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KSE Institute Russia Chartbook

Turning Point Approaching

February 2023

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Executive Summary

1. **Important sanctions on Russian oil and gas were phased in only gradually in 2022.** However, meaningful measures in this area are now in place. Furthermore, Europe successfully moved away from Russian gas. As energy prices also returned to pre-invasion levels towards the end of 2022, we expect oil and gas earnings to decline sharply in 2023. READ MORE
2. **Lower exports—and production—of hydrocarbons will weigh on the economy.** We expect real GDP to contract by 6.1% this year. Importantly, the immediate crisis will be followed by an extended period of stagnation. Altogether, we believe that Russia's economy will be more than 15% smaller in 2024 compared to a no-war/no-sanctions scenario. READ MORE
3. **The impact from a less supportive external environment on government finances already materialized last year.** Sharply higher expenditures due to the war also contributed to a meaningful shift of the federal government's fiscal accounts compared to the pre-war budget. We forecast the deficit to widen further, to 6.5% in 2023 and 6.1% in 2024. READ MORE
4. **Higher deficits will put significant pressure on financing, which has already become increasingly challenging in 2022H2.** Russia will be depleting key macro buffers as it relies on the National Welfare Fund for budgetary support. At the same time, higher issuance of domestic debt, in the absence of foreign investors, will increase debt service costs. READ MORE
5. **Sanctions on Russia's central bank have severely limited access to reserves.** A less supportive external environment will weigh on the ruble and increase inflationary pressures. In the absence of large FX inflows, the CBR will struggle to simultaneously address monetary and financial stability. A rate hike of around 300bps is likely in 2023H1. READ MORE
6. **Russia's economy has long struggled with low productivity growth and this challenge will only grow.** The country is now cut-off from important financial markets, many foreign companies have disengaged, and capital spending is crowded out by war-related expenditures. In addition, emigration of high-skilled workers will weigh on potential growth going forward. READ MORE
7. **Ukraine's allies should impose additional sanctions now.** With Russia's economy approaching a turning point in the first half of this year, we believe that exacerbating vulnerabilities would help shorten the war. READ MORE

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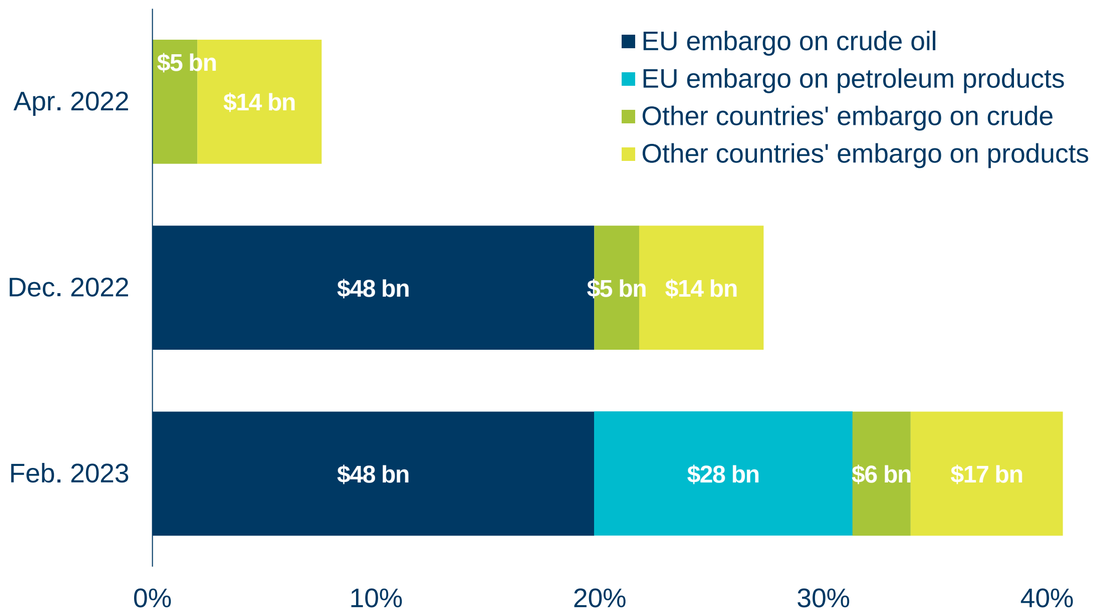
The external environment will worsen considerably in 2023.

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Sanctions on Russian oil and gas exports are only now kicking in.

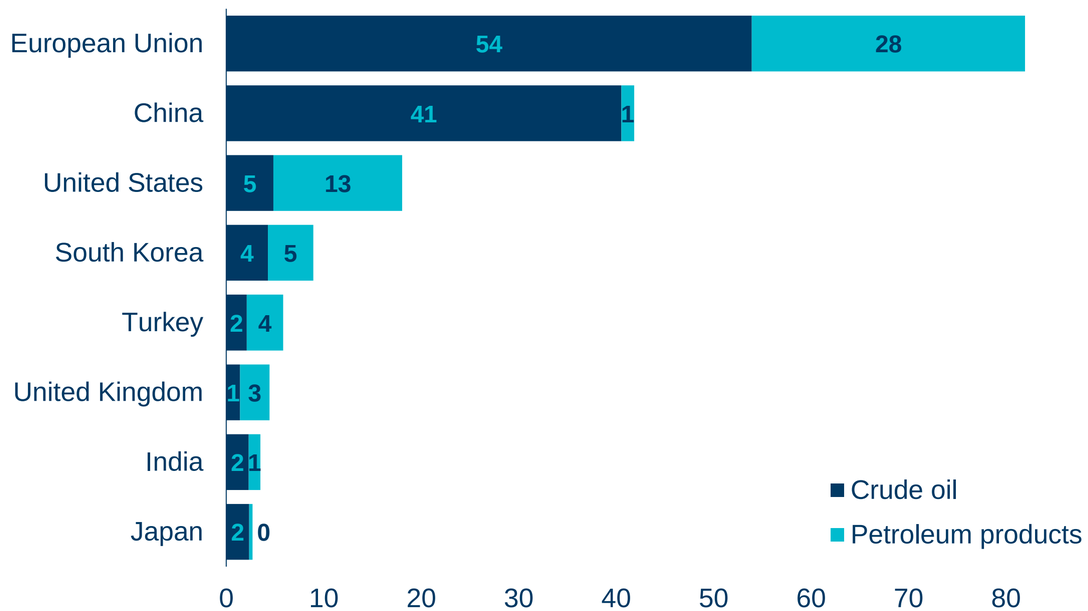
- Sanctions on oil and gas began in earnest with the EU embargo on crude oil, which took effect on December 5, 2022.
- With the embargo on petroleum products (February 5, 2023), roughly 40% of oil and gas exports will be under sanctions.
- The biggest importers of Russian oil (in 2021) that have not imposed restrictions are China, India, Korea, and Turkey.

Sanctions coverage, in % of 2021 oil and gas exports value



Source: UN Comtrade, KSE Institute

Russian oil exports in 2021 by destination, in U.S. dollar billion



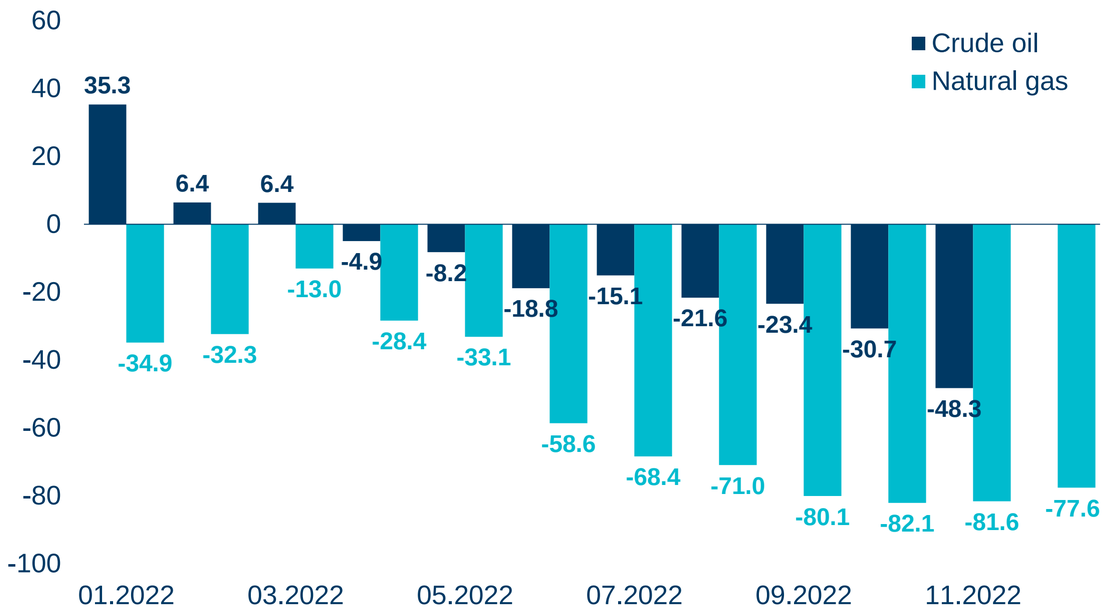
Source: UN Comtrade, KSE Institute

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Higher prices offset lower export volumes in 2022.

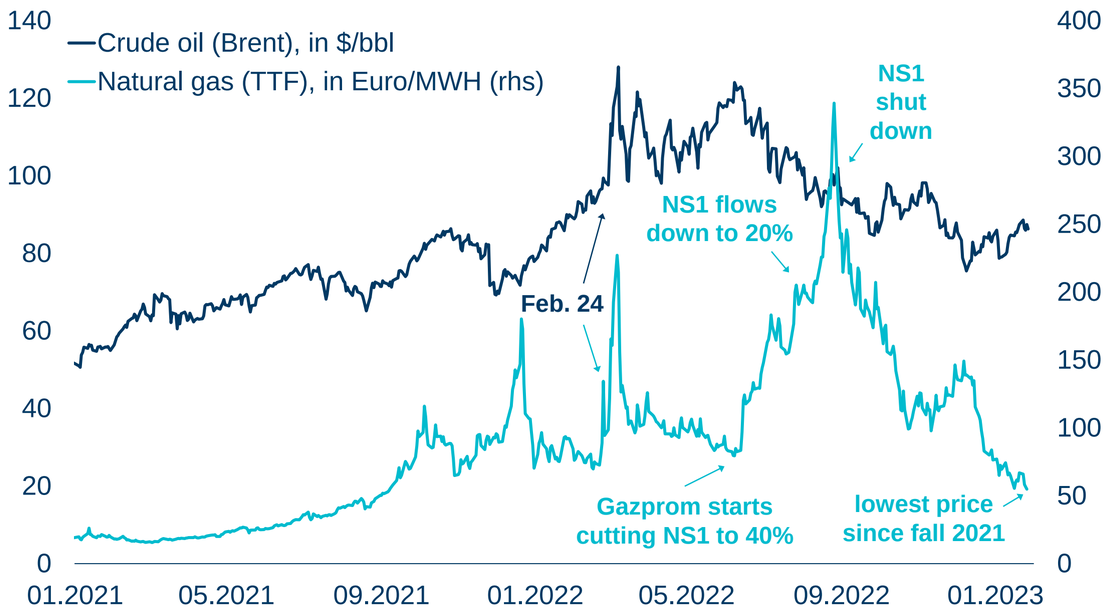
- Despite the gradual phasing in of sanctions, hydrocarbon exports to G7 countries fell throughout 2022.
- In December, natural gas flows to the EU+UK were down by over 75% compared to the 2021 average.
- However, substantially higher prices, especially for gas, more than offset the volume decline for most of 2022.

G7 imports from Russia, % change vs. 2021 average volumes



Source: Bruegel, KSE Institute

Prices for crude oil and natural gas in 2021-22



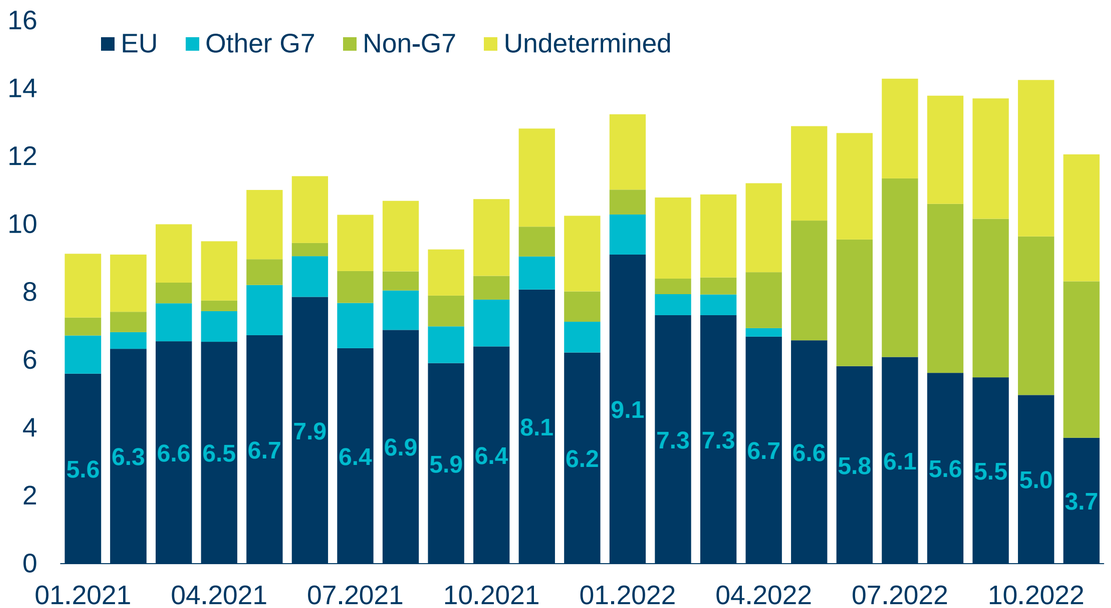
Source: Bruegel, KSE Institute

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Russia’s ability to redirect oil exports has kept production robust.

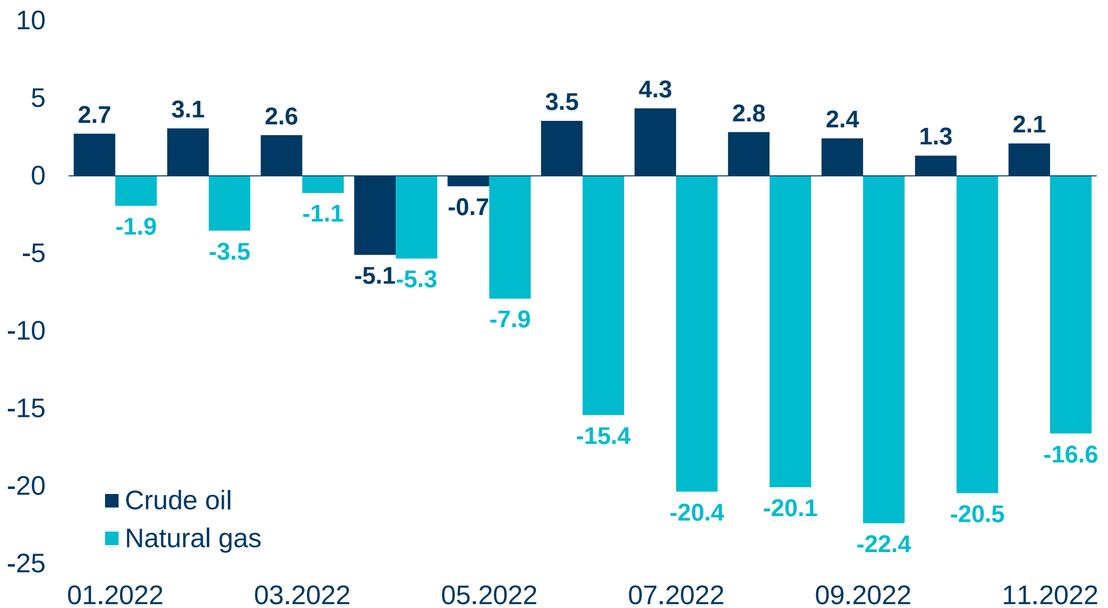
- Crude oil exports to G7 countries fell by close to 50% compared to the 2021 average, to 3.7 million tons in November.
- Non-G7 exports increased significantly, reaching 8.4 million tons in November, and now account for 70% of the total.
- This redirection has enabled Russia to keep up crude oil production, while natural gas production is down markedly.

Russian seaborne crude oil exports, in million tons



Source: Bruegel, KSE Institute

Russian production volumes, % change vs. 2021 average volumes



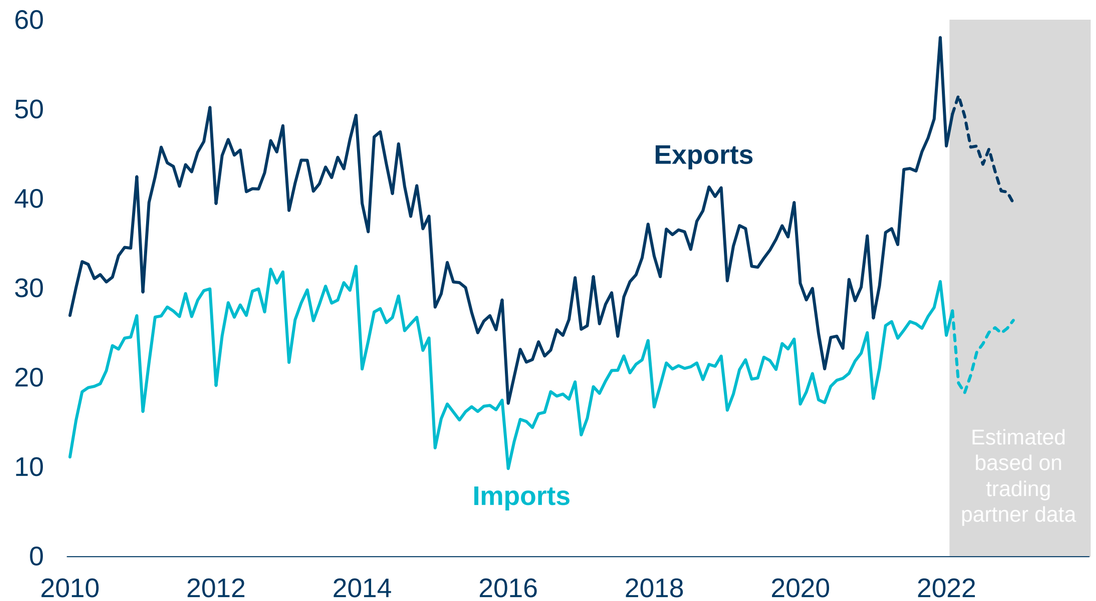
Source: Rosstat, KSE Institute

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Lower imports also supported the trade balance last year.

