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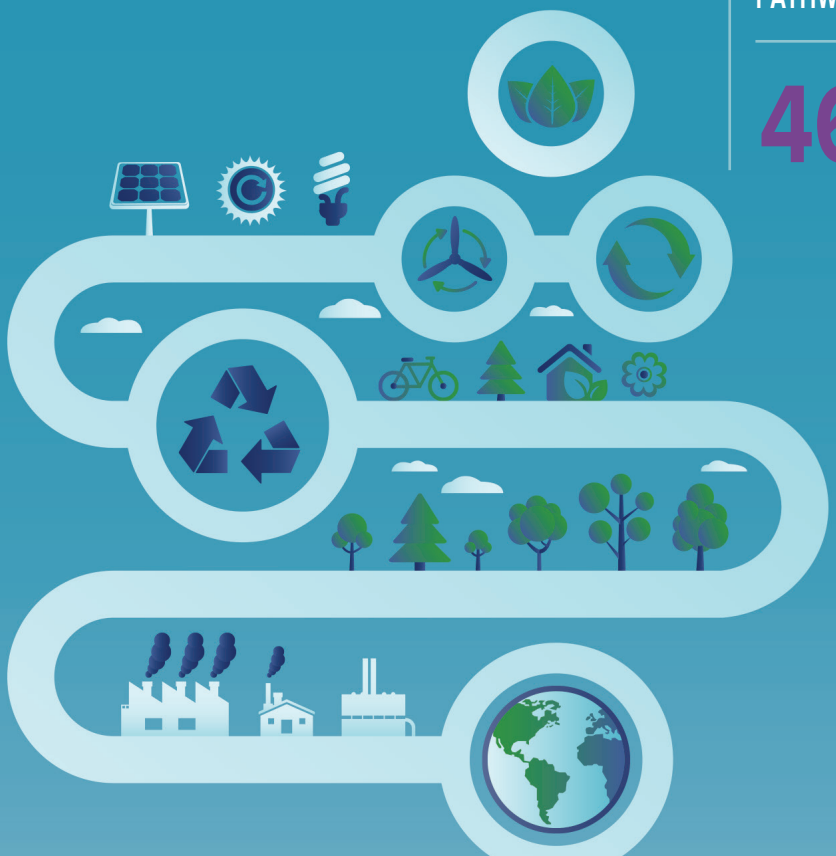
AMIDST STRONG ECONOMIC RECOVERY, RISKS STEMMING FROM COVID-19 AND INFLATION BUILD

SPECIAL FOCUS ON RUSSIA'S GREEN TRANSITION: PATHWAYS, RISKS AND ROBUST POLICIES

46 RUSSIA ECONOMIC REPORT

DECEMBER 2021



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SPECIAL FOCUS ON RUSSIA'S GREEN TRANSITION: PATHWAYS, RISKS AND ROBUST POLICIES

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This report is part of a biannual report series that is led by the World Bank Macroeconomics, Trade and Investment (MTI) Global Practice. The team that prepared this edition was led by David Knight (Lead Economist for Russia, MTI) and Olga Emelyanova (Economist, MTI), and consisted of Irina Rostovtseva (Research Analyst, MTI), Samuel Freije-Rodriguez (Lead Economist, POV), Vladimir Kolchin (EECPV), Peter Nagle (Senior Economist, EPGDR), Collette Mari Wheeler (Senior Economist, EPGDR), Franz Ulrich Ruch (Economist, EPGDR), Katerina Levitanskaya (Operations Officer, CEUA1), Lucie Johanna Wuester (Consultant, MTI), Henry Aviomoh (Young Professional, MTI), Appolenia Mbowe (Senior Economist, MTI) and Anna Prokhorova (Consultant, MTI).

The focus note ***"Pathways, risks and robust policies for Russia's green transition"*** was produced by the World Bank team consisting of Grzegorz Peszko (Lead Economist, SENGL), Jevgenijs Steinbuks (Senior Economist, DECSI), David Knight (Lead Economist for Russia, MTI), Olga Emelyanova (Economist, MTI) and Irina Rostovtseva (Research Analyst, MTI). This focus note builds on the work of the teams who prepared the forthcoming accompanying reports, *"Energy Subsidies in Russia: Size, Impact, and Potential for Reform" and "Russia and Global Green Transition: Risks and Opportunities"*.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF BOXES

ABBREVIATIONS AND ACRONYMS

AE	Advanced Economies
BAM	The Baikal-Amur Magistral
BAT	The Best Available Technology
BaU	Business as Usual
BBL	Barrel
BCAT	Border Carbon Adjustment Taxes
BP	British Petroleum
BRIC	Brazil, Russia, India and China
CAB	Current account balance
CAIT	Climate Watch Data Explorer
CARB	California Air Resources Board
CBAM	Carbon Border Adjustment Mechanism
CBR	Central Bank of Russia
CCDR	Climate Change Development Report
CGE	Computable General Equilibrium
GHG	Greenhouse gas
CO_2	Carbon dioxide
COVID-19	Corona Virus Disease 2019
CIS	Commonwealth of Independent States
CPB	Netherlands Bureau for Economic Policy Analysis
CPI	Consumer price index
CPL	Cost per Lead
DC	District of Columbia
DOM.RF	The Russian housing agency
ECA	Europe and Central Asia
EEA	The European Economic Area
EITE	Energy-intensive and trade-exposed
EMDE	Emerging Markets and Developing Economy
ENVISAGE	The Environmental Impact and Sustainability Applied General Equilibrium
ERAI	The Eurasian Rail Alliance Index
ESG	Environmental, Social and Governance
ETS	Emissions Trading System
EU	European Union
FCND	Food Consumption and Nutrition Division
FEU	Forty-foot Equivalent Unit
FFDC	Fossil Fuel-Dependent Countries
FX	Foreign Currency
FZ	Federal Law
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GHG	Greenhouse Gas Emissions
GLP	Good Laboratory Practice
GNFS	General Number Field Sieve
GTAR	The Global Trade Analysis Project
HH	Household
ICT	Information and communications technology
IEA	International Energy Agency

IHS Markit	American-British information provider
IMF	The International Monetary Fund
IPCC	The Intergovernmental Panel on Climate Change
IPSOS	Global market research and a consulting firm
JODI	The Joint Organizations Data Initiative
Kb/d	Thousand barrels per day
LCDS	Low-Carbon Development Strategy
LHS	Left-Hand Side
LNG	Liquid Natural Gas
LUCF	Land-Use Change and Forestry
MRV	Monitoring, Reporting and Verification systems
NDC	Nationally Determined Contribution
NEER	The Nominal Effective Exchange Rate
NFI	Net fossil fuel Importing Countries
NPL	Non-Performing Loan
NPV	Net Present Value
NWF	National Wealth Fund
OECD	Organization for Economic Co-operation and Development
OPEC+	Organization of the Petroleum Exporting Countries
OxCGRT	The Oxford COVID-19 Government Response Tracker
PMI	Purchasing Managers' Index
PTI	Payment-to-Income
QOQ	Quarter-on-Quarter
RHS	Right-Hand Side
ROA	Return on Assets
ROE	Return on Equity
ROSSTAT	Russian Federal State Statistics Service
SAAR	Seasonally Adjusted Annual Rate
SDR	Special Drawing Rights
SME	Small and Medium-sized Enterprises
TASS	Russian News Agency
TEU	Twenty-foot equivalent unit
TVP-VAR	Time-Varying Parameter Vector Autoregressive model
UK	United Kingdom
UN Comtrade	International Trade Statistics Database
UNFCCC	United Nations Framework Convention on Climate Change
UNWTO	United Nations World Tourism Organization
UMICs	Upper Middle-Income Countries
USA	The United States of America
USDA	United States department of Agriculture
VAR	Vector Autoregressions
WCI	The World Container Index
WDI	World Development Indicators
YOY	Year-over-Year

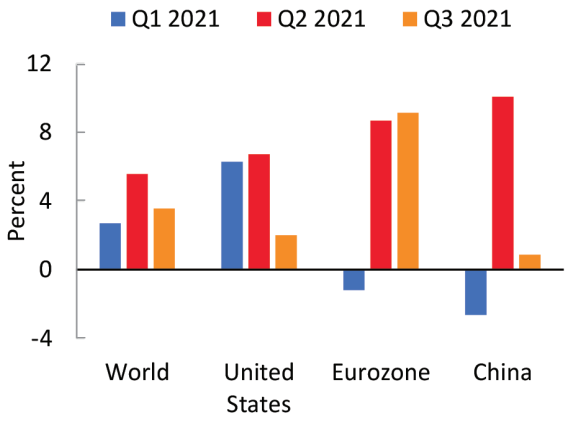
OVERVIEW

A. The global economy cools amid an ongoing pandemic, sustained supply disruptions and high energy prices

Global activity is now moderating from a strong rebound following the pandemic recession. Following a sharp rebound in the second half of 2020, the pace of the global recovery eased in the first half of 2021, held back by renewed COVID-19 outbreaks, ongoing supply chain bottlenecks and high commodity prices. Despite good vaccination progress across advanced economies and many large emerging markets and developing economies (EMDEs), global growth moderated further in the third quarter as sharp slowdowns in the United States and China more than offset robust growth in the euro area (Figure O-1). Much of the recent deceleration in global economic activity reflected mounting supply bottlenecks, including energy shortages in China, which have severely hampered global industrial production and supply chains.

