assessment of the Impact of the Iran War on Russia. Tech. rep. KSE Institute.

Risinger, Lucas, Matvii Talalaievskyi, and Benjamin Hilgenstock (2026). Russian CHP imports tracker | Q1 2026. en. Tech. rep. KSE Institute. https://institute.kse.ua/wp-content/uploads/2026/04/russian_chp_tracker_eng_q1_2026.pdf.

Why economists get the Russian economy "wrong" and how we can think about sanctions

Torbjörn Becker

1 Introduction

The Russian economy, as a subject of study for economists and others, is no longer primarily about the welfare of people in Russia or how businesses develop. Instead, it is about how Russia finances its war against Ukraine. As such, we cannot assume that the standard statistics we are used to relying on carry the same meaning as we typically attribute to them. At the macro level, GDP, inflation, and budget data may all be part of a strategic communications effort designed to present a narrative that suits the producers of these numbers. In some cases, these indicators may still be the best available measures of economic developments in Russia, but in others, they are not.

For external observers, the problem is that it is impossible to know with certainty which numbers to trust and which to dismiss as propaganda. Among analysts of the Russian economy, there is no consensus on which data to rely on or how difficult it is to manipulate statistics to support a particular narrative. One thing is clear, however: Narratives about the strength of the Russian economy and the effectiveness of sanctions are of great importance to all parties involved in Russia's war against Ukraine.

This new reality – where economic statistics are used as part of wartime information strategies – creates real challenges for economists trying to understand developments in the Russian economy. Since there are no comprehensive alternative data sources to the official statistics produced by Russian authorities, we must return to some basic facts about how the Russian economy functioned before the full-scale invasion in 2022. This can then be complemented with standard economic reasoning about how economies operate; after all, the Russian economy faces the same budget constraints as any other. Careful analysis along these lines can provide a roadmap for designing sanctions that limit the resources available for Russia's war effort – even if economists cannot precisely track economic performance at every point in time.

In addition to the challenges created by Russian authorities in interpreting current data,

forecasting future developments also requires predicting how Western countries will design and enforce sanctions as well as how Russia adapts. This is far from trivial. Many early forecasts about the Russian economy assumed that Western leaders would fully grasp the severity of Russia's threat to Ukraine and European security and would therefore impose comprehensive trade bans, rapidly eliminate EU dependence on Russian energy, and severely restrict financial transactions with Russia. This did not happen. Instead, we have seen a gradual approach, reflected in 19 EU sanctions packages (for a timeline, see the Sanctions on Russia web portal: https://sanctionsrussia.org). The back-and-forth of U.S. sanctions adds further uncertainty. Although this uncertainty is now better understood, it does not make predicting future developments any easier.

To shed light on how the Russian economy is evolving and how sanctions should be assessed, this chapter first reviews key features of the Russian economy before 2022. It then questions some of the macroeconomic indicators published after 2022 and discusses how sanctions can be evaluated more carefully than simply concluding that they have failed because the war continues. The chapter concludes with a discussion of priorities for future sanctions.

2 The Russian economy pre-2022

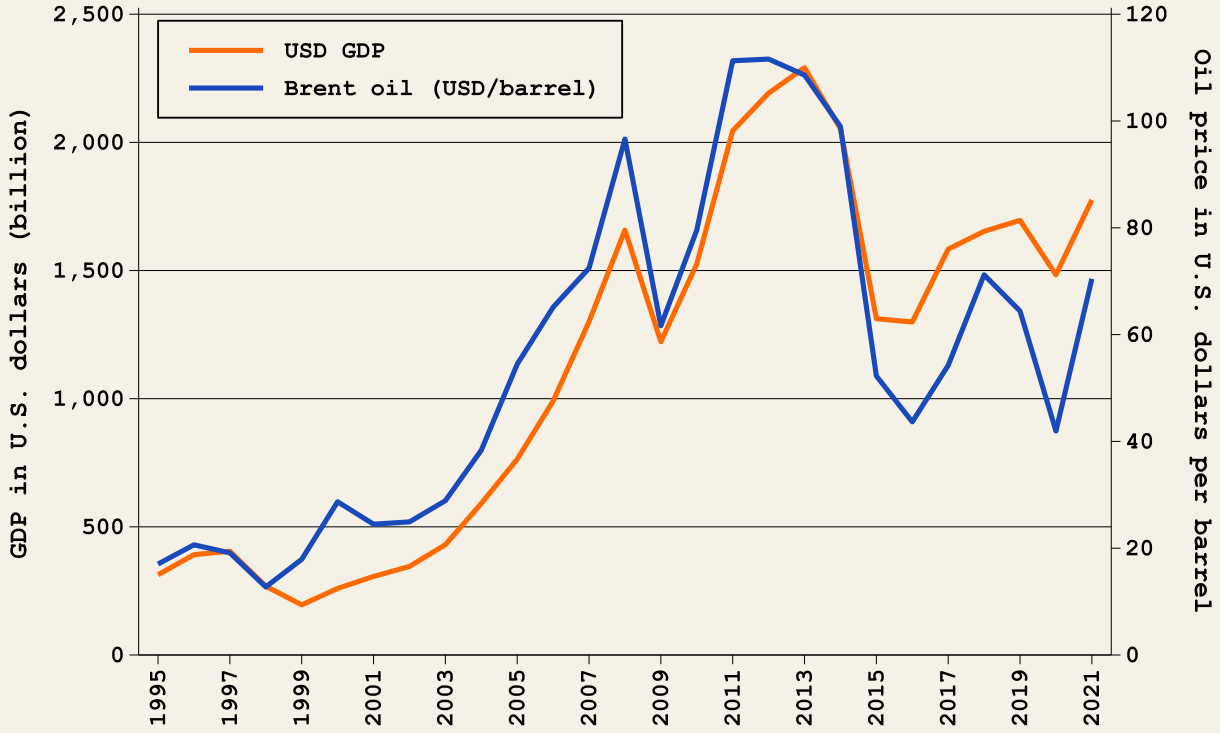
Despite repeated calls to diversify away from dependence on hydrocarbons – oil, gas, and coal – the Russian economy since the breakup of the Soviet Union has remained highly sensitive to developments in international oil prices. Figure 1 shows how Russian GDP moved closely in tandem with global oil prices before the war. Depending on the time period, the GDP measure used, and the statistical transformation applied, between 60 % and 90 % of Russian growth since 2000 can be explained by changes in international oil prices alone (see Becker (2016) for a more detailed discussion). This has important implications for sanctions: The price Russia receives for its oil exports, rather than the volume exported, is a key variable to target.

Looking at the history of the Soviet Union and later Russia, episodes of low oil prices have repeatedly created severe economic and political challenges and triggered discussions about reducing dependence on oil revenues. In the mid-1980s, when perestroika and glasnost were introduced, oil prices were around $10 per barrel. When Russia defaulted on its domestic bonds and entered an IMF program, oil prices were again close to $11 per barrel. During the global financial crisis of 2008–09, oil prices fell sharply, forcing Russia off its ruble peg. During the COVID-19 pandemic, oil prices declined again, leading the ruble to depreciate from 60 to 80 per dollar, while GDP fell by 7 % in the second quarter of 2020 and by nearly 3 % for the year as a whole.

This dependence on oil revenues does not mean that nothing else is happening in the Russian

economy, which has also developed in other directions, including increases in real incomes and the emergence of new businesses. This becomes evident when growth is decomposed into consumption, investment, and net exports. However, domestic demand has largely been supported by external revenues that finance imports, which in turn feed into domestic consumption and investment. Limiting Russia's imports, another key target of western sanctions, is therefore not only important as a direct way to constrain defense production; it also affects macroeconomic development, as reduced imports lead to lower consumption and investment, thereby weakening economic activity and government revenues.

Figure 1: International oil price and Russian GDP



Source: Rosstat and U.S. Energy Information Administration.

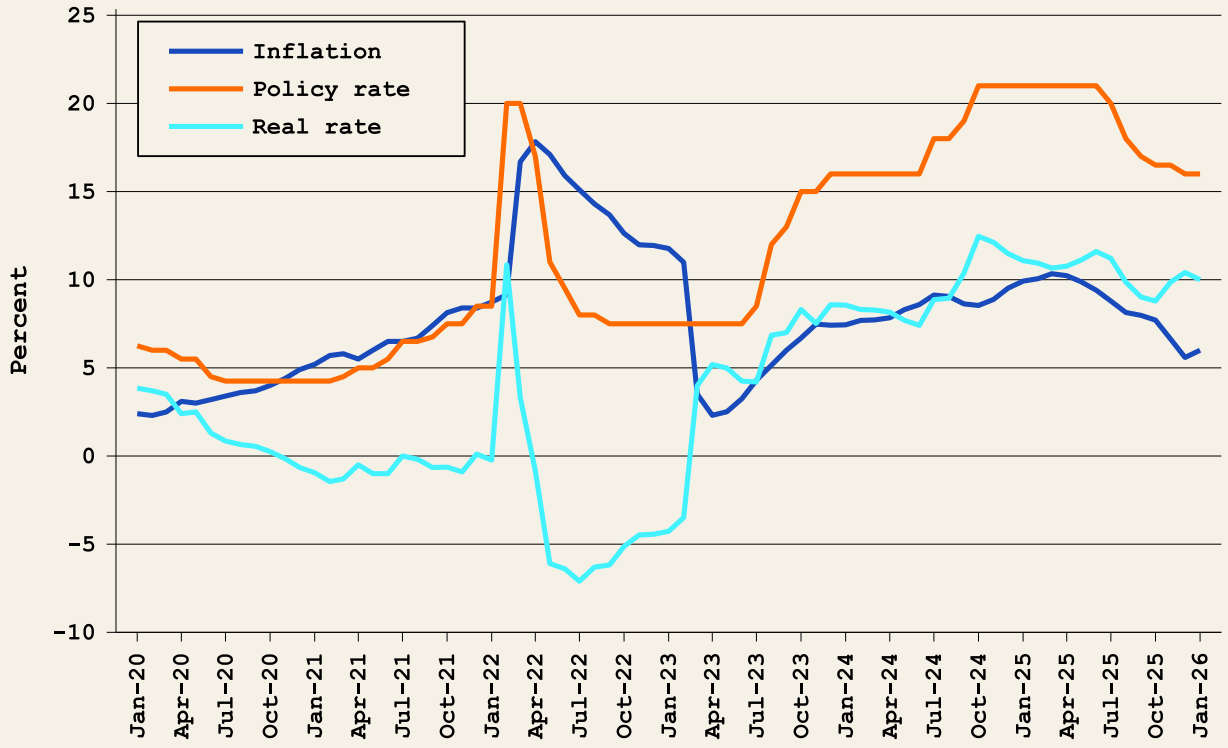
3 Basic economics in motion since 2022

Since 2022, official Russian statistics have aimed to present a picture of relative macroeconomic stability and limited sanctions impact. At the same time, many economic indicators are no longer published (Anisimova and Smitt Meyer, 2023). In our reports

from fall 2024 and spring 2025, we question the reliability of the remaining official macroeconomic statistics (SITE, 2024; SITE, 2025).

Although there is no definitive proof that figures such as real GDP growth are incorrect, there are strong reasons to question the official inflation numbers. Figure 2 compares official inflation with the Central Bank of Russia's policy rate and the implied real interest rate. In our 2025 report, we also included an alternative inflation measure from the Russian survey company ROMIR, which has since been discontinued and removed from its website. There are several methodological questions regarding the basket used for the official statistics in a situation where several goods in the basket are replaced by other goods of varying quality, for example, how do cars from top European producers, with all the latest safety features, compare to cars produced in Russia lacking basic features such as airbags? But even putting this aside, why is it that the ROMIR index that tracked official inflation before the war suddenly shows inflation that is more than double official numbers after sanctions were introduced? The baskets of course differ, but the question is then, which basket is more relevant when comparing prices before and after 2022? The other question is, why does the central bank keep its interest rate at a level that implies real interest rates in double digits when the real interest rate was barely positive before the war? It could be a result of trying to fight fiscal overheating or protecting the ruble but it could also be because inflation is substantially higher than the official numbers. Although we will not know for sure, these matters suggest that official inflation numbers are highly questionable.

Figure 2: Inflation, policy rate and implied real interest rate



Source: Central Bank of Russia (CBR) and author's calculations.

Inflation is important not only in itself but also because it affects real GDP, real incomes, and many other indicators. If price changes are understated, then real economic performance is overstated. In other words, manipulating inflation statistics can distort a wide range of economic measures without requiring comprehensive falsification across sectors – adjusting one key variable can affect the entire system of macroeconomic indicators.

There are, of course, plausible explanations for Russia's reported GDP growth in recent years, notably the large fiscal stimulus driven by military spending. This resembles classical Keynesian, demand-driven growth. However, for such policies to sustain growth over several years, two conditions must be met: the government must be able to finance its spending, and there must be sufficient available resources to expand production. If these conditions are not satisfied, the result will be inflation rather than real growth.

In the early phase of the war, both financing and resource availability were more plausible. Over time, this has become less likely. Government savings in the National Wealth Fund have declined, taxes have increased, and spending in non-military sectors has stagnated in real terms. War expenditures have increasingly been financed through bank lending and by extracting resources from other sectors via higher taxes and elevated interest rates – a

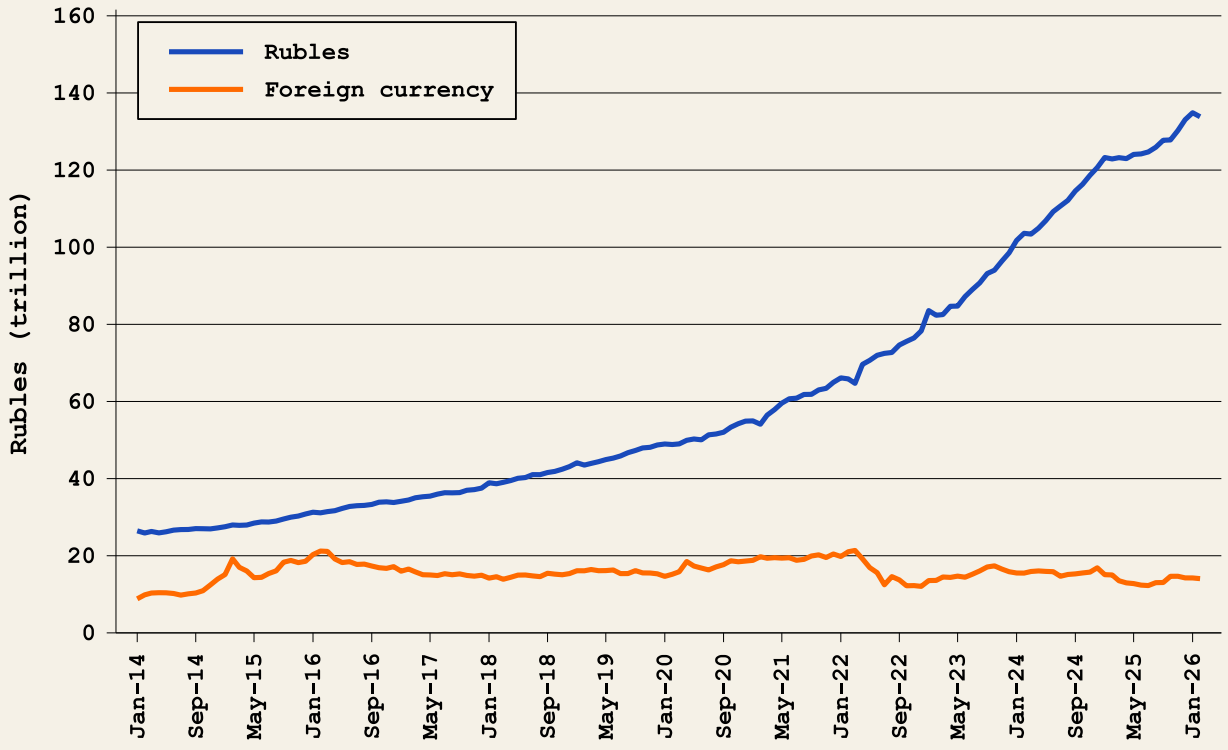
classic case of public spending crowding out private activity.

These macroeconomic imbalances are reflected in the central bank's efforts to contain inflation through double-digit interest rates, while fiscal policy continues to stimulate demand.

This inconsistency is a clear sign of mounting economic pressures. At the same time, such policy imbalances can persist for some time before culminating in a full-blown macroeconomic crisis. This presents a key challenge for economists: even if the current trajectory is unsustainable, the timing of a crisis remains highly uncertain.

The same applies to the banking sector. Vulnerabilities have been building for some time, but this does not allow us to predict when a crisis will occur that significantly limits the Kremlin's room for maneuver. Indicators of rising risk include rapid credit growth and strong deposit growth in a high-interest-rate environment. Figure 3 shows how deposits have evolved over time. This creates potential instability: If interest rates decline, depositors may withdraw funds, potentially triggering a classic bank run.

Figure 3: Deposits



Source: Central Bank of Russia (CBR).

Finally, some market-based indicators, such as exchange rates and share prices, remain available. However, due to capital controls, sanctions, and restrictions on foreign participation, these markets are less informative than before. Reduced market depth

and participation limit their ability to reflect underlying economic conditions, further complicating the analysis of the Russian economy.

4 How can we think about sanctions?

Sanctions following Russia's full-scale invasion of Ukraine span a wide range of measures: limiting revenues, restricting exports of military-relevant goods, constraining financial transactions, limiting travel, and freezing or confiscating Russian assets abroad. These diverse measures cannot be aggregated into a single metric to determine whether sanctions "work." While the ultimate objective is to end Russia's aggression and ensure compliance with international law, such outcomes may take decades, if they occur at all. In the shorter term, evaluating sanctions requires more specific metrics. One useful framework is to assess how sanctions affect Russia's intertemporal budget constraint – both at the national and government levels – by distinguishing between price and quantity effects on both revenues and costs.

For example, sanctions on oil exports have primarily targeted prices rather than volumes, whereas gas sanctions have focused more on reducing quantities imported by the EU. On the cost side, sanctions aim to increase the price Russia pays for imports by complicating supply chains, thereby indirectly reducing import volumes.

A report from KSE Institute (KSE Institute, 2026c) summarizes developments in 2025, noting intensified sanctions targeting Russia's energy sector, financial system, and evasion networks. Measures included sanctions on major oil companies, tighter restrictions on the shadow tanker fleet, lower oil price caps, and EU plans to phase out Russian energy imports by 2027. These efforts increasingly aimed not only to reduce prices but also to constrain volumes and improve enforcement.

According to the report, sanctions contributed to a significant decline in energy revenues, with oil and gas revenues falling by 24 % compared to all of 2024. In December, revenues dropped by 43 % year-on-year due to widening discounts on Russian oil, showing that the decline in revenues accelerated at the end of the year. Nevertheless, Russia still earned approximately $160 billion from oil exports and $39 billion from gas exports in 2025. While sanctions weakened government finances and increased reliance on domestic borrowing, they did not eliminate revenue streams.

5 The war against Iran and its impact on the Russian economy

At the beginning of 2026, the Russian economy was clearly under pressure from sanctions. Reduced energy revenues strained both the government budget and the broader economy, while high interest rates and directed lending to the military-industrial complex increased financial sector risks. Macroeconomic indicators pointed to growing fragility (KSE Institute, 2026b; BOFIT, 2026).

However, the situation changed when the U.S. and Israel launched a full-scale attack on Iran, causing oil prices to surge. In a revealing interview, President Putin urged energy companies to use windfall profits to repay bank debt rather than invest or support the budget – highlighting concerns about financial sector stability.

At the same time, reports pointed to rising non-performing loans, particularly outside the military sector, and increased reliance on bank financing of government debt (Moscow Times, 2025; Kennedy, 2025). In this new environment of high oil prices and eased U.S. sanctions, Russia's fiscal constraints may weaken significantly. KSE Institute (2026a) outlines scenarios showing that even a short-lived oil price spike could generate substantial revenue gains, while a prolonged period of high prices could effectively remove current constraints on Russia's war financing.

6 Conclusions

In an environment where oil export volumes are not effectively constrained and global prices are high, strengthening enforcement of price caps becomes critical. Without such measures, Russia's budget constraints may effectively disappear for as long as elevated energy prices persist. Price cap enforcement must therefore take center stage in sanctions policy. This includes renewed efforts to limit Russia's shadow fleet, not only in formal terms but also through practical enforcement measures that disrupt its operations. Failure to act may increase incentives for Ukraine to target Russian energy infrastructure directly, potentially exacerbating global supply pressures and driving prices even higher.

On the import side, sanctions should focus both on increasing costs and limiting quantities. This requires engagement with key actors such as China, as well as stricter controls on Western exports that continue to reach Russia. Broader trade restrictions could further weaken domestic demand and government revenues.

Financial sector vulnerabilities also present an important channel. Banking crises are historically disruptive and costly, and Russia's financial system remains exposed despite temporary relief from higher oil revenues.

Finally, expectations about sanctions must be managed. Sanctions may not end the war overnight, but they can affect Russia's budget constraints and influence the intensity of its war effort. Ending the war is ultimately a political decision, shaped not only by economic costs but also by regime stability considerations.

If Ukraine's partners in the EU are serious about reducing human suffering and long-term economic costs, they must use all available tools to constrain Russia's war capacity. We may not know the effect of each sanction that is introduced, but banning all trade with some humanitarian exceptions would increase costs for Russia while making enforcement significantly easier for Western countries. In the end, sanctions should be Russia's problem – not ours. Failure to limit the resources available to the Russian war machine will be enormously costly for generations to come in Europe.

References

Anisimova, A. and C. Smitt Meyer (2023). Russia's data warfare. Tech. rep. FREE Policy Brief. https://freepolicybriefs.org/2023/04/18/russia-data-warfare/.

Becker, Torbjörn (2016). Russia and oil—out of control. Tech. rep. FREE Policy Brief. https://freepolicybriefs.org/2016/10/31/russia-oil-control/.

BOFIT (2026). "Higher oil prices bring at least temporary relief for the russian economy." In: *BOFIT Weekly Review 13/2026*. https://www.bofit.fi/en/monitoring/weekly/2026/vw202613_1/.

Kennedy, Craig (2025). Russia's Hidden War Debt (full report): Moscow Has Been Discreetly Funding Heavy War Costs with Risky, Off-Budget Debt. Navigating Russia (Substack). https://navigatingrussia.substack.com/p/russias-hidden-war-debt-full-report.

KSE Institute (2026a). Assessment of the impact of the iran war on russia. Tech. rep. https://kse.ua/sanctions-hub-of-excellence/.