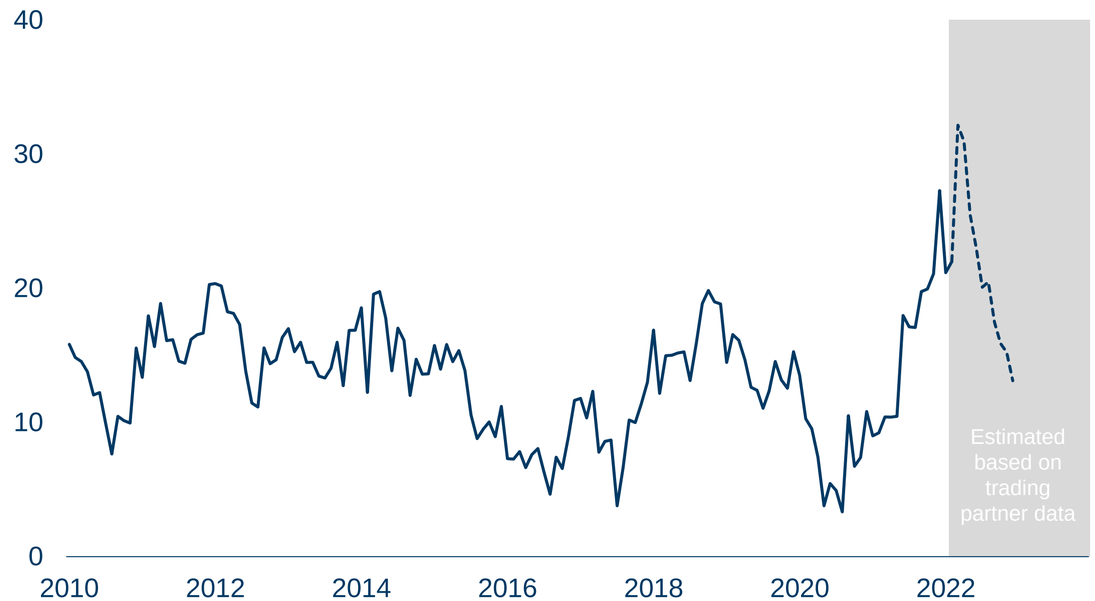
- We estimate that goods exports reached $542 billion in 2022, up 9.7% compared to the previous year.
- Imports weakened to $285 billion, down 6.4% vs.2021, despite the recovery in recent months.
- As a result, Russia's trade balance reached a record-high $257 billion last year ($190 billion in 2021).

Estimated exports and imports, in U.S. dollar billion



Source: national authorities, KSE Institute

Estimated trade balance, in U.S. dollar billion



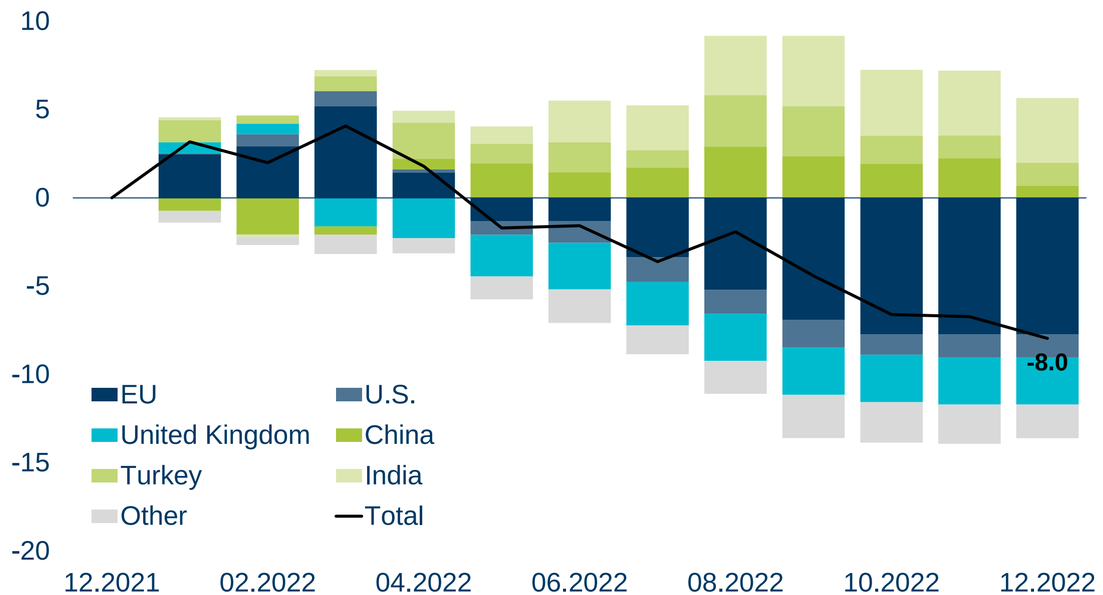
Source: national authorities, KSE Institute

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Export and import dynamics differed considerably over the course of 2022.

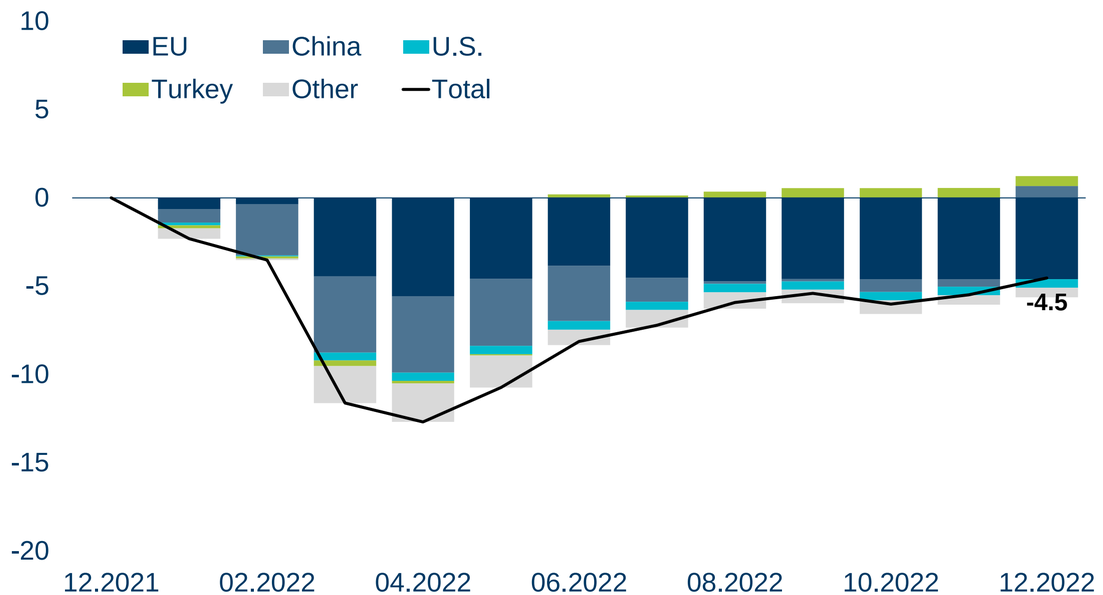
- Russian exports initially remained robust despite losses in traditional markets such as the EU, UK, and US.
- But lower prices more than offset the shift to alternative destinations, e.g., China, India, and Turkey in 2022H2.
- On the imports side, Russia has not been able to replace EU and US trade, although imports from China recovered.

Change in goods exports vs. December 2021, in U.S. dollar billion



Source: national authorities, KSE Institute

Change in goods imports vs. December 2021, in U.S. dollar billion



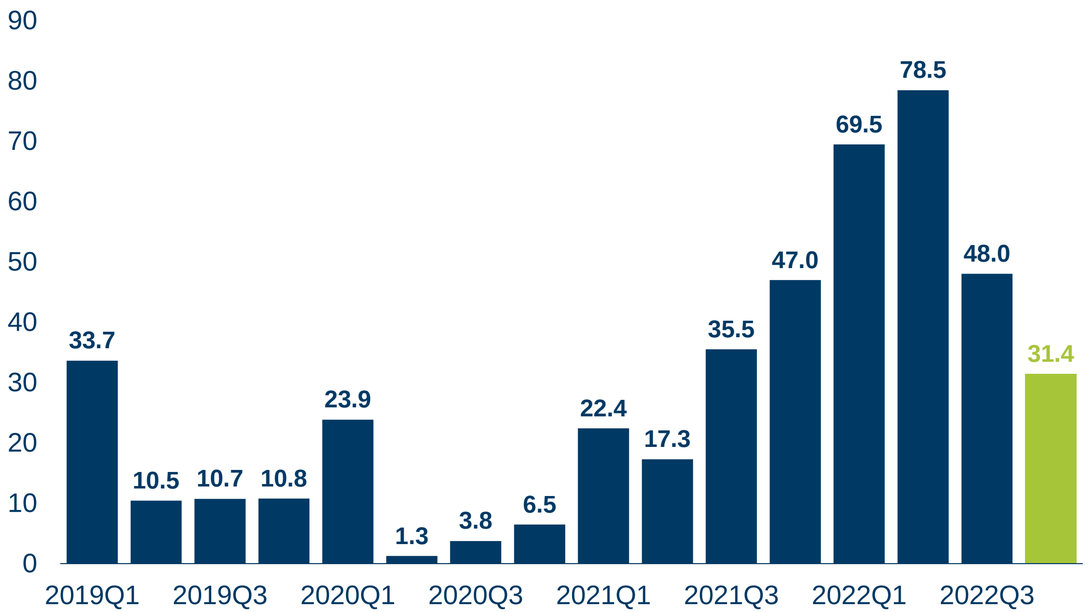
Source: national authorities, KSE Institute

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Recent data show that the external environment is changing quickly.

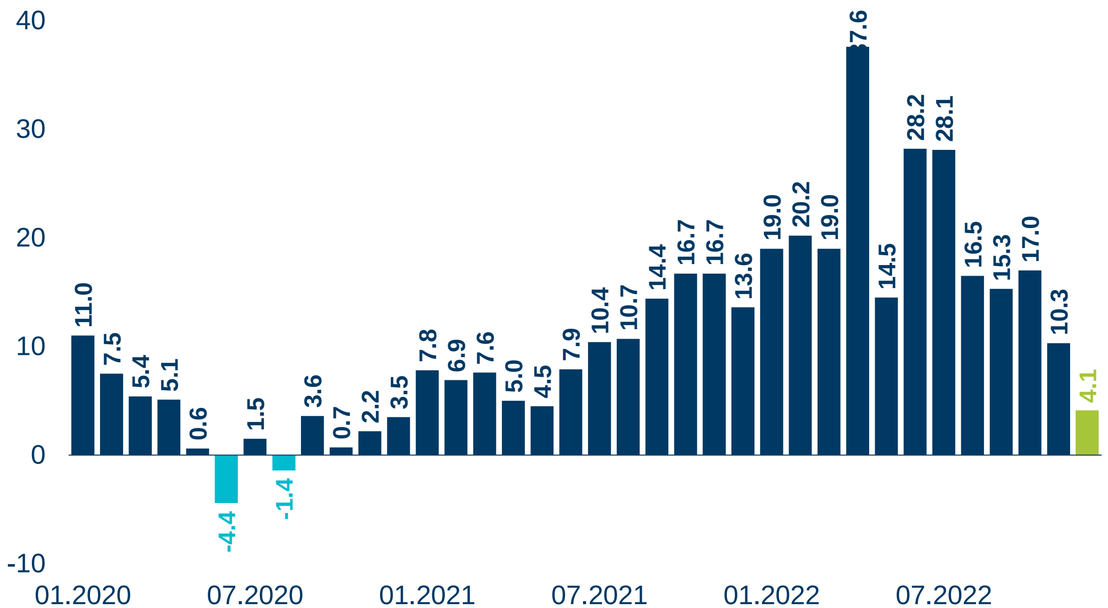
- The current account surplus fell to $31.4 billion in 2022Q1, the lowest reading since early 2021.
- Monthly data shows that December was particularly weak at $4.1 billion, smaller than any surplus since late 2020.
- This points to a clear impact from the EU embargo on crude oil and Europe's ability to move away from Russian gas.

Quarterly current account balance, in U.S. dollar billion



Source: Bank of Russia, KSE Institute

Monthly current account balance, in U.S. dollar billion*



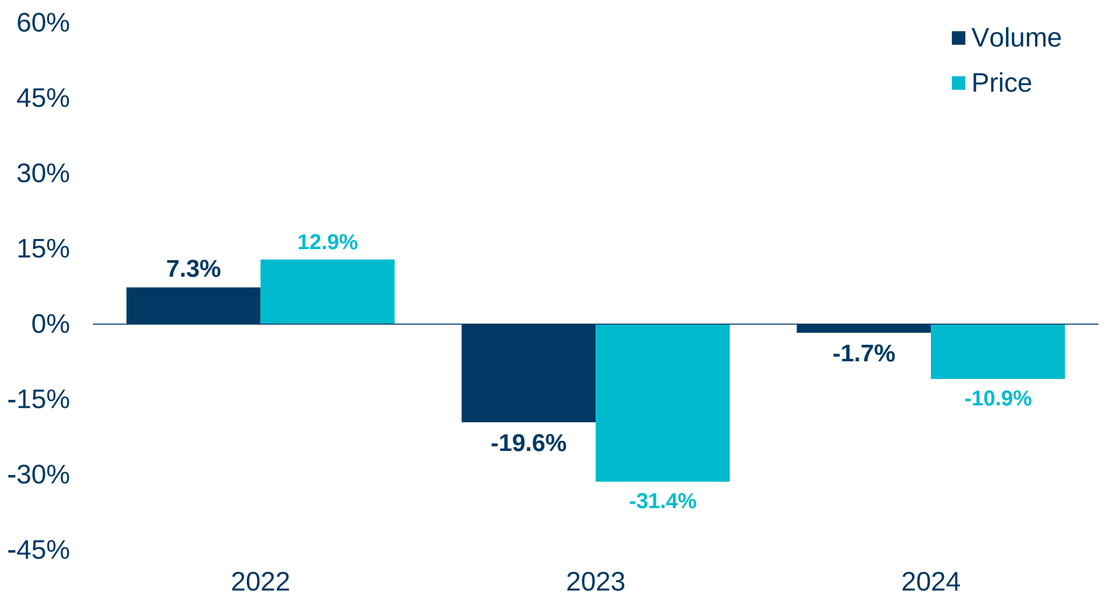
Source: Bank of Russia, KSE Institute *monthly and quarterly data do not fully align

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We project a significant decline in oil and gas exports this year.

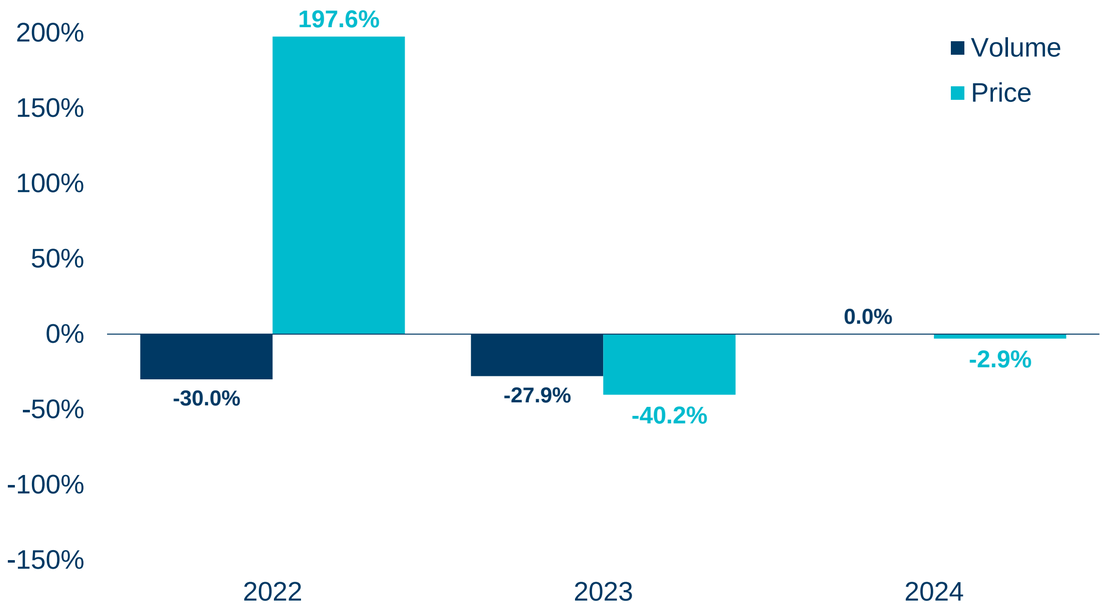
- We expect significant declines in oil and gas export volumes in 2023, 19.6% and 27.9%, respectively.
- Prices, which already moderated in 2022H2, will fall further—by 31.4% for oil and 40.2% for year-over-year in 2023.
- Importantly, we do not foresee any bounce back in 2024, rather natural gas prices will drop further.

Oil volume and price forecast, in % year-over-year



Source: KSE Institute

Natural gas volume and price forecast, in % year-over-year



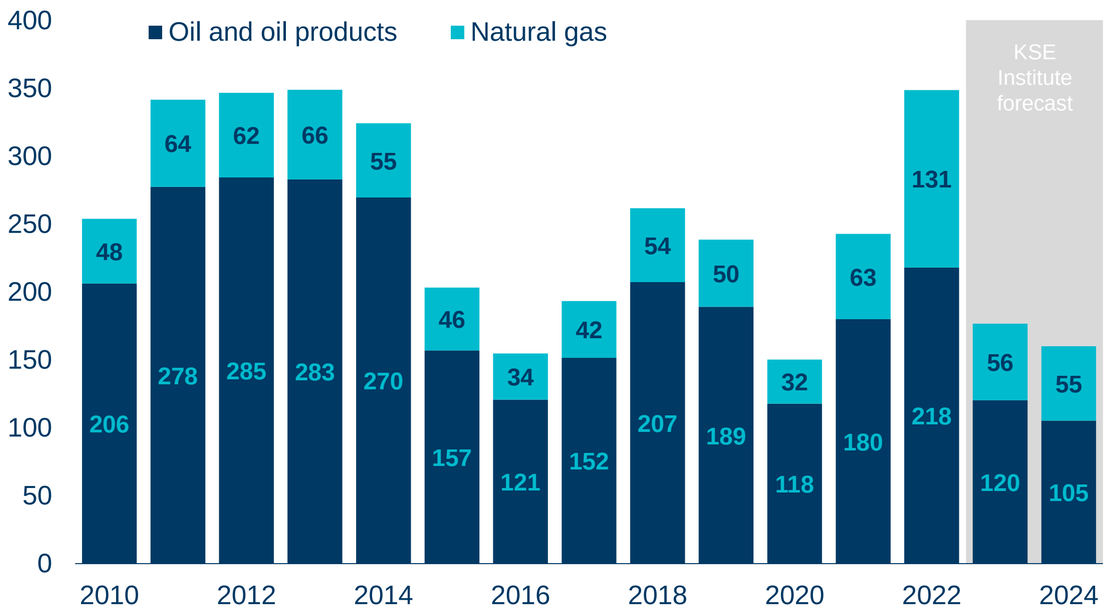
Source: KSE Institute

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As a result, lower hydrocarbon earnings will weigh on the current account.