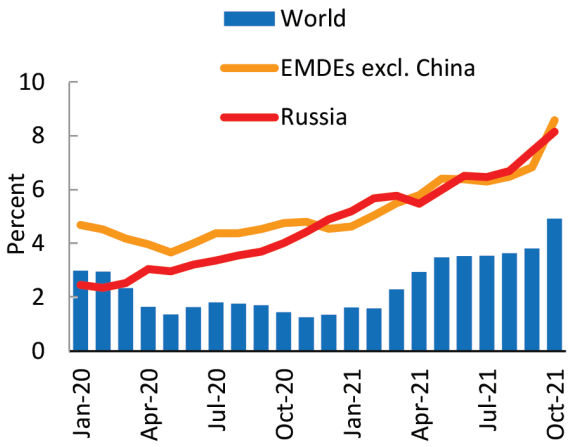
Inflation has risen to become a central concern, with global financial conditions tightening as central banks act. Global headline inflation has increased steadily in 2021, reaching 4.9 percent year-on-year in October — 1.9 percentage points above its pre-pandemic level in January 2020 (Figure O-2). The rise in inflation was broad-based across regions and components, reflecting a combination of robust global demand for goods, sharp increases in energy and food prices, and worsening global supply bottlenecks. Inflation surpassed the targets of many central banks, particularly in EMDEs in Europe and Central Asia. In advanced economies, financial conditions have eased, with equity valuations surging to all-time highs, boosted by strong corporate earnings. Despite rising inflation and the Federal Reserve reducing the pace of asset purchases in November, 10-year government bond yields have edged up only modestly in the United States, especially in comparison to the Taper

Figure O-1: Growth slowing in the United States and China, but robust in the euro area



Source: Oxford Economics; World Bank.
Note: Chart shows real local currency qoq saar growth for the euro area, China, and the United States. China GDP seasonally adjusted by Oxford Economics.

Figure O-2: Inflationary pressures building worldwide



Sources: Haver Analytics; World Bank.
Note: Figure shows the annual percentage change in the consumer price index. Aggregates are calculated using real U.S. dollar GDP weights at 2019 prices and market exchange rates. Sample includes 34 advanced economies and 73 EMDEs.

Tantrum[1] episode of 2013. In contrast, EMDEs have experienced a tightening of financial conditions in recent months, due to pandemic setbacks, country-specific risks, and more recently, a broad-based increase in policy rates to address above-target inflation.

Energy prices have hit historical highs. Energy prices have continued an upward run throughout most of the year. Crude oil reached a seven-year high at end-October while natural gas and coal prices have risen to all-time highs. The increase in prices partly reflects the unexpectedly strong rebound in demand, especially in China and India, while prices were also heavily affected by supply chain and weather-related disruptions. Non-energy prices have remained elevated, particularly those with high energy content, while iron prices have slipped as China announced scaled-down steel production (Figure O-3).

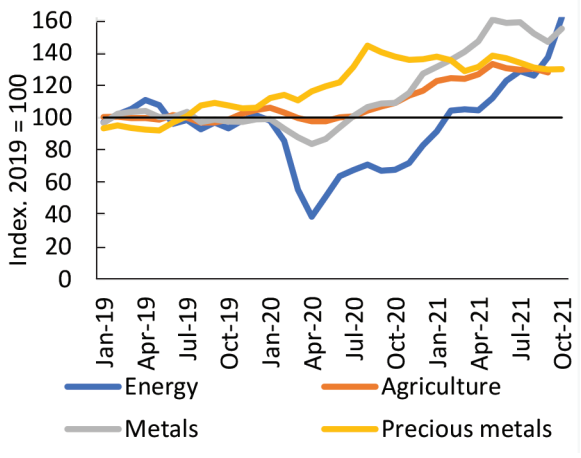
B. Russia saw strong growth in 2021, with momentum weakening late in the year

Russia's economy rebounded strongly in the second quarter. Growth accelerated as restrictions were eased (Figure O-4) and consumers flocked back to shops. Household consumption surged ahead in the second quarter of this year, increasing more than nine percent on the previous quarter (seasonally adjusted) (Figure O-5). Growth in the second quarter pushed quarterly economic activity above its previous high point in 2019. This spending splurge resulted from a release of unfulfilled demand built up while COVID-19 restrictions were in place, aided by increased credit, Russian tourists staying at home for their holidays this year, and resource inflows via the energy sector.

Investment growth also strengthened into the second quarter. Gross fixed capital formation posted strong growth of 6.6 percent, qoq (seasonally adjusted), in the second quarter. Investment was particularly high in the financial, accommodation, ICT, and wholesale and retail trade service sectors. Higher corporate credit growth, which peaked in May-July, fed into investment growth along with previous contributing factors.

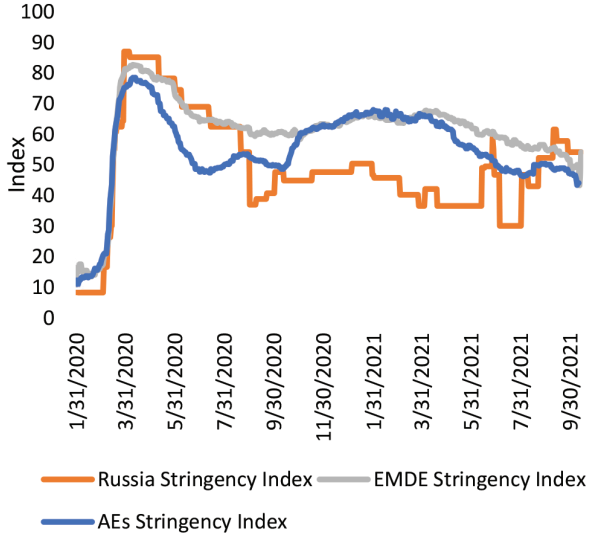
After scaling up rapidly and hitting capacity constraints mid-year, production growth then eased in line with slackening demand. With pent-up demand realized and financial conditions tightening as the central bank raised interest rates to combat inflation, growth weakened in the third quarter with provisional data suggesting a small quarter-on-quarter decline in activity. The sharp jump in demand this year effectively utilized spare capacity in the economy, with utilization in the manufacturing sector running at historically high levels from

Figure O-3: Energy prices have surged and non-energy commodity prices remain high



Source: Bloomberg; International Energy Agency; World Bank.

Figure O-4: COVID-19 restrictions were relatively light throughout most of this year



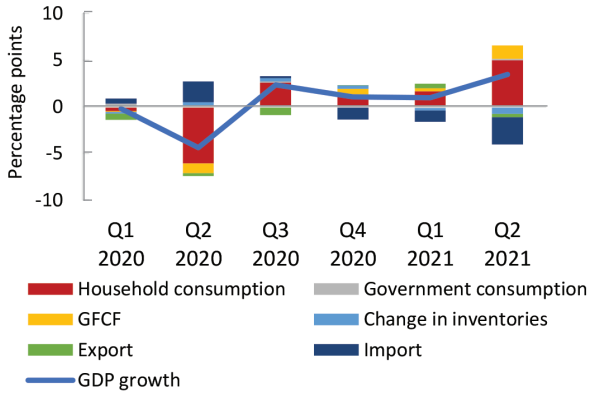
Source: Oxford COVID-19 Government Response Tracker (OxCGRT).

[1] World Bank Group. 2015. Global Economic Prospects, June 2015: The Global Economy in Transition. Washington, DC: World Bank. doi: 10.1596/978-1-4648-0483-0. License: Creative Commons Attribution CC BY 3.0 IGO

February onwards (Figure O-6) and labor market shortages emerging. But since June, retail sales and production growth have moderated, suggesting a harmonized cooling of demand and production (Figure O-7).

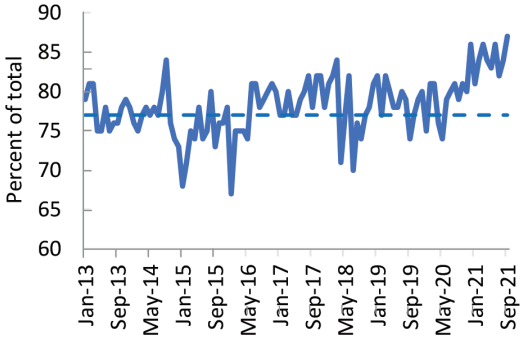
Downside risks intensified with the rapid rise in COVID-19 cases from August. By the end of October, COVID-19 reached a new peak of close to 40,000 new cases each day. While this incidence, adjusted for population size, is above the average for both high income and upper middle-income countries, the severity of Russia's epidemic is more clearly illustrated by its very elevated death rates. The official statistics on COVID-caused deaths show that the death rate is double its previous peak (Figure O-8), and far higher than the average for high and upper middle-income countries,

Figure O-5: Household consumption drove strong growth in the second quarter



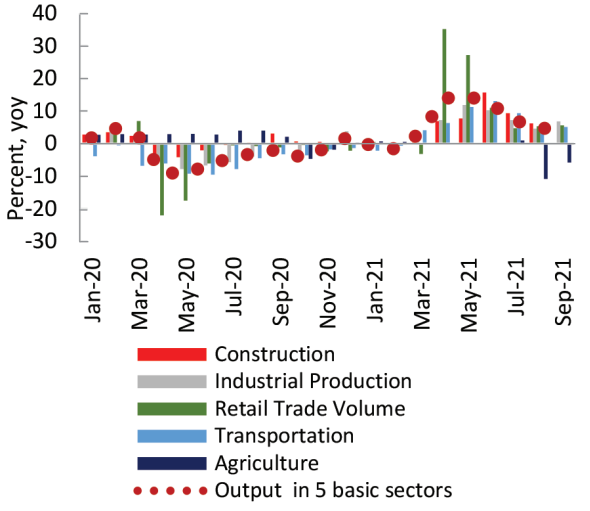
Source: Rosstat.