– (2026b). Russia chartbook: Weak revenues put severe strain on the budget; economic growth stalls amid higher inflation. Tech. rep. https://kse.ua/sanctions-hub-of-excellence/.

– (2026c). Sanctions and the russian economy: 2025 year-end assessment. Tech. rep. https://kse.ua/sanctions-hub-of-excellence/.

Moscow Times (2025). Russia could face systemic banking crisis by late 2026, kremlin-linked think tank warns. https://www.themoscowtimes.com/2025/12/05/russia-could-face-systemic-banking-crisis-by-late-2026-kremlin-linked-think-tank-warns-SITE.

SITE (2024). The Russian Economy in the Fog of War. Tech. rep. Stockholm Institute of Transition Economics, Stockholm School of Economics. https://www.konj.se/media/piamenjt/2024-10-01-report-on-the-russian-economy.pdf.

– (2025). Financing the Russian War Economy. Tech. rep. Stockholm Institute of Transition Economics, Stockholm School of Economics. https://www.hhs.se/contentassets/79a322a8739a401ea88225909d2e4856/site-russian-economy-spring-2025-update.pdf.

The limits on Russia's war financing and the energy windfall

Matthew C. Klein

Russian military spending and other war-related expenditures surged last year even as oil and gas (O&G) revenues fell, with the difference covered by a mix of higher taxes on the domestic non-O&G economy, cuts in non-military spending, public borrowing, liquidation of reserve assets, monetization of gold holdings, and a massive credit expansion via the banking system.

The latest official data from Russia's Ministry of Finance and the Central Bank of Russia (CBR) suggest that the Russians may find it difficult to ramp their spending further, even with the current rise in energy prices. The fundamental problem is not a lack of money, but shortages of men and materiel, which translate higher spending into higher prices, rather than greater volumes of real output.

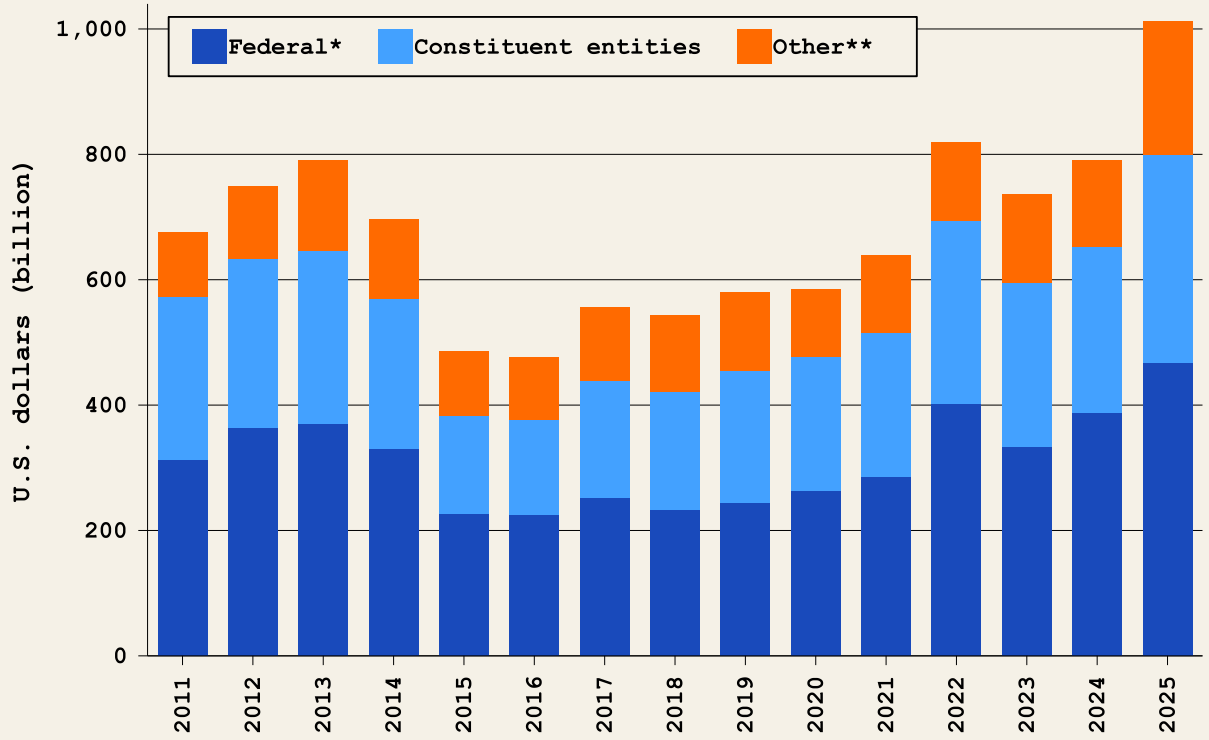
In the four years since the war began, the consolidated Russian government (Russian Ministry of Finance, 2026d) has spent about ₽281 trillion and collected about ₽263 trillion in taxes and other revenues. (For perspective, Russia's total GDP in 2025 was about ₽220 trillion.) Total spending rose from ₽37 trillion in 2019, to ₽47 trillion in 2021, to ₽55 trillion in 2022, to ₽84 trillion in 2025. Until recently, taxes largely rose in line with spending, from ₽40 trillion in 2019, to ₽48 trillion in 2021, to ₽53 trillion in 2022, to ₽75 trillion in 2025. While much of this increase can be explained by inflation pushing up the prices of goods and services in rubles, higher spending and taxation also reflects the government's efforts to mobilize resources for the war effort, driving down the unemployment rate to historic lows.

The recent gap between spending and revenues is largely, although not entirely, a function of stagnant oil and gas tax receipts, which were 6 % lower in 2025 than in 2021 in ruble terms. Consolidated revenues excluding O&G taxes were 72 % higher in 2025 than in 2021 (in rubles), similar to consolidated spending, which was 78 % higher.

It is perhaps more informative to consider the evolution of the budget in U.S. dollars, which helps adjust for changes in Russian inflation and for changes in the international prices of goods imported for the war effort. The result is that consolidated Russian government spending, in USD, was 28 % higher ($223 billion) in 2025 than in 2024, which itself was slightly lower than in 2022. Federal spending (Russian Ministry of Finance, 2026e) excluding transfers to the "constituent entities" of the federation was 20 % higher in 2025 than in 2024 ($79 billion), spending by the constituent entities (Russian Ministry of Finance, 2026c) was up by 26 % ($69 billion), and other spending – consolidated spending that cannot

be attributed to the federal government or the constituent entities – was up by 54 % ($75 billion). The Russians increased their efforts substantially in 2025, but it was not enough to give them an edge on the battlefield.

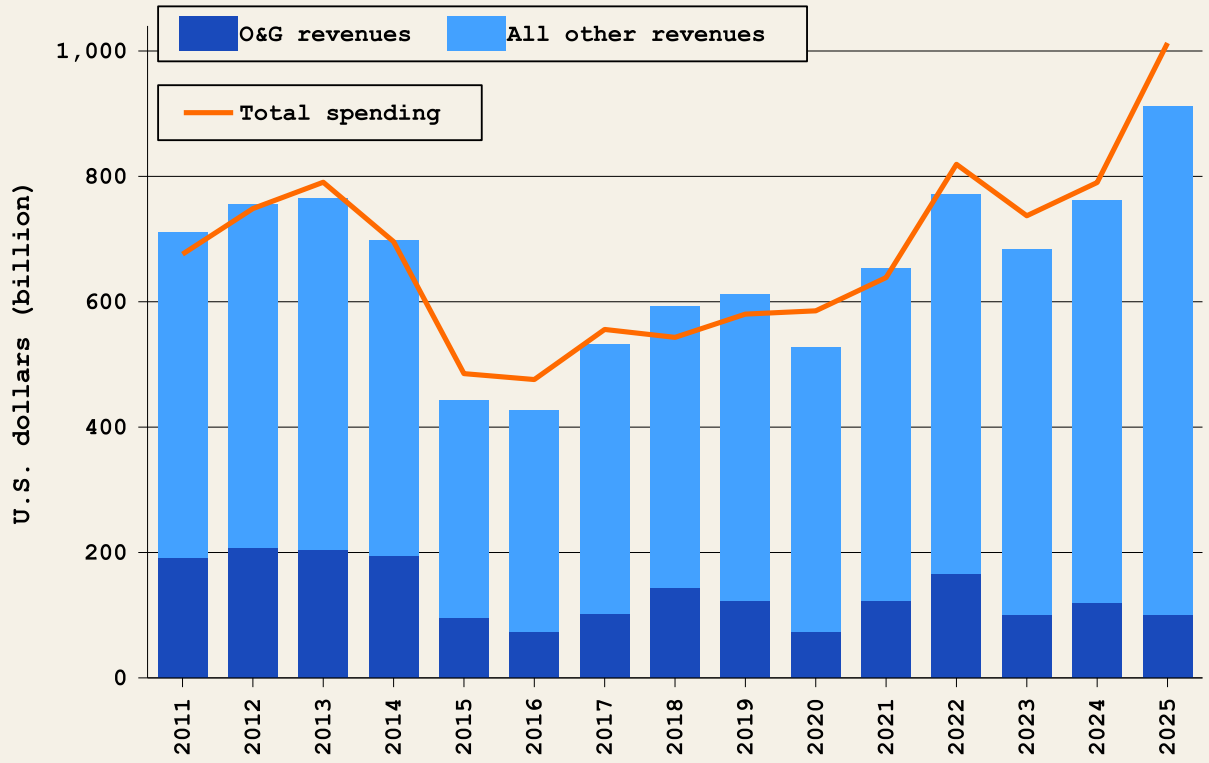
Figure 1: All-out effort: Russian yearly government spending



Notes: *Excluding transfers to constituent entities **Consolidated spending less federal ex-transfers and constituent spending. In U.S. dollar terms, Russian government spending popped in 2025 to a new all-time high of about $1 trillion thanks to higher taxes and much larger deficits.
Source: Ministry of Finance (Russia), OECD, author's calculations.

Russian energy revenues (Russian Ministry of Finance, 2026b) were lower in 2025 than in 2024, but about the same as in 2023, which is perhaps not as low as one might have expected given the tightening in sanctions, the drop in oil prices, and Ukrainian strikes on Russian refineries. By contrast, the U.S. dollar value of Russian government revenues excluding oil and gas taxes were about one-third higher than the relatively stable 2022–2024 average.

Figure 2: Big push: Russian consolidated budget revenues and expenditures



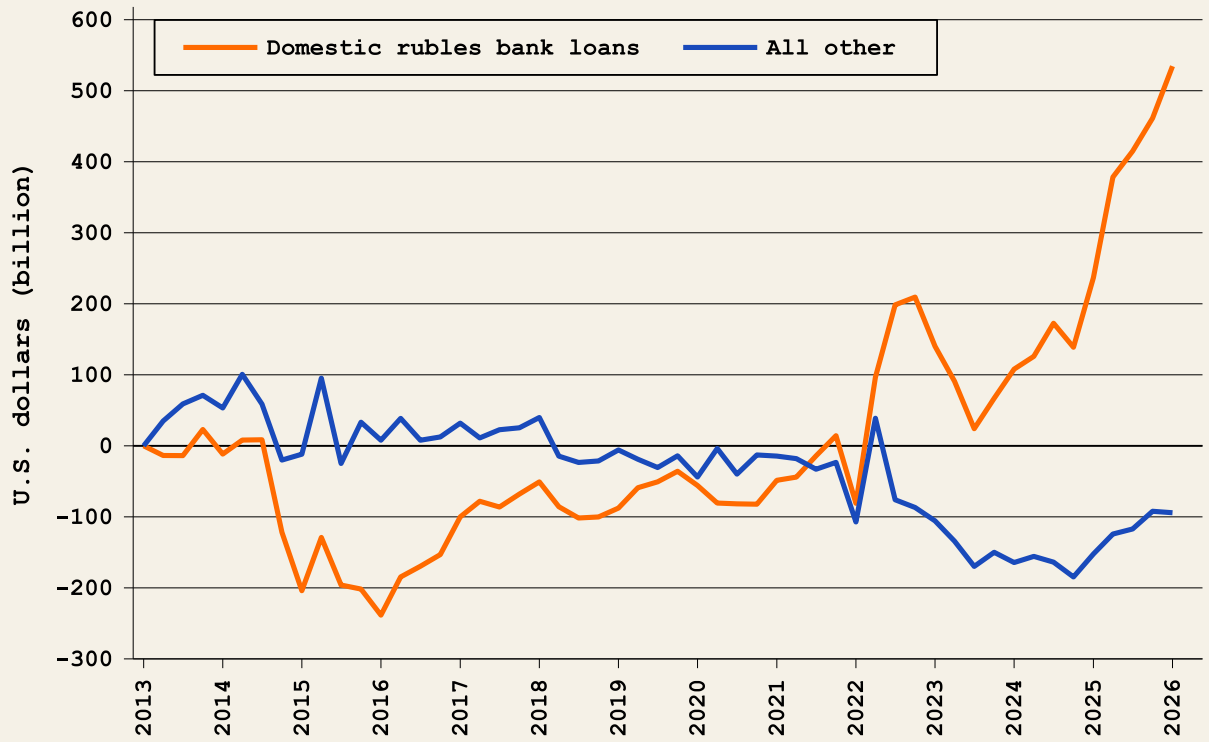
Notes: Russian government spending soared in 2025 despite sanctions and other measures hitting oil and gas revenues. Higher taxes and bigger deficits have more than filled the gap.
Source: Ministry of Finance (Russia), OECD, author's calculations.

The main government accounts do not present a complete picture of Russian war-related spending and borrowing, however.

Since the war began, Russian nonfinancial corporations have increased their total indebtedness by ₽37 trillion (Bank of Russia, n.d.c). That is roughly twice the size of the accumulated deficit of the government over the same period. Nonfinancial corporate debt began rising faster than its pre-war (2017–2021) trend around the middle of 2023, and was about 24 % higher (₽20 trillion) as of March 2026. In USD terms, Russian nonfinancial corporate debt outstanding has increased by 43 % ($404 billion) between 2021Q4 and 2026Q1, after years of being stable around $900 billion in the years before the war. Much of that increase occurred in 2025 and the beginning of 2026.

Russian banks ramped up their lending to domestic businesses once the war began, but until 2025, this was only enough to replace lost financing from abroad. Since then, however, surging bank lending and, to a lesser extent, rising issuance of FX-denominated bonds sold to Russian investors, has coincided with a dramatic increase in corporate indebtedness and purchasing power.

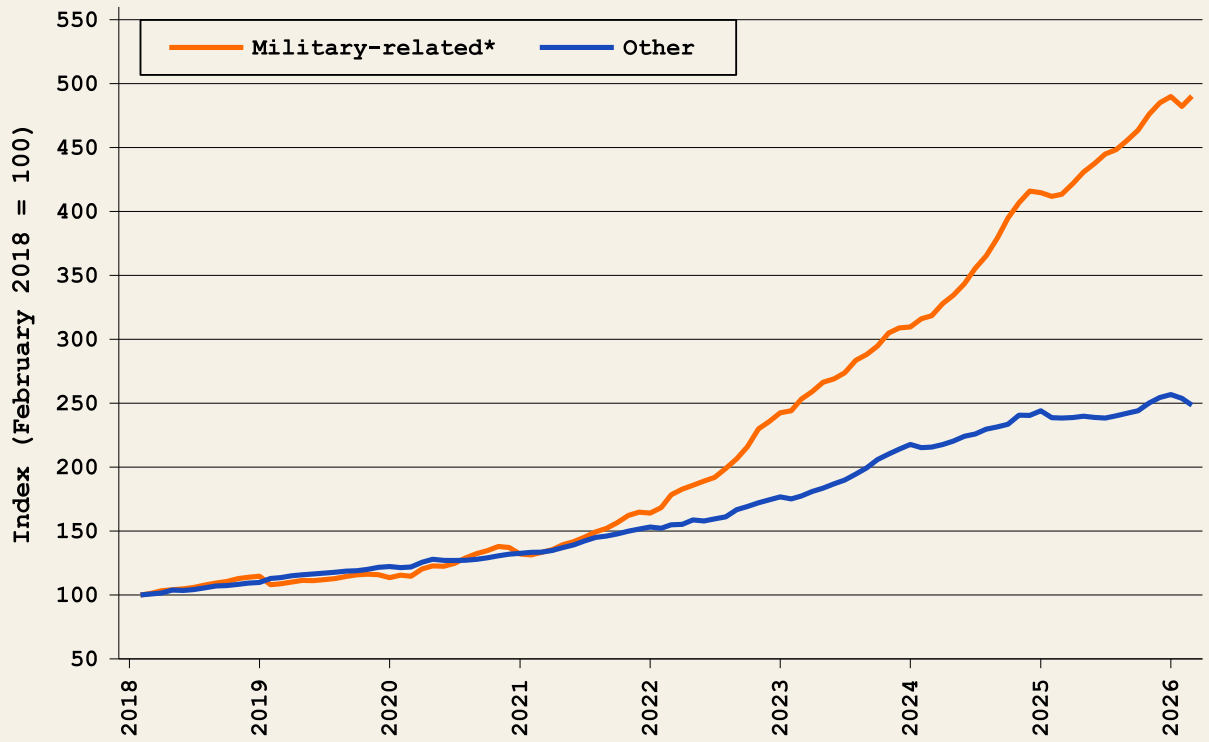
Figure 3: Series break: Russian nonfinancial business debt outstanding



Notes: The surge in bank lending to Russian businesses in the first years of the war had only been sufficient to keep overall nonfinacial business indebtedness stable. That changed in 2025.
Source: Bank of Russia, OECD, author's calculations.

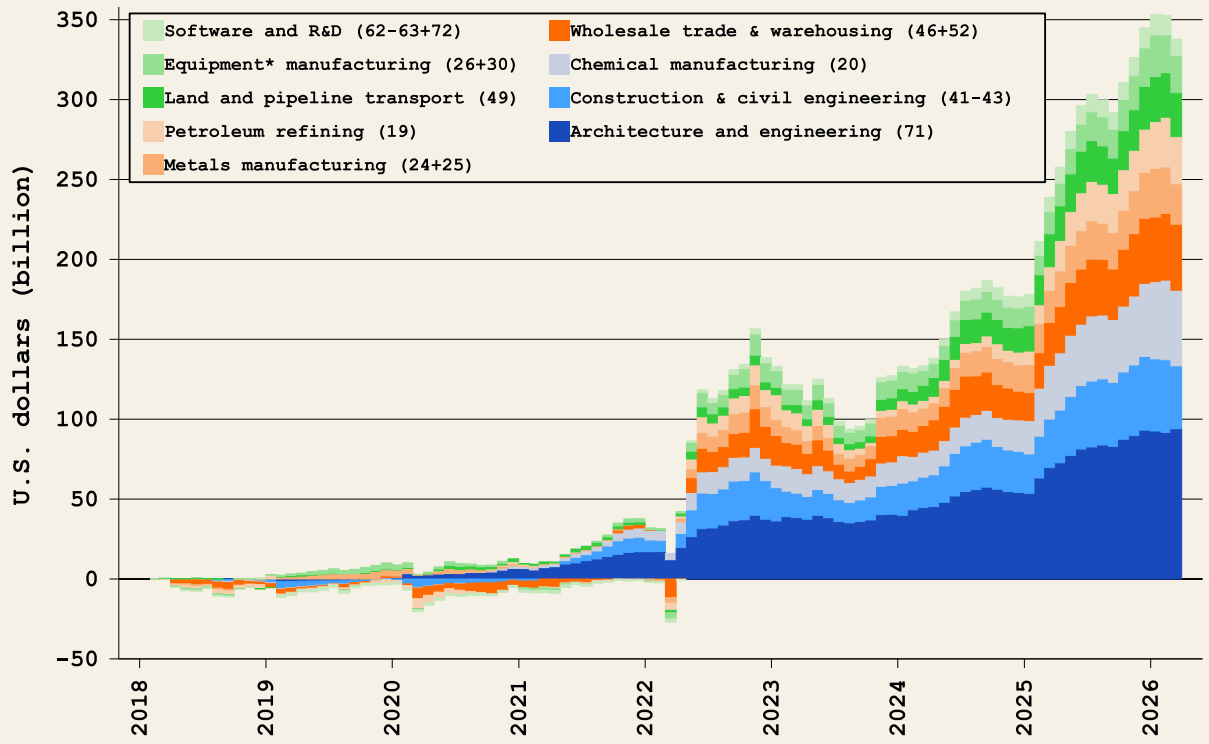
Monthly data on Russian business bank loans by the borrower's industry (Bank of Russia, n.d.d) show that this debt surge is related to the war effort. According to the work of Kennedy (2025), who identified 16 distinct OKVED2 industries that supported the military, Russian banks have shifted the composition of their loan books to favor the businesses in war-related fields. The USD value of this additional lending surged in 2025, coincident with the increase in official government spending on the war.

Figure 4: Mobilization of the banks: Ruble value of bank loans outstanding by OKVED2 sector



Notes: *Following Craig Kennedy: OKVED2 sectors 19, 20, 24, 25, 26, 30, 41, 42, 43, 46, 49, 52, 62, 63, 71 and 72. RUB-denominated bank lending to businesses followed similar patterns until shortly before the war began. Since then, borrowing by military-related sectors has grown 2.4 times faster.
Source: Bank of Russia, author's calculations.