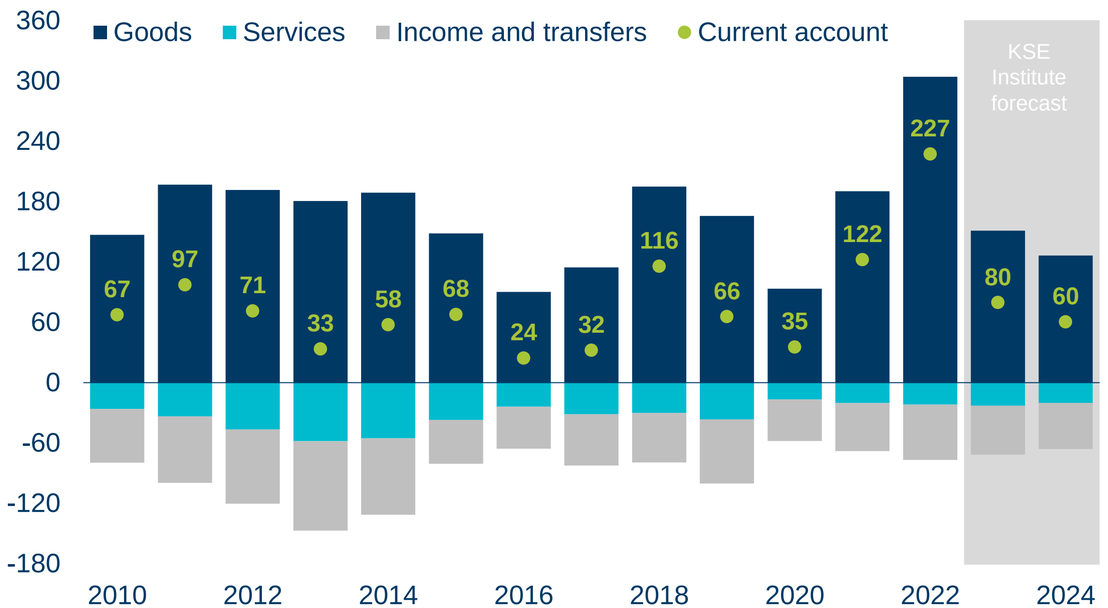
- We project that lower export volumes and prices will lead to a 50% decline in oil and gas earnings this year.
- A level of around $40 billion per quarter has, historically, been a critical threshold for the Russian economy.
- Lower hydrocarbon exports also mean a sharp reduction in the overall current account surplus, to $80 billion in 2023.

Oil and gas earnings, in U.S. dollar billion



Source: Bank of Russia, KSE Institute

Current account and components, in U.S. dollar billion



Source: Bank of Russia, KSE Institute

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At this critical junction, additional sanctions could exacerbate the pressure.

- To exacerbate challenges emanating from a less supportive external environment, we propose new oil and gas sanctions.
- We estimate that these measures would reduce oil and gas earnings by $54 billion and $65 billion in 2023-24, respectively.
- This would deprive Russia of financing for imports, wear down buffers, and expose economic and financial vulnerabilities.

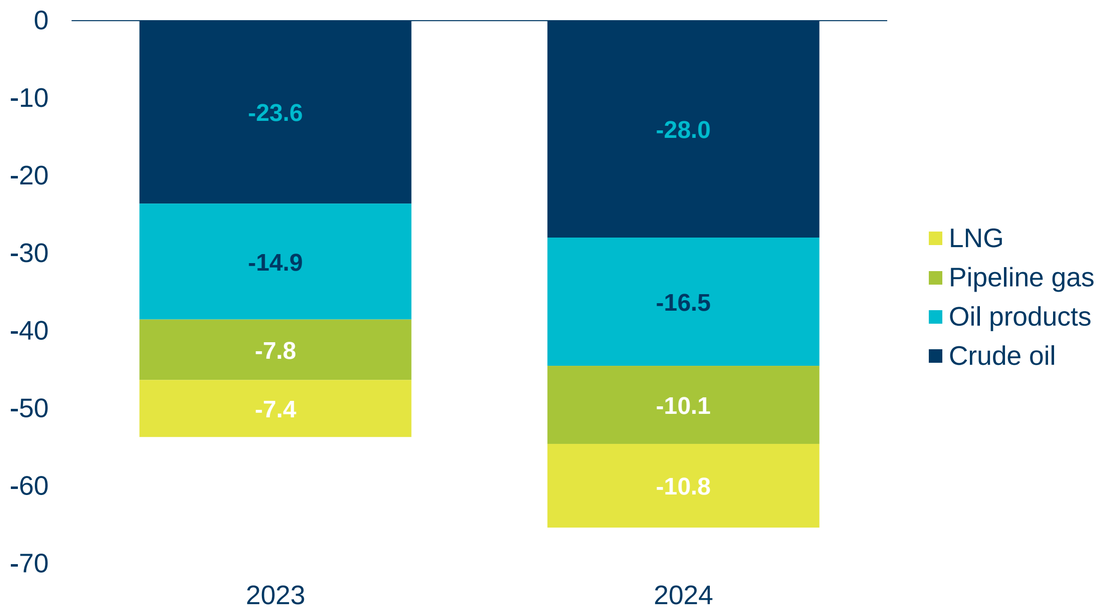
KSE proposal for further sanctions on Russian oil and gas

Russia's position has weakened considerably in recent months as Europe adjusted to the loss of Russian gas supply, and energy prices fell back to pre-invasion levels. We propose to exacerbate challenges created by a less supportive external environment by imposing the following measures:

1. Cutting the crude oil price cap to $50/bbl at the next review
2. Setting the oil products price caps at levels consistent with the crude price cap and respective pre-invasion price spreads to crude
3. Banning imports of Russian gas into the EU via pipelines controlled by Russia, thereby closing Turkstream and sending gas via Ukraine
4. Banning imports of Russian LNG into the EU
5. Imposing comprehensive sanctions on Gazprom, Russian oil companies, and Gazprombank

Source: *KSE Proposal for a Further Package of Oil and Gas Sanctions*, 13.01.2023

Oil and gas earnings vs. baseline scenario, in U.S. dollar billion



Source: KSE Institute

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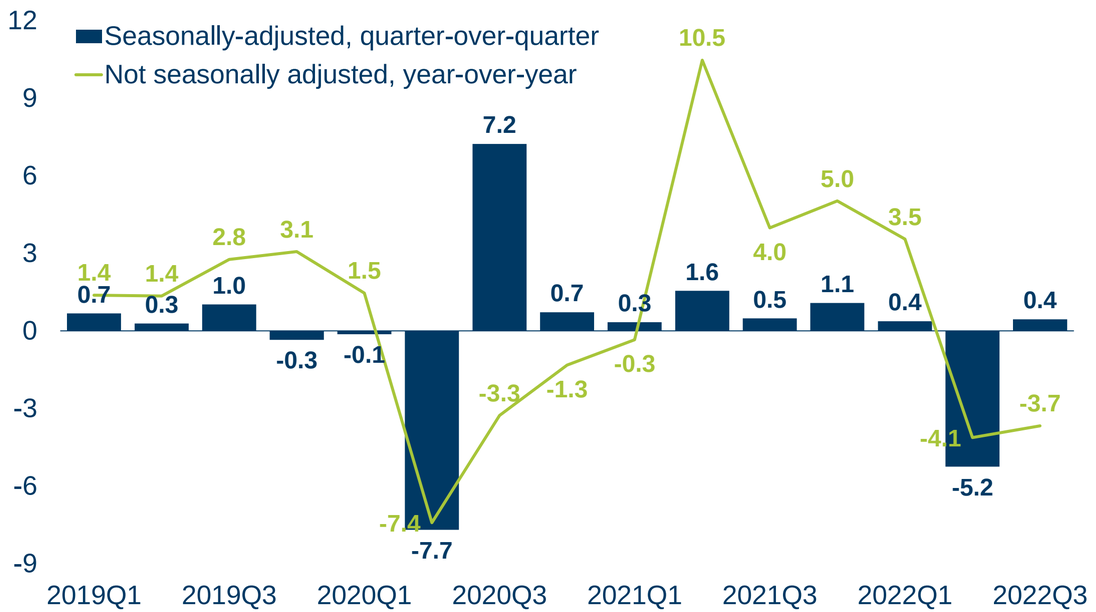
Lower hydrocarbon exports and production will weigh on activity.

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We forecast a sharp contraction of Russia‘s economy this year.

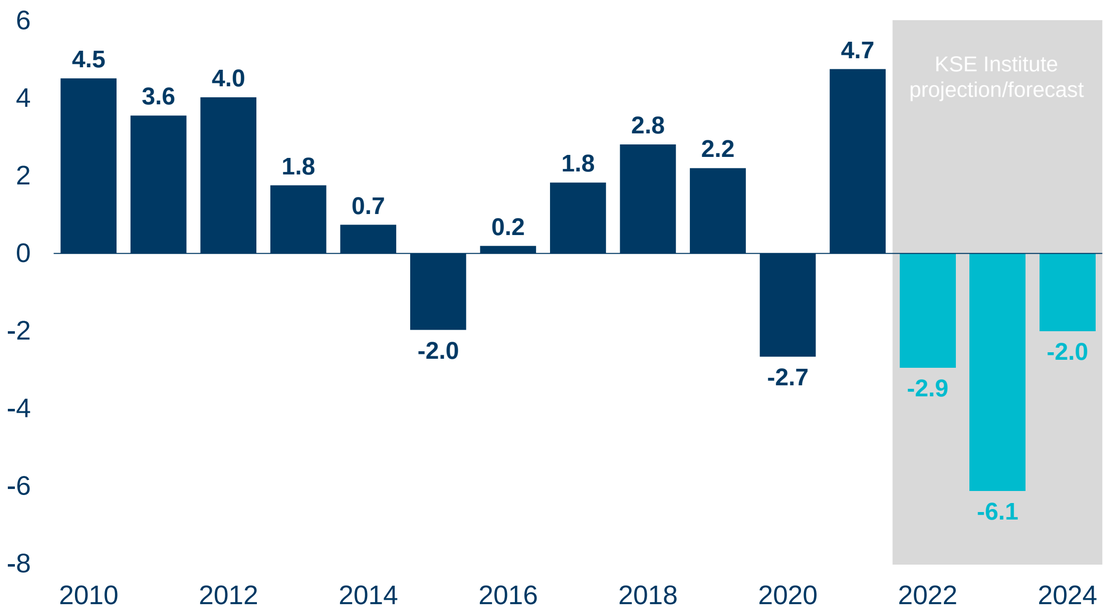
- The Russian economy overperformed expectations in 2022, and the contraction of GDP was likely contained to ~3%.
- However, we project that sharply lower oil and gas exports as well as production will weigh heavily on activity in 2023.
- In our view, real GDP will decline by 6.1% this year, followed by a further 2.0% contraction in 2024.

Quarterly real GDP dynamics, in %



Source: Rosstat, KSE Institute

Real GDP growth, in % year-over-year



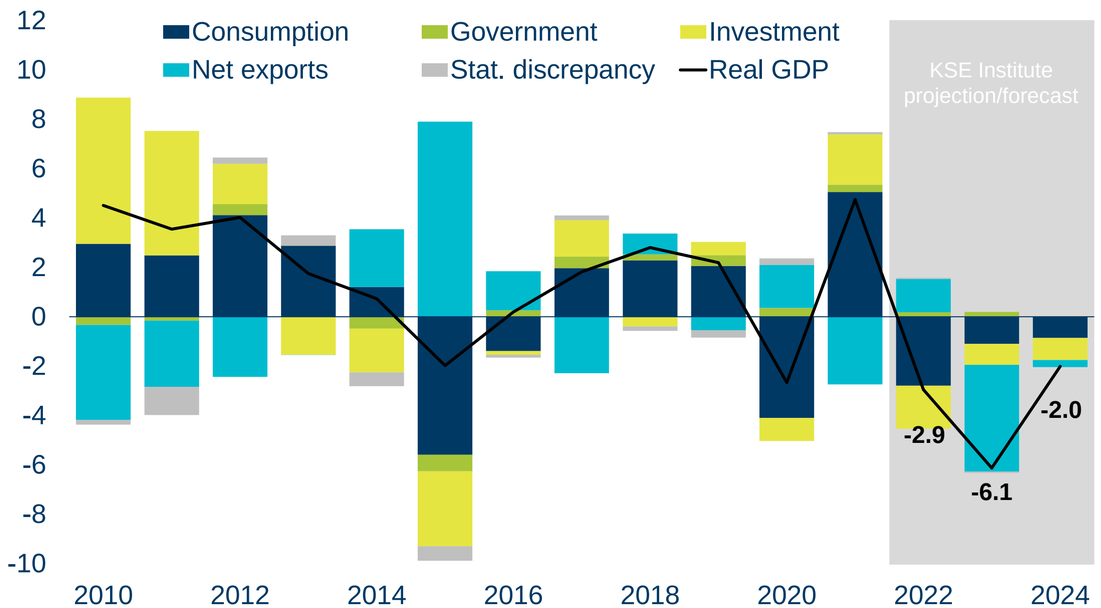
Source: Rosstat, KSE Institute

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Net exports no longer offset weaker domestic demand.

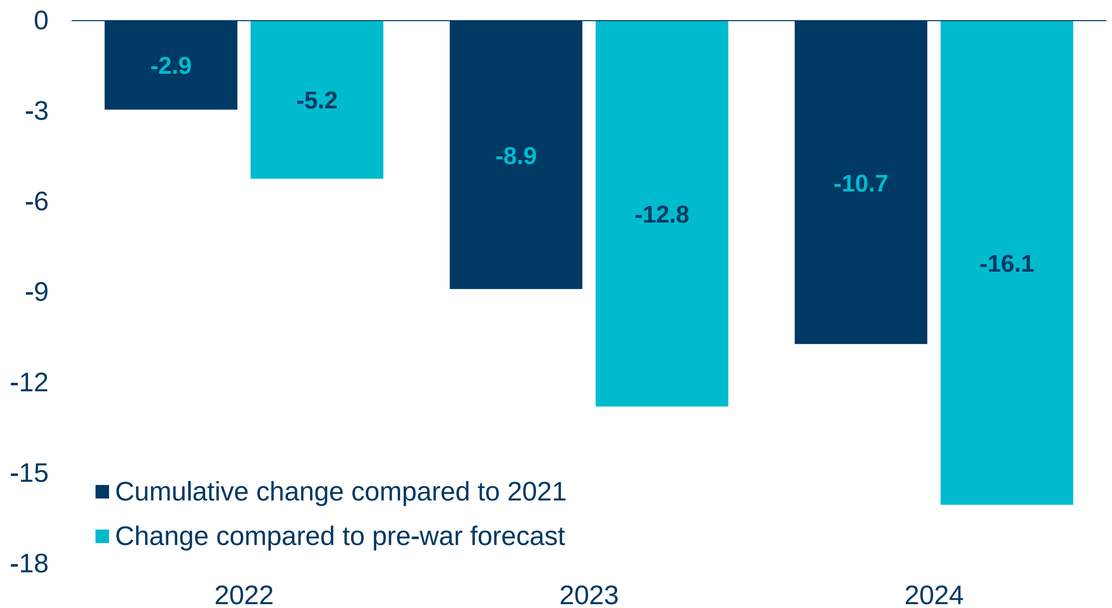
- What is different about 2023-24 compared to last year is that net exports will no longer offset weaker domestic demand.
- By 2024, the Russian economy will be roughly 11% smaller than in 2021 and 16% smaller than in a no-war scenario.
- Importantly, the war/sanctions-driven crisis will not be followed by a rebound but, rather, an extended period of stagnation.

Contributions to real GDP growth, in percentage points



Source: Rosstat, KSE Institute

Loss in real gross domestic product, in %



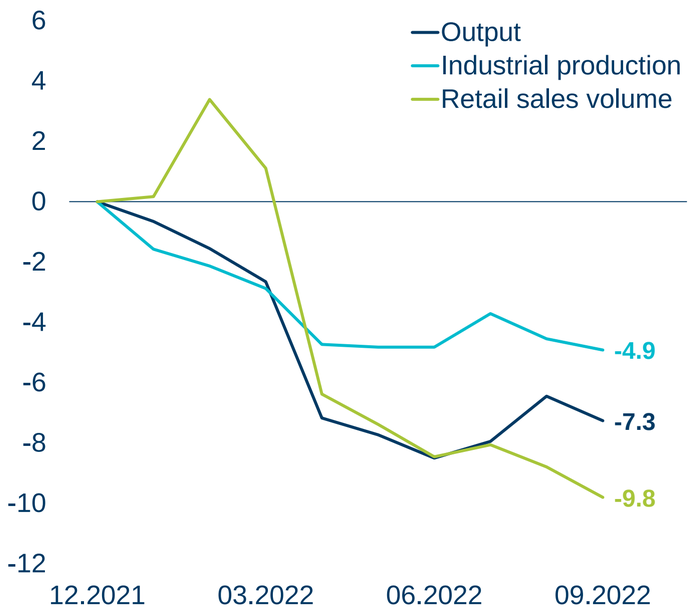
Source: International Monetary Fund, KSE Institute

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In some sectors, the effect of sanctions is clearly visible.

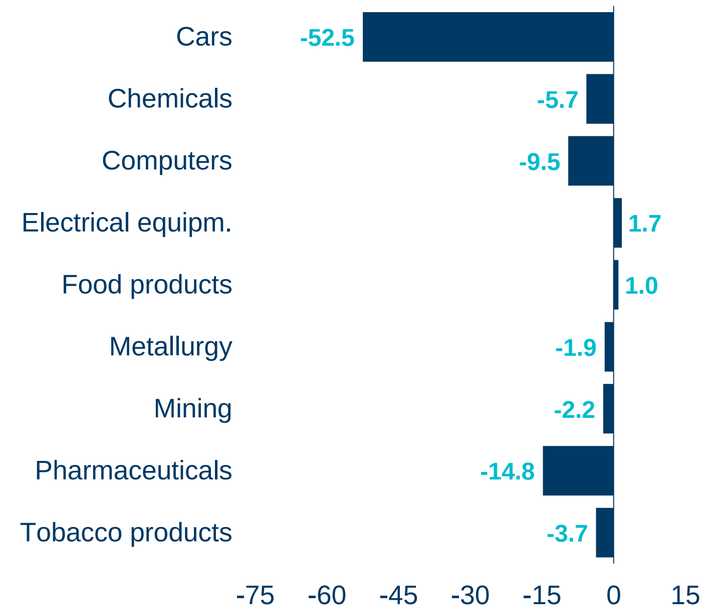
- High-frequency activity indicators point to noticeable and continued weaknesses in the Russian economy.
- Sectoral performance differs considerably, however, with car production and pharmaceuticals under the most pressure.
- PMIs show that the war and sanctions are weighing on services, but much less so than during previous crisis episodes.