Figure O-6: Industrial capacity utilization has reached exceptionally high levels (*percent of total*)



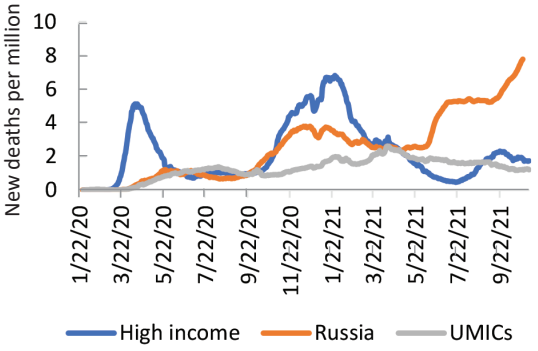
Source: Russian Economic Barometer.

Figure O-7: High-frequency statistics point to slowdown in supply and demand in the third quarter (*percent of total*)



Source: Rosstat.

Figure O-8: The COVID-19 epidemic has become even more severe



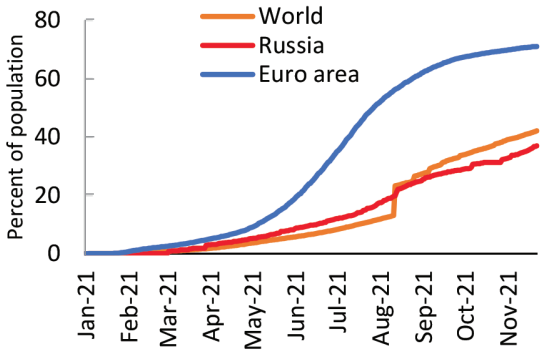
Source: Our World in Data.

while vaccinations remain low (Figure O-9). In response to the rapidly worsening situation, the authorities imposed new mobility restrictions in October.

The current account surplus expanded on high commodity prices and low outbound tourism. The current account surplus in 2021 to September, at US$82 billion, has exceeded its 2019 level. Indeed, such a large surplus has not been seen, over a similar period and in nominal prices, since 2008. While fossil-fuel export values rebounded from lows last year, with volumes limited by the OPEC+ agreement, they remain slightly below their 2019 level (Figure O-10). However, exports of non-fossil fuel goods, especially metals, are sharply higher. While strong domestic demand has pushed up imports of goods to broadly return the trade balance to its level pre-2019, minimal outbound tourism, along with an increase in net investment income, has driven the exceptional current account performance. Continued private capital outflows, along with central bank reserve accumulation, offset the surplus, resulting in only a modest appreciation in the ruble over the year to date.

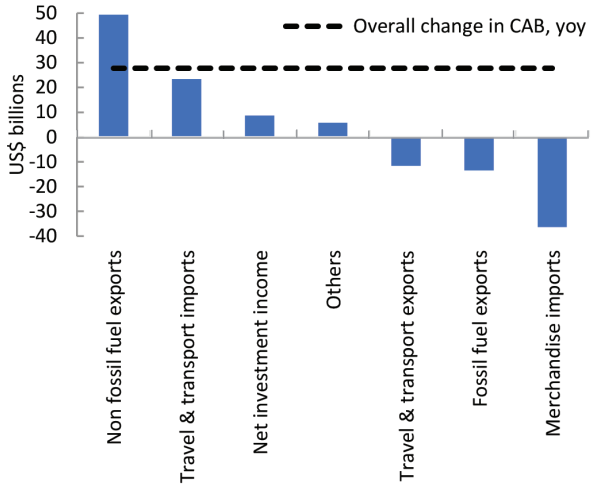
Inflation is on the rise as Russia copes with high demand, rising commodity prices and supply bottlenecks. A perfect storm of supply and demand pressures have acted to push inflation up in Russia (Figure O-11), as in many other countries in 2021, with consumer price index (CPI) inflation steadily rising to 8.1 percent year-on-year by October, a five-year high. The pickup in inflation has reflected a rapid recovery in demand — with the negative output gap closing — as well as supply-side constraints and spikes in commodity prices, especially in food items. Core inflation and inflation expectations are also rising.

Figure O-9: Global vaccination has progressed, particularly in some large EMDEs, but Russia still trails the world



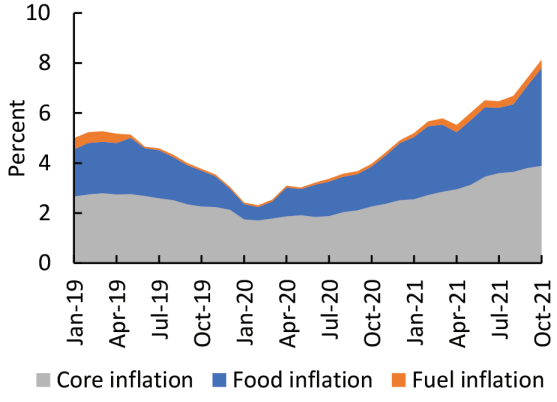
Source: Our World in Data (database); World Bank.
Note: Figure shows the share of population fully vaccinated. China data are only updated periodically, hence the kink in 'world'.

Figure 0-10: The current account was boosted by high commodity exports, tourism remains low (*year to September change, 2021 on 2019*)



Source: Russian Customs, Central Bank of Russia.

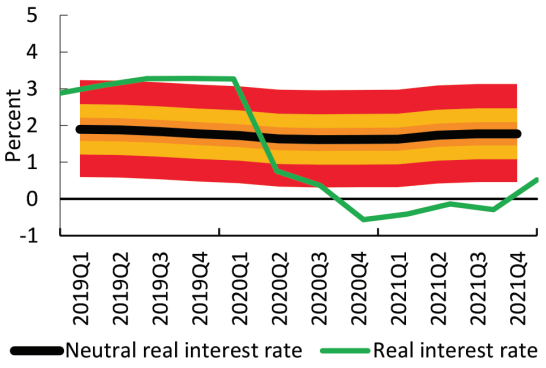
Figure O-11: Food and core components driving high inflation (*annual percentage change*)



Source: Haver Analytics; Ruch (2021).

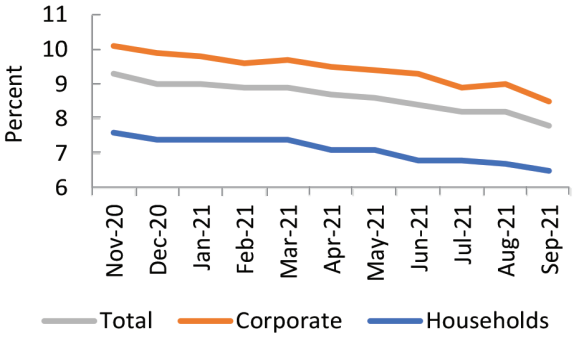
The Central Bank of Russia acted promptly, maintaining a broadly neutral monetary policy stance. The Central Bank of Russia was one of the first central banks to begin tightening monetary policy in 2021 as inflation moved above the CBR's target rate from December 2020. Since March, it has raised rates six times, by a totally of 325 basis points to stand at 7.5 percent at end October. These policy rate increases have helped maintain real interest rates around zero and shift monetary policy from an accommodative to a neutral stance — implying that monetary policy is neither putting upward or downward pressure on inflation or growth (Figure O-12).

Figure O-12: Monetary policy returned to a broadly neutral stance (*Real interest rate gap and uncertainty bands*)



Source: Ruch (2021), World Bank.
Note: Color scales correspond to 90 percent confidence interval.

Figure O-13: NPL rates are gradually declining

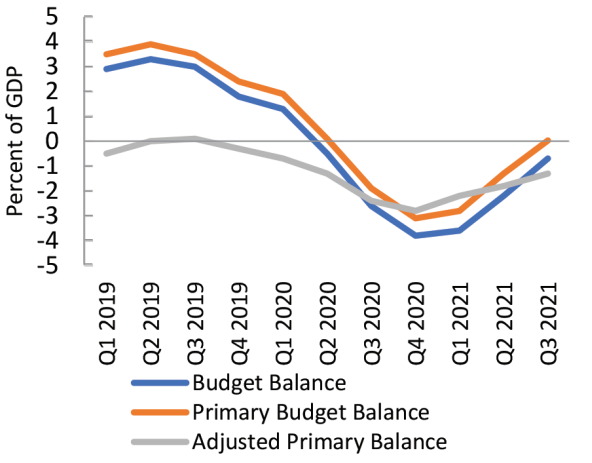


Source: Central Bank of Russia.

The banking sector has proven resilient over the COVID-19 pandemic so far, as economic recovery now helps improve balance sheets. The banking sector's key risk and performance indicators have remained largely resilient to the pandemic while recent economic recovery has helped improve the banking sector's operating environment and asset quality. Following the sector's exit from the regulatory forbearance in mid-2021, asset quality, profitability and capitalization have not deteriorated – in fact, profitability and returns on assets and equity in the system are rising. Profitability has been supported by strong lending growth fueled by the government's credit support programs and improving economic conditions. Year-on-year corporate credit growth has fallen over the year to October, both in nominal and real terms, while lending growth to SMEs and the household segment remains strong. Recent tightening of prudential measures for household lending will help to limit building risk in this segment and support alignment with monetary policy. Rates of non-performing loans, while relatively high, at 7.8 percent systemwide, have declined over the year so far (Figure O-13).

The government budget has rapidly consolidated, with a bumper revenue yield. Over the first nine months of the year, the federal budget has seen impressive increases in revenues; oil and gas revenues were up by 60 percent; VAT and income taxes by around 30 percent each. The revenue take has far exceeded that of the last pre-COVID year of 2019. The overall budget deficit, on a four-quarter rolling basis, shrank from 3.8 percent at end 2020 to around 1 percent in the third quarter of 2021 (Figure O-14). High

Figure O-14: Buoyant revenues have led to rapid improvement in the government budget



Source: Haver Analytics, World Bank.

commodity prices and robust economic recovery helped deliver high revenues, which were also bolstered by tax payments deferred from last year and tax policy measures such as the new, higher rate of personal income tax. Expenditures also grew as the authorities maintained some pandemic support measures and reintroduced others as the new wave worsened later in the year. High oil and gas revenues meant that the Ministry of Finance planned to purchase US$24 billion in foreign exchange in the first nine months of 2021 to be channeled to the National Wealth Fund next year.