Figure 5: Special financial operations: Ruble-denominated bank loans to military-related sectors

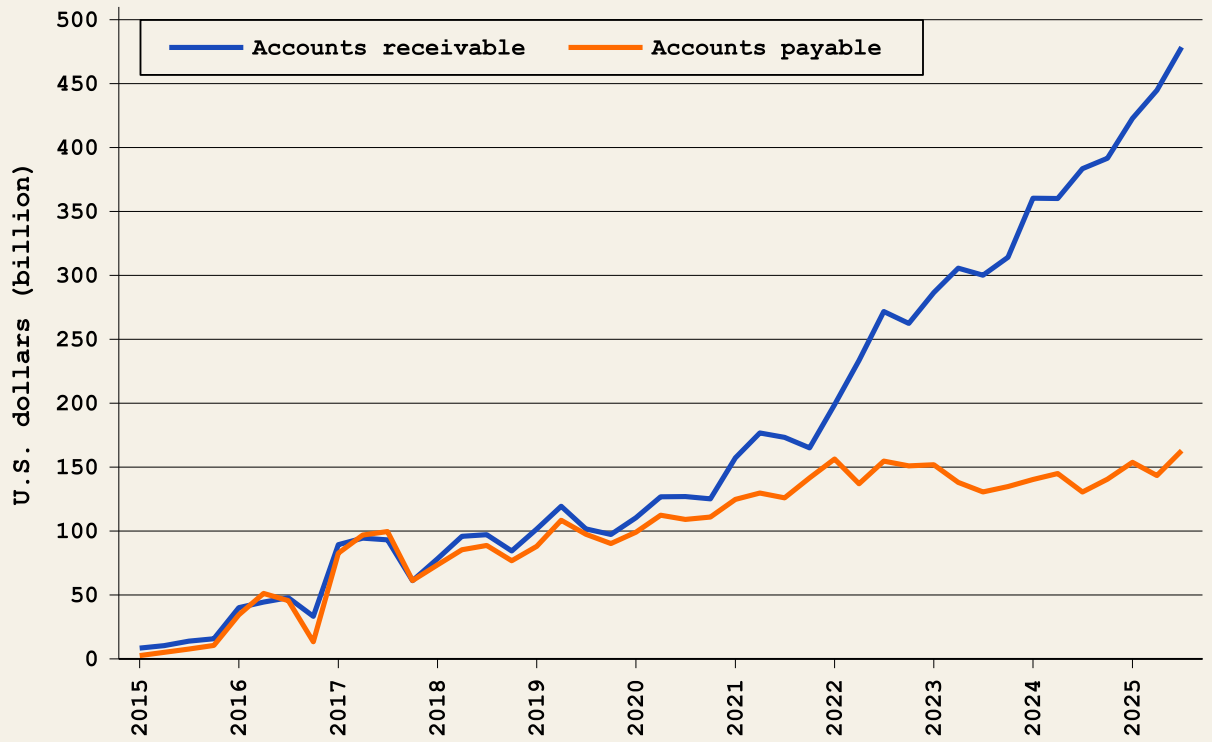


Notes: *Transport equipment ex. motor vehicles + computers, electronics and optical equipment.
Bank loans to industries identified as military-related by Craig Kennedy have grown by $309 billion since the start of the war, with half of that growth just since December 2024.
Source: Bank of Russia, OECD, author's calculations.

At the same time, the Russian government has also been lending to domestic businesses indirectly by accumulating unpaid "accounts receivable" claims against the Russian corporate sector. According to the quarterly financial accounts (Bank of Russia, n.d.b), the Russian government's accounts receivable assets and accounts payable liabilities moved in almost perfect tandem until the pandemic. Since the end of 2021, however, accounts payable liabilities have increased by just $21 billion, while accounts receivable assets have increased by $313 billion.

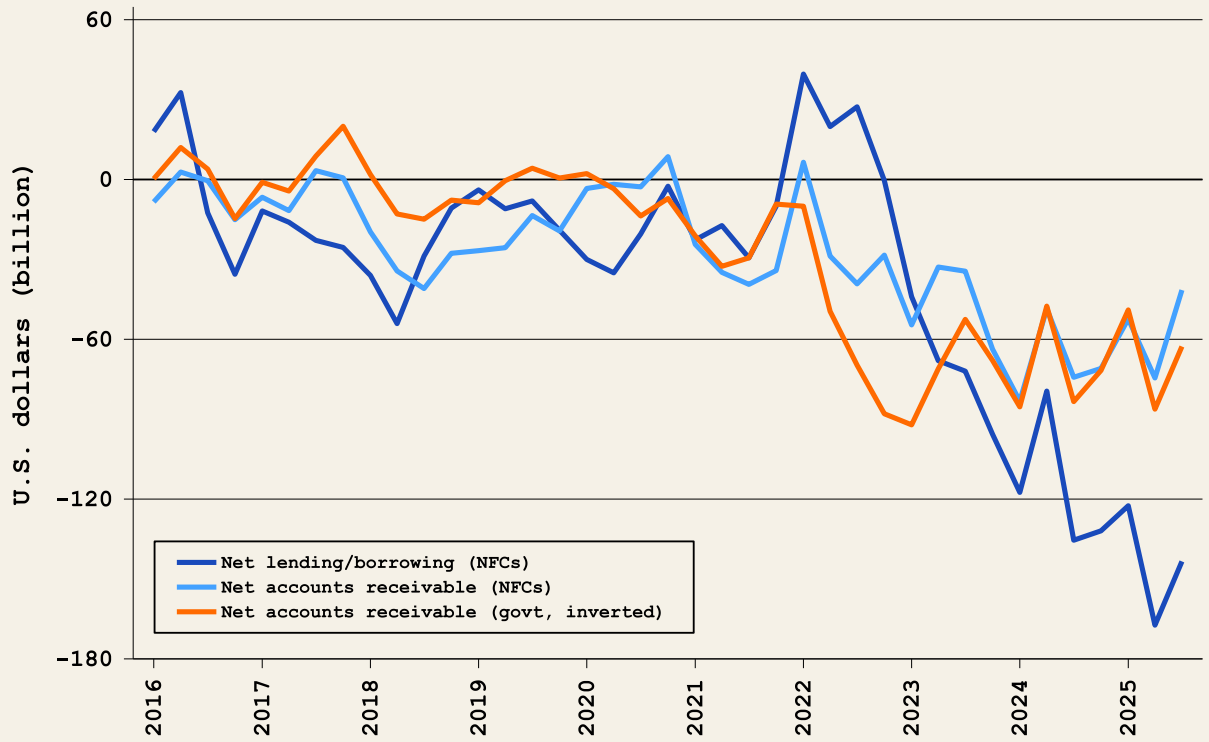
Similarly, Russian nonfinancial corporations' own accounts receivable and accounts payable used to track each other closely before the war, but since the start of 2022, aggregate accounts payable liabilities have surged relative to accounts receivable assets. Whether that reflects deferred tax payments or something else is difficult to determine, but it is a meaningful source of support for businesses. Combined with the surge in bank debt and bond issuance, Russian businesses were spending about $150 billion more than they earned in 2025, up from roughly zero before the war. That dwarfs the increase in the official government budget deficit.

Figure 6: Lending under the table: Russian government accounts receivable/payable



Notes: Cumulative sum since 2015Q1. With the partial exception of the pandemic, the Russian government´s unpaid bills and uncollected taxes tended to line up closely before the war. That changed in 2022.
Source: Bank of Russia, OECD, author's calculations.

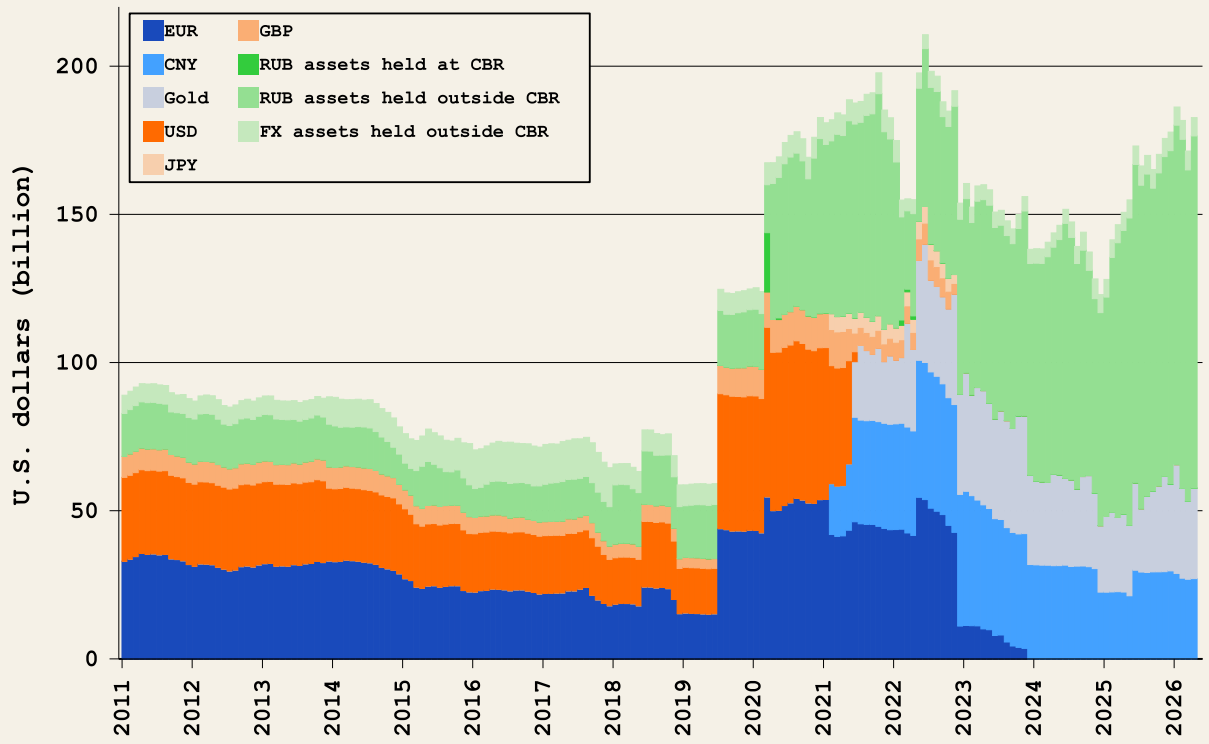
Figure 7: Pay later: Select Russian business-government financial flows



Notes: Four-quarter aggregates. Russian nonfin. corps. have been spending far more than they earn since the war started. Much of this corresponds to the accumulation of unpaid bills owed to the government.
Source: Bank of Russia, OECD, author's calculations.

Over the same period, the "National Wealth Fund" of the Russian Federation (Russian Ministry of Finance, 2026a) has sold 40 % of its holdings of Chinese yuan and 74 % of its gold (by weight). It now mostly holds ruble-denominated claims on local businesses worth about $120 billion.

Figure 8: Piggy bank raid: Russia's National Welfare Funds, assets by type

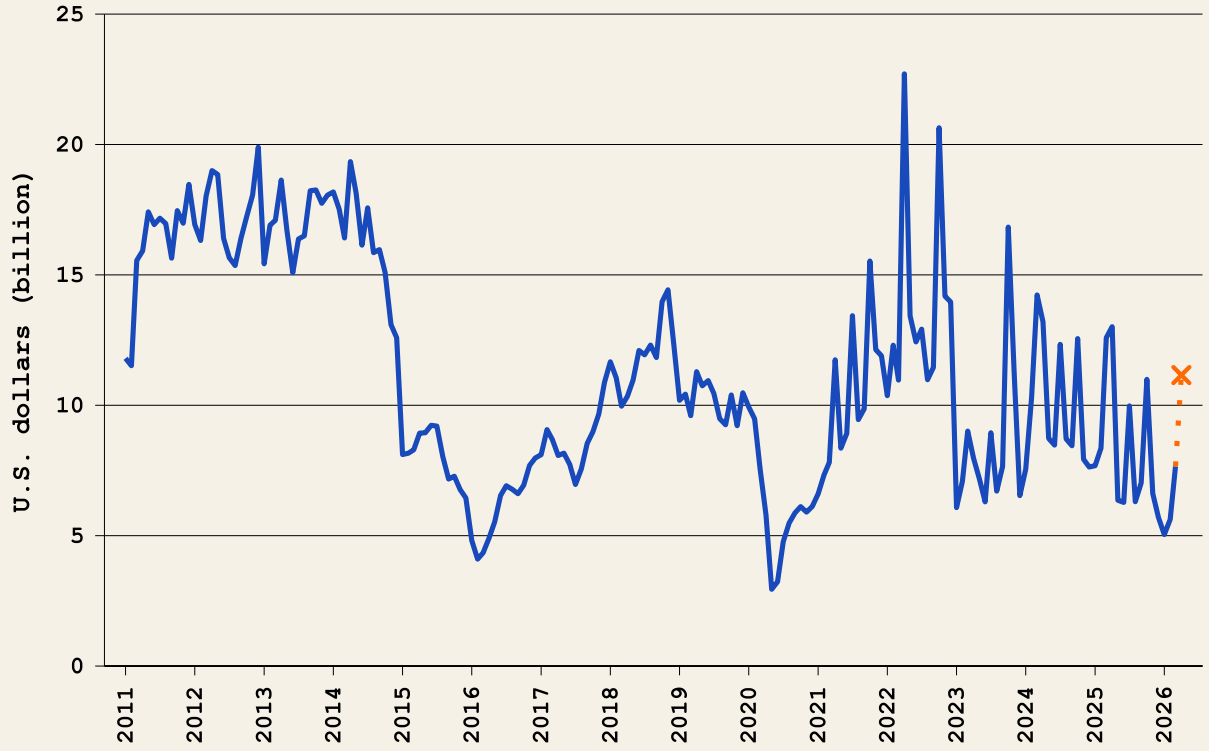


Notes: The Russians have replaced about $80 billion in hard currency assets with Ruble assets. The NWF has also sold 74 % of its gold (in tonnes) since the peak at the end of 2022, raising $37 billion.
Source: Ministry of Finance (Russia), Federal Reserve Board, author's calculations.

Higher energy prices have increased Russian tax receipts. The latest data show that monthly energy revenues were worth ₽855.6 billion in April, or about $11 billion. That is roughly double the December 2025–February 2026 average of $5.5 billion, but the significance of this should not be overstated. The consolidated Russian government already collected about $69 billion/month in non-energy revenues, which means that the extra $5.5 billion/month is simply not that large relative to the government's expenses. Much of the extra money is likely going to be used to replenish the NWF, with the government expecting to spend about ₽110 billion buying foreign currency and gold in May after deferring all purchases and sales in March and April.

Even this elevated level of energy tax revenue is substantially lower than what one might have expected given the level of international oil prices. From mid-2011 through mid-2014, the Russian government was collecting about $17 billion/month in energy revenues. Ukrainian attacks on Russia's ability to extract, refine, and export its oil, as well as ongoing sanctions, seem to have limited Russia's windfall from the Iran conflict. Further attacks could continue to constrain this revenue stream.

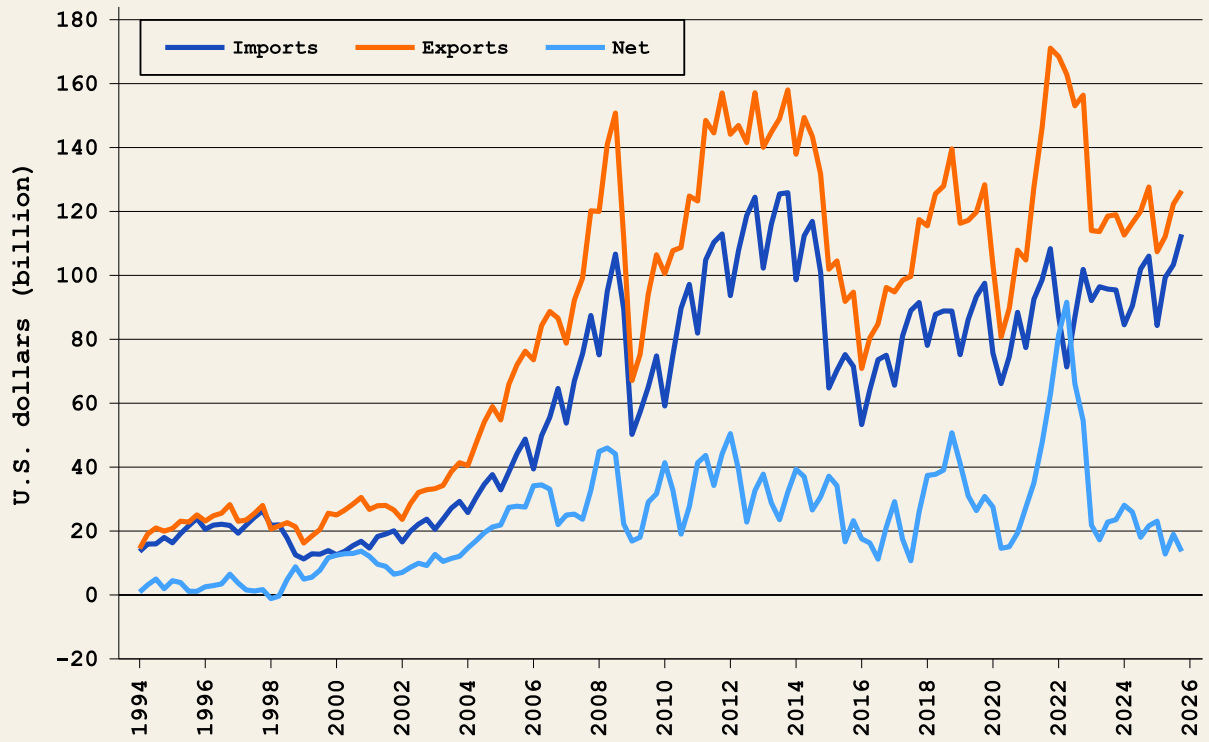
Figure 9: Missing out: Russian oil and gas revenues



Notes: Per month, net of refunds. The surge in energy prices and the loosening of export sanctions did not cause Russian O&G tax receipts to rise much in April, highlighting the impact of Ukrainian attacks.
Source: Ministry of Finance (Russia), OECD, Koyfin, author's calculations.

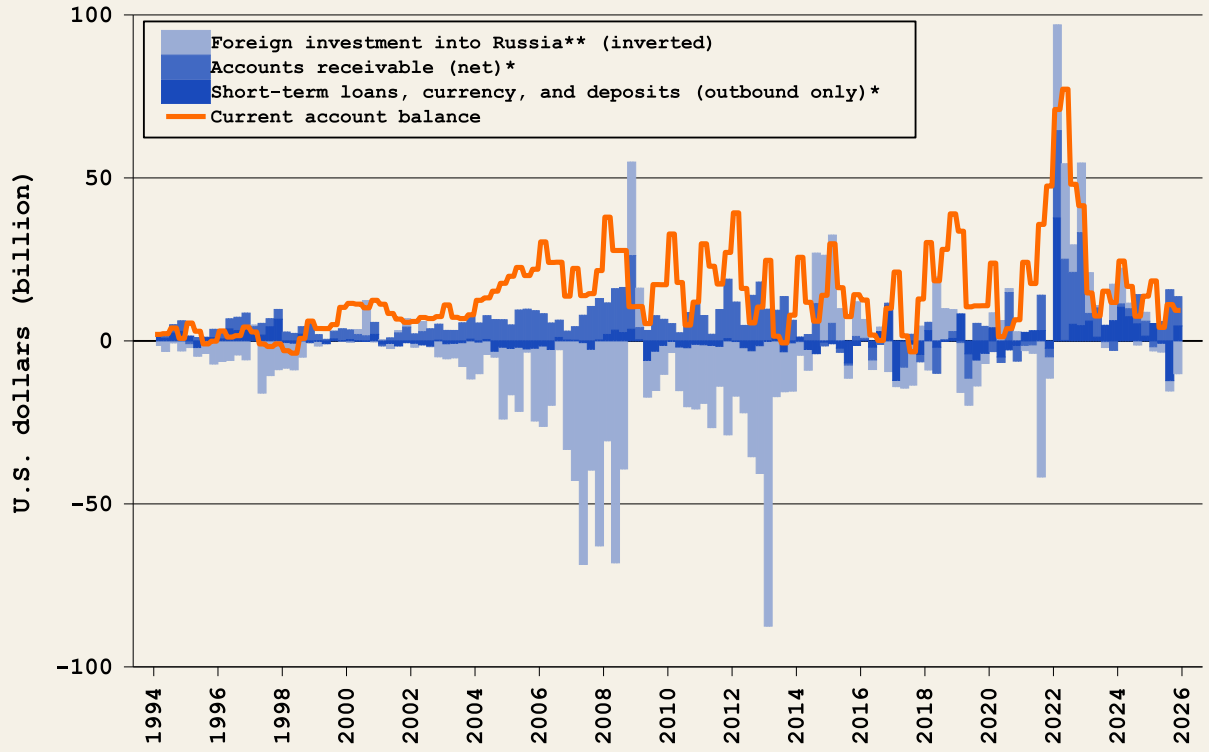
Even more important, the last time energy prices surged, in 2022, the extra money did not translate into higher imports of critical goods (Bank of Russia, n.d.a), but was instead used to finance capital flight by foreign investors and Russian households, as well as to cover unpaid bills owed to Russian companies. That was because sanctions and export controls limited what Russians could buy with their windfall. For the most part, those sanctions remain in place, and as long as they do, the Russians will have difficulty translating higher paper profits into needed military equipment.

Figure 10: New meaning to “forced savings”: Russian trade in goods and services



Notes: Per quarter. Russian export earnings soared in 2022. But this did not translate into either higher imports or reserve accumulation, because of sanctions and capital flight.
Source: Bank of Russia.

Figure 11: How to (not) spend it: Select Russian cross-border financial flows



Notes: Per quarter. *Non-bank businesses and households only **Excluding accounts payable owed by Russians to foreign suppliers.
Russia's current account surplus ballooned in 2022 as foreign investors fled and Russians emigrated en masse, all while energy exports soared. That did not help the war effort.
Source: Bank of Russia, author's calculations.

Tellingly, Russia's top officials seem to be more concerned about the impact of higher energy revenues on domestic inflation than on any potential benefits. The finance ministry is still planning for oil prices to be lower than they were in 2025 (Interfax, 2026), and cutting non-military spending accordingly. Meanwhile, Putin has personally told Russian oil and gas companies to use any windfalls to pay down debts (President of Russia, 2026). In a meeting with the Russian Union of Industrialists and Entrepreneurs, Putin expressed his view that the war and associated price spikes would be temporary (Vedomosti, 2026). Putin is reported to have asked Russian oligarchs for "donations" to the Russian budget (Financial Times, 2026), which does not seem like the sort of thing that would happen if officials were confident about the country's fiscal position.

Even more revealing are the statements from Elvira Nabiullina, the long-serving boss of the CBR. On March 20 2026, after the CBR announced its most recent interest rate decision, her main concern about "external conditions" was that it would worsen Russia's inflation situation (Bank of Russia, 2026b), noting that "this is another supply shock that will impact global costs and, to a certain extent, be passed on to prices in the Russian market." She also

expressed her concern that any increase in government spending would also be inflationary and force the CBR to keep rates high. A few days later, Nabiullina testified to the Duma about the CBR's most recent annual report (Bank of Russia, 2026a). She warned about the dangers of prematurely lowering interest rates, even though the CBR's "key rate" was still about 10 percentage points higher than Russia's inflation rate. As she put it, "When virtually the entire labor force is employed, the economy cannot grow faster than labor productivity."