Activity indicators vs. December 2021, in %



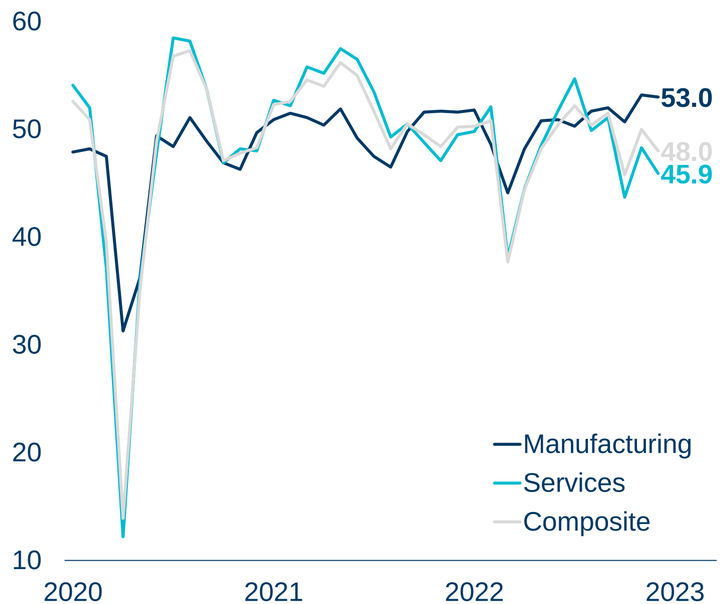
Source: Rosstat, KSE Institute

Sectoral production, in % year-over-year*



Source: Rosstat, KSE Institute *as of November 2022

PMIs, index (50+ = expansion)



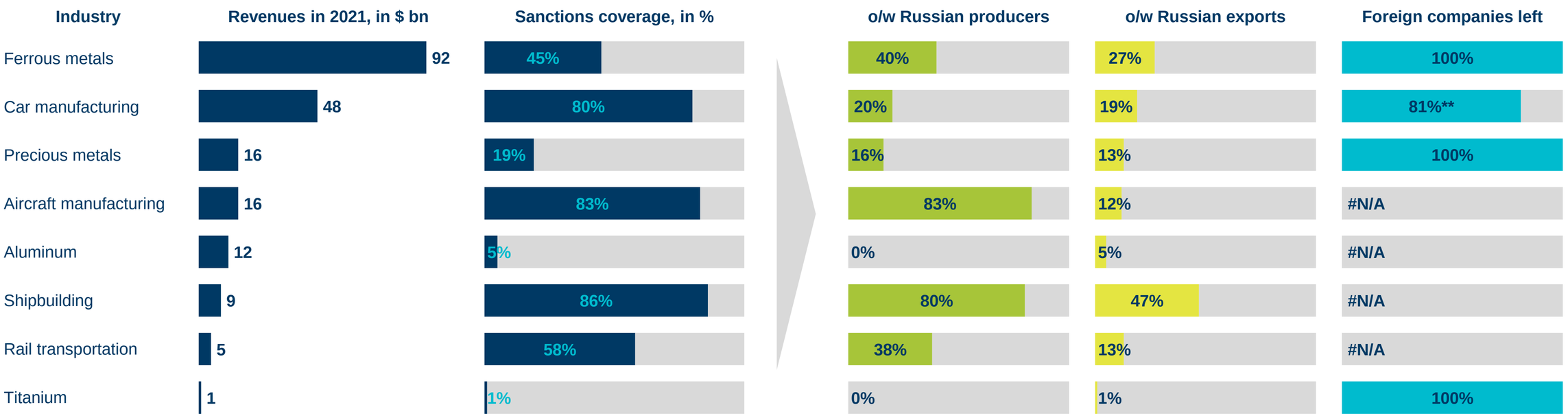
Source: S&P Global, KSE Institute

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Sanctions exemptions continue to shield important industries

- Based on our most-recent sanctions database update, sanctions cover 54% of revenues (2021) in a set of critical industries.
- Exemptions for Russian producers are particularly relevant in metallurgical industries and dilute the impact of sanctions.
- A more pronounced impact on the Russian manufacturing sector would require meaningful tightening of restrictions.

KSE index for metallurgical and engineering industries



Source: KSE Institute *includes companies from sanction coalition countries: Albania, Andorra, Australia, Canada, European Union, Iceland, Japan, Montenegro, New Zealand, North Macedonia, Norway, Republic of Korea, Singapore, Switzerland, United Kingdom, and United States **Renault sold its business to the Russian government for 1 ruble; if included = 100%

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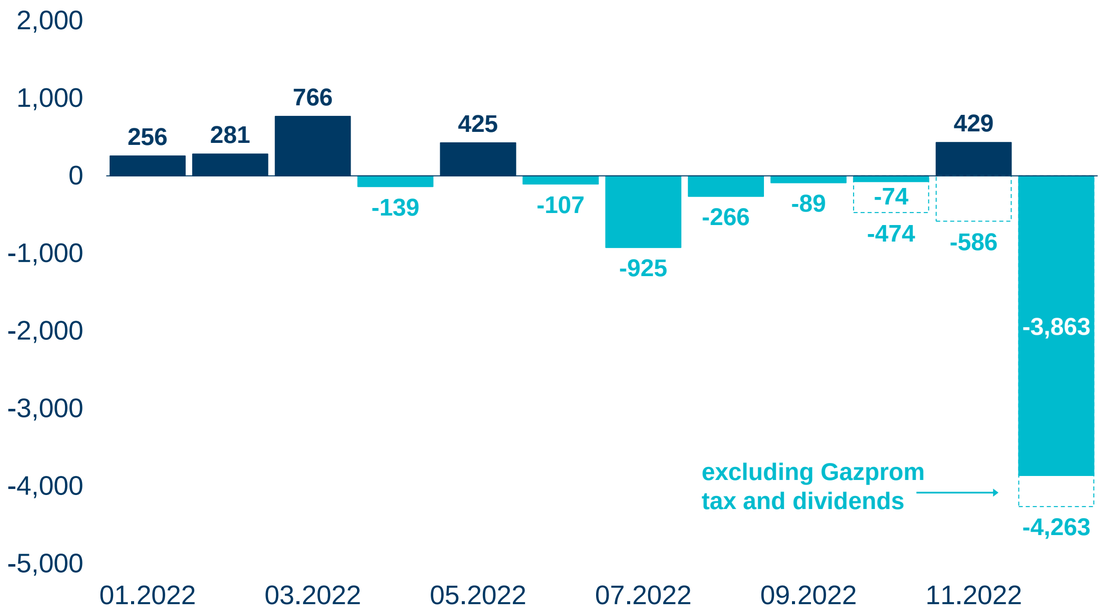
A less supportive external environment will also impact government finances.

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Sharply higher expenditures led to a 3.3 trillion-ruble deficit in 2022.

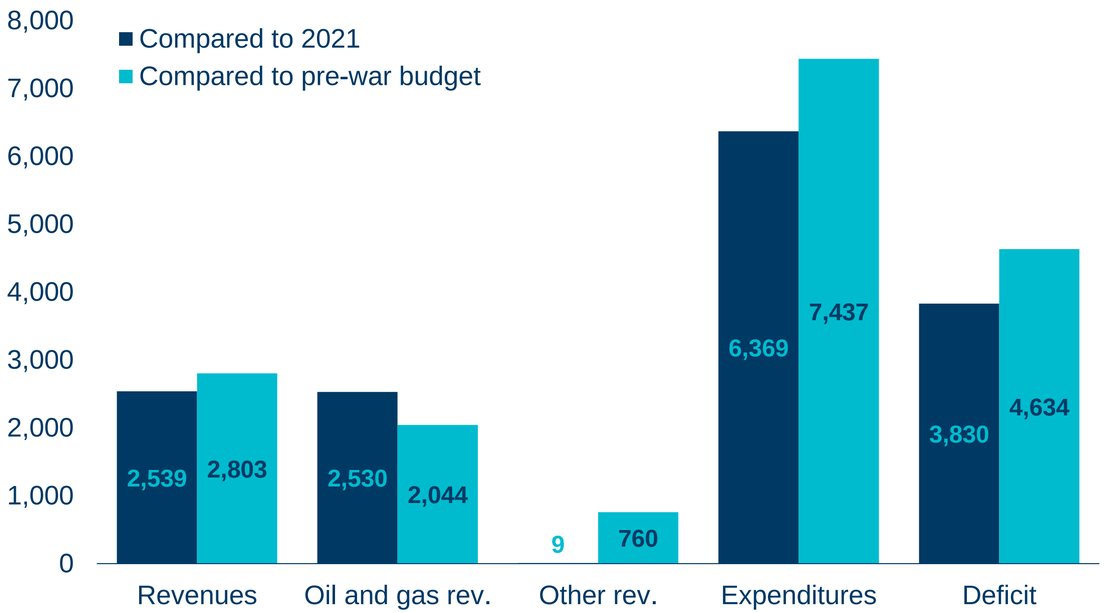
- Russia's Ministry of Finance reported the largest single-month deficit on record in December at 3.9 trillion rubles.
- The full-year deficit of 3.3 trillion rubles (or 2.3% of GDP) represents a 4.6 trillion shift compared to the pre-war plan.
- Key driver are expenditures, which came in 30% higher than originally expected due to the costs of the war.

Federal government balance, in ruble billion



Source: Ministry of Finance, KSE Institute

Revenues and expenditures in 2022, in ruble billion



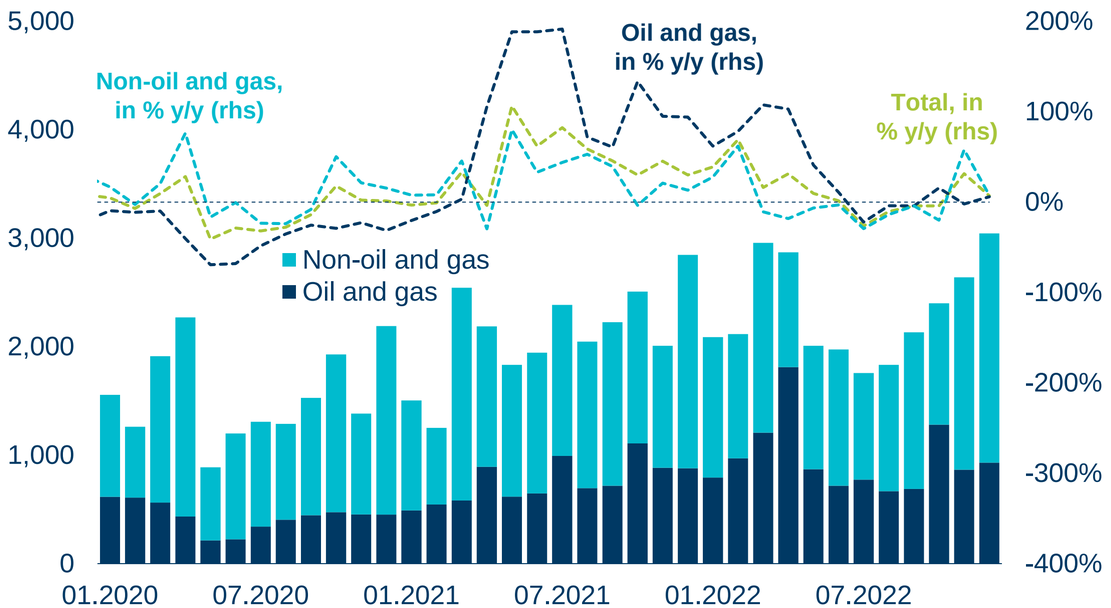
Source: Ministry of Finance, KSE Institute

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Higher oil and gas revenues provided support last year.

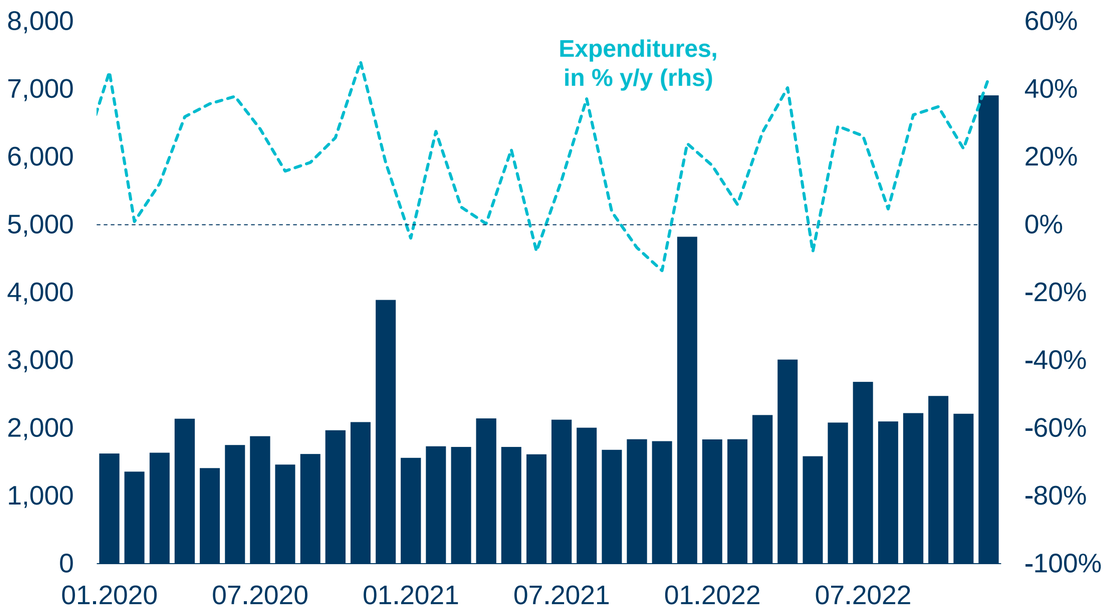
- Oil and gas revenues were driven up by high oil and gas prices in 2021 (+73%) and the first half of 2022 (+69%).
- However, global energy prices moderated towards the end of the year and export volumes started to weaken.
- With non-oil and gas receipts stalling due to the recession, overall revenues could not keep up with expenditures.

Federal budget revenues, in ruble billion



Source: Ministry of Finance, KSE Institute

Federal budget expenditures, in ruble billion



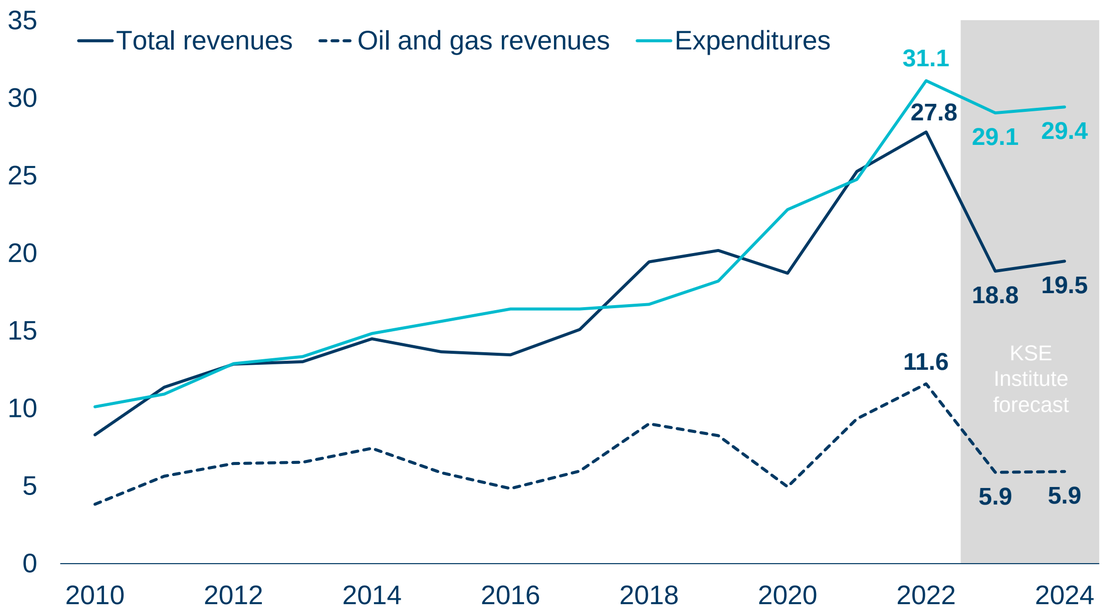
Source: Ministry of Finance, KSE Institute

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We project the budget deficit to widen considerably in 2023.

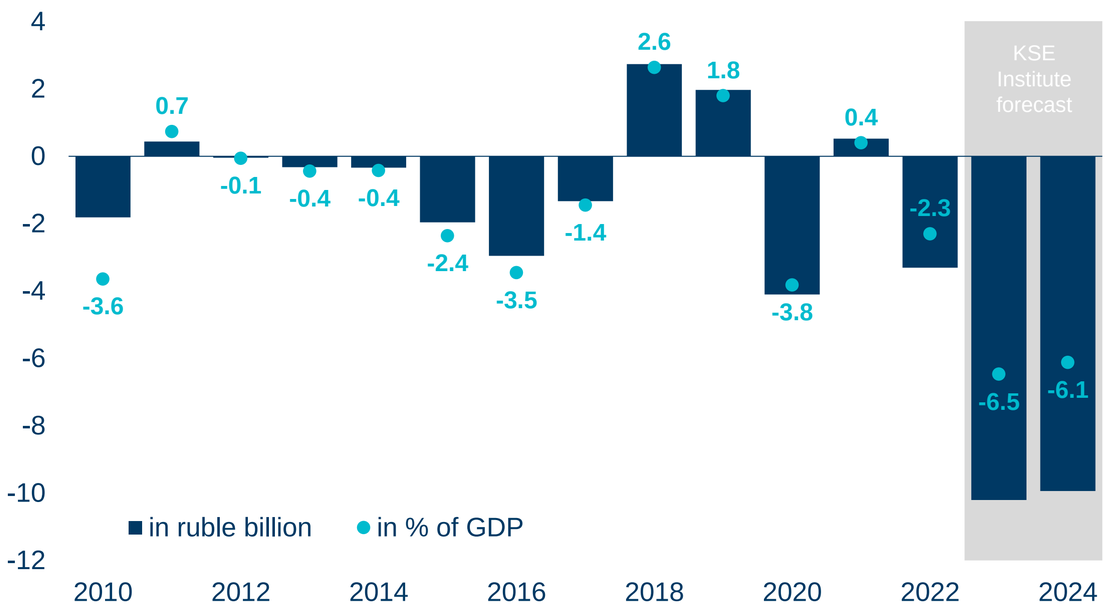
- We forecast revenues to decline in 2023-24, driven by the GDP contraction as well as lower hydrocarbon earnings.
- At the same time, expenditures will stay elevated as the costs of the war continue to crowd out other spending.
- The budget deficit will widen considerably as a result, to 6.5% of GDP in 2023 and 6.1% of GDP in 2024.