Labor markets have recovered and are now showing signs of tightness. Labor force participation rates for both men and women increased in the first half of 2021, returning to their trend levels. This increase in the labor force coincided with a fall in the unemployment rate, with the national rate falling to 4.3 percent by September 2021 – the lowest since 2017. Overall, 1.7 additional people entered the work force in the first nine months of the year. Recruitment agency job posting data suggests that workers became significantly harder to find by mid-year. Job postings from employers jumped up 24 percent year-on-year in the second quarter and the ratio of unemployed people to job posts has fallen to a value of 1.7, well below comparable estimates of 2.9 and 1.9 observed in 2020 and 2019, respectively.

Real wage growth has been strong, and Russia's new poverty measure showed a fall in the second quarter. The official national poverty measure underwent a major change this year, with the definition of the poverty line shifting from a more "absolute" definition to one which is defined relative to the income distribution, a measure more commonly used as countries become richer. While this means that poverty statistics for 2021 are not comparable with previous years, backward estimation indicates that over the last five years, the two methodologies would have produced quite similar results. The new poverty measure gives a reading of 14.4 percent in the first quarter, before falling to 13.1 percent in the second quarter – in line with seasonal variation seen in previous years. More broadly, real wage growth, which was maintained just above 2 percent in 2020, has continued this year, at an average of 2.5 percent in the year to August.

C. Growth to slow as Russia battles COVID-19 and elevated inflation

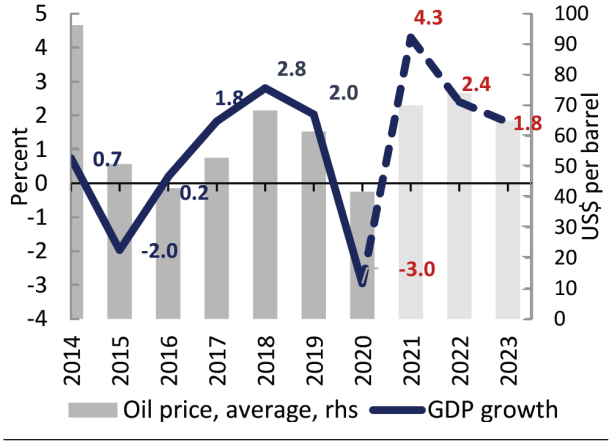
With output returning to potential sooner than expected, growth next year is forecast to be lower. The strong economic recovery this year has broadly closed the output gap, which would see growth normalizing next year. However, the outlook is affected by several short-term factors. On the upside, continued high commodity prices are expected to support increased domestic expenditure in 2022. On the downside, continued COVID-19 controls are likely to weigh on growth next year, as vaccination continues relatively slowly in the baseline, while tighter interest rates needed to control inflation will also limit demand. Taking these factors into account, real GDP growth is forecast to be 2.4 percent in 2022, falling to 1.8 percent by 2023 (Figure O-15).

High commodity prices will continue to contribute to a strong current account. After rising over this year, commodity prices are projected to remain elevated and contribute to robust export growth. With domestic demand and imports muted, the current account surplus is expected to remain strong. Over the longer-term, commodity export revenue may become lower and more volatile as the global low-carbon transition unfolds, albeit with uncertain pace and tipping points.

The budget is expected to return to surplus next year. As drivers of high energy sector revenue remain in place and gradual expenditure consolidation continues, the overall budget balance is expected to turn a surplus in 2022, although ongoing challenges to businesses and households may call for fiscal support and a more gradual path of consolidation.

Risks are evenly balanced. The baseline forecasts assume that Russia's vaccination program will continue to progress at a similar a rate in 2022 as it has done in 2021, which would leave a significant share of the

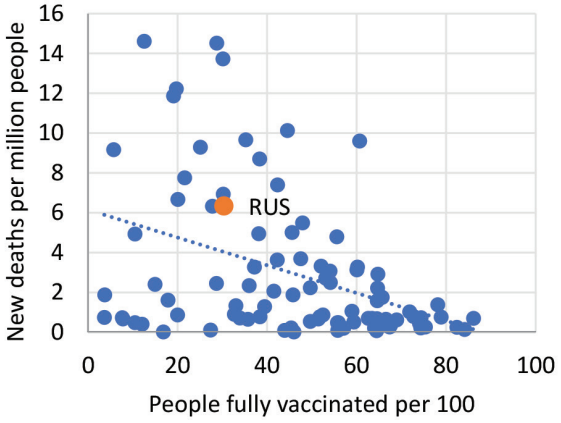
Figure O-15: Growth to ease down over next two years



Source: Rosstat, World Bank staff estimations.

population unvaccinated for most of the year. As a result, COVID-19 will continue to present a high risk to the population (Figure O-16), and ongoing and periodic COVID-19 control measures are expected to be needed, weighing on growth. Should the authorities be successful in rolling out vaccinations at scale more rapidly, this may present a positive surprise to forecasts. On the other hand, the baseline assumes that a continuation of the current monetary policy will be broadly effective in limiting inflation pressures. However, inflation has surprised many forecasters this year, and should elevated inflation prove more persistent than expected, and necessitate tighter monetary policy than presently envisaged, this could put downwards pressure on domestic demand and growth. Energy and commodity prices also present a risk to the outlook for Russia, with considerable uncertainty over the future energy demand linked to whether economic recovery will be sustained, the speed and ambition of the global green transition and how Russia's policy response will evolve, as discussed in Chapter 3.

Figure O-16: Vaccination progress can mitigate the high risk that COVID-19 still presents



Source: Our World in Data.
Note: Sample is high and upper middle-income countries, data is average over first half of 2021.

Robust economic outcomes this year largely reflect cyclical factors, but Russia still faces the challenge of raising its long-term growth rates. A rapid recovery from COVID-19, combined with high commodity prices, has driven faster growth, job creation and improving balances this year. However, estimates of potential growth, at about 1.8 percent, remain relatively low, pointing to the need for a comprehensive reform agenda to address the structural constraints to higher, sustained growth to support improved living standards. Enhancing the drivers of productivity and the environment for private sector investment and competitiveness, especially in non-energy intensive, higher value-added sectors, will be key to this agenda.

Russia's new low-carbon development strategy presents an opportunity to contribute by spurring green growth while meeting the country's climate objectives. As a landmark in its journey of green transformation, the government released a new Low Carbon Development Strategy on October 29, 2021. This strategy sets out a much more ambitious target scenario of climate change mitigation, which would see a 70 (35) percent reduction in net (gross) emissions by 2050 and net carbon neutrality 10 years after that. But the plan also sets in its sights raising growth at the same time as greening the economy, targeting average growth of at least 3 percent a year. This ambitious new plan sets the challenge for a policy program that would support significant structural changes. Such a twin goal of growth and greening will not be easy and will call for a simultaneous focus on addressing pre-existing constraints to growth while limiting the costs of the green transition and taking full advantage of the opportunities it may afford.

D. Russia's green transition: Pathways, risks and robust policies

Globally, environmental sustainability is becoming central to the economic agenda. With more than 60 countries, including Russia, representing more than 80 percent of global GDP now aiming to achieve carbon neutrality, wholesale changes to policy frameworks and market structures are expected in the years ahead to achieve these goals. However, uncertainty over the speed and course of policy developments relating to the green transition remains high.

The challenge for Russia is to fundamentally transform its economic structure. Russia has made some progress in diversifying away from fossil fuels, but less so from fossil fuel-burning industries. Russia's new low-carbon vision will require going much further: Reimagining Russia's economic structure, building world-best market institutions and assets to support a competitive economy that is led by productivity and innovation and which provides good quality, sustainable and resilient incomes for all. The special topic in this report presents scenarios and options for Russia to identify appropriate risk management approaches to the green transition of its economy. The forthcoming Russia Climate Change and Development

Report will go further to cover sectoral challenges and opportunities, economy-wide enablers, and the inclusion and social aspects of the green transition.

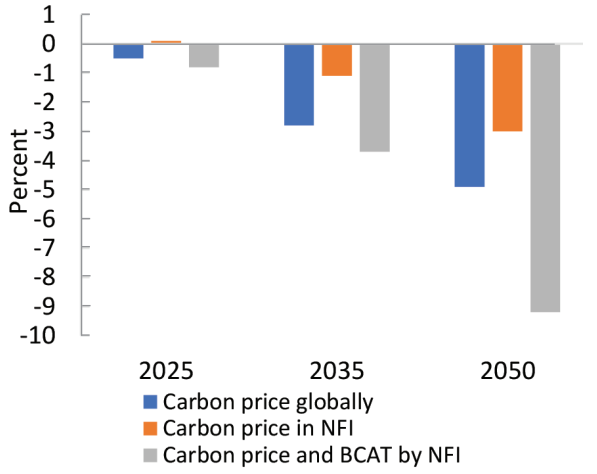
Simulations suggest proactive domestic climate action can help to safeguard Russia's economy from global green transition risks and create new opportunities. Analysis of multiple illustrative scenarios explores how global climate change policy may evolve and how Russia can respond. These scenarios include a global cooperative effort in which all countries take part, one where climate mitigation is led only by net fossil fuel importing countries (NFIs), and a third where those NFIs lead efforts but also apply a border carbon adjustment tax (BCAT) on countries not taking action. In all these scenarios, the demand for hydrocarbons from countries taking action would drop significantly. In a scenario where NFIs take domestic action alone but do not apply a BCAT, Russia would experience moderate GDP and welfare losses — about 3 percent of welfare by 2050 — compared to the baseline. However, with a broadly applied BCAT, the adverse impact would be much greater (Figure O-17). Russia applying carbon prices along with the rest of the world avoids the risks of greater losses that would come from the third scenario involving BCAT.