Energy importers cannot use the financial resources at their disposal to "print" oil that is not being exported, they can only bid up the price of whatever remaining supply is still available. Similarly, sanctioned energy exporters facing population decline cannot use their paper profits to compensate for real shortages of men and materiel, only to push up the prices of whatever they are still able to buy. From this perspective, the Russians' lack of optimism about any oil windfall makes perfect sense.

References

Bank of Russia (2026a). Elvira Nabiullina's speech at joint meeting of State Duma dedicated committees on Bank of Russia's 2025 Annual Report. Bank of Russia Official Press Release. http://www.cbr.ru/eng/press/event/?id=28437.

— (2026b). Statement by Bank of Russia Governor Elvira Nabiullina in follow-up to Board of Directors meeting on 20 March 2026. Bank of Russia Official Press Release. http://www.cbr.ru/eng/press/event/?id=28411.

— (n.d.a). External Sector Statistics. Bank of Russia Official Website. https://www.cbr.ru/eng/statistics/macro_itm/external_sector/.

— (n.d.b). Financial Accounts and Financial Balance Sheets. Bank of Russia Official Website. https://www.cbr.ru/eng/statistics/macro_itm/fafbs/.

— (n.d.c). Monetary and Financial Statistics: Organisations and Households Debt; Q4 2025. Bank of Russia Official Website. https://www.cbr.ru/eng/statistics/macro_itm/dkfs/ext_dep_indicator/.

— (n.d.d). Statistics Banking Sector: Granted Funds and Borrowings. Bank of Russia Official Website. http://www.cbr.ru/eng/statistics/bank_sector/sors/.

Financial Times (2026). Putin asks oligarchs to donate to budget as cost of Ukraine war soars. https://www.ft.com/content/d10dfb27-f56f-45a0-9423-af5253cbedd5?syn-25a6b1a6=1.

Interfax (2026). The Ministry of Finance has stated that the budget rule may change starting in 2027. Interfax Business News Agency. https://www.interfax.ru/business/1079744.

Kennedy, Craig (2025). Russia's Hidden War Debt (full report): Moscow Has Been Discreetly Funding Heavy War Costs with Risky, Off-Budget Debt. Navigating Russia (Substack). https://navigatingrussia.substack.com/p/russias-hidden-war-debt-full-report.

President of Russia (2026). Meeting on Economic Issues. Official Website of the President of the Russian Federation. http://kremlin.ru/events/president/news/79756.

Russian Ministry of Finance (2026a). Data on the Movement of Funds and Results of the Management of the National Wealth Fund's Assets. Official Website. Last Updated: May 14, 2026. https://minfin.gov.ru/ru/document?id_4=93488-dannye_o_dvizhenii_sredstv_i_rezultatakh_upravleniya_sredstvami_fonda_natsionalnogo_blagosostoyaniya.

Russian Ministry of Finance (2026b). Information on the generation and use of additional oil and gas revenues in the federal budget for 2018–2026. Official Website. Last Updated: May 06, 2026. https://minfin.gov.ru/ru/statistics/fedbud/oil?id_57=122094-svedeniya_o_formirovanii_i_ispolzovanii_dopolnitelnykh_neftegazovykh_dokhodov_federalnogo_byudzheta_v_2018-2023_godu.

— (2026c). Summary monthly data on the implementation of the consolidated budgets of the constituent entities of the Russian Federation (in billions of rubles, cumulative from the start of the year). Official Website. Last Updated: May 18, 2026. https://minfin.gov.ru/ru/statistics/subbud/execute?id_57=88391-informatsiya_ob_ispolnenii_byudzhetov_subektov_rossiiskoi_federatsii.

— (2026d). Summary monthly report on the implementation of the consolidated budget of the Russian Federation and state extra-budgetary funds (in billions of rubles, cumulative from the start of the year). Official Website. Last Updated: May 18, 2026. https://minfin.gov.ru/ru/statistics/conbud/execute?id_57=93447.

— (2026e). Summary monthly report on the implementation of the federal budget (in billions of rubles, cumulative from the start of the year). Official Website. Last Updated: May 18, 2026. https://minfin.gov.ru/ru/statistics/fedbud/execute?id_57=80042-informatsiya_ob_ispolnenii_federalnogo_byudzheta.

Vedomosti (2026). What Vladimir Putin Said About the Middle East Conflict at the RSPP Congress. Vedomosti Newspaper. https://www.vedomosti.ru/economics/articles/2026/04/17/1032154-chto-vladimir-putin-skazal.

The China-Russia asymmetric partnership: Implications for Europe

Alicia García-Herrero, Elina Ribakova, and Lucas Risinger

1 Introduction

The partnership between China and Russia has attracted considerable analytical attention since Russia's full-scale invasion of Ukraine in February 2022. Much of that attention has focused on the question of its durability: whether external pressure, primarily from the United States and its allies, can fracture the relationship. The evidence to date suggests that external actors have limited capacity to do so. The partnership rests on a genuine, if not unconditional, convergence of strategic interests, and both parties have demonstrated a willingness to absorb considerable costs to sustain it.

This chapter argues, however, that the more consequential question is not whether the alliance can be broken from outside, but how its internal dynamics are likely to evolve over time. Our central contention is that the China-Russia relationship, while stable in the near term, is structured in a way that generates increasing asymmetry between the two parties. What we observe is best described as a bounded partnership model: Cooperation is real, mutually beneficial in the short run, and politically durable, but it is bounded by China's commercial cost-benefit analysis, its sovereign-technology and energy-independence ambitions, and its persistent refusal to commit capital that would lock it into Russia's future. The partnership's "no limits" label, proclaimed in the February 2022 joint statement signed days before Russia's full-scale invasion (Reuters, 2022), is mostly rhetorical; deeply and structurally asymmetrical would be more accurate.

Both have derived tangible benefits from the partnership, and those benefits help explain its resilience. But the distribution of gains is not static. Russia's position appears strongest in the short term and is likely to deteriorate over the medium to long term, while China's gains are already significant and are likely to compound. The relationship is not a coalition of equals moving toward a shared destination; it is an increasingly unbalanced arrangement in which one party is accumulating structural advantages at the expense of the other.

The chapter proceeds in four steps. It first examines the gains that Russia has derived from

the partnership in the short term, before turning to the structural costs that are likely to materialize over time. It then analyses China's gains, distinguishing between immediate benefits and the longer-term strategic gains that Beijing is constructing. A bridging section links these bilateral dynamics to a broader argument about the distribution of power in the emerging international order. The chapter concludes by drawing out the implications for European strategy, identifying two scenarios that are not mutually exclusive and whose potential simultaneity represents the most challenging policy environment for European actors.

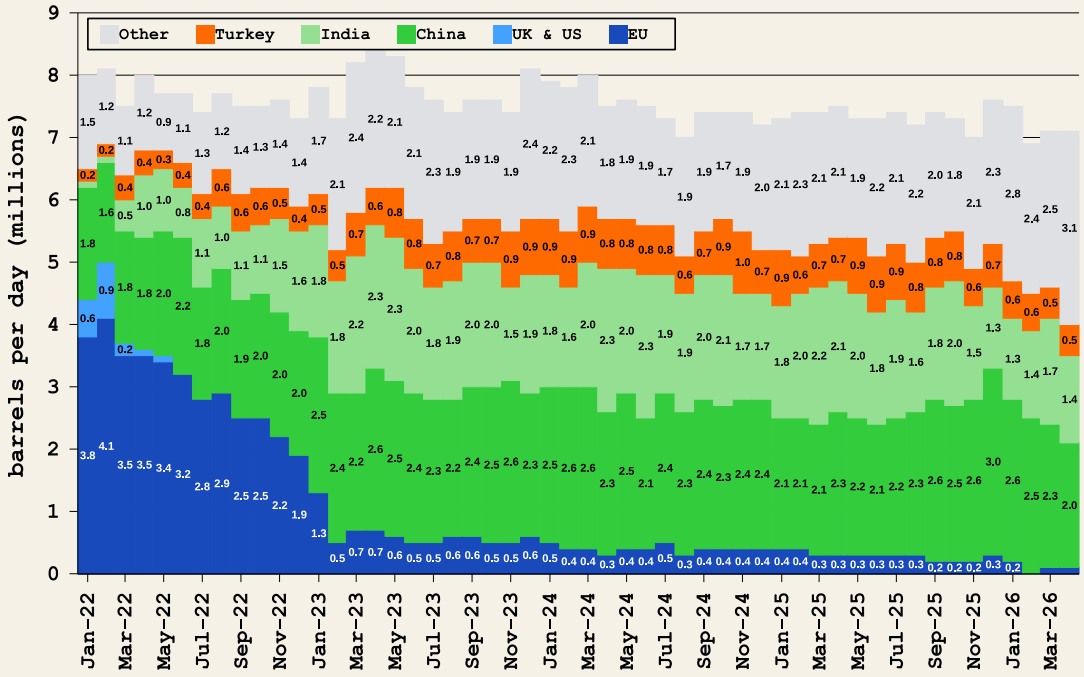
2 Russia: Short-term gains, long-term costs

2.1 Short-term gains

Russia's most immediate gain from the partnership has been the preservation of its war economy under conditions of comprehensive sanctions. China has served as both a market for Russian commodity exports and a supplier of the imported goods that the Russian economy requires. On the export side, Chinese buyers have absorbed a substantial share of the Russian hydrocarbons that European markets ceased to purchase after 2022, providing Moscow with a revenue stream that, while constrained by below-market pricing and logistical limitations caused by U.S. and EU sanctions, has helped sustain public finances and military expenditure (see Figure 1). For example, China pays nearly 40 % less for Russian gas than Gazprom's other clients (The Moscow Times, 2025). The scale of this pivot is striking: Looking at crude oil and condensate specifically, Europe's share of Russian exports collapsed from about half in 2020 to 12 % in 2024, while Asia's share surged from 41 % to 81 % (U.S. Energy Information Administration (EIA), 2025). For total goods trade, the reorientation is even starker: The EU's share of Russian exports fell from roughly 38 % to just 7 % (European Commission, n.d.). China alone now accounts for about 35 % of Russia's total foreign trade, up from 16 % of exports and 30 % of imports before the full scale invasion. Bilateral trade more than doubled from $104 billion in 2020 to $245 billion in 2024. After explosive growth in mutual trade during 2022–2023, bilateral trade then stagnated as markets became saturated and the threat of U.S. secondary sanctions intensified. The prolonged stagnation of the Power of Siberia 2 pipeline negotiations illustrates the limits of this arrangement – though a "legally binding" memorandum was signed in September 2025, the two sides have yet to agree on price, timeline, or investment – but the overall energy relationship has functioned as an economic buffer of material significance.

The 2026 Iran war has dramatically underscored both the fragility and the resilience

Figure 1: Russian oil export volume by destination



Source: International Energy Agency, KSE Institute.

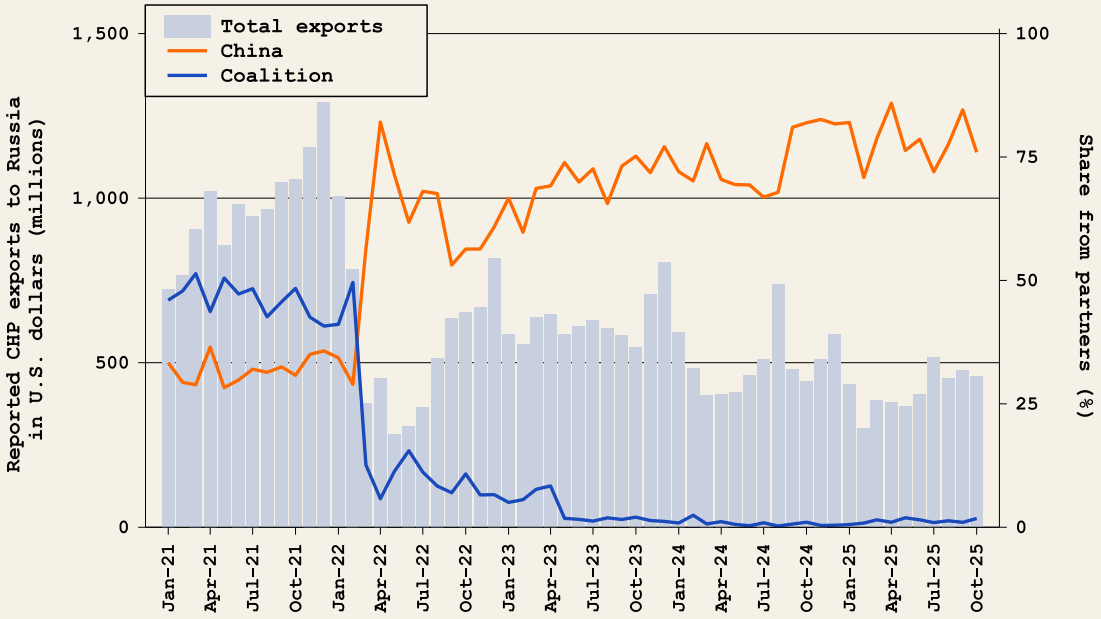
of Russia's energy-dependent model. Before the crisis, Russia's energy outlook had deteriorated to its worst state since the full-scale invasion: oil export earnings fell below $10 billion in February for the first time since the COVID-19 pandemic, export volumes dropped sharply for the first time during the war as U.S. sanctions hit Russia's biggest producers, and the budget deficit had reached ₽3.45 trillion in just two months – more than 40 % higher than in the same period the previous year, exceeding 90 % of the full-year plan. The Kremlin was reportedly preparing 10 % cuts to all non-security spending.

Iran's closure of the Strait of Hormuz reversed this trajectory overnight. Depending on the conflict's duration, Russia could gain between $84 billion and $252 billion in additional export earnings and between $45 billion and $151 billion in additional budget revenues in 2026 compared to a no-war baseline (Hilgenstock et al., 2026). Even under an optimistic scenario (which has since been surpassed), the windfall would have moderately reduced Russia's macro vulnerabilities. In a more extended conflict, Russia would likely achieve a budget surplus and refill its sovereign wealth fund, effectively granting it the capacity to sustain high war spending for years to come. The U.S. Treasury's repeated extension of sanctions relief on Russian oil, framed as a market-stabilization measure, has further compounded the effect by recovering suppressed export volumes and beginning to narrow the discount on Russian crude.

On the import side, China has become Russia's principal supplier of dual-use technology, electronics, and machinery, filling the gaps that Western export controls had created,

which is one of the important benefits that Russia is extracting from this relationship. And yet, China has not granted Russia unlimited access. Chinese firms have periodically adjusted their behavior in response to the threat of secondary sanctions, which means that Russia has had to adjust to the availability of certain categories of technology depending on the stringency of the U.S. sanctions. The depth of this dependence is measurable: China's share in Russia's dual-use imports rose from roughly 25 % before the invasion to over 80 % by 2025, concentrated in electronic components, CNC machine tools, computing and telecommunications hardware, and advanced optical and aerospace components (see Figure 2, which compares imports of Common High Priority (CHP) items from China to imports from the coalition of countries applying export controls). Russia's military-industrial complex has become structurally reliant on Chinese components and Chinese intermediation of Western components in ways that would be extremely difficult and costly to reverse (Risinger, Talalaievskyi, et al., 2026; Bilousova et al., 2024).

Figure 2: Reported CHP exports to Russia and share from partners



Source: UN Comtrade, Chinese customs, KSE Institute.

China's major role in Russia's economic survival, mostly via trade, has been made possible thanks to China's build-up of an infrastructure for international payments, which China has provided to Russia as an alternative to Western financial infrastructure. The expanded use of the renminbi in bilateral transactions, routed through the CIPS interbank messaging system as a partial substitute for SWIFT access, has allowed Russia to conduct international commerce at a scale that its exclusion from dollar-denominated systems might otherwise

have foreclosed.

However, this financial lifeline has introduced its own vulnerabilities. As Bank of Russia Governor Elvira Nabiullina herself acknowledged, the expanded role of the yuan means that developments in China and movements in the yuan exchange rate now exert greater macroeconomic influence on Russia than at any previous point. The yuan is not a freely floating currency, and PBoC policy can be unpredictable and opaque. High reliance on the yuan complicates the Bank of Russia's monetary policy and exposes its financial system to unpredictable external shocks. What was sold domestically as a step toward financial sovereignty has merely created new risk exposures.

Moreover, Chinese banks have proven far less willing than Russian officials hoped to serve as an alternative payment infrastructure. Multiple rounds of secondary sanctions threats prompted major Chinese financial institutions to curtail or suspend accepting yuan payments from Russian counterparties – creating bottlenecks of weeks to months, requiring routing through expensive intermediaries, and leaving significant sums stuck in transit.

Finally, Chinese promotion of pro-Russian narratives about the war, along with Beijing's broader promotion of a multipolar world order, has reduced Russia's diplomatic isolation in the Global South and provided Moscow with political cover in multilateral forums.

2.2 Long-term costs

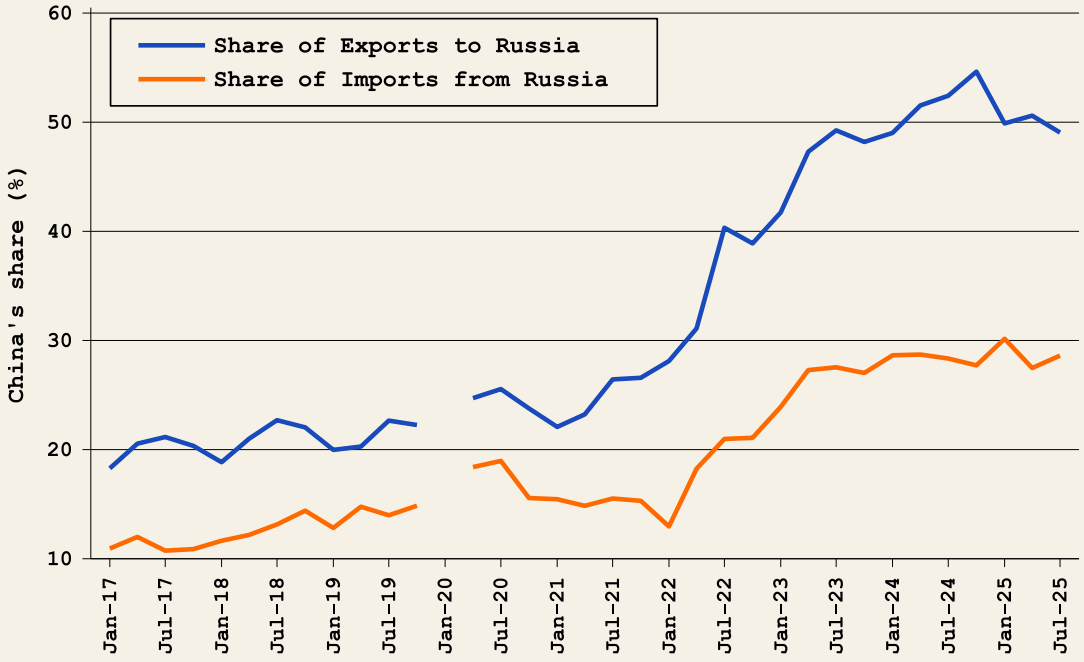
What is, no doubt, a very useful partnership for Russia so far, is already showing some cracks when it comes to more structural costs down the road. The most fundamental is economic dependence. As Russia's trade and financial relationships with Western economies have contracted, China has become the dominant node in Russia's external economic relations. This is not only true for exports but also imports (see Figure 3).

The diversification of imports appears all the more difficult given that Russia mainly accumulates renminbi as payment for its exports, which does not allow Russia to accumulate hard currency to import from other sources and makes substitution of imports from other sources very difficult as the renminbi is not freely convertible. These complications are exacerbated by the financial sanctions imposed by the U.S. and EU against Russia. This also means that Russia is constrained when it comes to building – and financing – infrastructure to a single foreign source, China.

Such dependence limits Russia's negotiating leverage across a widening range of domains: energy pricing, technology access, infrastructure financing, and currency arrangements. Each of these represents a potential choke-point that China does not need to exercise overtly to make its influence felt.

The automotive industry illustrates the pattern clearly. Russia is now one of the top recipients of Chinese cars. Unlike Western carmakers, which before 2022 manufactured

Figure 3: China's share of global trade with Russia



Source: IMF DOTS.

in Russia, Chinese producers supply finished vehicles made entirely in China – bypassing domestic production chains, eroding accumulated know-how, and reducing domestic output. Moscow first responded with ambivalence, then imposed tariffs: In October 2024, mandatory recycling fees on imported vehicles were increased by up to 85% – a poorly veiled protectionist measure directed at China that dramatically reduced import flows. Russian regulatory agencies have also revoked certification permits for specific categories of Chinese trucks. Simultaneously, Moscow is inviting Chinese manufacturers to localize production in Russia, attempting unsuccessfully to recreate the pre-2022 model of Western-anchored localized production. Although China is willing to direct its production overhang toward Russia, it is not willing to invest in localized production – trading yes, investment no.

The military-industrial complex is where this dependence is most consequential. Despite years of efforts at import substitution, Russian manufacturers have merely replaced European dependencies with Chinese ones. China's growing importance is visible in the Common High Priority (CHP) items list – 50 product codes (Bureau of Industry and Security (BIS), 2024) jointly designated by the U.S., EU, UK, and Japan as critical to the Russian war machine. CNC machine tools, previously acquired from Germany and other sanctions-coalition countries, have been substituted with lower-quality alternatives almost exclusively from Chinese suppliers. Electronics and components that were once sourced from a wide range of partners are now overwhelmingly procured from China. The

military-industrial complex has a far greater reliance on China than the civilian economy does, and deliveries of machinery and components from the domestic market have not kept pace with Chinese alternatives (Risinger, Shkurenko, et al., 2025).

All in all, Russia's increasing economic ties with China do not represent a neutral substitution but a shift from a multilateral system in which Russia participates to a bilateral arrangement governed by Chinese institutional priorities. Russian elites are not blind to this dynamic. The language of "sovereignty" that permeates Russian official communication – from information-security doctrine to export-structure controls to rare-earth industrialization policy – is now in significant part a response to the anxieties that Chinese, not European, leverage creates. Moscow wants to be Beijing's partner, not its dependent.

Geopolitically, the most telling indicator of Russia's declining leverage within the partnership is the trajectory of its regional influence. In Central Asia, a space Russia has historically regarded as its sphere of influence, Chinese economic penetration has advanced significantly since 2022. The Central Asian states, alert to the sanctions exposure that close alignment with Moscow entails and aware of how Russian revanchism may one day gaze in their direction, have diversified their external relationships, and China has been the principal beneficiary of that diversification.