Federal budget revenues and expenditures, in ruble trillion



Source: Ministry of Finance, KSE Institute

Federal budget balance, in ruble trillion and % GDP



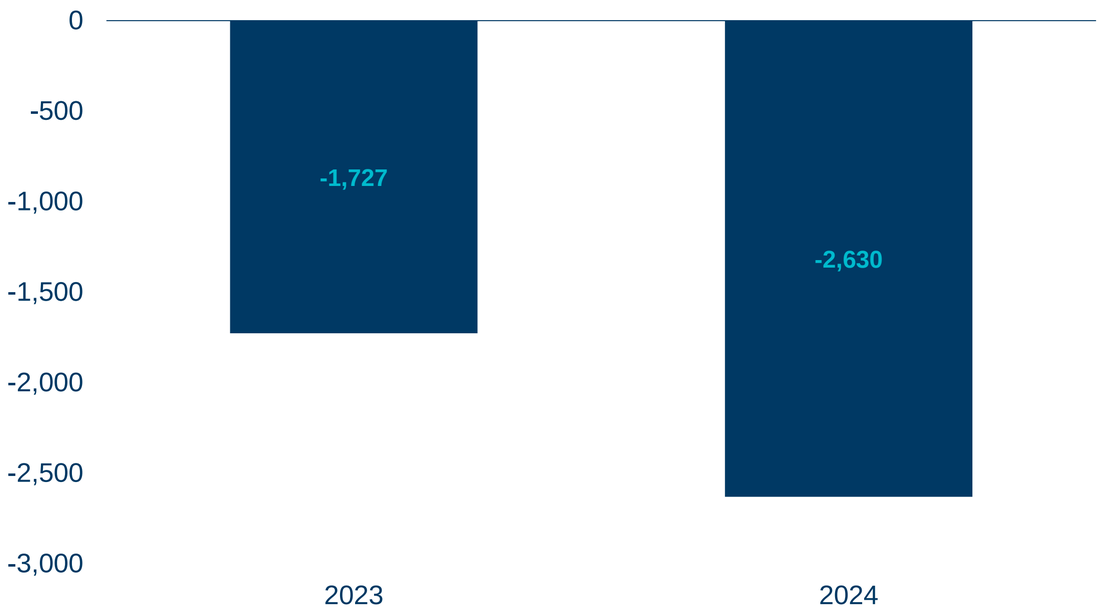
Source: Ministry of Finance, KSE Institute

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Fiscal pressure would rise further should further sanctions be imposed.

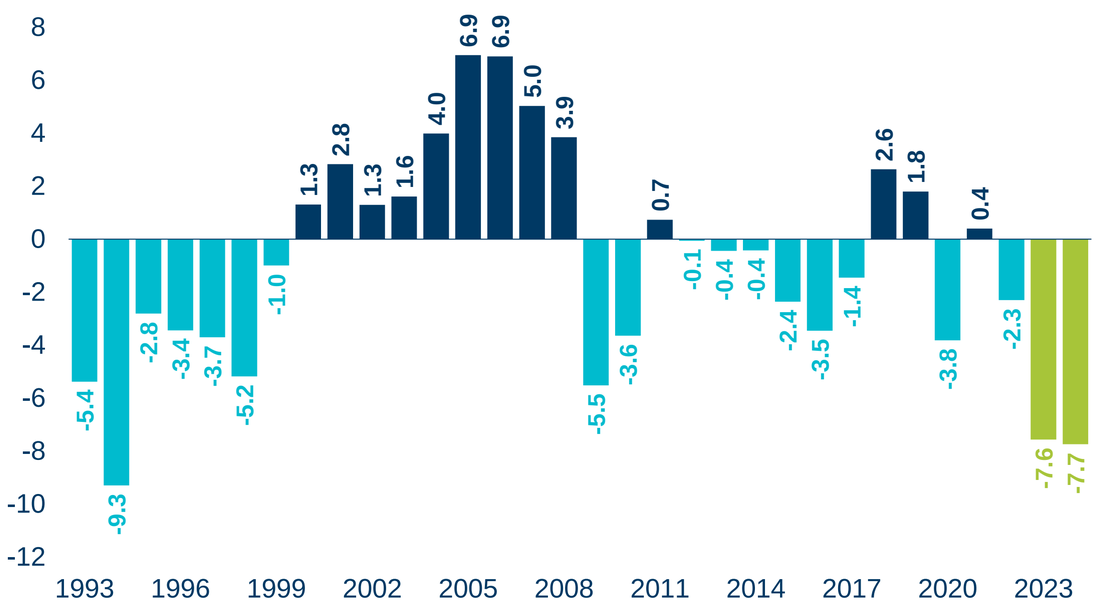
- In a scenario of additional sanctions on Russia oil and gas exports, revenues would weaken further in 2023-24.
- We project that the deficit would widen by 1.7 trillion rubles this year and 2.6 trillion rubles next year in this case.
- Authorities would likely have to resort to painful cuts to non-defense expenditures as well as tax increases.

Oil and gas revenues vs. baseline scenario, in ruble billion



Source: KSE Institute

Bull case federal govt. deficit in historical context, in % of GDP



Source: Ministry of Finance, KSE Institute

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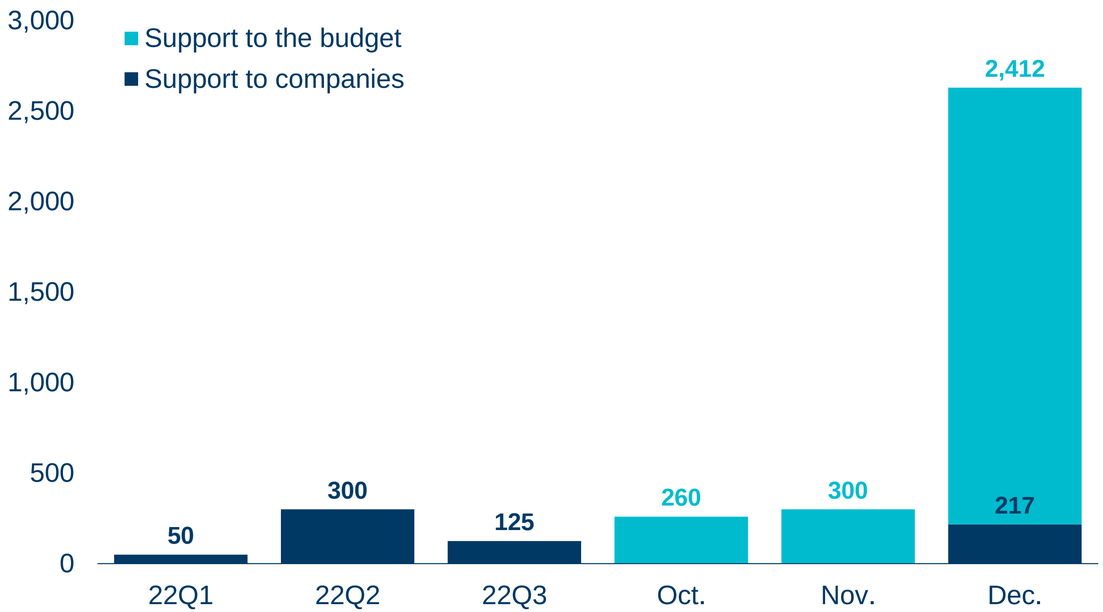
Rising financing needs will deplete important buffers and drive-up debt service costs.

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Russia relied extensively on the NWF for budgetary support in 2022.

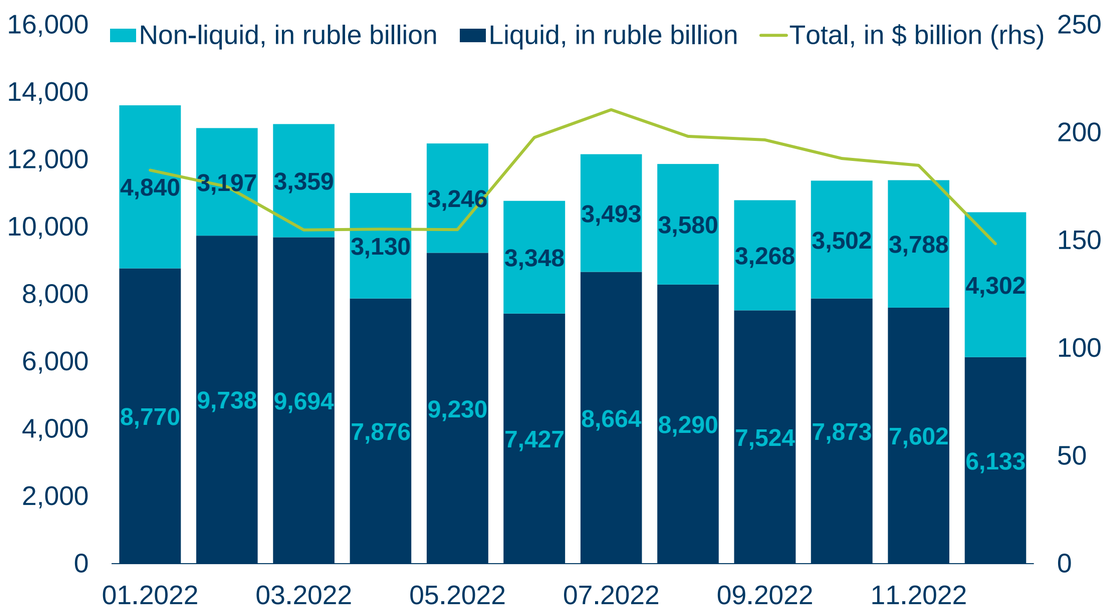
- Russia has spent 3.7 trillion rubles (~$53 billion) to support the budget and struggling companies since the start of the war.
- As a result, NWF assets dropped by 3.2 trillion rubles to 10.4 trillion rubles ($148.4 billion or 7.8% of GDP).
- Importantly, roughly 40% of the remaining holdings are not liquid and cannot easily be repurposed for the budget.

Utilization of the NWF in 2022, in ruble billion



Source: Ministry of Finance, KSE Institute

Assets of the NWF in 2022, in ruble billion and U.S. dollar billion



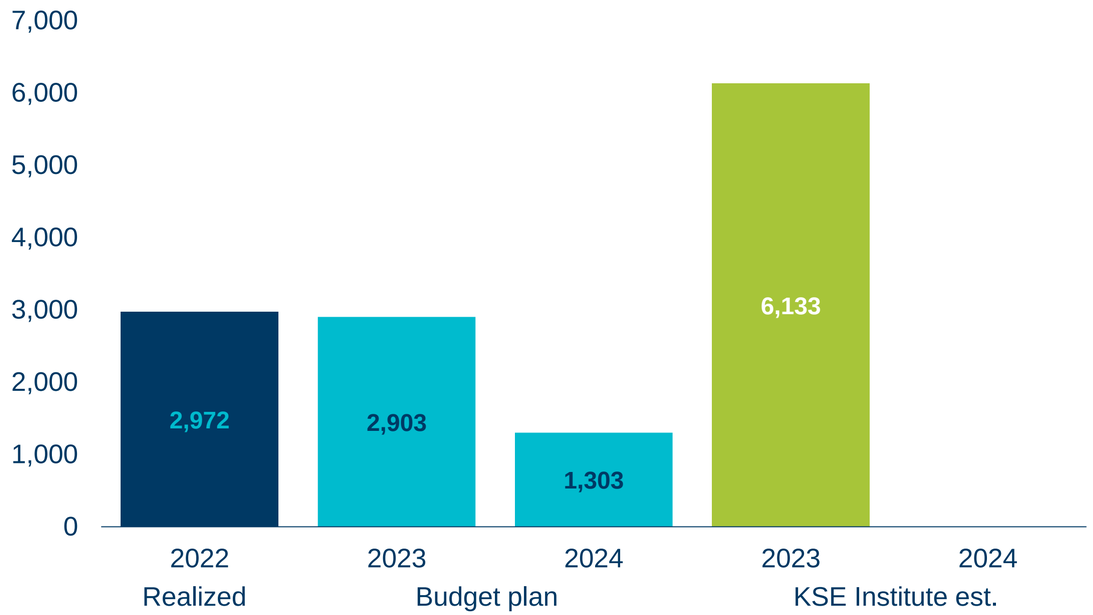
Source: Ministry of Finance, KSE Institute

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Further use of the NWF for government financing will deplete buffers.

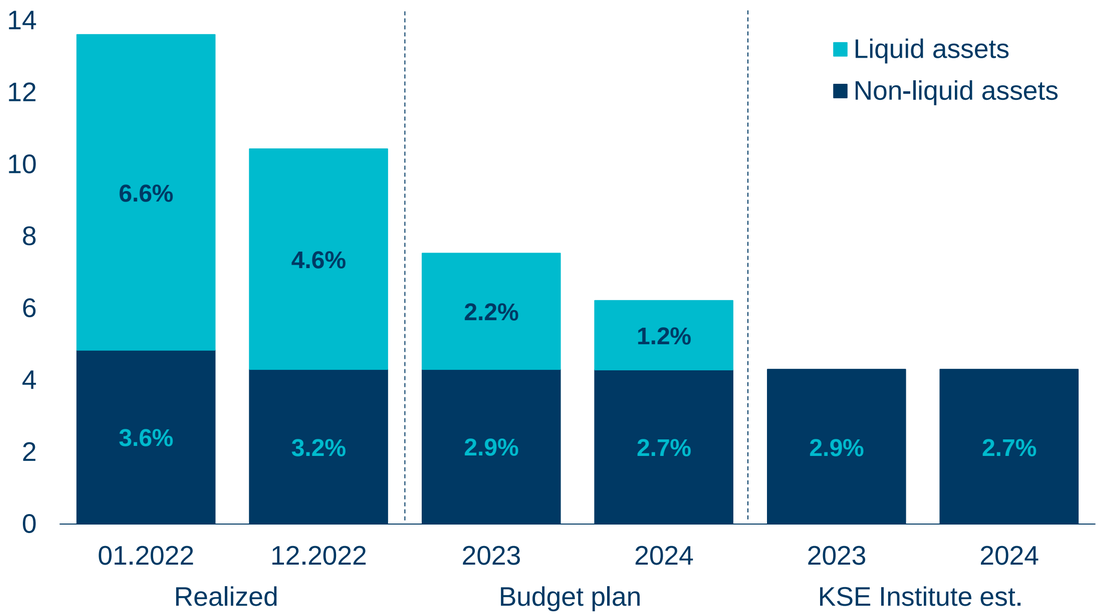
- Current law allows for an additional 4.2 trillion rubles (~$60 billion) from the NWF to be used for the budget this year and next.
- This would reduce the liquid share of this critical macro buffer to around 1.9 trillion rubles (1.2% of GDP) by end-2024.
- In our view, however, significantly larger financing needs will deplete the liquid portion of the NWF sometime this year.

NWF support to the budget in 2022-24, in ruble billion



Source: Ministry of Finance, KSE Institute

Projected NWF assets, in ruble billion (labels display % of GDP)



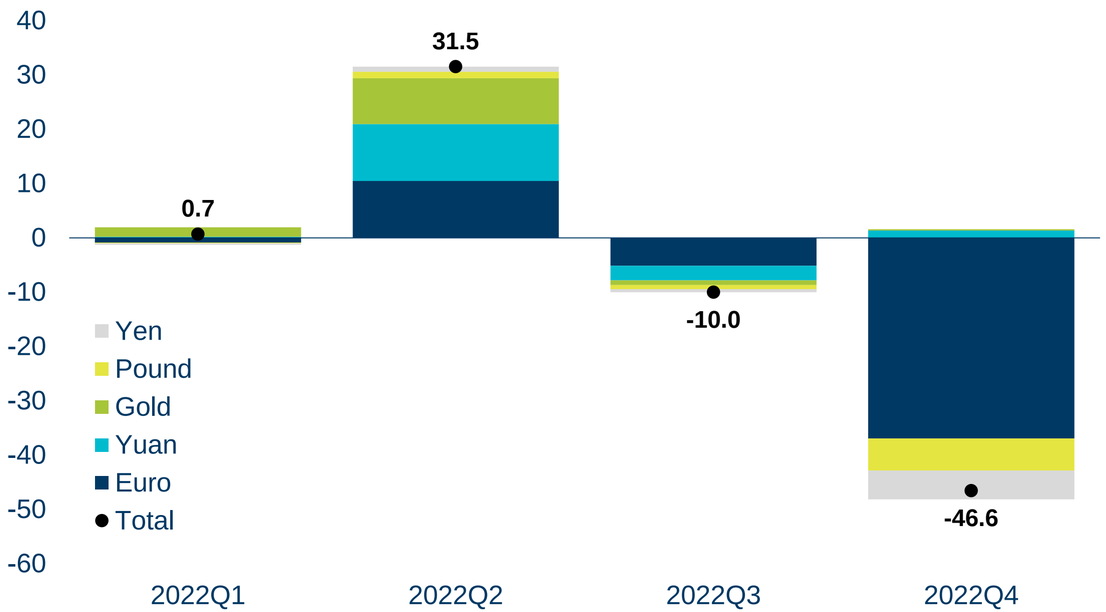
Source: Ministry of Finance, KSE Institute

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The composition of the remaining liquid assets could be a challenge.

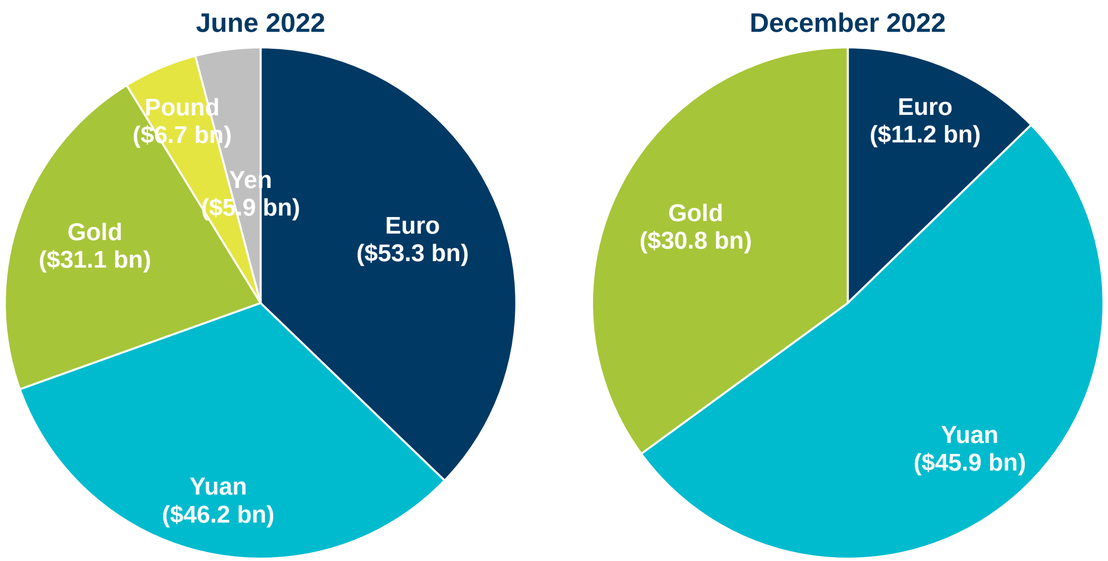
- The remaining liquid part of the NWF consists overwhelmingly of gold and yuan-denominated assets.
- Authorities sold-off most of fund's euro-denominated assets, and all pound- and yen-denominated assets in December.
- This means that government funding via the NWF could be impeded by the challenge of selling assets at scale.