Amongst a wide set of supporting policies, carbon pricing and energy subsidy reforms are central. Russia's new LCDS envisages establishing a carbon price after 2030, while recent emissions monitoring regulation also sets the groundwork for such measures. Carbon pricing is a central pillar of climate action and can take a number of forms – usually a tax or a tradeable permit system. Such pricing ensures market-based incentives for all actors to account for the social cost of carbon emissions. With carbon pricing in export markets, it also helps to ensure income and fiscal revenues are retained domestically.

The significant resources spent on consumer energy subsidies in Russia could be better deployed. Energy subsidies for consumers, while serving a purpose to alleviate hardship, also increase emissions and reduce economic efficiency. New estimates by the World Bank show that Russia's consumer subsidies on electricity, gas and petroleum amounted to 1.4 percent of GDP in 2019. Modelling shows that by redeploying these resources, the authorities could increase GDP and ensure that no consumers are left worse off, while at the same time reducing emissions.

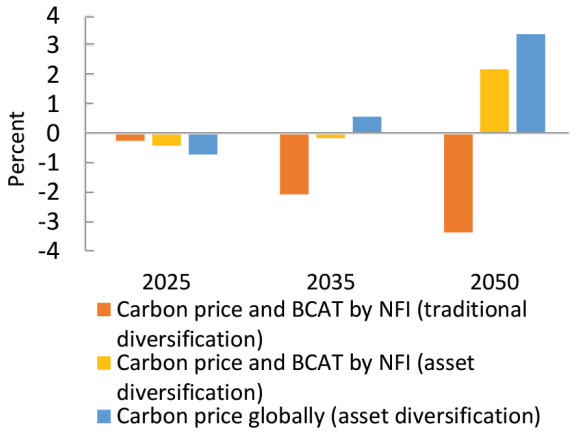
Rebalancing the asset base of the economy requires major reforms in the regulatory structures to incentivize and navigate a green transition. Resources raised from carbon action can be used to support affected communities and to invest in productive assets (Figure O-18) such as human capital, renewable natural capital and innovation that can support Russia to develop new growth drivers. But this needs to be complemented with action to address the pre-existing constraints to structural change, including regulatory frameworks to support competitiveness, entrepreneurship, and investment.

Figure O-17: Impact on welfare of different climate-change action scenarios



Source: Makarov et al. 2021 based on Peszko et al. 2021.

Figure O-18: Active asset diversification policies could lead to welfare gains



Source: Makarov et al. 2021 based on Peszko et al. 2021.
Note: Chart shows change in welfare relative to baseline.

PART I

RECENT ECONOMIC DEVELOPMENTS

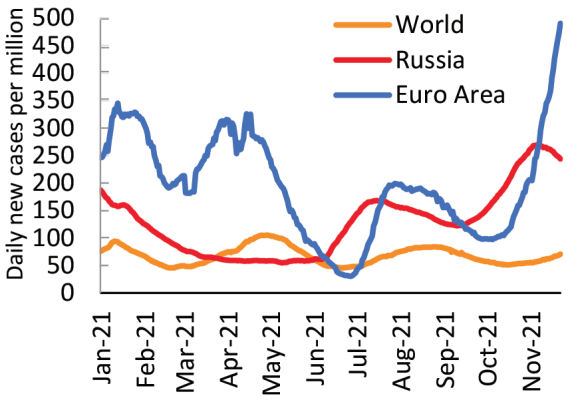
1.1 Global activity: Cooling amid protracted pandemic and sustained supply disruptions

Despite cooling in late 2021 – amid pandemic resurgences, widespread supply bottlenecks, and a fading fiscal boost – the global economy is still set to grow by 5.6 percent this year, fueled by robust rebounds in some major economies. There was very good progress in COVID-19 vaccination rollouts in advanced and many large emerging economies, but new waves of the pandemic in late 2021 are dampening activity. Global inflation accelerated in 2021, driven by a mixture of demand and supply, and shows little sign of abating. Global financial conditions are tightening amid rising inflation and reduced monetary accommodation, particularly in emerging markets and developing economies. The recovery in the global goods trade lost momentum later in the year, while the services trade is below pre-pandemic levels as international tourism remains weak. Energy prices have continued to rise, while non-energy commodity prices have plateaued at a high level. The COVID-19 pandemic has likely scarred potential output through its adverse effects on human capital and physical investment, especially in EMDEs. The crisis has also disproportionately affected vulnerable groups and worsened inequality. By the end of this year, about 100 million people are expected to have fallen back into extreme poverty because of the pandemic.

Global activity is now moderating after a strong rebound from the pandemic recession. Following a sharp rebound in the second half of 2020, the pace of the global recovery eased in the first half of 2021, held back by renewed COVID-19 outbreaks (Figure 1-1). Despite very good vaccination progress across advanced economies and many large EMDEs, global growth moderated further in the third quarter, as sharp slowdowns in the United States and China more than offset robust growth in the euro area (Figure and Figure 1-3). Much of the recent deceleration in global economic activity reflects ongoing supply bottlenecks, including energy shortages in China, which have severely hampered global industrial production. High-frequency indicators suggest that global activity stabilized at the start of 2021Q4 (Figure 1-4), but a surge in new COVID-19 cases in Europe, and to some extent in parts of the United States, in recent weeks could weigh on growth going into 2022.

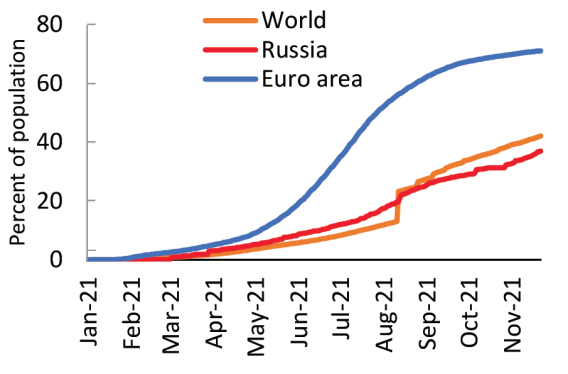
Global trade growth has lost momentum amid moderating global economic activity and persistent supply bottlenecks. The recovery in global trade plateaued in 2021, as ongoing pandemic disruptions weighed on global economic activity, particularly in the United States and China. Staggered shutdowns and re-openings across regions, coupled with congestions at ports and a shortage of trucking, have led to severe bottlenecks in the global supply chain and extended delays in supplier de-

Figure 1-1: A rapid acceleration in new COVID-19 cases in Europe is pushing up global cases, possibly disrupting activity going into 2022



Source: Our World in Data (database); World Bank.
Note: Figure shows 7-day moving average of new daily COVID-19 cases. Last observation is November 22, 2021.

Figure 1-2: Global vaccination has progressed, particularly in some large EMDEs, but Russia still trails the world

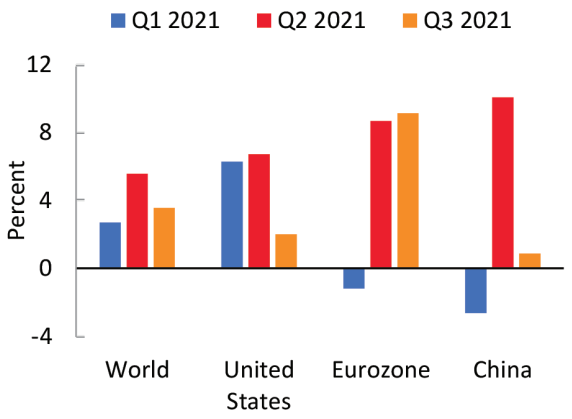


Source: Our World in Data (database); World Bank.
Note: Figure shows the share of population fully vaccinated. Last observation is November 22, 2021.

liveries (Figure 1-5). Declining global manufacturing PMI new export orders point to a further softening in global goods trade growth at the end of 2021 (Figure 1-6). Services trade has yet to regain its pre-pandemic level, with the recovery held back by sustained weakness in tourism. International tourist arrivals were nearly 70 percent below 2019 levels in July 2021 — a peak holiday month — and are likely to remain muted so long as the virus continues to spread (UNWTO 2021).

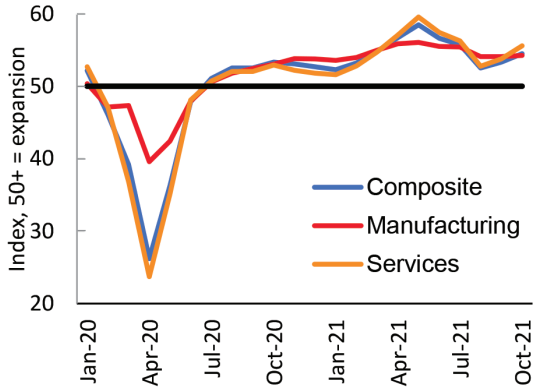
Inflation accelerated in 2021 worldwide, driven by a mixture of demand and supply, and shows little sign of abating. Global headline inflation increased steadily in 2021, reaching 4.9 percent (yoy) in October — 1.9 percentage point above its pre-pandemic level in January 2020 and 3.3 percentage points above its January 2021 level (Figure 1-7). The rise in inflation was broad-based across regions and components, reflecting a combination of robust global demand for goods, sharp increases

Figure 1-3: Growth slowed sharply in the United States and China in the third quarter, in contrast to that of the euro area



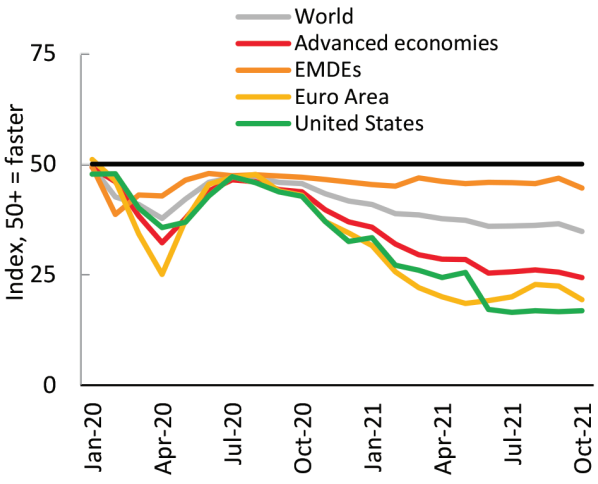
Source: Oxford Economics; World Bank.
Note: Chart shows real local currency qoq saar growth for the euro area, China, and the United States. China GDP seasonally adjusted by Oxford Economics.