A comparable dynamic is observable in multilateral groupings such as BRICS and the Shanghai Cooperation Organization (SCO), where the progressive expansion of membership dilutes Russian influence while extending Chinese convening power. Russia's role in these frameworks is shifting from co-architect to participant, a change that reflects the broader asymmetry of the bilateral relationship.

Perhaps most consequentially in the long run, Russia risks ceding effective leverage over its most strategic assets – hydrocarbons, minerals, and Arctic infrastructure – that have historically constituted the material foundation of its great-power status. In the cases of hydrocarbons and minerals, Russia's potential permanent loss of European markets has reduced Russia's ability to use other buyers to push up the price that China pays. The significant discount that China pays for Russian oil, even during an historic oil crisis, is immediate evidence of this dynamic. Moreover, China's global dominance in refining critical minerals means that Russia can hardly act as a price maker in their bilateral trade.

3 China: Short-term gains and long-term strategic architecture

3.1 Short-term gains

China's immediate gains from the partnership are substantial but operate on a different logic from Russia's. Where Moscow has been primarily concerned with survival under pressure, Beijing has been engaged in a process of strategic positioning that exploits the current conjuncture while also working on the long-term gains.

The energy dimension is the most straightforward. Russia's exclusion from Western markets has transformed the terms of its commercial relationship with China. Beijing has secured access to Russian hydrocarbons at discounts that represent a meaningful improvement in China's terms of trade, strengthening industrial competitiveness at a time of domestic economic pressure and intensifying external competition.

Chinese crude imports from Russia rose from 86 million tonnes in 2022 to a record 108.5 million tonnes in 2024, making Russia China's single largest oil supplier. Nonetheless, China maintains a well-diversified supply of oil: Russia accounted for only 19 % of Chinese crude imports in that time. Russian crude has been systematically priced at deep discounts to benchmark, essentially turning Russia into a risk-priced supplier akin to Iran and Venezuela. Yet China demonstrated its optionality in 2025: After three consecutive years of volume growth, Russia sent roughly 150,000 fewer barrels per day to China than in 2024 – a 7.2 % decline – as new sanctions prompted Chinese national oil companies to reduce purchases and independent refiners shifted toward other discounted sanctioned barrels. China's ability to re-optimize its sanctioned-supplier portfolio is the form of leverage that makes the relationship uncomfortable for Moscow.

More broadly, Russia has become a captive supplier across a range of commodities – minerals, agricultural products, timber – with diminishing ability to seek competitive alternatives due to sanctions, a shift that has altered the balance of bargaining power in ways that are unlikely to reverse even if Russia's geopolitical situation eventually improves.

Gas is where China's leverage is most visible. While Russia has been able to redirect oil toward China and India with relative ease, gas is far harder to reroute. The Power of Siberia 1 pipeline reached 38.8 billion cubic meters in 2025, exceeding its contracted target, but Russian authorities are understandably concerned that this cannot replicate the European revenue model, which combined higher prices, deeper contractual commitments, and stronger pricing leverage. The Power of Siberia 2 project – which would run through Mongolia and deliver up to 50 billion cubic meters per year from western Siberian fields stranded by the loss of European markets – has emerged as the most important test of whether the partnership has real commercial substance. A memorandum signed in September 2025 was described by Russian officials as a "legally binding" milestone, but subsequent reporting made clear it sidesteps every critical commercial term, including the gas price. China can delay final investment decisions, press for lower prices and greater flexibility, and resize utilization depending on spot LNG market conditions. Putin finished his trip to Beijing in May without a deal on the project once again, proving that even a

global energy crisis has not provided sufficient leverage for Moscow (García-Herrero and Ribakova, 2026). Russia's west-basin gas has no comparable alternative.

The financial dimension merits particular attention. Prior to 2022, the internationalization of the renminbi had advanced slowly, constrained by China's maintenance of capital controls and the limited incentive for third parties to hold or settle in a non-convertible currency. The sanctions imposed on Russia following the invasion of Ukraine have propelled the use of the renminbi for trade settlements. This would not have been possible in the past as all renminbi transactions had to use Western international payment channels but China's creation of its Cross-Border International Payments System (CIPS) has allowed it to make payments outside of SWIFT (with China's own messaging system), which are particularly useful for countries subject to Western sanctions, as is the case for Russia. More broadly, Russia's experience has provided a visible demonstration to other economies – sanctioned, sanction-threatened, or simply concerned about dependence on U.S. financial infrastructure – that dollar alternatives exist and function at scale. This is a major benefit for China in its quest for renminbi internationalization without losing its grip on capital controls.

The 2026 Iran war has further illuminated the strategic calculus behind the partnership. Both Russia and China have maintained conspicuously muted responses to the U.S.-Israeli campaign – a silence that reflects not passivity but strategic calculation. For China, the war is opening space in the Indo-Pacific as the United States becomes consumed by the Middle East. China had been dependent on Iran for roughly 13 % of its crude oil imports, routed largely through Malaysia and Indonesia to circumvent sanctions, with a 25-year cooperation agreement worth an estimated $400 billion in discounted oil. With Iranian supply now disrupted, Russia stands to fill part of the gap, as Chinese independent refineries shift between Russian, Venezuelan, and Iranian crude depending on availability and pricing. Yet China's vulnerability to the energy shock is structurally contained: Precautionary stockpiling since late 2025 has given Beijing three to four months of crude oil reserves, and its growing electric vehicle economy and clean energy investments reduce structural oil dependence over the medium term, while reliance on coal helps shield the economy from oil and gas price volatility in the short term. For Beijing, the Iran crisis is a manageable disruption that offers strategic benefits: U.S. distraction and reinforced narratives about American unilateralism.

3.2 Long-term strategic architecture

The more consequential gains for China are structural and likely to compound over time. The first concerns economic dominance through accumulated leverage. China's GDP is already roughly ten times that of Russia in nominal terms, and the trajectories of the two economies suggest this gap will widen. But aggregate size understates the nature of the dependency that is forming. What matters is China's growing role as the decisive node in an

increasing number of supply chains on which Russia depends: manufacturing, technology, capital equipment, and the dual-use inputs that sustain the Russian defense sector. Each of these dependencies constitutes a potential point of leverage that China accumulates without needing to exercise it overtly. As Chinese investment flows into Russian infrastructure projects that Western capital has vacated, the relationship between formal ownership and effective economic control becomes progressively more complex.

Second, China may be constructing a financial architecture that confers the practical benefits of currency internationalization without the costs traditionally associated with reserve currency status. A modern reserve currency typically requires the issuing country to run trade deficits and maintain open capital accounts, accepting a degree of domestic economic constraint in exchange for international monetary influence and cheaper borrowing. China's approach, by contrast, seeks to expand renminbi use among economies that have limited dollar alternatives – through sanctions, political friction, or deliberate strategic choice – while retaining capital controls and the domestic financial autonomy they provide. If this network continues to expand, as China's engagement with BRICS enlargement suggests it intends, Beijing may achieve a form of monetary influence that is historically novel: international in reach but insulated from the vulnerabilities that international status has historically entailed.

Third, China's approach to multilateral frameworks reflects a hub-and-spoke institutional logic that is systematically accruing to its advantage. The progressive expansion of BRICS and the SCO increases Chinese convening power while diluting Russian influence. New member states are drawn to these frameworks primarily by the economic relationships they have with China, not with Russia. Beijing's bilateral relationships with each member state pass through Chinese institutional and commercial nodes in ways that generate dependencies on the hub rather than horizontal ties among spokes. Russia, which positioned itself as a co-architect of a multipolar order, finds its role within that order shifting as the institutions it helped create become vehicles for Chinese rather than shared strategic priorities.

Finally, and most worrisome, is China-Russia cooperation on the military front. China stands to benefit from having a front-row view of Russia's ongoing war on Ukraine and the corresponding innovation. There are already signs of Russia and China investing together in drone production (Financial Times, 2025).

4 The asymmetry as a structural dynamic

The bilateral analysis presented above points toward a conclusion that is relevant beyond the China-Russia relationship itself. The widening gap between Chinese and Russian

trajectories within the partnership is not an incidental feature; it is a structural consequence of the terms on which the relationship was built and the divergent capacities that each party brings to it. Russia entered the partnership seeking immediate relief from Western pressure and found a willing provider. China entered it with longer time horizons and a more systematic conception of the advantages it sought to accumulate. The result is a relationship in which short-term complementarity conceals medium- and long-term asymmetry.

This dynamic has implications that extend beyond the bilateral balance. The financial architecture, the institutional frameworks, and the infrastructure investments that the partnership is generating do not simply redistribute leverage between Moscow and Beijing. They contribute to a reconfiguration of the international order that affects the strategic environment of third parties, including Europe. The question of what this asymmetry means for European strategy is therefore not secondary to the bilateral analysis; it is its logical continuation.

5 Implications for European strategy

European policy toward the China-Russia relationship has tended to treat the two bilateral relationships – with Russia and with China – as analytically and institutionally separate. The analysis developed in this chapter suggests that this separation is increasingly inadequate. The structural dynamics of the China-Russia partnership generate spillovers that affect European interests directly, and the two relationships are linked in ways that require a more integrated strategic framework.

Two scenarios, which are not mutually exclusive, illustrate the range of implications European actors should consider. In the first, Russia, finding itself progressively subordinated within its partnership with China and aware of the structural disadvantages accumulating against it, eventually seeks to rebalance by re-engaging with Europe. For Europe, this scenario presents both an opportunity and a risk: an opportunity to offer a counterweight to Chinese dominance over Russian strategic assets in ways that might support a more stable regional order, and a risk of premature engagement that rewards Russian aggression without securing a durable change in behavior. Any meaningful re-engagement would require a credible resolution of the war in Ukraine on terms consistent with European security principles, a condition that remains distant but should not be structurally foreclosed. European re-engagement would also need to be structurally limited – i.e., maintaining bans on imports of Russian oil and gas – to guard against a repeat of the weaponized dependence that led Europe into crisis in 2022.

In the second scenario, China continues to actively use the Russia relationship as an instrument for weakening Europe as a strategic actor. This could operate through multiple channels: sustaining Russian military capacity long enough to erode European political

will and fiscal capacity for supporting Ukraine; advancing the de-dollarization agenda and renminbi internationalization in ways that reduce European monetary leverage; deepening Chinese economic penetration of European markets and critical infrastructure during a period of European strategic distraction; or amplifying political divisions within Europe through information operations that Moscow conducts but Beijing benefits from. It is important for Europe to note that this scenario does not require explicit – or visible – coordination between Beijing and Moscow; the structural alignment of their interests is sufficient to produce convergent effects.

What European strategy requires is a dual-track framework that operates at two levels simultaneously. At the first level, it must maintain the capacity for eventual re-engagement with Russia, but only as long as Russia concedes when it comes to a fair settlement of its invasion of Ukraine. This includes, but is not limited to, paying reparations to Ukraine, returning prisoners of war and children abducted from occupied territories, and potentially negotiating the return of Ukrainian territories. At the same time, though, Europe must reduce its economic and technological dependencies on China. The two tracks are connected. Europe's ability to offer Russia a meaningful alternative to Chinese dependency, if and when the conditions for such an offer arise, will depend on Europe having retained sufficient economic and institutional agency to make the offer credible.

In practical terms, the task for Western strategy is not to wait for the partnership to fracture – it will not, in any relevant time frame – but to sharpen the costs of the asymmetry that Russia already bears. This means maintaining and extending secondary sanctions that make every Russia-China transaction more expensive and less reliable, providing strategic support for alternative transport and energy corridors that reduce China's leverage over both Russia and third countries, and investing in energy alternatives to reduce Russia's leverage vis-à-vis Europe. The China-Russia partnership's internal tensions are real but not destabilizing; China's support has been decisive in enabling Russia to sustain both its economy and its war effort. European policy must therefore maintain financial and technological pressure while leveraging the vulnerabilities that already frustrate Moscow.

The 2026 Iran war represents the biggest challenge to the sanctions regime in more than four years of Russia's full-scale war against Ukraine and carries direct implications for European strategy. First, any further easing of sanctions on Russian oil will not meaningfully reduce current supply challenges, since Russia has already been producing close to its capacity – sanctions have primarily targeted the value Russia extracts from exports, not volumes. Easing restrictions will, however, fundamentally undermine the credibility of the sanctions regime and jeopardize European security for years to come. Second, U.S. distraction in the Middle East is keeping open the space for Russia to pursue maximalist demands in Ukraine and to consolidate its sphere of influence closer to home, while additional energy revenues give Moscow the financial means to continue its war in Ukraine for longer or open new fronts in Europe, whether hybrid or otherwise. Third, the crisis demonstrates that Russia's provision of satellite imagery and intelligence to Iran – enabling Tehran to target U.S. and allied assets with precision – has not triggered meaningful U.S.

push-back, validating Putin's calibrated approach and signaling to European policymakers that the Russia-China-Iran axis of coordination is deepening in ways that directly affect transatlantic security. Europe must therefore plan for a scenario in which U.S. strategic bandwidth is structurally reduced and the costs of the China-Russia partnership are amplified by Middle Eastern instability.

6 Conclusion

The China-Russia partnership has clearly grown since Russia's full-scale invasion of Ukraine but in an increasingly asymmetric way. This, and not so much Western pressure, will be the defining factor when it comes to the resilience of their relationship. The current complementarity of interests is already showing some cracks as Russia realizes the costs of such relations in the medium term as the terms of the relationship become less favorable. Such costs include economic dependence, diminished regional influence, and eroding leverage over its own strategic assets. China is deriving benefits that are comparably real in the short term and considerably larger in the long term, as it consolidates its choke-points on the Russian economy, extends the use of the renminbi without losing control of its capital account, and builds a hub-and-spoke approach to international relations with Russia becoming a by-stander even within its region of influence.

The 2026 Iran war illustrates the pattern at speed: Russia receives a temporary financial reprieve through higher energy prices, but the windfall does not alter the underlying structural asymmetry – China remains the party with options, able to re-optimize its supplier portfolio and absorb the shock through precautionary stockpiling and energy diversification, while Russia remains the party locked in. The muted responses of both Moscow and Beijing to the U.S.-Israeli strikes reflect a shared strategic calculation – letting the U.S. entangle itself in a costly Middle Eastern quagmire – but the long-term benefits flow disproportionately to China, which gains space in the Indo-Pacific while Russia merely forestalls fiscal collapse.

For Europe, the implications are both urgent and structural. The temptation to keep fully separate policy files for Russia and China, each managed on its own terms, underestimates the degree to which the two are now linked through the bilateral dynamics described in this chapter. Furthermore, the asymmetry that is building within the China-Russia relationship in China's favor means that Europe needs to continue to include Russia, and therefore Ukraine, in is diplomatic relations with China. Within that context, Europe will need to play its cards well when it comes to the potential scenarios in China-Russia relations, one in which Russia attempts to turn to Europe to exit the increasing straitjacket that China has put Russia in or one in which Russia accepts such strategic dependence. The more Russia worries about the latter, the more Europe should have some leverage when it comes to a fair settlement of Russia's invasion of Ukraine and the future relations between the two and

between Europe and Russia.

Finally, one area that warrants close attention – and future research – is cooperation in the military sphere. Russia's aggression against Ukraine means it is at the forefront of current warfare. While Ukraine has generally maintained a lead in innovation, Russia has been quick to catch up and produce at scale – which it would not have been able to do without Chinese support. In return, it would be practical for China to request access to a front-seat view of the war to learn from it. There are already signs of Russia and China investing together in drone production (Reuters, 2024). The partnership in this domain – technology supply yes, technology transfer no – mirrors the broader pattern, but the military dimension carries implications that extend well beyond the bilateral relationship and directly affect European security.

References

Bilousova, Olena et al. (2024). Challenges of Export Controls Enforcement. Tech. rep. https://sanctions.kse.ua/wp-content/uploads/2024/01/Challenges-of-Export-Controls-Enforcement.pdf.

Bureau of Industry and Security (BIS) (2024). Common High Priority Items List (CHPL). U.S. Department of Commerce. https://www.bis.gov/licensing/country-guidance/common-high-priority-items-list-chpl.

European Commission (n.d.). EU Trade Relations with Russia: Facts, Figures and Latest Developments. Directorate-General for Trade and Economic Security. https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/russia_en.

Financial Times (2025). Chinese parts supplier takes stake in leading Russian drone maker. https://www.ft.com/content/e907c2fa-2d3b-4269-bc6c-b2fee4d9f688.

García-Herrero, Alicia and Elina Ribakova (2026). The Supplicant and the Sovereign. The Wire China. https://www.thewirechina.com/2026/05/21/the-supplicant-and-the-sovereign/.

Hilgenstock, Benjamin et al. (2026). Assessment of the Impact of the Iran War on Russia. Tech. rep. KSE Institute.

Reuters (2022). Moscow-Beijing Partnership Has 'No Limits'. https://www.reuters.com/world/china/moscow-beijing-partnership-has-no-limits-2022-02-04/.

– (2024). Exclusive: Russia has secret war drones project in China, intel sources say. https://www.reuters.com/world/russia-has-secret-war-drones-project-china-intel-sources-say-2024-09-25/.

Risinger, Lucas, Pavlo Shkurenko, et al. (2025). Disassembling the Russian war machine: Logistics, chokepoints, and dependencies. en. Tech. rep. 2. KSE Institute. https://sanctions.kse.ua/wp-content/uploads/2025/07/KSEInstitute_RussianMIC_2.pdf.

Risinger, Lucas, Matvii Talalaievskyi, and Benjamin Hilgenstock (2026). Russian CHP imports tracker | Q1 2026. en. Tech. rep. KSE Institute. https://institute.kse.ua/wp-content/uploads/2026/04/russian_chp_tracker_eng_q1_2026.pdf.

The Moscow Times (2025). Russia's Power of Siberia 2 Deal With China Would Take a Decade to Boost Gas Exports: Reuters. https://www.themoscowtimes.com/2025/10/07/russias-power-of-siberia-2-deal-with-china-would-take-a-decade-to-boost-gas-exports-reuters-a90744.

U.S. Energy Information Administration (EIA) (2025). Russia's oil exports have decreased modestly since 2022: shifting toward Asia. Today in Energy. https://www.eia.gov/todayinenergy/detail.php?id=65885.

China's role in supplying Russia with sanctioned products

Konstantin Egorov

1 Introduction

The Russian invasion of Ukraine in 2022 triggered the largest application of trade sanctions to date.[1] Yet, this unprecedented use of geoeconomic pressure has neither stopped the war nor led to a major collapse of the Russian economy. Arguably, one of the main reasons behind this apparent resilience of the Russian economy is its ability to circumvent trade sanctions by sourcing banned products through countries that have not joined the sanctioning coalition (Egorov et al., 2025a; Chupilkin et al., 2023).

The list of such countries is both long and diverse. It includes not only members of the Eurasian Economic Union (Armenia, Belarus, Kazakhstan, Kyrgyzstan), but also the U.S. ally the UAE and the NATO member Turkey, among others. Crucially, it also includes China, the main geopolitical rival of the U.S. One possibility is that sanctions have not reached their full potential because the geopolitical reach of the U.S. and the EU does not extend far enough to include enough countries potentially willing to supply sanctioned goods to Russia. In this scenario, no single country would be able to decisively offset the effects of geoeconomic pressure. Alternatively, the sanctions' lack of success could be attributed primarily to China alone, while all other Russian trade partners play only a marginal role. So, how large was China's role in circumventing Western sanctions? This question is key not only for understanding the impact of sanctions in hindsight but also for evaluating the current potential of China's geopolitical influence. In particular, it informs whether China alone could similarly constrain future attempts by the U.S. and the EU to use economic coercion against others.[2]

This chapter uses the list of sanctioned products from Egorov et al. (2025b) and the customs data from Egorov et al. (2025a) to investigate this question. The former consists of 10-digit Harmonized System (HS) product codes forbidden to be exported to Russia by the U.S., the EU, Australia, Canada, Japan, South Korea, Switzerland, Taiwan, and the UK. The latter contains the detailed records of all Russian international trade transactions up to the end of

[1] https://www.castellum.ai/russia-sanctions-dashboard

[2] See Clayton et al., 2023; Clayton et al., 2024 for the theory of economic coercion and hegemonic power in this context.

2023.

Section 2 reveals the dominant share of China in the supply of sanctioned goods to Russia in arguably the most decisive period of the conflict, that is, in March 2022–December 2023. This includes both products produced within the sanctioning countries and shipped to Russia through third countries (labeled as *rerouting*) and similar products produced elsewhere (*substitution*). Moreover, China's role is especially pronounced in the supply of products most likely to contain so-called critical military components, as identified by the Main Directorate of Intelligence of Ukraine (2025).

The overall dominant role of China can be explained by its position as Russia's largest trading partner but not by its active response to sanctions. In fact, Chinese shipments of sanctioned products to Russia have increased by roughly the same percentage as shipments of other countries friendly to the Russian government. Instead, even prior to 2022, China was by far the largest trading partner of Russia (after the EU), and its exports to Russia had already been expanding at a much higher rate than those of most other countries. The Chinese response to sanctions has, however, been unique as China appears to be the only country that has successfully substituted Western-made sanctioned products with domestically produced Chinese alternatives.

Section 3 illustrates these findings with two specific case studies: Russian imports of microprocessors and washing machines. Both products have received considerable attention in the media, since the former is a primary example of a dual-use product (it can be used as a critical military component without being classified as a weapon) and the latter is an example of a sanctioned consumer good that is sophisticated enough to significantly depend on foreign technology. In both cases, China accounts for the vast majority of Russian imports of these two products but in starkly different ways. Almost all microprocessors imported to Russia remain Western brands. 76 % of these shipments go through China, thereby providing Russia with continued access to prohibited Western technology. In contrast, Western brands of washing machines have practically disappeared from the Russian market. Yet, China currently produces 81 % of all washing machines imported to Russia. In this way, China has effectively substituted Western technology with its own.

Section 4 concludes by confirming that the trends identified in Sections 2 and 3 persisted during 2024, based on the more recent publicly available trade data.

2 Main findings

2.1 Current supply of sanctioned products

Where does Russia get its current supply of sanctioned products? In particular, what share of them arrives through China? Figure 1 shows the shares of top-10 countries that shipped sanctioned products to Russia from March 2022 through December 2023.[3] These include all 10-digit product codes that were sanctioned by at least one country, regardless of where they were produced. Some of these shipments reflect the circumvention of sanctions, e.g., microprocessors produced in the U.S. but shipped from Turkey. Others reflect the substitution of sanctioned products by comparable products produced outside of the sanctioning countries, e.g., Chinese washing machines replacing banned European ones.