Change in liquid NWF assets, in U.S. dollar billion*



Source: Ministry of Finance, KSE Institute *based on market exchange rates

Composition of liquid NWF assets, in %*



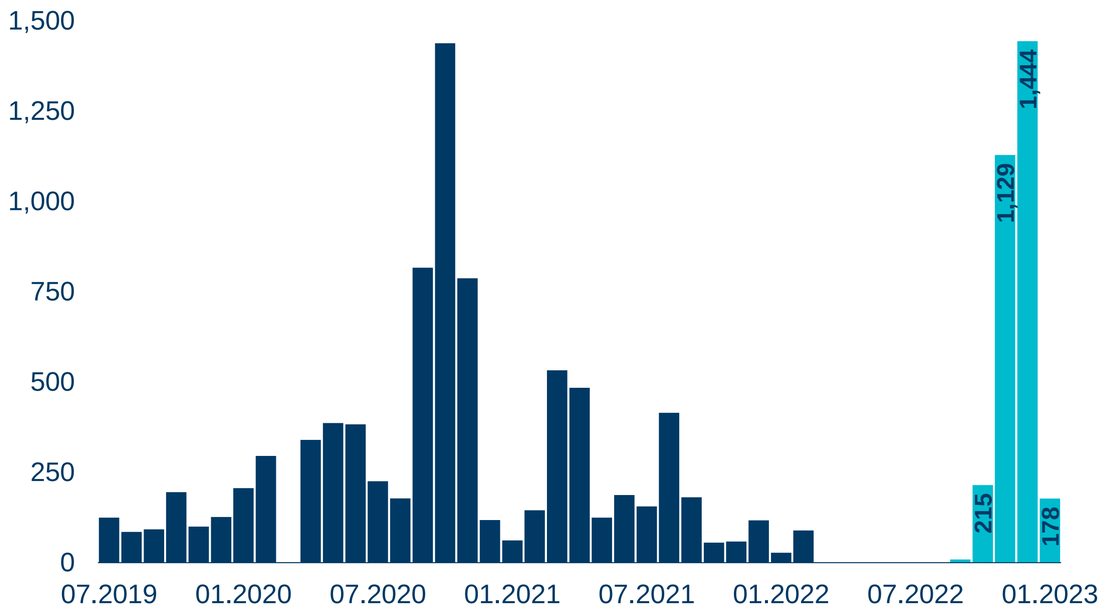
Source: Ministry of Finance, KSE Institute *based on market exchange rates

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Elevated domestic debt issuance also points to growing pressure.

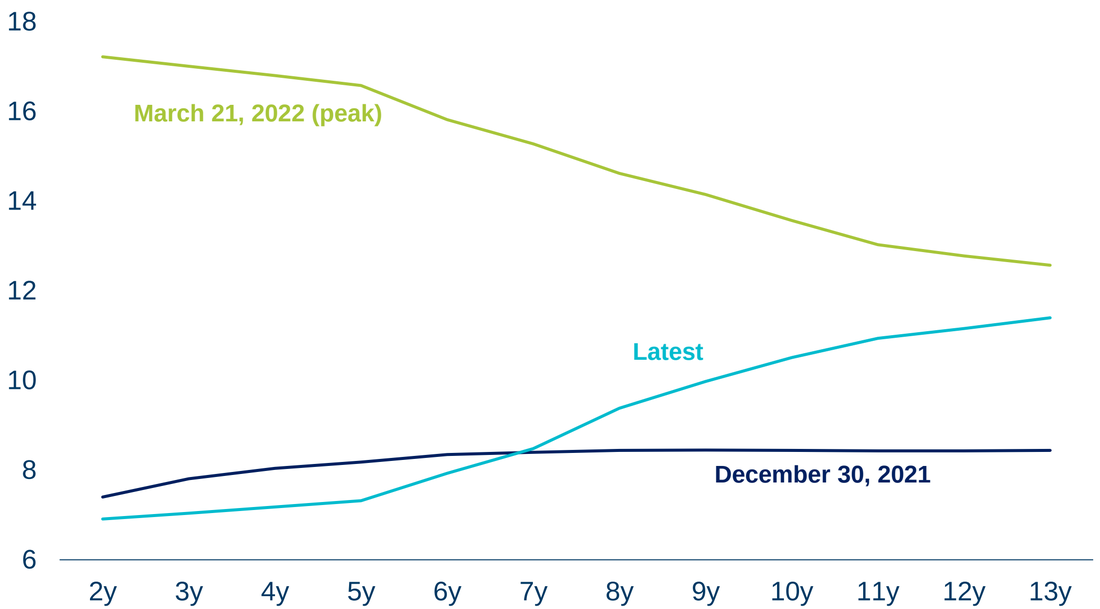
- In addition to NWF use, the Ministry of Finance issued a record 2.8 trillion rubles (~$47 billion) in OFZ in 2022Q4 alone.
- This indicates that financing pressure is already rising—and will do so further as the deficit widens in 2023-24.
- A large share of debt is issued at floating rate and OFZ yields point to debt service costs going up significantly.

New domestic debt (OFZ) issuance, in ruble billion



Source: Ministry of Finance, KSE Institute

OFZ yield curves, in %



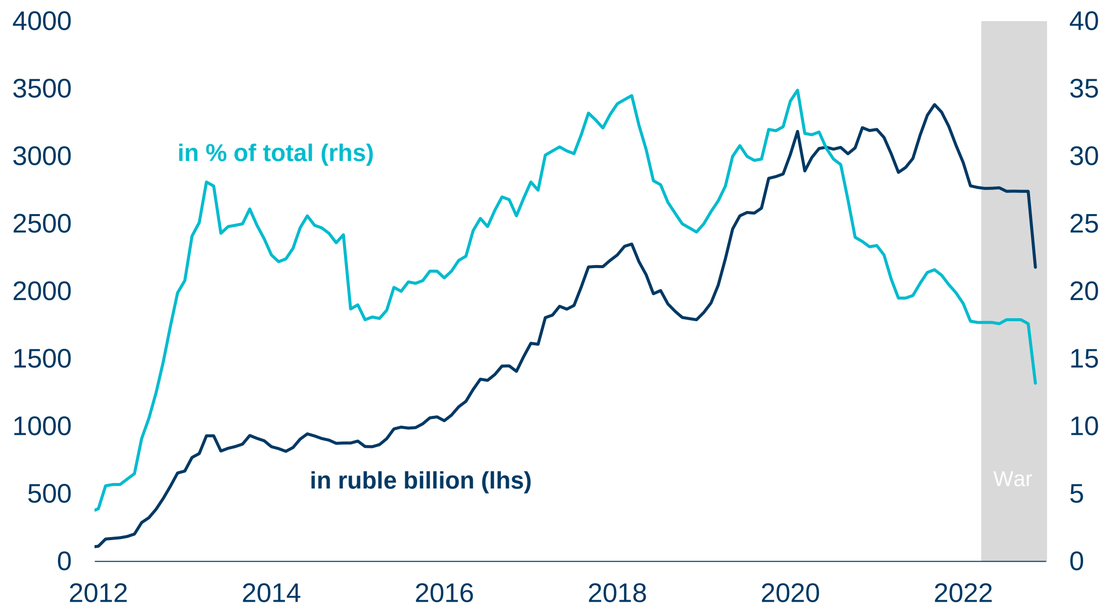
Source: Bank of Russia, KSE Institute

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The banking system will have to bear most of the burden.

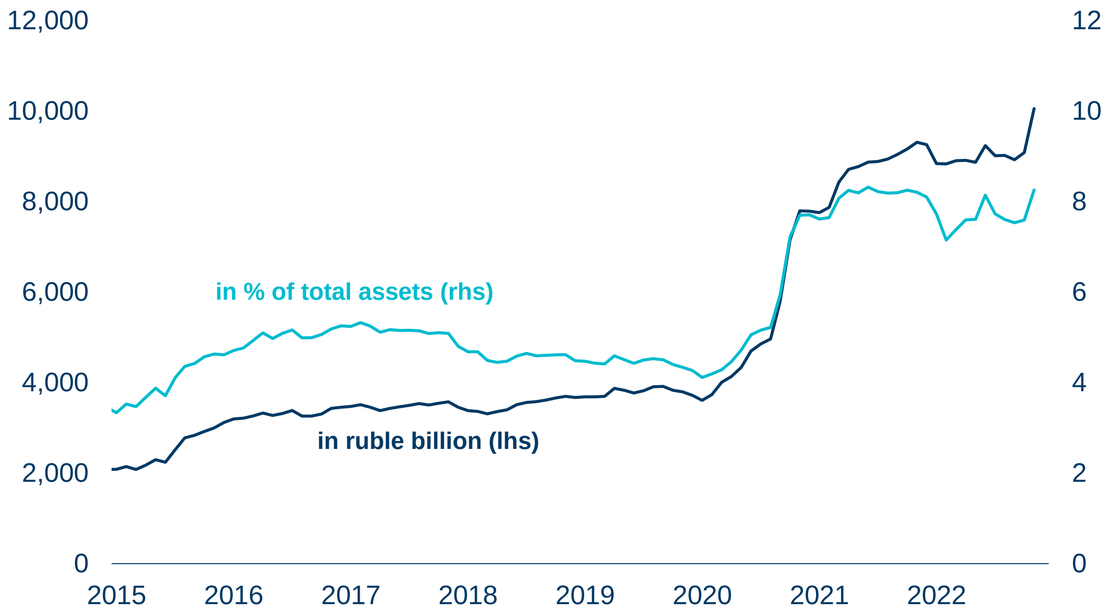
- Foreigners have largely disengaged from the Russian sovereign debt market since the start of the war.
- Following a period with little movement, remaining holdings dropped by 560 billion rubles (~$9.2 billion or -21%) in November.
- With foreigners no longer participating, domestic banks will need to bear most of the government financing burden.

Non-resident OFZ holdings



Source: Bank of Russia, KSE Institute

Credit institutions OFZ holdings



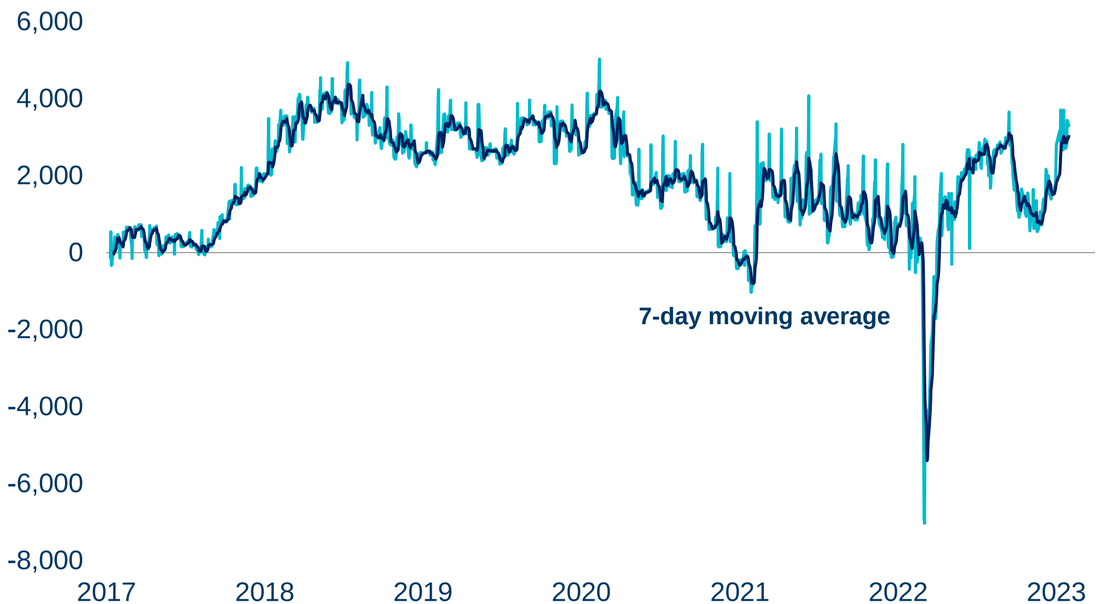
Source: Bank of Russia, KSE Institute

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Unprecedented financial sector sanctions did not trigger a systemic crisis.

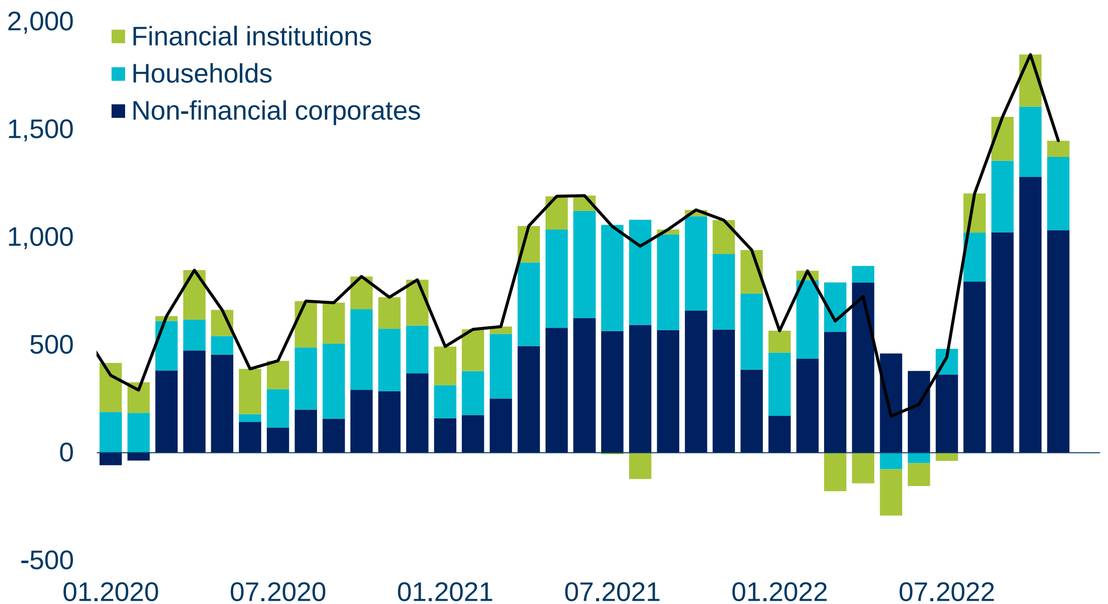
- Liquidity conditions recovered quickly after the initial shock from the war and imposition of sanctions.
- As a result, financial institutions continued to be able to provide the private sector with credit.
- Due to the absence of a systemic financial crisis, Russia's economy overperformed expectations in 2022.

Banking system structural liquidity surplus, in ruble billion



Source: Bank of Russia, KSE Institute

New ruble-denominated credit to the private sector, in ruble billion*



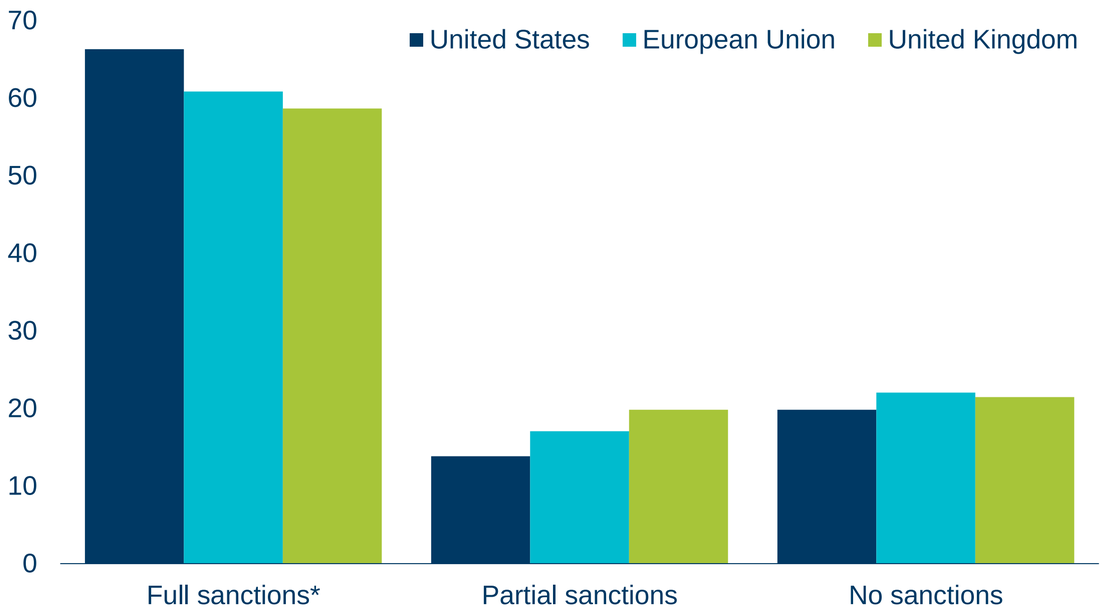
Source: Bank of Russia, KSE Institute *3-month moving average

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We see considerable room to strengthen the sanctions regime.

- The U.S., EU, and UK have imposed fairly comprehensive sanctions, but room for tightening remains.
- Arguments in favor of the exemption of Gazprombank are getting weaker as energy trade with Russia drops.
- Regulators should also set clear deadlines for the exit of foreign banks from the Russian market.