Figure 1-4: The global composite PMI has stabilized, supported by services activity



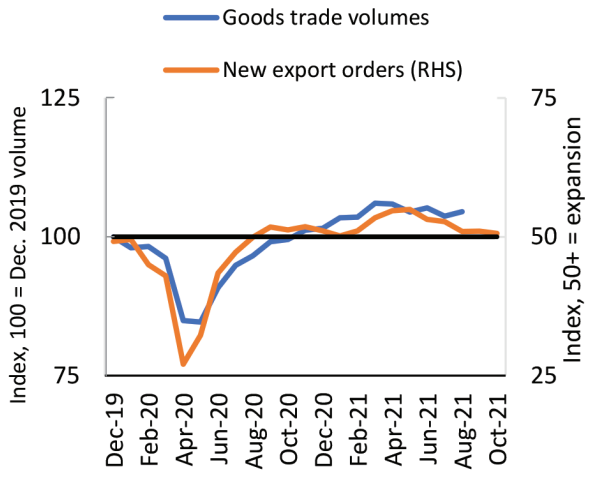
Source: Haver Analytics; World Bank.
Note: PMI readings above 50 indicate expansion in economic activity; readings below 50 indicate contraction.

Figure 1-5: Supply bottlenecks persist, with growing delays in supplier delivery times



Sources: Haver Analytics; World Bank.
Note: Figure shows the manufacturing PMI suppliers' delivery times, where 50 indicates faster delivery times.

Figure 1-6: Slowing manufacturing PMI new export orders point to further moderation in global goods trade



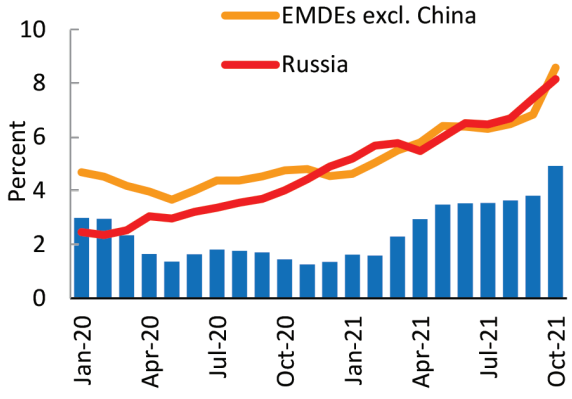
Sources: CPB Netherlands Bureau for Economic Policy Analysis; Haver Analytics; World Bank.
Note: Goods trade measured as the average of export and import volumes. PMI readings above 50 indicate expansion in economic activity; readings below 50 indicate contraction.

in energy and food prices, and worsening global supply bottlenecks. Inflation surpassed the targets of many central banks, particularly in EMDEs in Europe and Central Asia (ECA). In response, policy rates were increased in about 25 central banks over 2021 — the vast majority of which were EMDEs (Figure 1-8). The global composite PMI input and output price sub-indices point to further inflationary pressures going forward, especially given sharply higher energy commodity prices.

Global financial conditions are broadly stable amid a divergence between advanced economies and EMDEs. Global financial conditions treaded water in recent months. In advanced economies, financial conditions have eased, with equity valuations surging to all-time highs, boosted by strong corporate earnings. Despite rising inflation and the Federal Reserve starting to reduce the pace of asset purchases in November, 10-year US government bond yields have edged up only modestly, especially in comparison to the Taper Tantrum episode of 2013. In contrast, EMDEs have experienced a tightening of financial conditions in recent months, due to pandemic setbacks, country-specific risks, and more recently, a broad-based increase in policy rates to address above-target inflation (Figure 1-9: Global financial conditions are broadly stable amid a divergence between advanced economies and EMDEs.). Credit spreads on EMDE sovereign bonds have drifted upwards since mid-2021, reaching their highest level since early March (Figure 1-10).

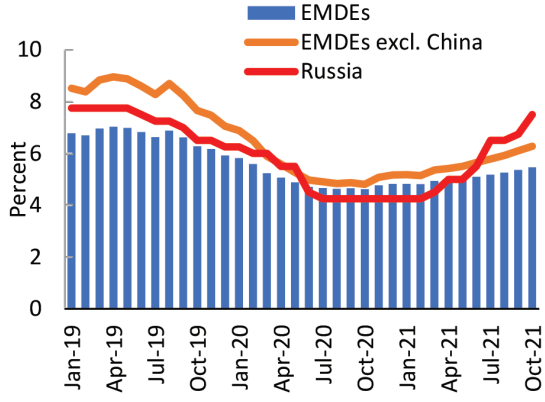
The robust euro area recovery is facing growing headwinds from supply bottlenecks and renewed COVID-19 outbreaks. Euro area growth bounced back strongly to an average of 8.9 percent (qoq saar) in the second and third quarters of 2021, following two consecutive quarters of contraction. The rebound in activity reflected a sustained easing of pandemic restrictions amid vaccination progress, allowing for the release of substantial pent-up demand for services. More recently, activity appears to have remained broadly resilient despite new headwinds from supply chain disruptions and a steep rise in energy prices (Figure 1-11). Still, member countries with greater exposure to global supply chains and energy shortages are experiencing notable drags to activity, with industrial production slowing particularly sharply in Germany. Moreover, rising COVID-19 cases and associated pandemic restrictions also cloud the near-term outlook and could dampen momentum going into 2022.

Figure 1-7: Inflationary pressures are building across many economies, especially those in ECA



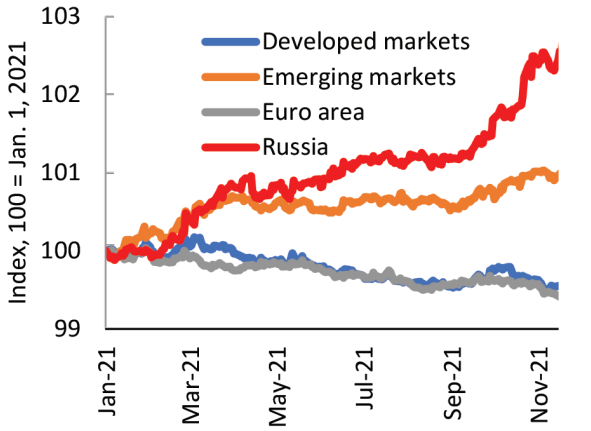
Sources: Haver Analytics; World Bank.
Note: Figure shows the annual percentage change in the consumer price index. Aggregates are calculated using real U.S. dollar GDP weights at 2019 prices and market exchange rates. Sample includes 34 advanced economies and 73 EMDEs.

Figure 1-8: Monetary policy rates have risen in response to above-target inflation, particularly in Russia



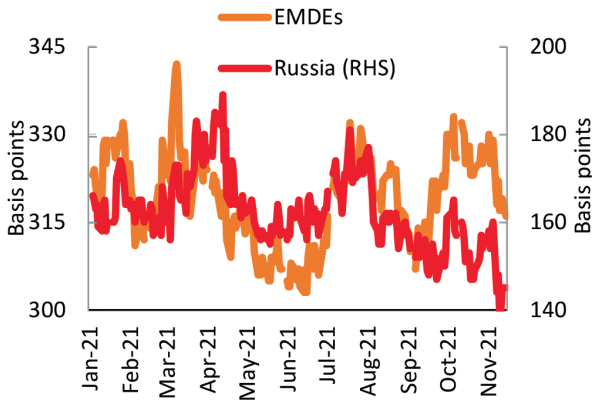
Sources: Haver Analytics; World Bank.
Note: Figure shows the annual percentage change in the consumer price index. Aggregates are calculated using real U.S. dollar GDP weights at 2019 prices and market exchange rates. Sample includes 34 advanced economies and 73 EMDEs.

Figure 1-9: Global financial conditions are broadly stable amid a divergence between advanced economies and EMDEs.



Sources: Bloomberg; World Bank.
Note: Figure shows Goldman Sachs nominal financial condition indices re-indexed to January 1, 2021 = 100.

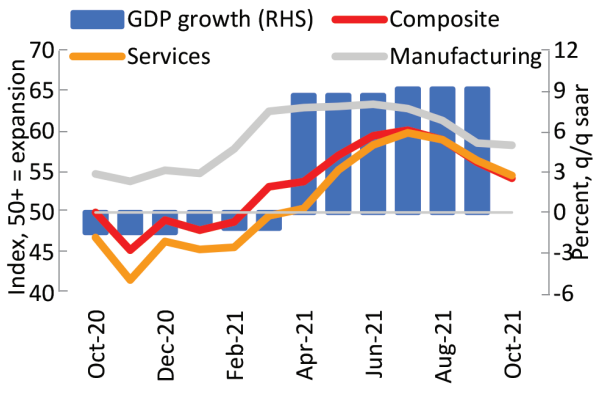
Figure 1-10: Credit spreads on EMDE sovereign bonds have drifted upwards since mid-2021



Sources: Haver Analytics; World Bank.
Note: Cumulative international debt issuance by EMDE governments and corporations. Sample includes 76 EMDEs.