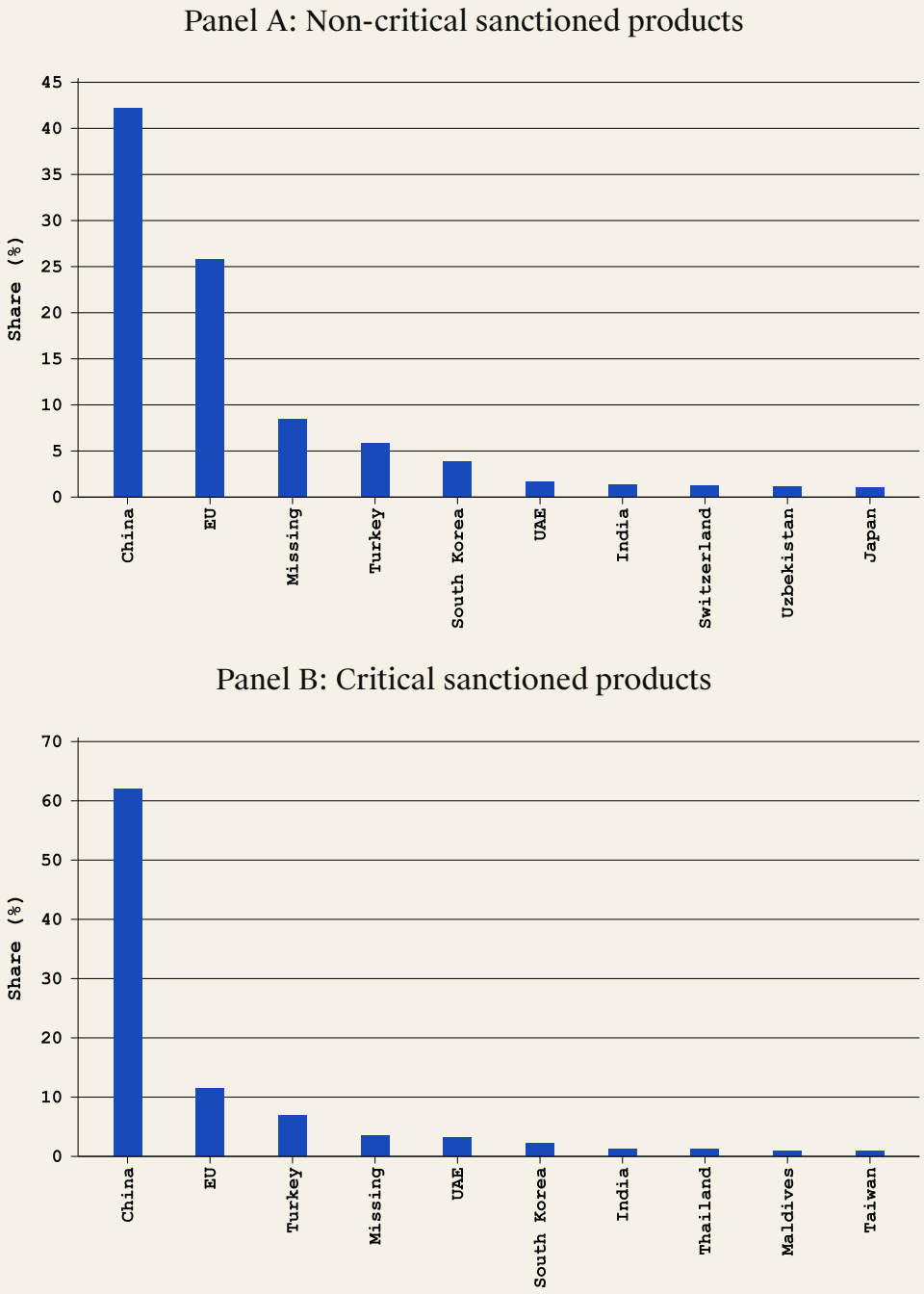
Panel A shows the distribution of countries for the sanctioned products that are not considered to be critical military components (non-critical and critical products account for 86 % and 14 % of all imports of sanctioned products, respectively). China ships 42 % of all non-critical products, with the EU in second place with 26 %. The latter category includes products sanctioned by other countries but not by the EU. As emphasized in Egorov et al. (2025b), different sanctioning countries impose sanctions on different products. For example, single-malt Scotch whisky is sanctioned by Switzerland but not by the EU. The same category also includes products sanctioned later in 2022 or 2023, since not all sanctions were imposed at the start of the conflict. Moreover, there are many legal exceptions to sanctions imposed by the EU. For example, sanctions for most luxury products apply only for products above a certain price threshold, and thus selling cheaper products within the same product code does not violate these sanctions.

Next, customs records do not report the country of shipment for 8.5 % of all imports of non-critical sanctioned products. Of course, many of the underlying transactions violate the laws of the sanctioning countries, and thus the exporters involved have incentives to misreport some information. This analysis, however, is based on data reported on the Russian side of the border. Thus, a transaction considered illegal, for example, in the EU is typically perfectly legal within Russia. As a result, the same firm that misreports information on the European side of the border has incentives to report it truthfully on the Russian side of the border. This may help to explain why only 8.5 % of shipments of sanctioned products have no reported country of shipment.

The next non-sanctioning country that supplies sanctioned products to Russia is Turkey. But the gap between first and second place is substantial. Specifically, China supplies more than 7 times more sanctioned products by value than Turkey (42 % vs. 5.8 %). The remaining non-sanctioning countries in this list include India with 1.4 % and Uzbekistan with 1.2 %.

[3] Throughout the chapter, imports from Hong Kong are included in the total imports from China.

Figure 1: Shares of top-10 countries in Russian imports of sanctioned products



Notes: This Figure shows the shares of individual countries of shipment for sanctioned products imported to Russia during March 2022–December 2023. Sanctioned products include all 10-digit product codes sanctioned at least by one country. Panels B and A show shares for the imports of critical military components and for everything else within sanctioned products respectively. Critical components account for 14 % of total Russian imports of sanctioned products.
Source: Russian customs data, author's calculations.

The same pattern holds for critical components and is much starker. China supplies 62 % of all critical components to Russia, while the remaining non-sanctioning countries within

the top 10 together amount to only 13.5 %.

Thus, Figure 1 reveals China's central role in shipping sanctioned products to Russia. To further disentangle China's role as a logistical hub that helps Russia circumvent sanctions from its role as a producer of banned goods not available elsewhere, one could similarly decompose all sanctioned products currently available in Russia by the country in which they have been produced. Specifically, of the non-critical products, 44 % were made in China, 25 % in the EU, 6 % in South Korea, 4 % in the U.S., and 3 % in Turkey. Within the critical components category, the corresponding shares are 57 % for China, 13 % for the EU, 4 % for Taiwan and the U.S., 3 % for South Korea and Malaysia, and 2 % for Turkey. These figures reflect both the crucial role of rerouting of Western products to Russia through third countries, and the truly indispensable role of China in replacing Western sanctioned products with similar products made elsewhere.

Finally, it is important to emphasize that China plays a dominant role in the rerouting of Western products as well. Specifically, within all sanctioned products rerouted to Russia,[4] only 6 % of non-critical products arrived through China, but the corresponding number for critical components is 34 %. In fact, China is by far the largest supplier of critical components produced elsewhere to Russia, with Turkey (17 %), the EU (12 %), and the UAE (11 %) occupying the next three places.[5]

2.2 Explaining China's role

While most sanctioned products arrived in Russia through China, there could be several alternative reasons for this pattern. It's possible that China has specifically responded to the sanctions imposed after February 2022 to help Russia overcome them. However, it's also worth noting that China was Russia's second largest trade partner in 2021 (accounting for 23 % of total Russian imports). Thus, when Russian imports from its largest partner (the EU with 45 %) collapsed, China's trade share with Russia would mechanically increase, so that it would become the top supplier in figures from the previous subsection. To paraphrase, all China had to do to become Russia's main supplier of sanctioned products was simply not to reduce its trade with Russia relative to 2021.

To check how Chinese trade flows to Russia have changed since 2021, I calculate the average monthly imports of sanctioned products for each country separately in 2021 and during the period March 2022–December 2023. Then I keep only those countries that have increased their exports to Russia. Within this set of countries, I calculate the shares of individual countries. This calculation shows which countries are most responsible for the increases in imports of sanctioned products to Russia. In fact, the shares for China become even larger, with 58 % and 62 % for non-critical and critical products, respectively. This means

[4] That is, within all sanctioned products imported to Russia through a country other than the one in which these products were produced.

[5] Within all sanctioned products shipped to Russia from the same country in which they were produced, China accounts for 56% of non-critical and 74% of critical products.

that China was not just the biggest pre-war supplier of sanctioned products to Russia, but has also increased its trade of sanctioned goods with Russia by significantly more than any other country.

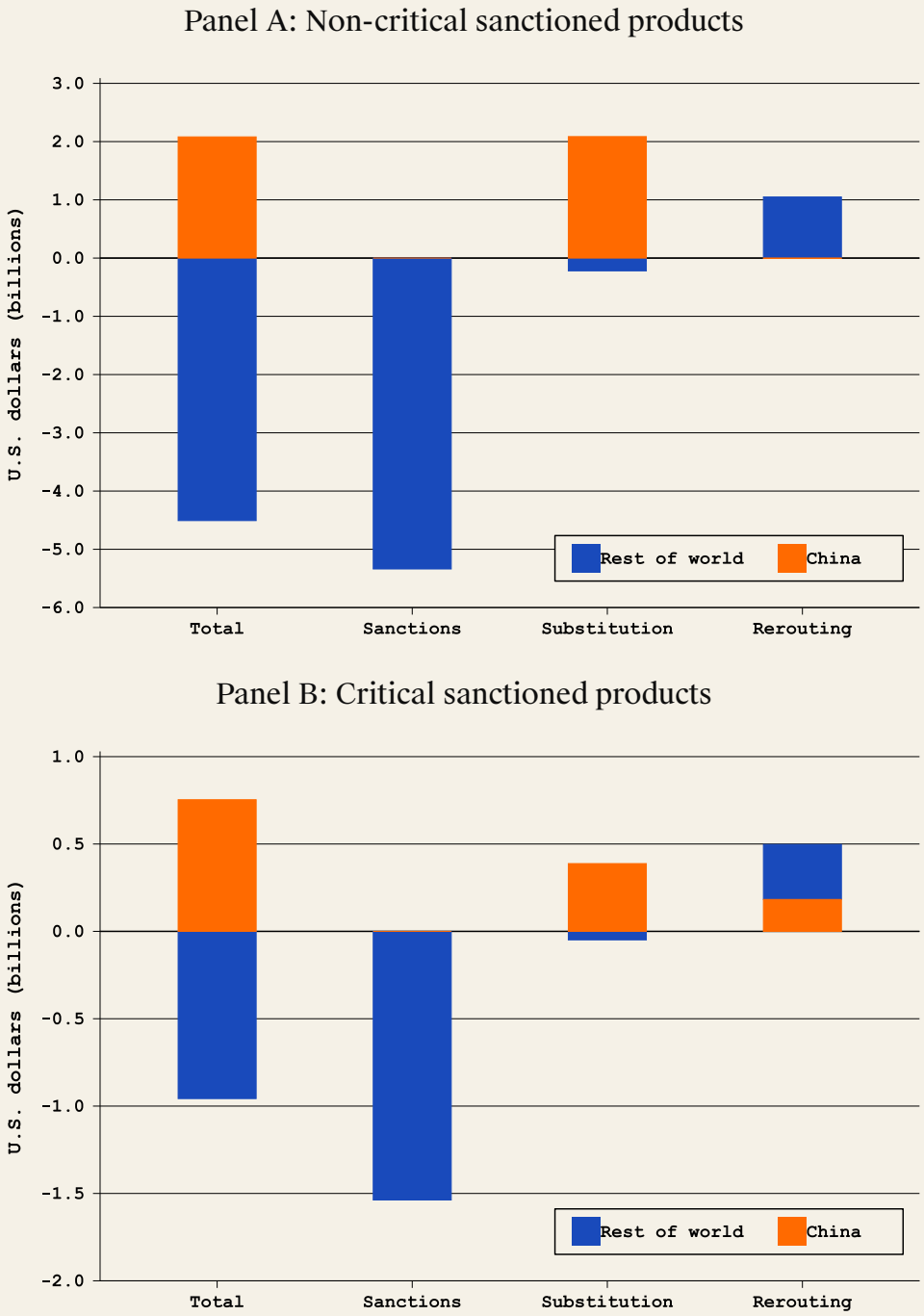
To get a sense of the magnitude of these changes relative to the overall drop in trade in sanctioned products, Figure 2 decomposes the total changes in imports of sanctioned products to Russia into several categories, separately for China and the rest of the world. Specifically, Russian average monthly imports of non-critical sanctioned goods from the sanctioning countries fell by $5.3 billion since 2021 (category "Sanctions" in Panel A). This fall has been partially compensated by the increase in trade with the rest of the world excluding China (the blue bars in "Substitution" and "Rerouting") so that the resulting drop in average Russian imports was reduced to $4.5 billion (the blue bar in "Total"). On top of this, the average imports from China have increased by $2.1 billion (the orange part in "Total"), so that in the end, during the conflict, Russian average monthly imports of non-critical sanctioned products were only $2.4 billion lower than in 2021.

The same Panel A of Figure 2 reveals that China is single-handedly responsible for virtually all of the substitution and none of the rerouting of non-critical sanctioned products. In the aggregate, non-critical sanctioned products were more substituted than rerouted, and thus China has contributed more than the rest of the world to the increase in trade with Russia for this product category. In contrast, Panel B of Figure 2 shows that the average monthly imports of critical components to Russia declined by only $0.2 billion since 2021. This type of sanctioned product was more rerouted than substituted, with China providing 41% of total rerouting and all of the substitution.

Even though Figure 2 points to China as the main driver behind the increased trade of sanctioned products, it is still possible that this effect is largely mechanical, rather than a deliberate response aimed at reducing sanctions' effectiveness. In particular, as Figure 3 shows, in the years prior to 2022 Russia's trade with China was expanding at a much higher rate than trade with any other major Russian trade partner. Moreover, based on Figure 3 alone, it's very hard to say whether the expansion of China's trade with Russia since 2022 was simply a continuation of a pre-existing trend or a response to Western sanctions layered *on top* of this trend.

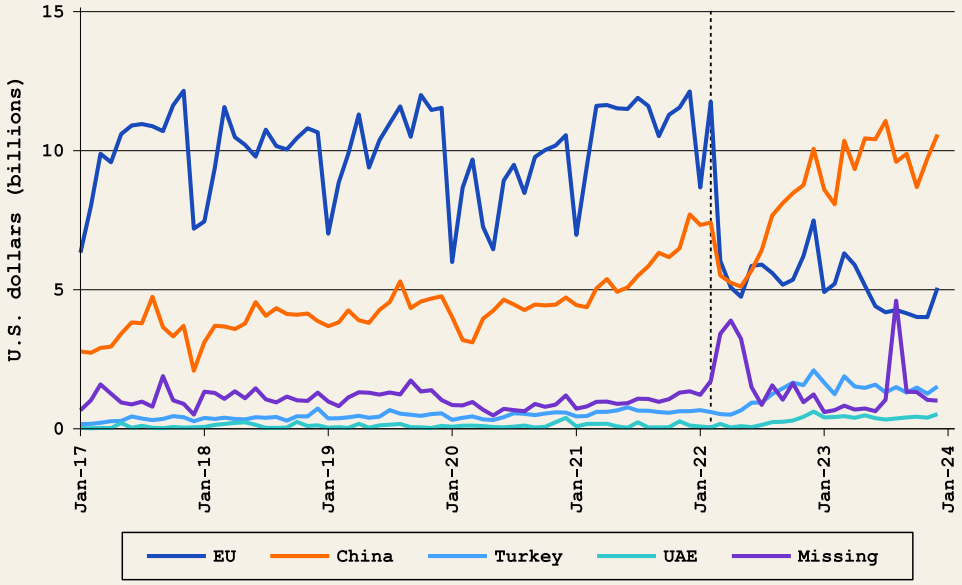
To evaluate the role of trends versus sanctions in the expansion of Chinese trade, I extend the regression-based analysis from Egorov et al. (2025a). The details are available upon request, but simply put, within all non-sanctioning countries, I select those who are most frequently mentioned as helping Russia to cope with sanctions: Armenia, Belarus, China, Georgia, Kazakhstan, Kyrgyzstan, Serbia, Turkey, and the UAE. For this set of "friendly" countries, I estimate two types of such "help": either rerouting of banned Western-made products or their substitution with similar but locally produced products. I do this separately for critical and non-critical components. For each such country, I compare their exports to Russia with "normal" exports to Russia, that is, exports from other countries, e.g., Brazil, and exports of products that have not been sanctioned by any country. This way I can estimate

Figure 2: Decomposition of changes in Russian imports of sanctioned products since 2021



Notes: This Figure is based on changes in average monthly imports between the period of March 2022–December 2023 and all of 2021, separately by category and by country. "Total" shows the total change in imports to Russia in billions of dollars. This total is then decomposed into the imports from sanctioning countries ("Sanctions"), imports of products shipped and produced in the same country ("Substitution"), and in different countries ("Rerouting"). All trade with missing information on the country of shipment is counted as a part of "Rerouting". Panels A and B do this decomposition separately for non-critical and critical sanctioned products.
Source: Russian customs data, author's calculations.

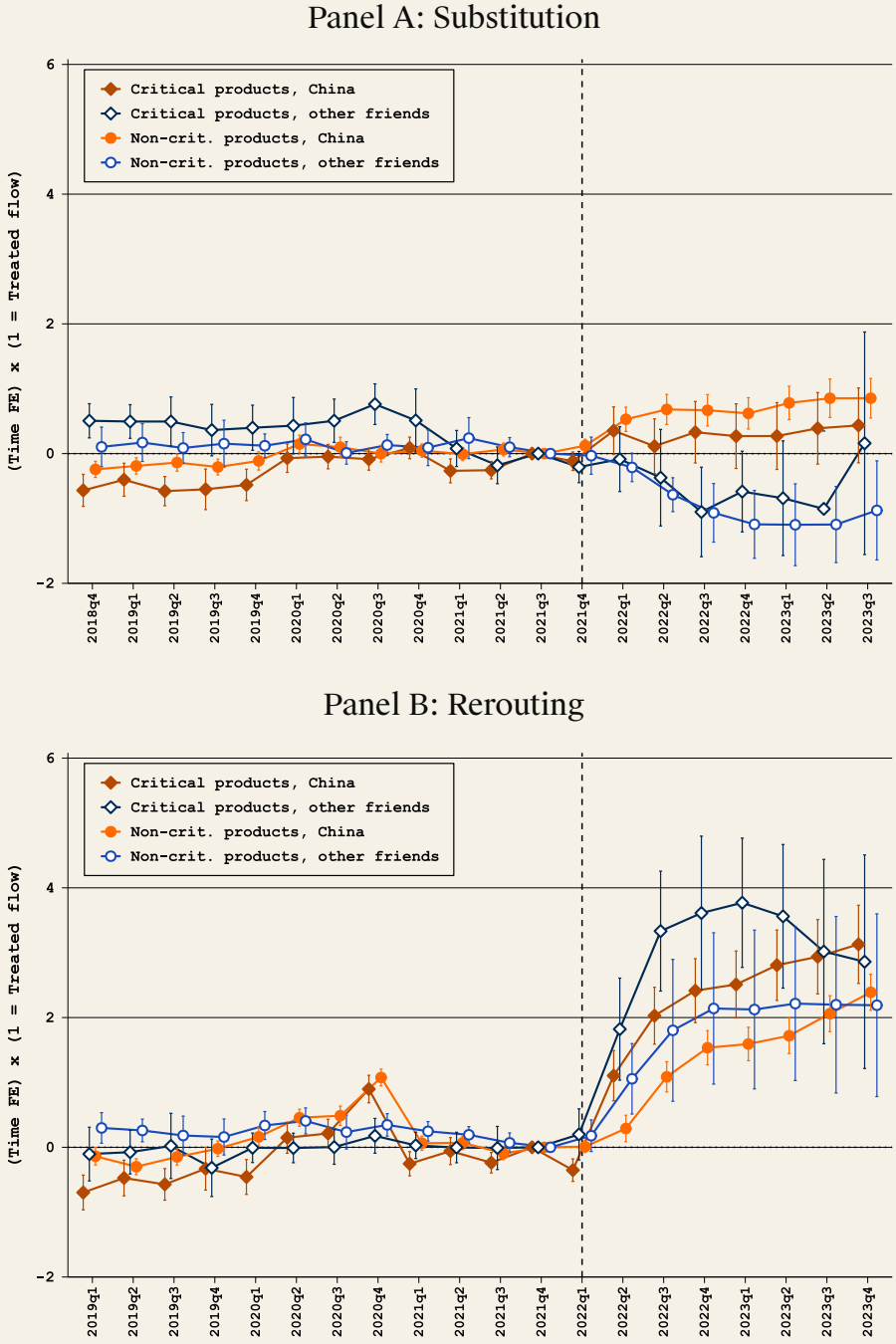
Figure 3: Russian imports by country



Notes: This Figure shows monthly Russian imports by country of shipment. In 2021, the top three Russian trade partners were the EU, China, and missing country of shipment (followed by South Korea, Turkey, and Japan).
Source: Russian customs data, author's calculations.

whether Russian trade of sanctioned products with these "friendly" countries has expanded since 2022 *beyond* country-wide trends that reflect a general decrease in trade costs and thus equally apply to all products and not just the sanctioned ones. Crucially, I estimate these effects of sanctions on "friendly" countries separately for China and for other "friends". This way I can evaluate whether China has done more or less relative to other countries to help Russia cope with sanctions.

Figure 4: Regression-based estimates of substitution and rerouting, by country and product type



Notes: This Figure displays the estimated regression coefficients that represent the changes in trade in response to sanctions on top of country- and product-level trends. Lines marked with filled and hollow diamonds display coefficients for critical components among sanctioned products, while lines marked with filled and hollow circles display coefficients for the rest of the sanctioned products. Red lines show coefficients for China, and blue lines show the average coefficients for Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Serbia, Turkey, and the UAE. The impact of export sanctions is then estimated on each of these flow's value, with the imports from third countries serving as a control (comparison) group. The bars represent 95 % confidence intervals. The coefficients are estimated based on 3,358,280 observations across 8,753 products and 204 countries. Further details are available upon request.
Source: Russian customs data, author's calculations.