Sanctions coverage, in % of total banking system assets



Source: national authorities, KSE Institute *full blocking sanctions or SDN designation

Summary of financial sector sanctions

Institution	de-SWIFT	US	EU	UK	Assets (₽ tn)**
Sberbank	Yes	Full*	Full	Full	39.1
VTB Bank	Yes	Full*	Full	Full	19.8
Gazprombank	No	Partial	Partial	Full*	8.9
Alfa-Bank	No	Full*	Partial	Partial	6.1
Rosselkhozbank	Yes	Partial	Full	Partial	4.2
Credit Bank of Moscow	Yes	Partial	Partial	Partial	3.7
Bank Otkritie	Yes	Full*	Full	Partial	3.4
VEB	Yes	Full*	Full	Full	3.4***
Promsvyazbank	Yes	Full	Full	Partial	2.8***
Sovcombank	Yes	Full	Partial	Partial	2.0
Raiffeisenbank	No	None	None	None	1.6
Rosbank	No	Full*	None	None	1.6
Tinkoff Bank	No	None	None	None	1.3
UniCredit Bank	No	None	None	None	1.2
Bank Rossiya	Yes	Full	Full	Partial	1.2

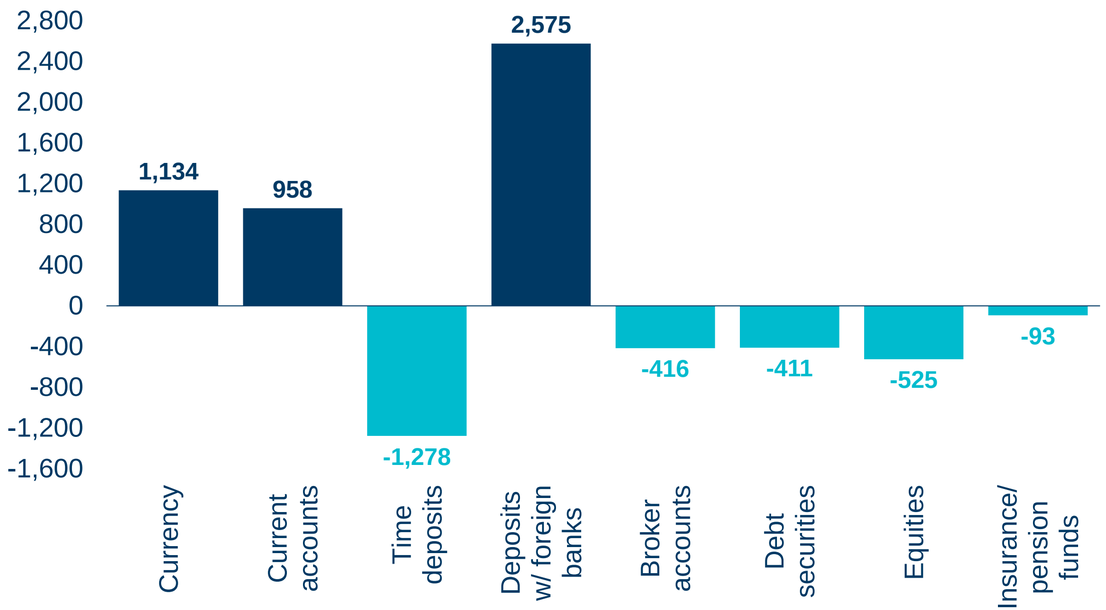
Source: national authorities, KSE Institute *exceptions for energy **February 2022 ***2020

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Underlying vulnerabilities remain and could resurface quickly.

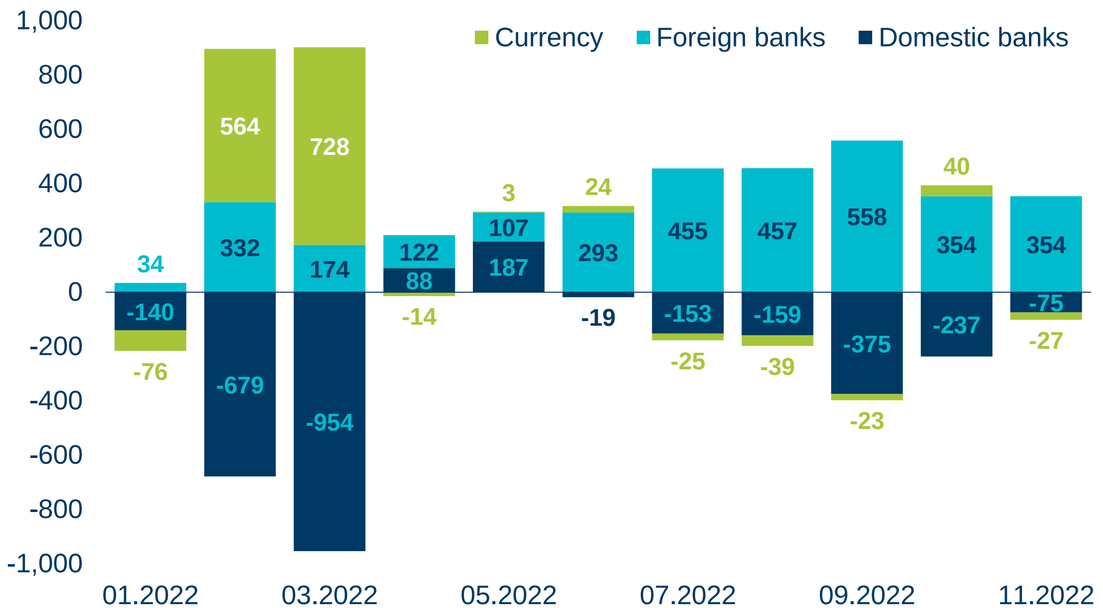
- While a systemic financial crisis was avoided, clear signs of vulnerabilities exist, including household asset movements.
- For instance, households moved funds from longer-term investments to cash holdings, current accounts, and foreign banks.
- As in previous crises, foreign currency was pulled from domestic banks—at the start of the war and surrounding mobilization.

Household assets since the start of the war, in ruble billion



Source: Bank of Russia, KSE Institute

Foreign currency cash and deposits, in ruble billion



Source: Bank of Russia, KSE Institute

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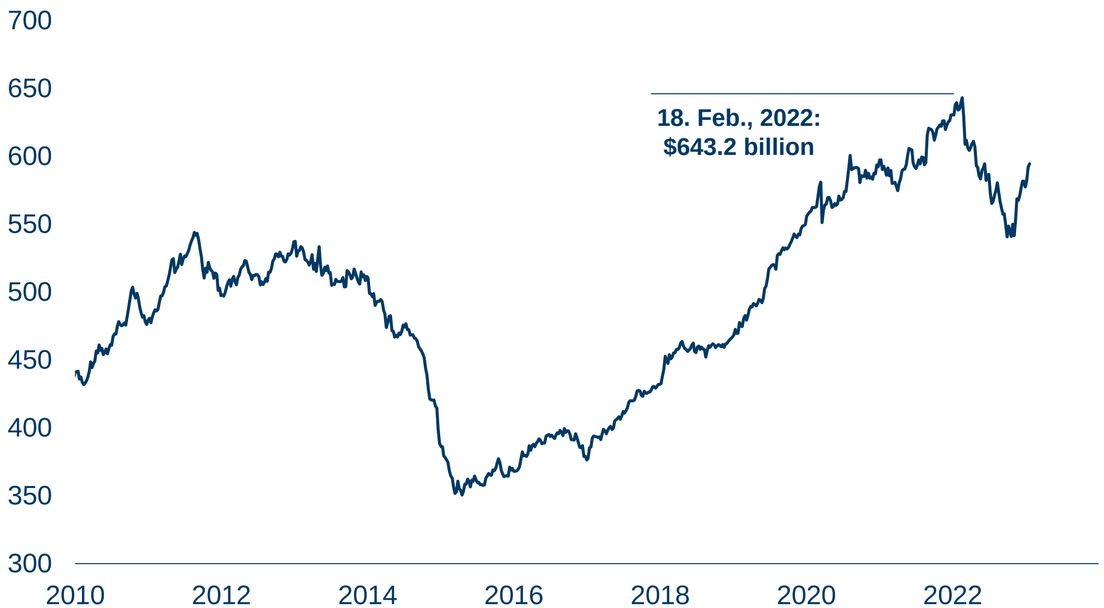
Sanctions have had a big impact on reserves and policy space is shrinking.

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A significant share of international reserves has been frozen.

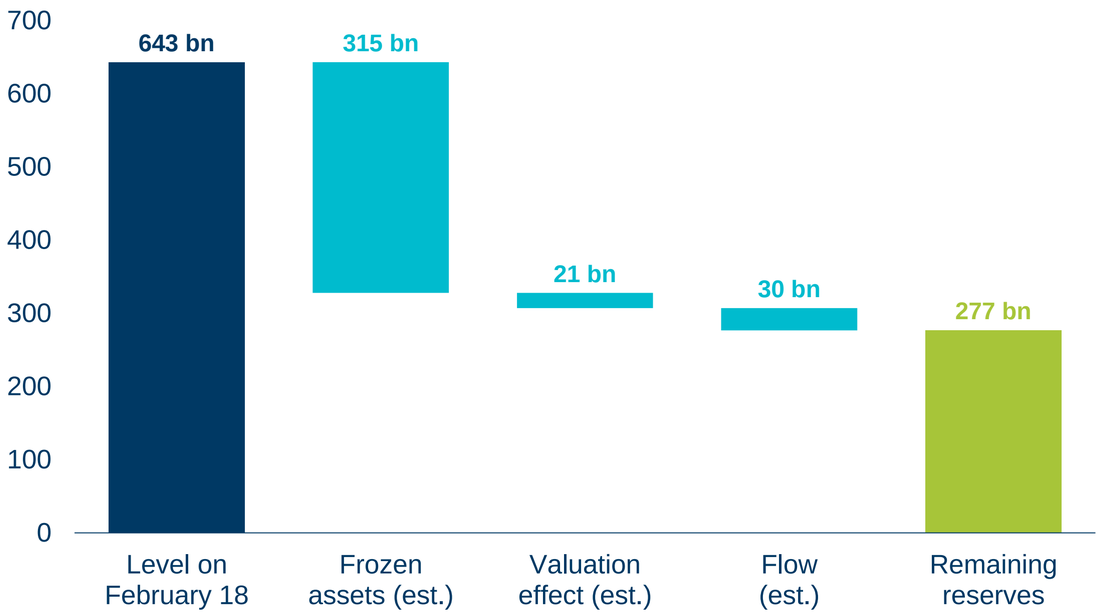
- Before the invasion, Russia held $634 billion in international reserves, part of what is described as *“Fortress Russia”.*
- However, we estimate that around $315 billion were geographically located in countries that froze CBR assets.
- Valuation effects due to the strong U.S. dollar have further reduced the stock—although this reversed somewhat recently.

Reserves, in U.S. dollar billion



Source: Bank of Russia

Change in reserves, in U.S. dollar billion



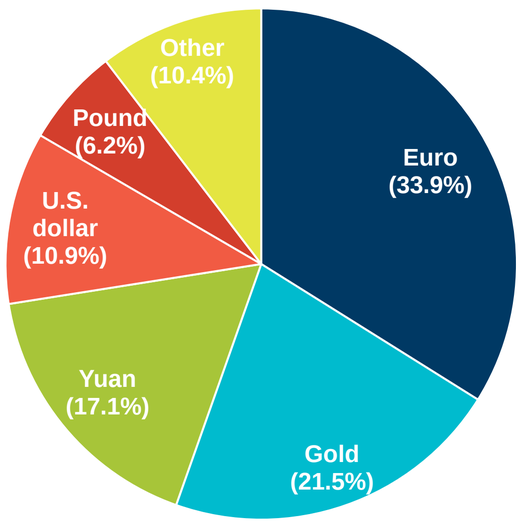
Source: Bank of Russia, KSE Institute

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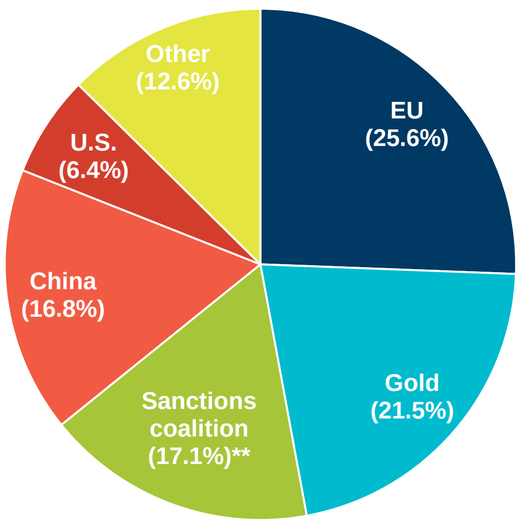
The quality of the remaining reserves is also a challenge.

- In addition, we believe that the situation is even more challenging due to the composition of the remaining assets.
- A significant share—yuan-denominated assets and gold—cannot be easily converted, at least at scale, into G7 currencies.
- As such currencies are required to make external payments, overall reserve adequacy is indeed quite fragile.

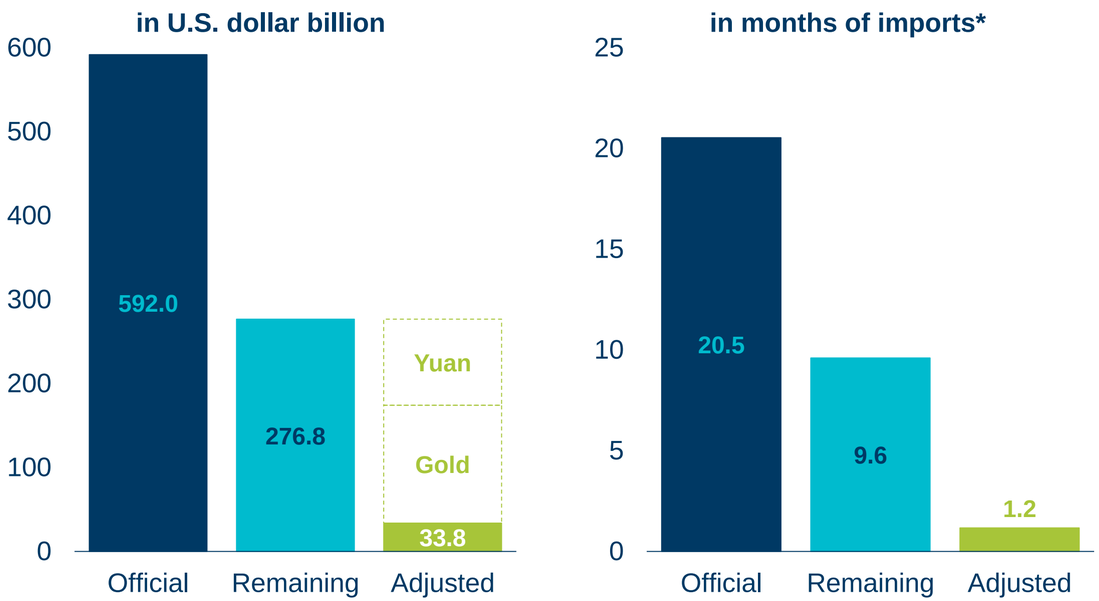
Currency distribution, in %*



Geographical distribution, in %*



Adequacy of international reserves



Source: Bank of Russia *as of December 2021 **includes Canada, Japan, and UK

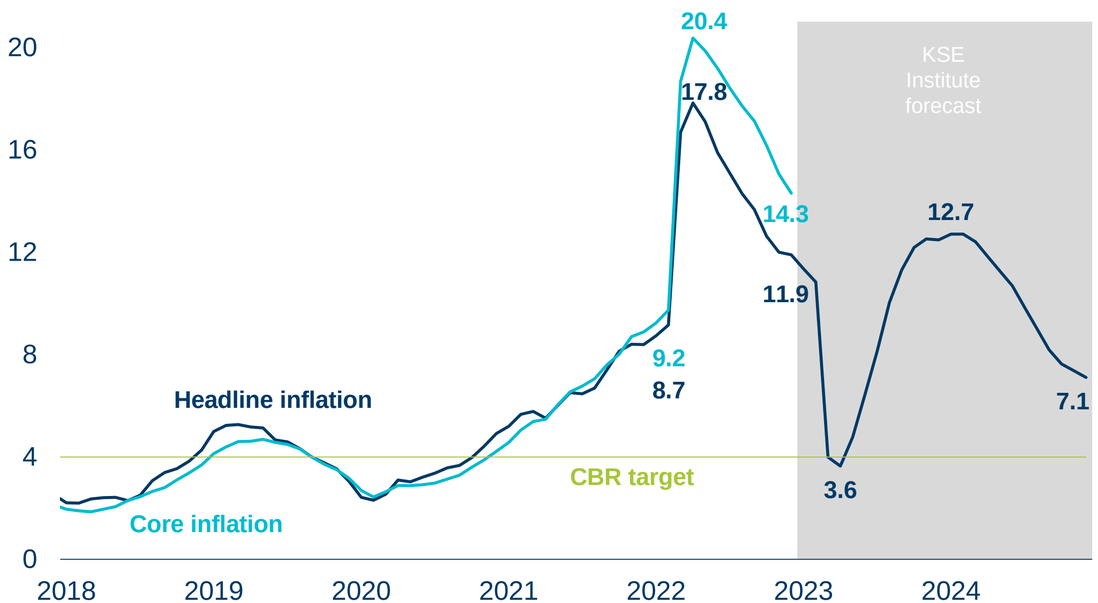
Source: Bank of Russia, KSE Institute *2022Q4 imports of goods and services

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Rising inflation will trigger monetary policy tightening in the coming months.

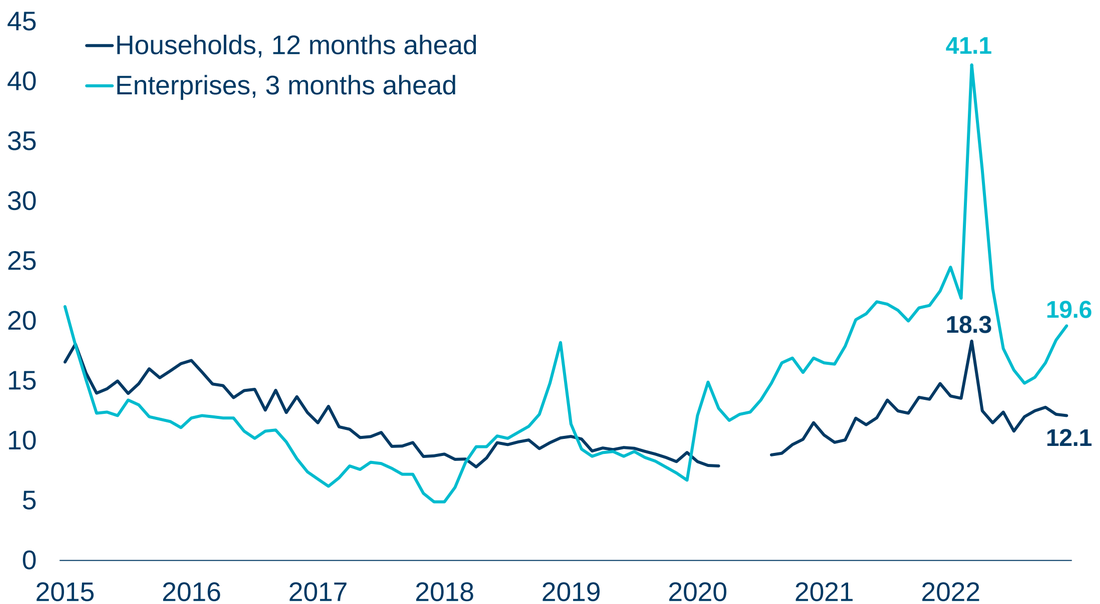
- We expect that the weaker external environment will weigh on the ruble and, in turn, increase inflationary pressures.
- Headline inflation will likely move back into double-digit territory by late 2023/early 2024 if this scenario materializes.
- Recent data releases show that inflation expectations, especially those of enterprises, are not well-anchored.