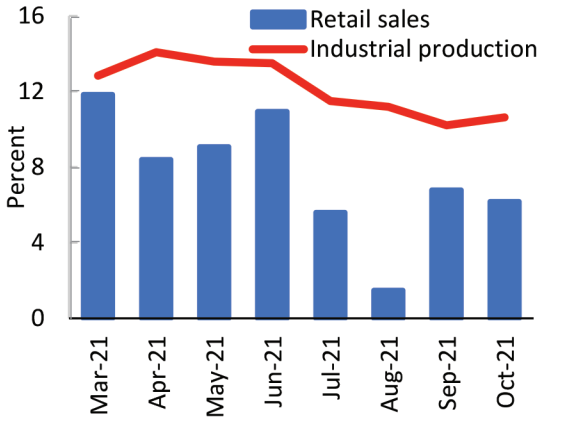
Activity in China, Russia's second-largest trading partner after the euro area, is slowing sharply. Following a short-lived sequential bounce back in the second quarter, Chinese GDP growth slowed to 0.2 percent (qoq, sa) in the third quarter, constrained by pandemic restrictions, electricity shortages, and a sharp slowdown in the property sector. While private consumption continued to improve at the start of the third quarter, with retail sales picking up to 4.9 percent in October (yoy), industrial production growth remained somewhat tepid as a result of persistent headwinds from power shortages (Figure 1-12). Financial conditions have tightened in response to mounting financial distress among highly leveraged property developers. In response, authorities increased the level of macroeconomic policy support in September and October, helping to avert a broader credit crunch.

Figure 1-11: Prior to the latest COVID-19 wave, PMIs in the euro area edged down but continued to indicate robust growth at the start of the fourth quarter.



Source: Haver Analytics; World Bank.
Note: PMI readings above 50 indicate expansion in economic activity; readings below 50 indicate contraction.

Figure 1-12: China's retail sales continued to recover in October, while industrial production growth remained modest amid electricity shortages



Sources: Haver Analytics; World Bank.
Note: Data is growth over the same month two years ago.

Box 1 Energy prices have continued to rise, while non-energy commodity prices have plateaued at a high level.

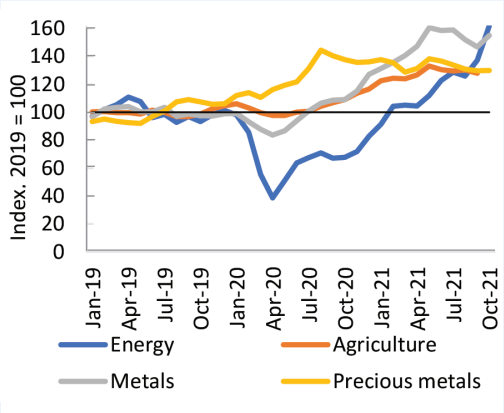
Energy prices continued to surge in 2021Q3, mainly led by natural gas and coal prices. In contrast, non-energy prices plateaued, but at high levels. Agriculture, fertilizers, and precious metal prices are about one third above their pre-pandemic levels, while metal prices are around one-half higher (Figure B1-1A).

Crude oil prices rose 7 percent in 2021Q3 and continued to increase in 2021Q4, reaching a seven-year high of US$86/bbl as of end-October. Prices have been supported by the recovery in global demand, weather-related supply disruptions, and restrained production by OPEC and its partners (OPEC+). The recent surge in natural gas and coal prices also boosted demand for oil as a substitute energy source for electricity generation and heating. Oil demand is currently around 5 percent below pre-pandemic levels for OECD and non-OECD countries, excluding China, whereas in China it is about 10 percent above its pre-pandemic level. On the supply side, global oil production dropped slightly in August and September after reaching a high reading in July. The fall was mainly due to weather-related supply disruptions (e.g., Hurricane Ida), routine maintenance, and other production constraints. Despite the agreement by OPEC+ in July 2021 to gradually increase production by 0.4 mb/per month from August, output was almost 1 mb/d below targets in August and September. Operational issues and weak investment in Nigeria and Angola caused their production to be lower than planned, and maintenance issues reduced output in Kazakhstan. On the other hand, oil production in Russia increased by almost 1 percent in 2021Q3, slightly above their target (Figure B1-1B). Among non-OPEC+ producers, production in the United States fell 4 percent month-on-month (mom) in September due to supply disruptions arising from Hurricane Ida.

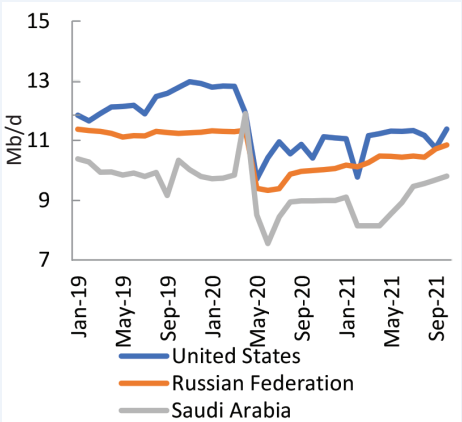
Natural gas and coal prices surged in 2021Q3 and continued to increase in October, with most benchmarks reaching all-time highs (Figure B1-1C). The increase in prices partly reflects a rebound in demand, especially in China and India, for electricity generation and industrial use. Prices were also heavily affected by weather-related disruptions. Droughts reduced hydropower production in Brazil, China, and the United States, increasing the need for coal and natural gas as a replacement. At the same time, floods in China and Indonesia disrupted coal supply, while Hurricane Ida reduced natural gas production in the United States. As a result, natural gas inventories are low, especially in Europe. Natural gas and coal prices declined in November, however, as coal production in China rose, and Russia, the world's largest exporter of gas, recently announced plans to start refilling European gas storage. More broadly, natural gas and coal markets have become increasingly integrated due to the growing usage of liquified natural gas (LNG; World Bank 2021). Previously, natural gas and coal markets had been relatively segmented by region, as natural gas was mostly traded by pipeline and coal is bulky and expensive to transport long distances. With the increased global transport of LNG, a shortage of one fuel in one region exerts greater upward pressure on the global price of that fuel and leads to stronger demand (and hence prices) of other products (e.g. natural gas). Previously, changes in prices had less of a spillover to other prices.

Figure B1-1: Commodity market developments

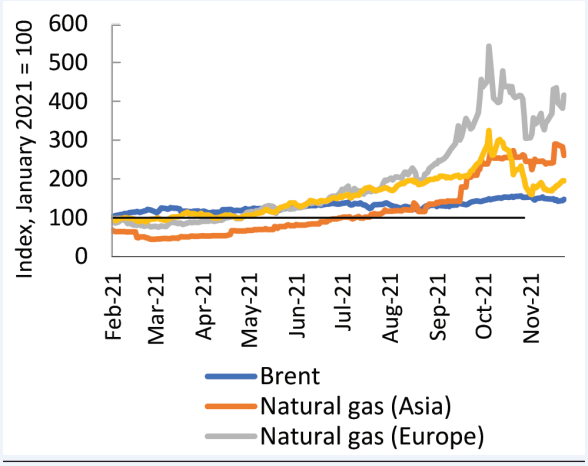
A. Non-energy commodity prices have plateaued at a high level



B. Global oil production dropped slightly in August and September



C. Energy prices have continued to rise



Source: Bloomberg; International Energy Agency; World Bank.

Non-energy commodity prices plateaued in 2021Q3, although there was significant variation among commodities. Metal prices were broadly flat on the quarter overall, but iron ore prices experienced a sharp decline of 17 percent, whereas most base metal prices increased. The fall in iron ore prices was mainly due to China's announcement that it would reduce steel production this year. In contrast, aluminum and zinc prices surged as a result of higher energy prices, with some manufacturers reducing production. Agriculture prices stabilized in 2021Q3 after substantial increases earlier in the year, with declines in some food prices, including wheat (Russia's main agriculture export commodity) offset by an increase in beverage prices. However, wheat prices have subsequently risen as adverse weather events have affected harvest forecasts. Fertilizer prices increased by 20 percent in 2021Q3, largely driven by the surge in natural gas and coal prices (a key input to fertilizer production), with some factories closing down as a result of high input costs.

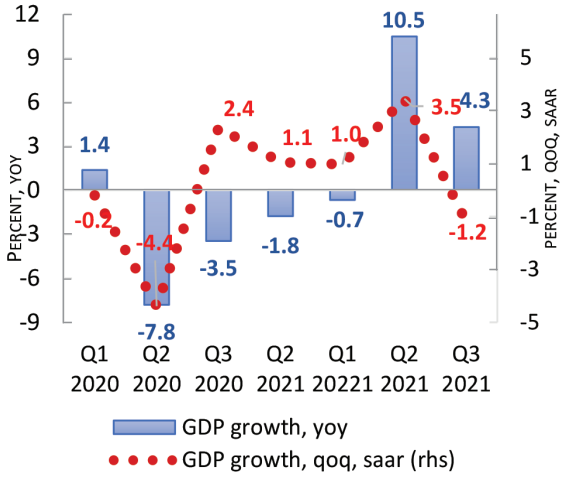
1.2 Russia: Strong recovery, momentum weakening towards end of year

The Russian economy was firing on all cylinders in 2021 and is expected to grow by 4.3 percent. With a relative return to normal life as COVID-19 restrictions were eased, consumers flocked back to shops and drove a large consumer boom in the second quarter, aided by savings built up over 2020 and rapid credit growth. Investment too was strong in the second quarter of the year and the current account surplus reached multiyear highs as energy and non-energy export prices surged and people stayed in Russia instead of holidaying abroad. Slack capacity in the economy was quickly utilized by mid-year. By autumn, however, it became clear that a damaging new wave of the COVID-19 epidemic was underway, which, with vaccination rates stuck at low levels, presents a risk to both economic activity and human health. With new measures to control the virus and the consumer rebound fizzling out, economic activity weakened in the third quarter.