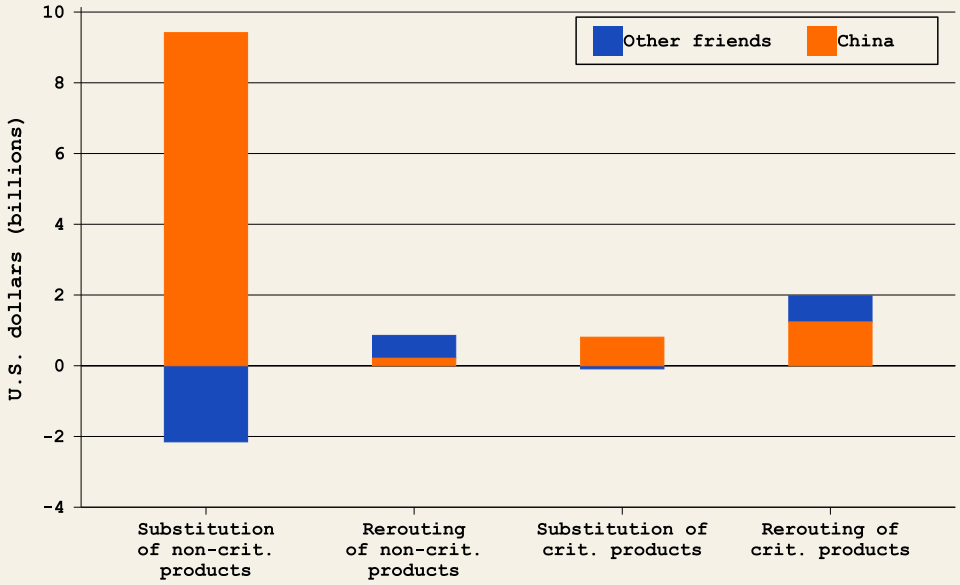
Figure 4 presents the estimates from this analysis. First, these results confirm that China is the only country that has managed to substitute the missing Western products with domestically produced alternatives. However, these effects are significant only for the non-critical products. This finding is in line with the notion that the critical components are more sophisticated and specialized than other sanctioned goods, and thus they are harder to substitute.

Panel B of Figure 4 reveals that all "friendly" countries have substantially increased their rerouting of sanctioned products to Russia since the start of the war. Rerouting of the critical components is always more substantial than rerouting of the rest of the sanctioned products. And even though China initially increased its rerouting by less than other "friendly" countries, the gap between them had closed by the end of 2023. Overall, this Figure confirms that China has expanded its trade of sanctioned products with Russia beyond the trend of expanding bilateral trade and beyond the trends for each of the 10-digit products.

Importantly, Figure 4 reports the *relative* increases in trade, that is, increases in log-points or percentages. Since China has been Russia's largest trade partner since 2022, even a small percentage increase of its trade can result in a large *absolute* increase in Russian imports. To evaluate the contribution of different countries to the aggregate Russian imports, I make the following calculation based on the estimated effects.

I keep country- and product-level trends the same while I assume away all the effects displayed in Figure 4. To paraphrase, I allow the Russian imports of, e.g., microchips from China to increase but only at the same rate as 1) the expansion of Chinese trade of non-sanctioned products and 2) the expansion of exports of microchips from "neutral" countries, e.g., Brazil, during the same time period. I compute the total change in Russian imports of sanctioned products with and without the effects from Figure 4, and the difference between the two reveal the change in trade of sanctioned products from various countries *on top* of what would have been expected from the overall trends associated with each country and product.

Figure 5: Regression-based decomposition of changes in Russian imports since 2022, by country, product, and type



Notes: This Figure shows the results of regression-based counterfactuals described in the main text. Specifically, the predicted values are computed with and without $\hat{\delta}_t^i = 0$ for all i, t, and in both cases the absolute values of the aggregate Russian imports are computed based on these predicted value. The difference in these two counterfactual aggregate values is interpreted as China's contribution through rerouting and substitution. This contribution can be computed separately for critical and non-critical sanctioned products, as well as separately for substitution and rerouting trade flows. The resulting 4 components of China's contribution are displayed as orange bars. Similarly, the components of contribution of other "friendly" countries are displayed as blue bars. To make this Figure comparable to Figure 2, changes in imports during March 2022–December 2023 were summed up and divided by 22 to convert them to average monthly changes.
Source: Russian customs data, author's calculations.

The same calculation enables me not only to estimate the total increase in Russian imports due to substitution and rerouting from nine "friendly" countries, but also to single out the role of China. Figure 5 presents the results of this decomposition. As expected, China single-handedly drives substitution of all sanctioned products. But the same Figure reveals the dominant role of China in rerouting of critical components. In fact, China is responsible for 63 % of all rerouting of critical products (vs. 25 % for non-critical products). Moreover, China is responsible for 76 % of the total increase in the Russian supply of banned critical components triggered by sanctions, once substitution and rerouting are added up together. Thus, even though the Chinese *relative* increase in rerouting of critical components was initially somewhat smaller than that of other "friendly" countries, the sheer size of the Chinese economy ensures that China alone is responsible for most of such rerouting.

3 Case studies

The results of Section 2 reveal China's role in the aggregate changes in Russian imports. Yet there is a lot of heterogeneity concealed behind these aggregate figures. In this Section, I illustrate this heterogeneity by looking at two specific products that are often discussed in this context: microprocessors and washing machines.

3.1 Microprocessors

Microprocessors have arguably received the most attention in the media since the start of the conflict. They exemplify both dual-use critical sanctioned products and the highly sophisticated Western products that are hard to substitute.[6]

In 2021, just two Western brands covered almost 97 % (by value) of the Russian imports of microprocessors: Intel and AMD. Strikingly, during March 2022–December 2023, the same 97 % of the Russian imports of microprocessors consisted of the same two brands. Such a remarkable lack of change is consistent with the notion that microprocessors are highly specialized products that are hard to substitute. Similarly, the total number of imported microprocessors has stayed practically constant. In 2021, the average monthly imports consisted of 107,263 microprocessors, while since March 2022 the same figure has been 104,654.

Crucially, though, in 2021, 94 % (by value) of all microprocessors were imported from the UK and Cyprus alone.[7] Yet, since the start of the conflict, the top-5 countries shipping microprocessors to Russia by value were China (76 %), Turkey (12.6 %), Serbia (3.6 %), Singapore (3 %), and Taiwan (2.2 %). Thus, in terms of brands, the case of microprocessors is an example of almost complete rerouting. For this to happen, China had to increase its average monthly shipments of microprocessors to Russia by 6.2 times in quantities and by 51.1 times in value.

Yet, some of the Intel and AMD microprocessors were always produced in China. Specifically, in 2021, 27.5 % of all microprocessors imported to Russia (by value) were produced in China. Since March 2022, this share has fallen to 23.3 %. The average monthly value of imported microprocessors made in China has similarly declined by almost 30 %. This means that there was actually no substitution of Western-made chips with chips made in China, even within the Western brands. Instead, 56 % of all microprocessors imported in 2021 were made in Vietnam and Malaysia, while since March 2022 their share has increased to 68 %.

Overall, these figures imply that the Russian supply of microprocessors has remained

[6] This section is based on the analysis of two 10-digit product codes that include all microprocessors and two 10-digit product codes that cover all fully automatic washing machines with a total load of no more than 6 kg.

[7] The same figures for Intel and AMD chips are 98% and 99% respectively.

remarkably stable since the start of the conflict. The same applies to its composition by brand and by the country of production. The only thing that has changed is the set of countries through which microchips are shipped to Russia, with China, and to a much smaller extent Turkey and others, displacing the UK and Cyprus.

It's also interesting to track the evolution of unit values for imported microprocessors. The average unit value of imported Intel microprocessors in 2021 was $204. Yet, the average unit value for the Intel chips shipped from China since March 2022 was only $166. The key problem with this comparison is that there is likely a compositional change in specific types of microchips even within the group of Intel microprocessors. As a result, this drop in average unit values could be driven by a shift towards lower-quality microchips. It's hard to say more based on the Russian international trade data because there is no clean control group for comparison of unit values.[8]

3.2 Washing machines

The case of washing machines is no less interesting for at least two reasons. On the one hand, they represent pure consumer products with no dual-use applications.[9] On the other hand, similar to microprocessors, washing machines are sufficiently sophisticated and they rely heavily enough on Western technology that they are presumably harder to substitute than some relatively simpler and more homogenous products.

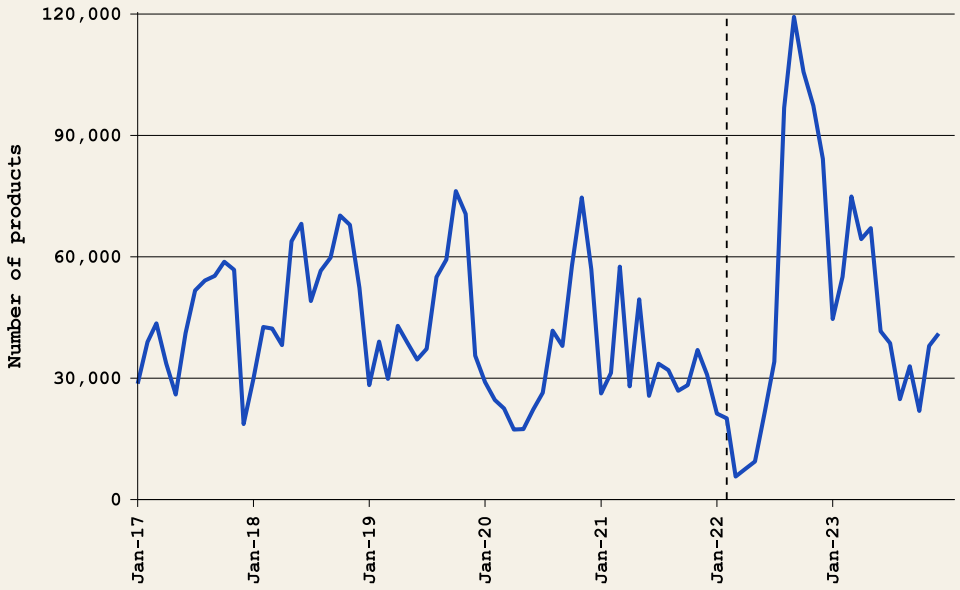
In 2021, at least 66 brands of washing machines were imported to Russia. The top 5 were Swedish Electrolux (17.1% of total value), Russian brands DEXP and Leran produced abroad (14.4% and 8.7%), Slovenian Gorenje (8.5%), and Italian Indesit (6.7%). Since March 2022, the total number of brands has increased to 93, with a new top 5 of Russian DEXP (19.3%), Slovenian Gorenje (13.1%), Russian Leran (8.9%), Russian Biryusa (6.4%), and Korean Samsung (5.9%). Notably, the former market leader Swedish Electrolux has practically disappeared from the Russian market with its market share falling from 17.1% to 0.3%. Similarly, Italian Indesit has fallen from 6.7% to 0.03%. Both Sweden and Italy are members of the EU that has imposed sanctions on washing machines. Curiously, South Korea has not, and the market share of Korean Samsung has increased from 0.3% to 5.9%. Thus, in stark contrast to the case of microprocessors, there seems to be an almost complete disappearance of sanctioned Western brands in this market. These brands have left, and their market share has been captured by remaining brands. The only prominent exception is Slovenian Gorenje, which has increased its market share despite Slovenia's EU membership.

[8] The same problem appears in any customs data due to compositional changes within the same product code. Yet, Corsetti et al. (2025) make use of the Turkish customs data to control for the same exporter, and they find an increase in average prices across all products shipped to Russia of about 4%. For an analysis of unit values based on Comtrade data, see Korhonen and Simola (2025). For the effect of 2014 sanctions on consumer prices in Russia, see Hinz and Monastyrenko (2022).

[9] The U.S. Commerce Secretary initially claimed that Russians may harvest sanctioned semiconductors from some consumer products like dishwashers or refrigerators (Tegler, 2023). However, there appears to be little evidence that it was a significant phenomenon. Subsection 3.1 also suggests that it was relatively straightforward for Russians to buy microprocessors directly, without the need to harvest them from other products.

The same lack of rerouting of Western brands is also clearly visible in the distribution of countries where the imported washing machines were produced. In 2021, 48.5 % of them (by value) were produced in China, 17.5 % in Poland, 10.3 % in Slovakia, 7.3 % in Turkey, and 5.5 % in Ukraine, with these top-5 countries together accounting for 89 % of the market. Since March 2022, these shares have shifted to 81.3 % for China, 9.3 % for Turkey, and 6.2 % for Uzbekistan, together accounting for almost 97 %.

Figure 6: Russian imports of washing machines



Notes: This Figure shows monthly Russian imports of fully automatic washing machines with a total load of no more than 10 kg.
Source: Russian customs data, author's calculations.

Interestingly, the number of imported washing machines has not decreased either. Figure 6 shows the monthly imports of washing machines over recent years. While there is an unusual spike in 2022,[10] most of it could be explained by delayed purchases of durable goods following the COVID-19 shock, combined with the unusually low level of imports in late 2021. In fact, the average imports of washing machines during 2017–2019 were 565,178 units per year, while the corresponding figure for 2020–2023 was only 500,911.

While comparing unit values over time can again be misleading due to compositional changes, it's worth noting that brands that left the Russian market were on average more expensive than the brands that stayed. In particular, in 2021, the average unit value for Electrolux and Indesit was 43 % higher than the corresponding average for DEXP, Leran, and Biryusa (while it was about 14 % cheaper than the average for Gorenje and Samsung). To the extent that the higher price had reflected higher quality and market appeal, these figures suggest an overall shift toward lower quality products since March 2022.

[10] This spike might have contributed to the rumors about washing machines being used for harvesting sanctioned semiconductors mentioned in the previous footnote.

Finally, a superficial look at shipment data alone may underestimate the role of China in supplying Russia with washing machines. Specifically, since March 2022, only 59 % of all washing machines imported to Russia were shipped from China (vs. 42 % in 2021). However, as mentioned earlier, a staggering 81.3 % of all washing machines imported to Russia since March 2022 were manufactured in China, including almost 60 brands out of the 93 imported brands available on the Russian market. Moreover, between 2021 and the period March 2022–December 2023, China has increased the average monthly number of washing machines it shipped to Russia by 107 %, while the similar average for machines produced in China has increased by 108 %.[11]

Thus, while the opportunities for rerouting of Western products are clearly available to Russian consumers, as is highlighted by findings in the case of microprocessors, there was almost no rerouting of sanctioned washing machines. Similarly to microchips, though, the total size of this market appears to have remained roughly unchanged. Instead, most sanctioned brands have practically disappeared from the washing machine market, and their place has been taken by remaining, cheaper brands. China appears to have taken advantage of this opportunity and has greatly expanded its direct and indirect exports to Russia, effectively dominating this market. This fact is especially striking since within all sanctioned consumer products, washing machines are arguably among the most sophisticated and hardest to substitute.

4 Recent changes

The findings in the previous Sections are based on the Russian customs data that end in 2023. In this Section, I use the publicly available Comtrade data[12] to check whether there was any reversal of these patterns during 2024. Importantly, there are several limitations associated with this dataset. First, it is much less detailed. It contains fewer variables, and the trade flows are reported only at the 6-digit (instead of 10-digit) product level. Second, it is based on the official statistics of Russia's trade partners, not of Russia itself. Thus, it is more likely to misreport transactions that are considered illegal outside of Russia.[13]

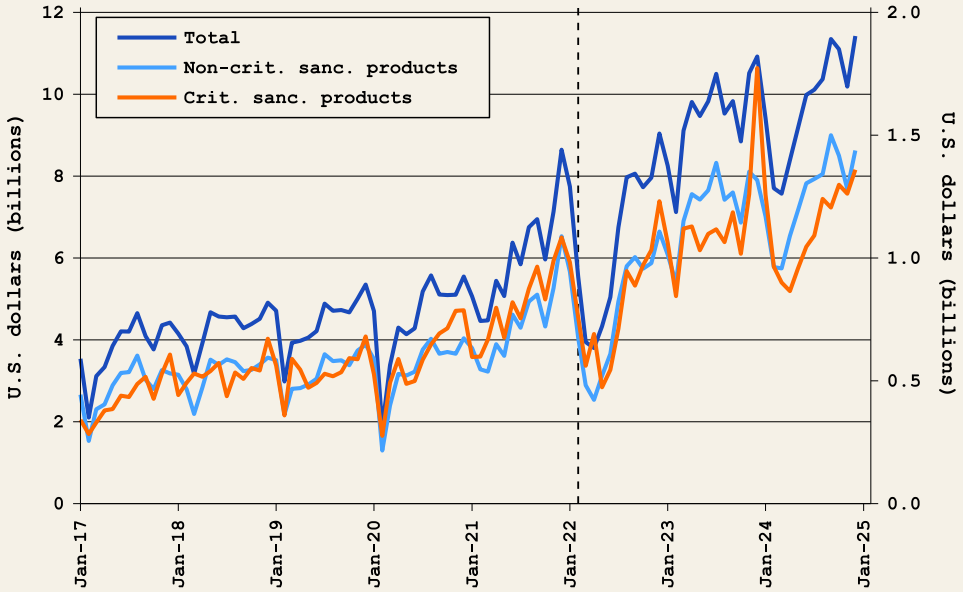
Figure 7 presents the aggregate trends of Russian imports from China. Overall, Russian trade with China continued to expand in 2024. The first half of 2024 saw a substantial decline in imports from China, but the trade has fully recovered by the end of 2024 and surpassed the end-of-2023 levels. The imports of both critical and non-critical sanctioned products continued to rise in the second half of 2024. There was a pronounced spike in the

[11] For comparison, the same figures for Turkey are mostly similar, with 108% and 85% respectively. Once again, the dominant initial scale of Chinese imports in 2021 ensured that China is responsible for most of growth of the Russian imports even though the relative growth of China's imports is comparable to that of other countries.

[12] https://comtradeplus.un.org/

[13] See Egorov et al. (2025a) for a more detailed comparison of Comtrade and Russian customs datasets.

Figure 7: Russian imports from China, by product type

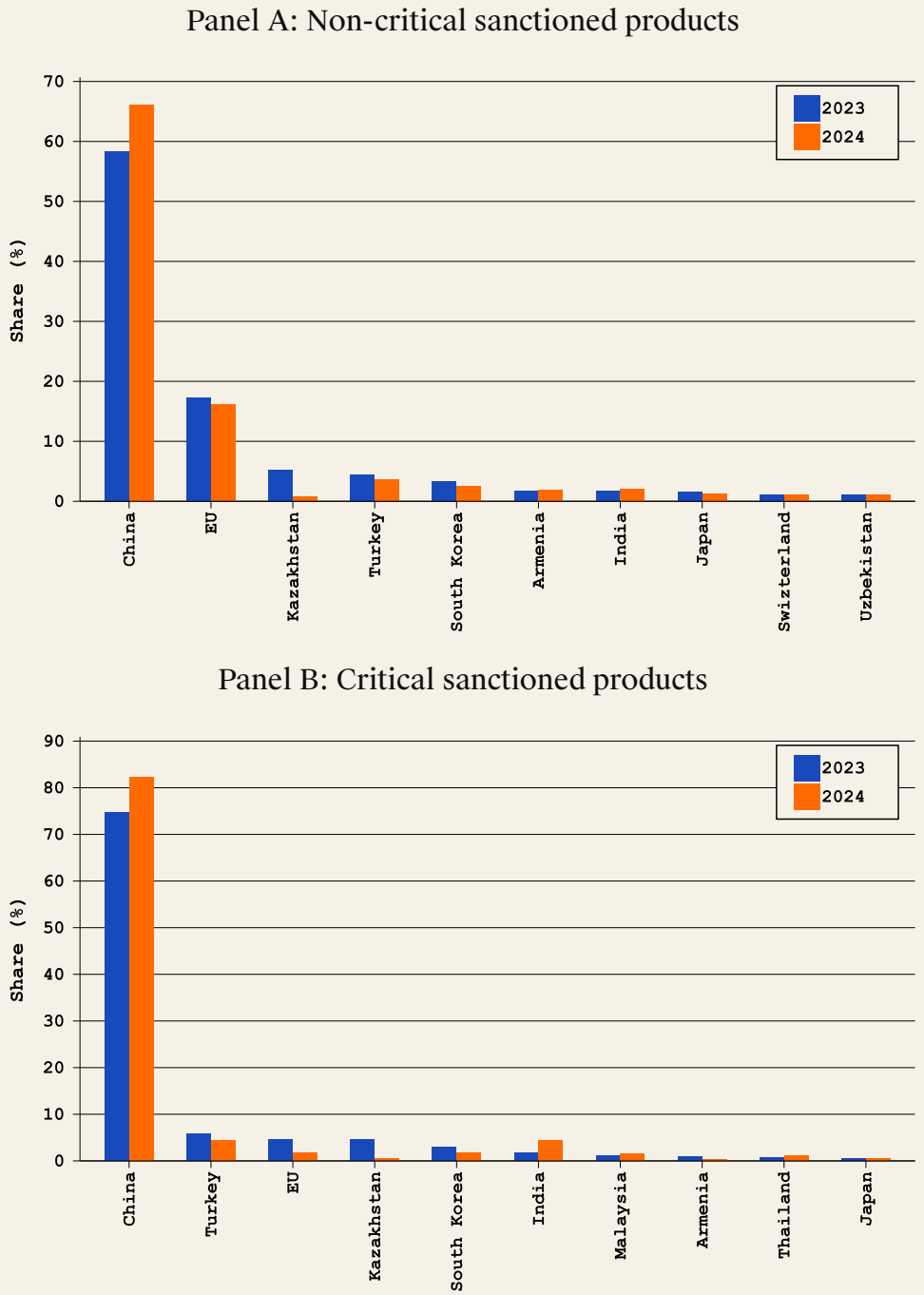


Notes: This Figure shows monthly Russian imports from China. The first two lines represent the total imports from China and the imports of the non-critical sanctioned products. These lines use the left vertical axis. The third line (orange) represents the imports of critical sanctioned products and it uses the right vertical axis. This Figure is constructed based on 6-digit Comtrade data, and thus the whole 6-digit category is considered sanctioned (critical) if at least one 10-digit product code within this category is sanctioned (critical).
Source: UN Comtrade, author's calculations.

imports of critical components at the end of 2023, followed by a sharp drop at the beginning of 2024, but by the end of 2024 the imports of critical components appear to have returned to the positive trend observed over the previous two to three years.