Inflation forecast, in % year-over-year



Source: Bank of Russia, KSE Institute

Inflation expectations, in %



Source: Bank of Russia

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A less supportive external environment will also put pressure on the ruble.

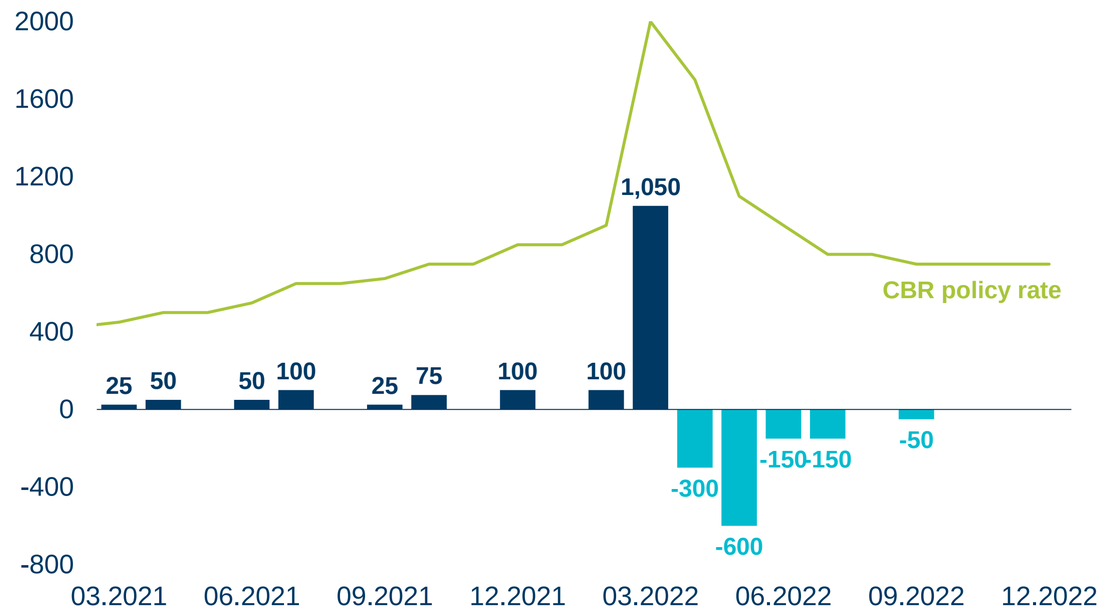
- As the external environment turned less supportive in late 2022, the ruble started to weaken again (by around 15%).
- We expect pressure to strengthen in 2023, with an average exchange rate of 75 ruble/U.S. dollar as our baseline scenario.
- With inflation rising and the ruble weakening, the CBR will likely have to raise interest rates in 2023H1, possibly by 300bps.

Ruble-U.S. dollar exchange rate



Source: Bank of Russia, KSE Institute

CBR policy rate and MPC decisions, in bps



Source: Bank of Russia, KSE Institute

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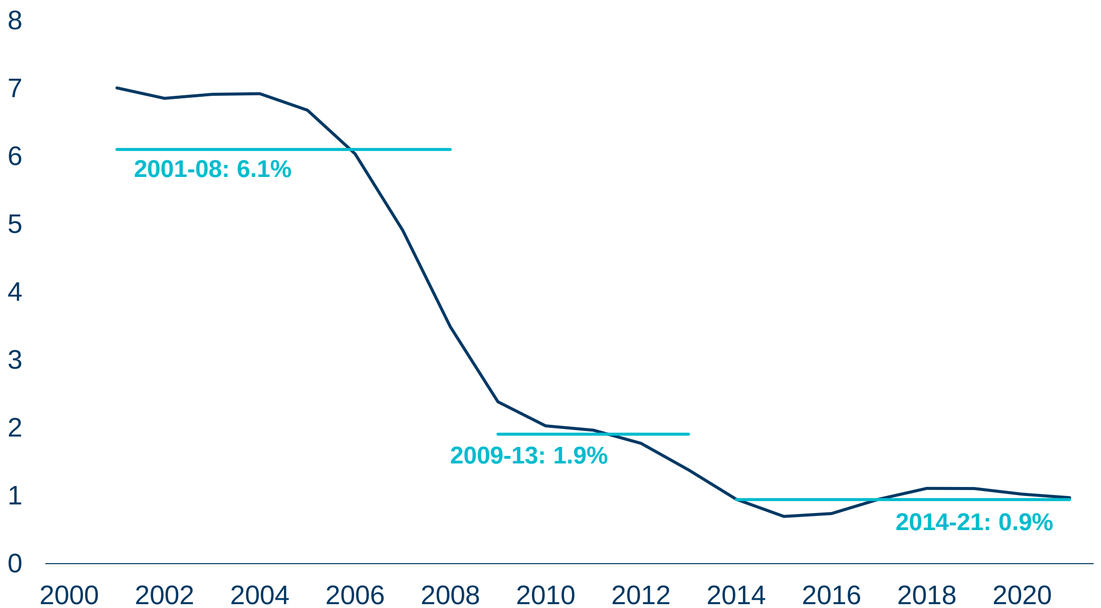
Russia’s economy is facing an extended period of stagnation.

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Low productivity growth has weighed on potential GDP for years.

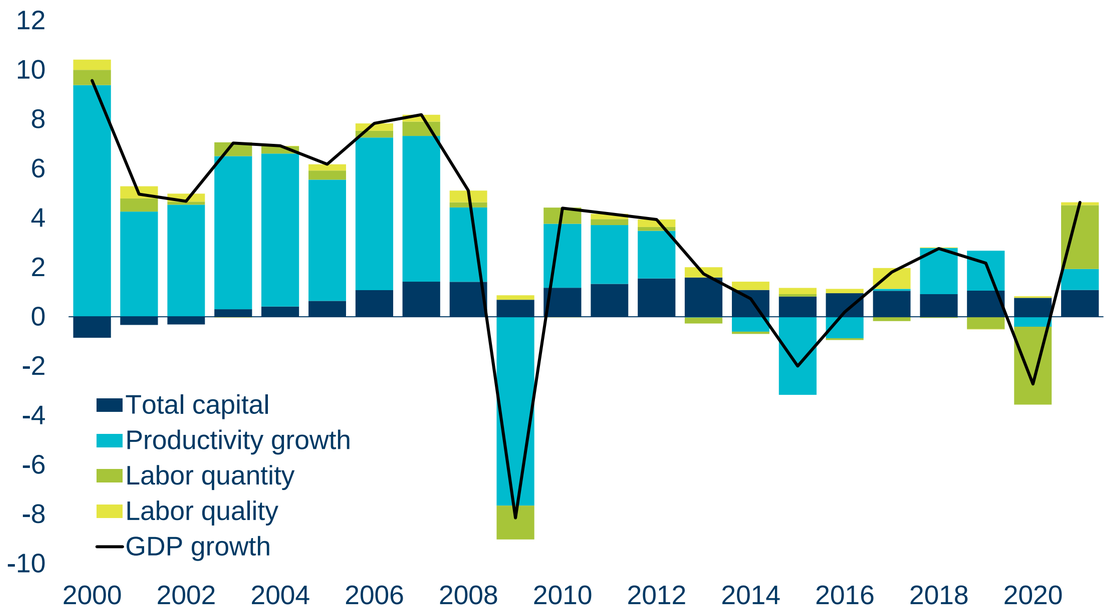
- Russia's economy has experienced a pronounced decline in potential growth, to around 1% by 2021.
- An initial decline in the aftermath of the global financial crisis was followed by another 50% drop post-2014.
- The main driver appears to be markedly weaker growth of total factor productivity in recent years.

Potential GDP growth, in % year-over-year*



Source: Rosstat, KSE Institute *calculated using H-P filter

Contributions to GDP growth, in percentage points



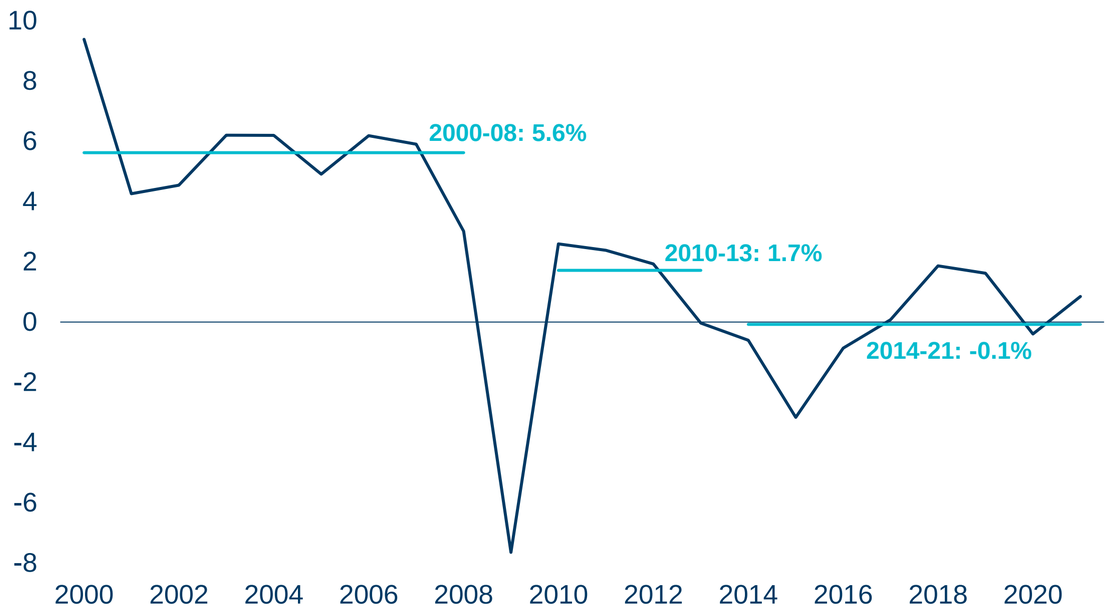
Source: Conference Board, KSE Institute

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Higher emigration will further weaken prospects going forward.

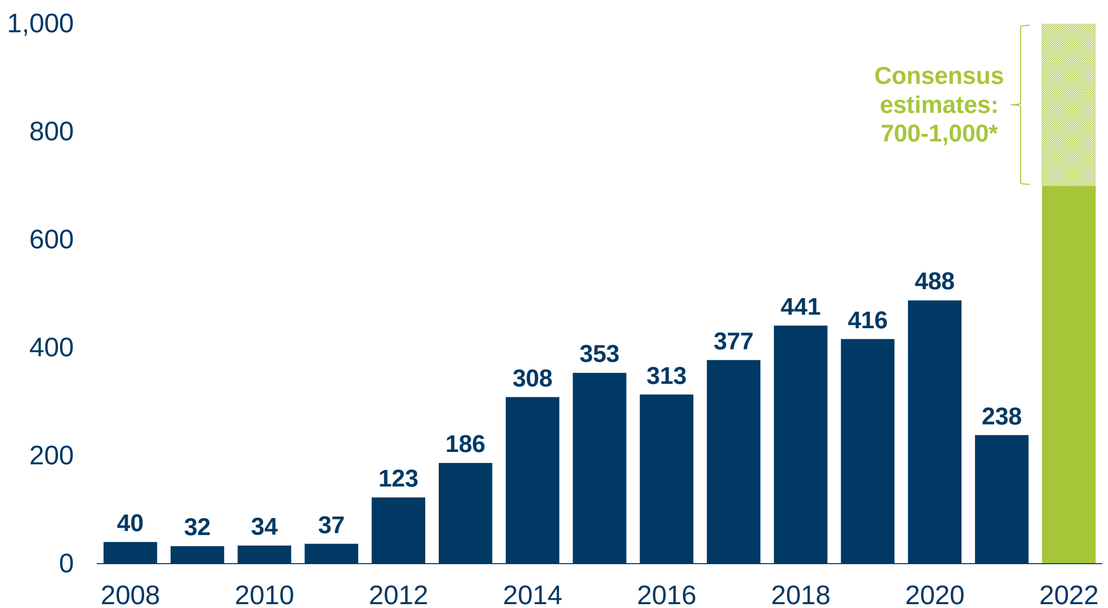
- Productivity growth was essentially absent post-2014 and will likely turn negative due to the war and sanctions.
- At the same time, the Russian economy is set to suffer from a lack of skilled workers as emigration picks up sharply.
- Altogether, we expect an extended period of economic stagnation, with major impacts on real incomes.

Total factor productivity growth, in % year-over-year



Source: Conference Board, KSE Institute

Emigration from Russia, in thousand persons



Source: Rosstat, KSE Institute *publicly-available estimates from media reporting

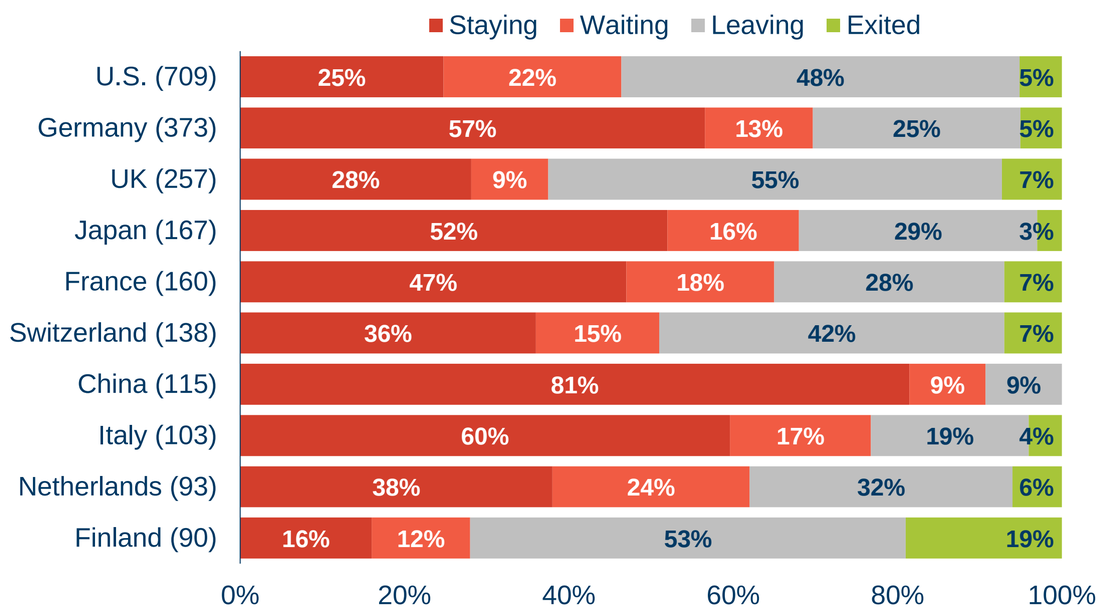
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The departure of foreign companies presents another challenge.

- Our analysis shows that only 6% of foreign companies have left Russia, while 37% are in the process of leaving.
- Trends differ considerably among countries with Chinese, Italian, and German businesses most hesitant to depart.
- Many companies are still biding their time and steps should be taken to accelerate their exit.

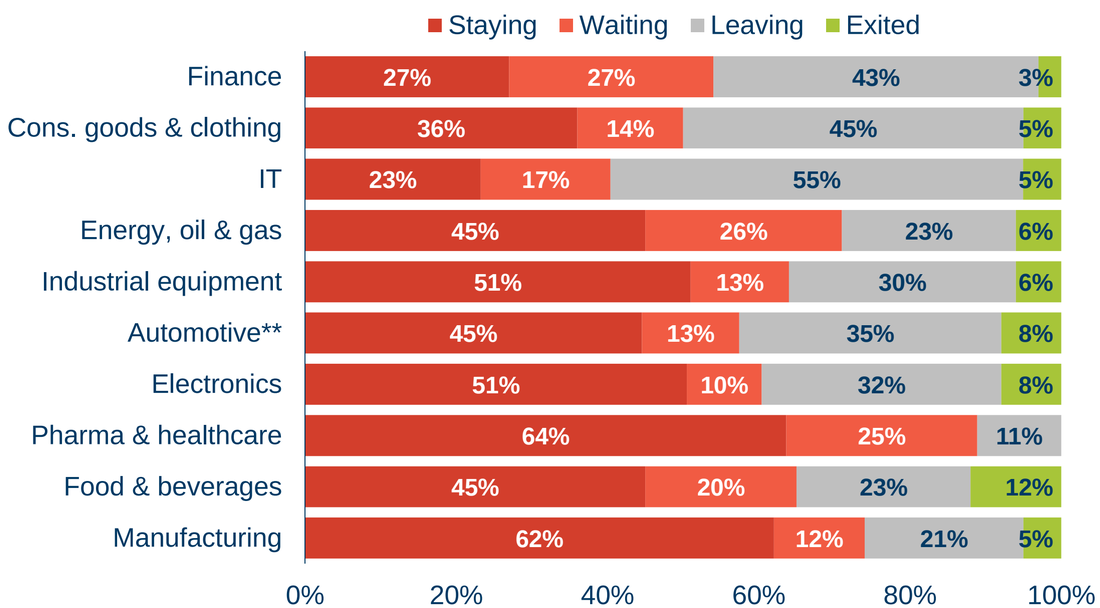
Visit KSE Institute's "Leave Russia" project website

Status of foreign companies in Russia by country, in %*



Source: KSE Institute *figure shows countries with largest number of companies

Status of foreign companies in Russia by sector, in %*



Source: KSE Institute *figure shows sectors with largest number of companies **automotive industry defined more broadly then in the context of the industrial index

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New targeted sanctions would have a meaningful impact at this critical junction.

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KSE Institute proposal for additional sanctions on Russia

We believe that Russia's economy is approaching a turning point in 2023H1. Ukraine's allies should take advantage of increasing vulnerabilities, significantly step-up pressure on the country, and bring its brutal invasion of Ukraine to an end.

To this end, we propose several measures that, together, would significantly reduce Russia's ability to continue the war.

1. Price cap on Russian crude oil of $50/bbl and commitment to reviews at regular intervals
2. Price caps on products in line with the crude cap and pre-invasion spreads between product and crude prices
3. Ban of natural gas imports into the EU via pipelines controlled by Russia; ban of all LNG imports into the EU
4. Full sanctions on Gazprom and Russian oil companies; personal sanctions on board members
5. Extension of financial sector sanctions to all Russian banks, including Gazprombank
6. Creation of deadlines by regulators for exit of foreign financial institutions from Russia
7. Full sanctions on all military-industrial enterprises as well as Rosatom; personal sanctions on board members
8. Complete ban on mining products, ferrous metals, and diamonds from Russia
9. Price cap on Russian fertilizer exports, except if exported through Odessa
10. Significant strengthening of monitoring and enforcement capacities

Visit the "International Working Group on Russian Sanctions" website for more information on various sanctions measures