Next, Figure 8 reports the countries of shipment for sanctioned products imported to Russia during 2024. Thus, it updates Figure 1. However, the two Figures are not directly comparable because Figure 8 considers non-sanctioned (non-critical) 10-digit products codes as sanctioned (critical) whenever they are in the same 6-digit category as *any* sanctioned (critical) products. Moreover, Figure 8 is based on the data from Russian trade partners, not from Russia itself; as a result, there is no category with missing country and the shares of sanctioning countries like the EU or South Korea appear to be much smaller than those in Figure 1. To assess the dynamics within the same dataset, Figure 8 reports the country shares both for 2023 and 2024.

Figure 8: Shares of top-10 countries in Russian imports of sanctioned products



Notes: This Figure shows the shares of individual countries of shipment for sanctioned products imported to Russia during 2023 (blue bars on the left) and 2024 (orange bars on the right). This Figure is constructed based on 6-digit Comtrade data, and thus the whole 6-digit category is considered sanctioned (critical) if at least one 10-digit product code within this category is sanctioned (critical). Sanctioned products include all product categories sanctioned at least by one country. Panels B and A show shares for the imports of critical military components and for everything else within sanctioned products respectively. Source: UN Comtrade, author's calculations.

Similar to the main conclusions from Section 2, in 2024, China continues to dominate the supply of sanctioned products to Russia. This dominance appears to be even more significant than in Figure 8, partly due to the possible misreporting of countries other than China. This could be the case if, for example, they are more cautious than China of potential secondary sanctions from the U.S. and the EU for assisting Russia in procuring sanctioned products.

Importantly, China's shares both for critical and non-critical sanctioned products have increased in 2024 relative to 2023. Consistent with Figure 7, this implies that patterns reported in Sections 2 and 3 are likely to have intensified during 2024. Accordingly, China's role in supplying Russia with sanctioned products appears to have further expanded.

References

Chupilkin, Maxim, Beata Javorcik, and Alexander Plekhanov (2023). The Eurasian roundabout: Trade flows into Russia through the Caucasus and Central Asia. EBRD Working Paper 276.

Clayton, Christopher, Matteo Maggiori, and Jesse Schreger (2023). A Framework for Geoeconomics. Working Paper 31852. National Bureau of Economic Research. https://www.nber.org/papers/w31852.

— (2024). A Theory of Economic Coercion and Fragmentation. Tech. rep. Available at SSRN: https://ssrn.com/abstract=4767131.

Corsetti, Giancarlo, Banu Demir, and Beata Javorcik (2025). Trading around geopolitics. Tech. rep. European University Institute. https://cadmus.eui.eu/entities/publication/6d948412-b120-4e5c-a4fa-952091508bee.

Egorov, Konstantin et al. (2025a). Trade Sanctions. BOFIT Discussion Papers 11/2025. Bank of Finland Institute for Emerging Economies (BOFIT). https://nbn-resolving.de/urn:nbn:fi-fe20251211117943.

— (2025b). "Trade Sanctions against Russia: Stylized Facts." In: *AEA Papers and Proceedings*. Vol. 115, pp. 578–582.

Hinz, Julian and Evgenii Monastyrenko (2022). "Bearing the cost of politics: Consumer prices and welfare in Russia." In: *Journal of International Economics* 137, p. 103581.

Korhonen, Iikka and Heli Simola (2025). From sanctions to price surges: The dynamics of Russia's import prices. BOFIT Discussion Papers 08/2025. Bank of Finland Institute for Emerging Economies (BOFIT). https://publications.bof.fi/items/bb18b69a-c252-43b6-a8da-9058d2916835.

Main Directorate of Intelligence of Ukraine (2025). War & Sanctions. https://war-sanctions.gur.gov.ua/en/components.

Tegler, Eric (2023). Is Russia Really Buying Home Appliances To Harvest Computer Chips For Ukraine-Bound Weapons Systems? Forbes. https://www.forbes.com/sites/erictegler/2023/01/20/is-russia-really-buying-home-appliances-to-harvest-computer-chips-for-ukraine-bound-weapons-systems/.

Regional convergence in Russia during the war

Iikka Korhonen

1 Introduction

In this chapter I explore how Russian regions' income convergence has progressed during the full-scale war after Russia's illegal invasion of Ukraine in February 2022. Earlier studies show that there was at least some income convergence among the Russian regions in the first years of the 2000s, but convergence stalled after 2014. Even during the period of general convergence, some regions, perhaps even one third of them, were lagging behind.

However, after the start of the full-scale war, regional convergence seems to have resumed. Many previously poorer regions have seen increase in their industrial production, as military procurement has been ramped up. In addition, signing up for the Russian military has been a way to increase incomes especially in many of the poorest regions. Looking at the data, during the war incomes have grown faster in the regions that were poorer before the invasion. Dispersion of regional wages has decreased.

The chapter is structured as follows. First, I briefly review some pertinent studies on regional convergence in Russia, and then I look at income, wage and employment data up to the end of 2025. Four years of full-scale war have indeed induced regional convergence in Russia, even if that may have happened at the expense of Russia's long-term growth potential and led to a less efficient allocation of resources. Poorer regions have seen faster income growth. Regions that had initially lower employment rates have witnessed faster employment growth, as overall demand for labor has grown. At the end I offer conclusions and some speculation about the future.

2 Earlier studies on regional convergence

Research on Russian regional economics shows that the 1990s were marked by strong divergence in income and economic indicators across regions, influenced by the transition

recession and the 1998 crisis (Solanko, 2008). While some convergence appeared among initially richer regions in the early and mid-2000s, poorer regions did not catch up, leading to the emergence of "growth clubs" with distinct development paths (Kholodilin et al., 2012). Regions rich in natural resources or large cities generally grew faster.

More recent studies highlight the fiscal and economic impacts of COVID-19, sanctions, and especially Russia's war on Ukraine. Since 2022, Russia's initial economic decline and subsequent recovery have been uneven: Defense industry regions have benefited, while export or automotive oriented regions have lagged (Zubarevich, 2024). Also, Yushkov and Alexeev (2024) show that the full-scale war has somewhat changed the relative success of Russia's regions. Among relative winners are weapons-producing regions, which were previously also poorer. Regions bordering Ukraine and regions with sanctions-prone industrial specialization are among the relative losers. Overall, although long-term divergence persisted, the war may be creating some new patterns of convergence within Russia, at least for the time being.

Gorodnichenko et al. (2025) discuss further regional economic developments in Russia after the full-scale invasion of Ukraine. They document further convergence in incomes and wages among Russian regions. Poorer regions were, broadly speaking, catching up with initially richer regions. However, there are some other factors at play as well. For example, regions bordering Ukraine have fared generally worse than their income levels would suggest. Similar to other studies, they show that regions with significant military industry have done relatively well. In addition, some of the poorest regions outside the North Caucasus region have seen quite rapid income growth, most likely related to military salaries and sign-up bonuses. Related research by Solanko (2024) shows how bank deposits have grown disproportionally more in several poorer regions with large numbers of mobilized soldiers.

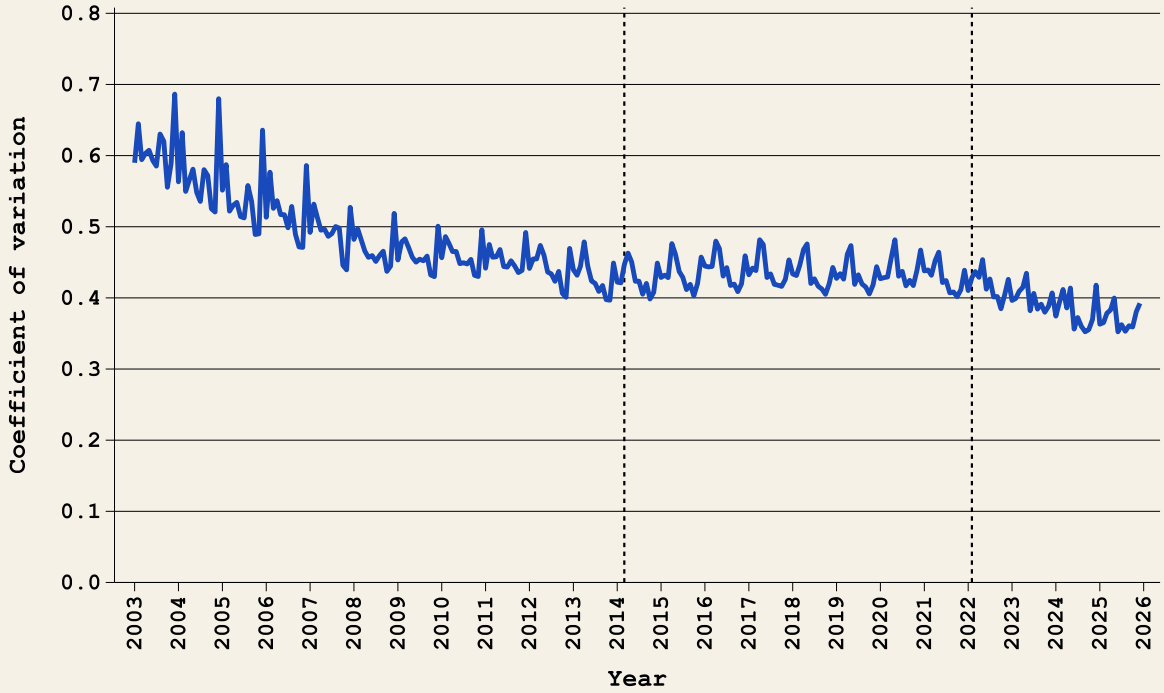
Nevertheless, Gorodnichenko et al. (2025) caution that much of the recent growth and income convergence in Russia has come at the expense of Russia's long-term growth potential. Investment in military industries and higher public spending have led to less efficient allocation of resources. In addition, outward migration and war casualties have already reduced Russia's working-age population significantly. The longer the war continues, the more severe the long-term consequences will be.

3 Wage and income convergence during the full-scale war

This section reviews data on average wages and incomes in the Russian regions. We can see that during the four years of the full-scale war incomes have, on average, grown faster in initially poorer regions, i.e., there has been income convergence. Analyzing dispersion of

regional average wages tells a similar story of convergence.

Figure 1: Russia's regional average wages



Notes: Russia's regional average wages, coefficient of variation. Vertical lines denote February–March 2014 (Russia's occupation of Crimea) and February 2022 (Russia's full-scale invasion of Ukraine).
Source: Rosstat, author's calculations.

Figure 1 shows the coefficient of variation (i.e., standard deviation of wages divided by their average) of regional average wages among 86 Russian regions (not counting the occupied Ukrainian regions) between 2003 and 2025. This simple metric confirms many of the observations noted earlier. The two vertical lines denote the illegal occupation of Crimea and Russia's military incursion into the Donetsk as well as Luhansk regions in February–March 2014 and the start of Russia's full-scale invasion in February 2022.

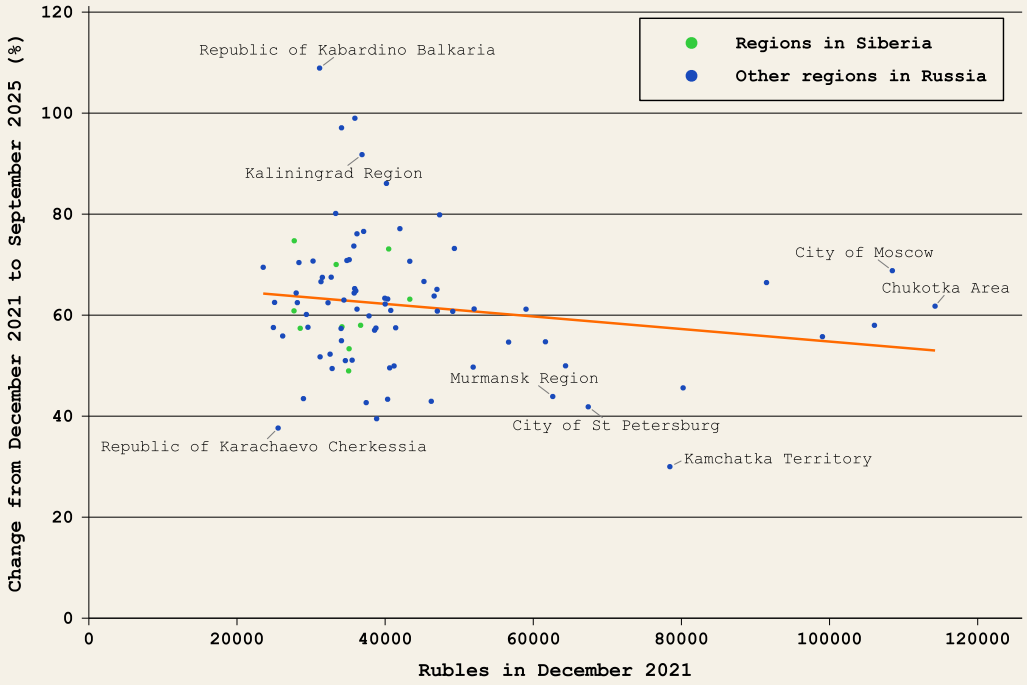
First, dispersion of average wages declined very substantially from the very early 2000s all the way to the early 2010s. While it is possible that convergence had already stopped slightly before the illegal occupation of Crimea, it is obvious that between 2014 and 2021 there was no *further* regional convergence in wages. This period also coincides with a very long period of low or non-existent GDP growth.

Second, there was a resumption in wage convergence following Russia's full-scale invasion of Ukraine. Military orders to previously struggling regions, participation in the war and the resulting higher incomes are obviously among the reasons, as has been discussed earlier.

Next I turn to a wider measure of economic welfare, i.e., the average household income per capita. In addition to wages, this measure includes social transfers (not just pensions, even if

they are by far the biggest component), entrepreneurial income, capital income (including rental income, dividends and interest paid on deposits) and other income (including, e.g., sign-up bonuses for military service).

Figure 2: Russia's regional average household per capita incomes



Source: Rosstat, author's calculations.

Figure 2 is a scatterplot, where the horizontal axis shows the average household income per capita in the fourth quarter of 2021, i.e., just before Russia's full-scale invasion, and the vertical axis shows the percentage change of the per capita income from the fourth quarter of 2021 to the third quarter of 2025. We can see that all regions have seen income growth, but the fastest growth is concentrated in regions that initially were relatively close to, but below the median per capita income (₽36,690 in the fourth quarter of 2021). Many of these regions had a disproportionally high share of manufacturing industry. Also many of the poorest regions in Siberia experienced relatively rapid income growth.

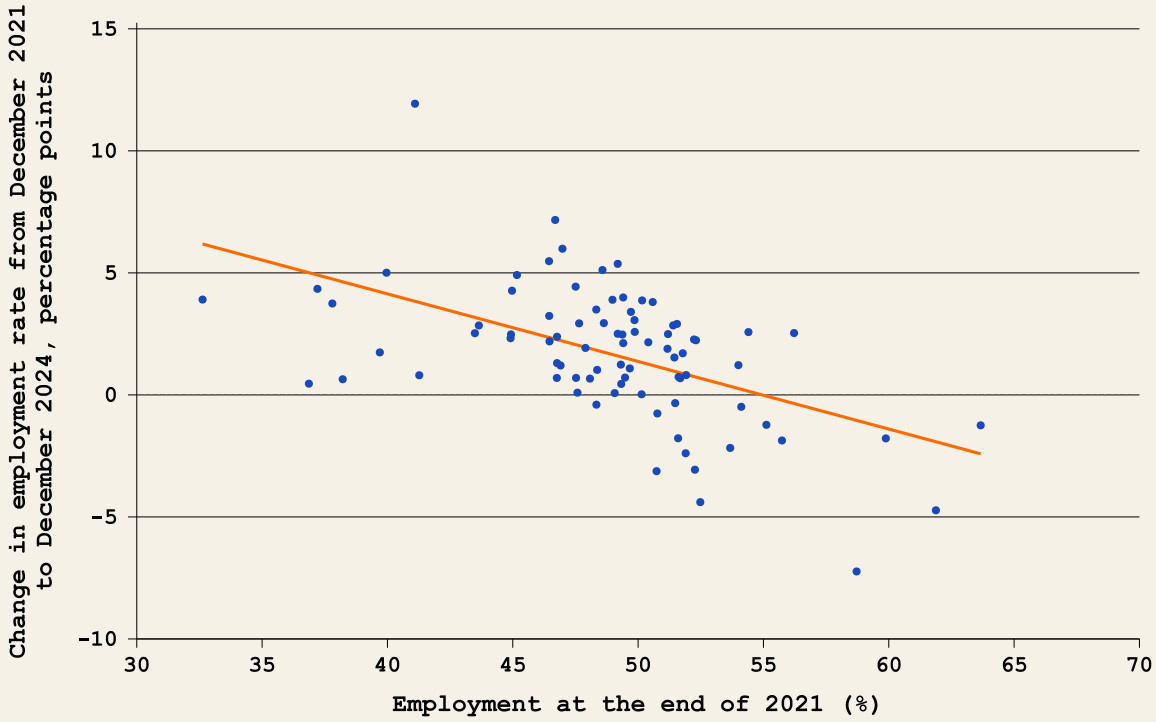
Looking at the full sample, there is negative correlation between the initial income and the subsequent income growth. It should be noted that the convergence of incomes would be in an even sharper focus, if City of Moscow and a handful of oil-rich regions with per capita income above ₽80,000 were to be ignored. These regions have done moderately well during the war with income growth rates at around 60 % (the median income growth for all regions was 61 %). On the other hand, initially richer regions like Murmansk and City of St. Petersburg have witnessed income growth that has been markedly below the median.

4 Employment convergence during the full-scale war

In this section I review how employment and especially regional employment rates have developed during the full-scale war.

First, it should be noted that the recorded employment figure and employment ratio have increased in Russia during the war, even when the total population has *decreased*. At the end of 2021 the recorded employment figure was 72.3 million, while by the end of 2025 it had climbed to 74.7 million. It can be noted that in the five years preceding the COVID-19 pandemic, Russia's employment figure hovered around 72 million. During 2020 employment declined by approximately two million, but it recovered back to pre-pandemic levels during 2021. Therefore, the strong increase in total employment from 2022 onward can't be explained by recovery from the pandemic.

Figure 3: Russia's regional employment rates



Source: Rosstat, author's calculations.

Figure 3 is a simple scatterplot where the horizontal axis depicts employment rate (average employment in the last three months of the year divided by the average population of the region) in 2021 and the vertical axis shows the *change* in the employment rate from 2021 to 2024.

Several observations can be made. First, employment rates vary greatly between regions. There are a number of remote regions in the north and in the far east, producing mostly energy and other raw materials, with employment rates around 60 %. These regions typically have fewer pensioners and also children. Then there are regions in the North Caucasian Federal District, such as the Republics of Ingushetia and Dagestan, where the employment rate lies below 40 %. They typically have a higher proportion of children and also more unemployment.

Second, changes in the employment rate during the full-scale war have been large. Moreover, there is a clear and statistically significant negative correlation between the initial employment rate and its change between 2021 and 2024. This means that Russian regions have converged among themselves in this important aspect of their economic structure.

Poorer regions with an employment rate below 45 % have all seen positive changes in their employment rate. In some cases they have been heavily targeted for military recruitment, which has lifted employment. The change in employment rate in City of Sevastopol between 2021 and 2024 was almost 12 percentage points, which has been driven by a strong increase in public employment; also, the population of the city has increased. In some cases a positive change in employment rate is most likely linked to the presence of military industries. For example, in the Chelyabinsk Oblast, known for its heavy industry, the employment rate has increased by more than two percentage points.

Some regions with previously higher employment rates have witnessed at least some decline in the rate. Here the reasons can be more varied. For example, in Murmansk Oblast the employment rate declined by seven percentage points and in Republic of Karelia by more than four percentage points. One can speculate that the local economies suffered from a drastic decline in trade with their Finnish and Norwegian neighbors. There are also regions in the far east, like Magadan Oblast, where the employment rate has declined, perhaps because of lower mining activity.

5 Concluding remarks

Russia's full-scale war against Ukraine has meant changes also for Russia's economic structure. Perhaps paradoxically, the war has led to greater convergence of wages and incomes. While the effect is not universal, many poorer regions have benefited from a much higher budget for military procurement as well as higher salaries paid for those willing to sign up for the military. The war has also re-allocated employment across Russian regions to better serve the needs of the military and as a response to new realities concerning Russia's foreign trade. The total employment rate has increased, and employment rates have become more similar across Russia.

At the same time, this convergence is most likely also a sign of lower growth potential going forward. The allocation of resources is less efficient and not conducive to lifting Russia's future production capacity.

References

Gorodnichenko, Y., I. Korhonen, and E. Ribakova (2025). War-induced economic convergence in Russian regions. Working Paper 25-21. Peterson Institute for International Economics.

Kholodilin, K. A., A. Oshchepkov, and B. Siliverstovs (2012). "The Russian regional convergence process: Where is it leading?" In: *Eastern European Economics* 50.3, pp. 5–26.

Solanko, L. (2008). "Unequal fortunes: A note on income convergence across Russian regions." In: *Post-Communist Economies* 20.3, pp. 287–301.

— (2024). Where do Russia's mobilized soldiers come from? Evidence from bank deposits. Policy Brief 1/2024. BOFIT.

Yushkov, A. and M. Alexeev (2024). "Russian regions in wartime: Fiscal and economic effects of the Russo-Ukrainian war." In: *Post-Soviet Affairs* 40.4, pp. 313–325.

Zubarevich, N. (2024). "Special military economic geography: Changes in the Russian economy by region." In: *Voprosy teoreticheskoy ekonomiki* 1, pp. 34–47.

Imprint

Kiel Institute for the World Economy
Kiel location
Kiellinie 66, 24105 Kiel, Germany
Phone +49 431 8814-1
info@kielinstitut.de

Berlin location
Chausseestraße 111, 10115 Berlin, Germany
Phone +49 30 30830637-5
berlin@kielinstitut.de

The Kiel Institute for the World Economy - Leibniz Center for Research on Global Economic Challenges is an independent foundation under the public law of the German federal state of Schleswig-Holstein.

It is represented by the Board of Directors
Prof. Dr. Moritz Schularick, Präsident, Executive Scientific Director
Michael Doberschütz, Acting Executive Administrative Director
Prof. Dr. Christoph Trebesch, Vice President

Responsible Supervisory Authority
Ministry of General Education and Vocational Training, Science, Research and Culture of the Land Schleswig-Holstein
Jensendamm 5, 24103 Kiel, Germany

Value Added Tax Identification Number
DE 251899169

Kielinstitut.de/publications