Growth accelerated in the second quarter and output recovered to its pre-pandemic level before momentum slowed in the third quarter. GDP growth accelerated to 3.5 percent, seasonally adjusted, quarter-on-quarter (sa, qoq) in Q2 2021 (Figure 1-13). Growth was sufficiently strong to lift quarterly economic activity above its pre-pandemic high point in 2019. Growth was led by strong private consumption and investment growth on the demand side. On a sectoral basis, the acceleration was driven by the services sectors, such as retail trade and transportation, while government programs for subsidized mortgages and direct support programs buoyed the construction industry. Almost all economic sectors exceeded pre-pandemic levels, with the notable exceptions of agriculture and mineral-resource extraction, where the OPEC+ agreement to limit production, and unfavorable weather conditions limited agricultural production (Figure 1-14). Provisional GDP data indicates that growth then fell back in Q3 and economic activity was flat or slightly lower.

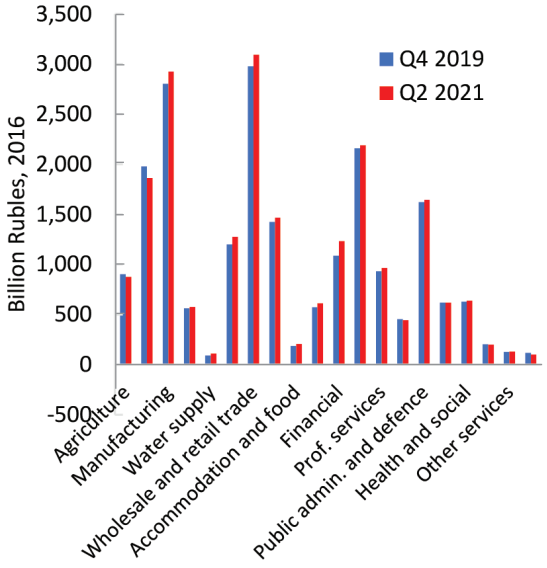
COVID-related restrictions, relaxed in late 2020, were reduced further in early 2021, creating the conditions for a return to 'business as usual'. Restrictions over the first half of 2021 were markedly less stringent than the average for EMDEs and advanced economies (Figure 1-15). With the easing of restrictions, increased mobility translated into households returning to regular consumption habits and businesses resuming normal operations. Mobility data show visits to retails areas, transit stops and workplaces rising over this period to reach the levels of a typical year, or even higher (Figure 1-16).

Figure 1-13: GDP growth accelerated in Q2 2021



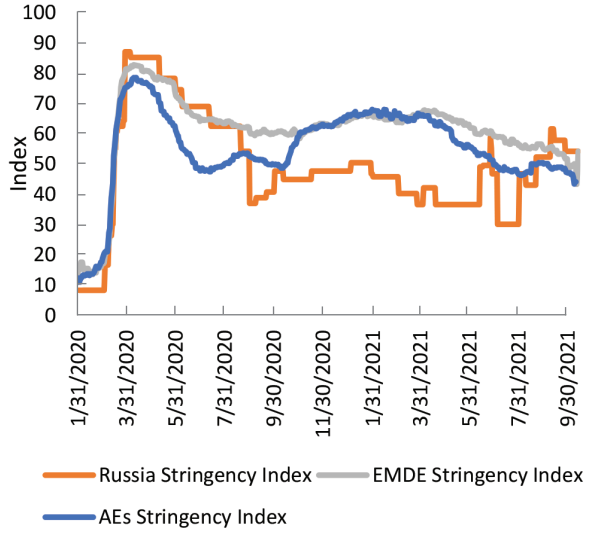
Source: Rosstat.
Note: Q3 2021 quarterly growth derived from flash estimate applied to sa series.

Figure 1-14: Output in almost all non-resource economic sectors exceeded pre pandemic levels



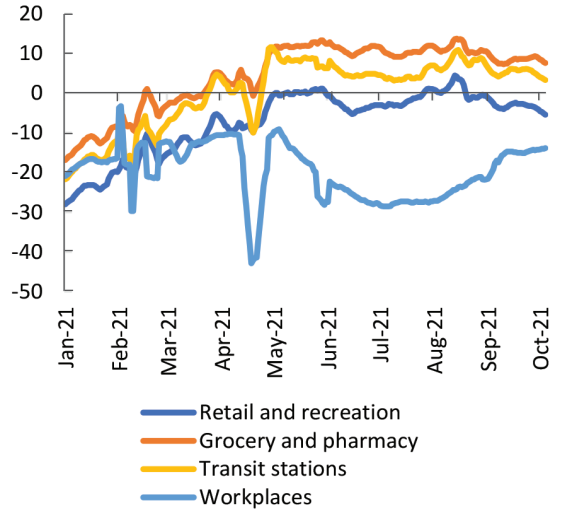
Source: Rosstat.
Note: Q3 2021 quarterly growth derived from flash estimate applied to sa series.

Figure 1-15: From late 2020 to the third quarter of 2021, Russia's COVID-19 controls were markedly less stringent than the average for EMDEs and advanced economies



Source: Oxford COVID-19 Government Response Tracker (OxCGRT).

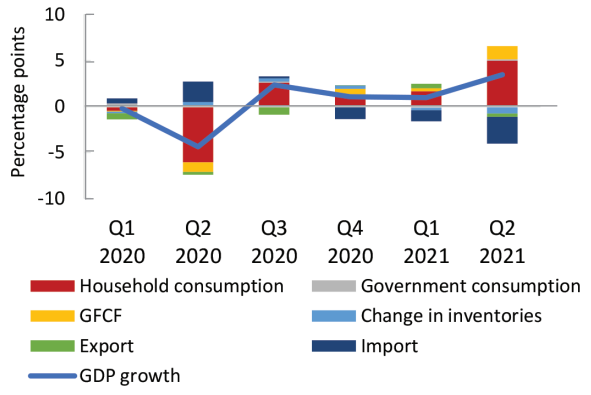
Figure 1-16: Mobility data show visits to retails areas, transit stops and workplaces rising to reach the levels of a typical year, or even higher (*Community mobility data, percentage difference to baseline*)



Source: Google COVID-19 Community Mobility Reports.

Less constrained by COVID restrictions and supported by credit growth and subdued outbound international tourism, household consumption expanded rapidly in the second quarter of 2021. Household consumption increased by more than nine percent on the previous quarter (qoq, sa) in 2021 Q2 (Figure 1-17). This spending surge reflected a release of demand pent-up while COVID-19 restrictions were in place; from an abnormally high share in Q2 2020, domestic savings dropped sharply in Q2 2021 as saved cash was spent (Figure 1-19). Household demand was also supported by low-cost credit, with the rate of monthly real credit growth to households nearly doubling over 2021 to date (Figure 1-18) and an improving labor market. With outbound international travel still costly and subject to restrictions in many locations, Russian tourism spending was increasingly diverted to the domestic economy (see BoP section for more information).

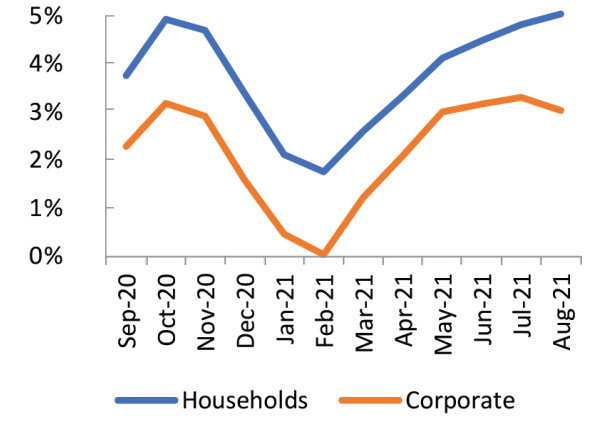
Figure 1-17: Household consumption contributed the most to GDP growth acceleration in Q2 2021 (*contribution to qoq growth adjusted for seasonality*)



Investment growth has also strengthened into the second quarter. Private gross fixed capital formation posted strong growth of 6.6 percent (qoq, sa) in Q2 this year, adding 1.5 percentage points to overall growth. According to high-frequency statistics, investment was particularly high in the services sectors —financial, accommodation, ICT, and wholesale and retail trade in particular — reflecting the low base of the same period last year. Low investment in mineral-resource sectors reflects the continued restrictions on oil production. Sectors associated with public services demonstrated weak performance in the first half of 2021 after intensive investment at the onset of the pandemic. Higher corporate credit growth, which peaked in May-July, has fed into investment growth (Figure 1-20).

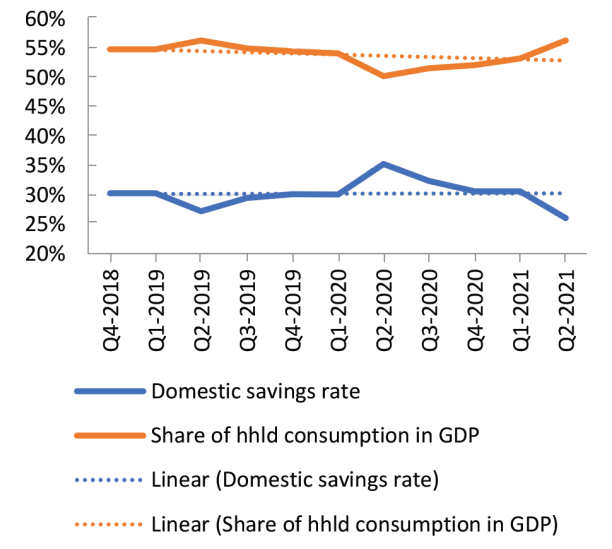
Industrial and retail trade recovery has been uneven across Russia's regions. Almost all Federal Districts (with the exception of North Caucasus and Siberia) saw growth

Figure 1-18: Robust credit growth in the second quarter supported consumption (*3mo3m*)



Source: Rosstat.

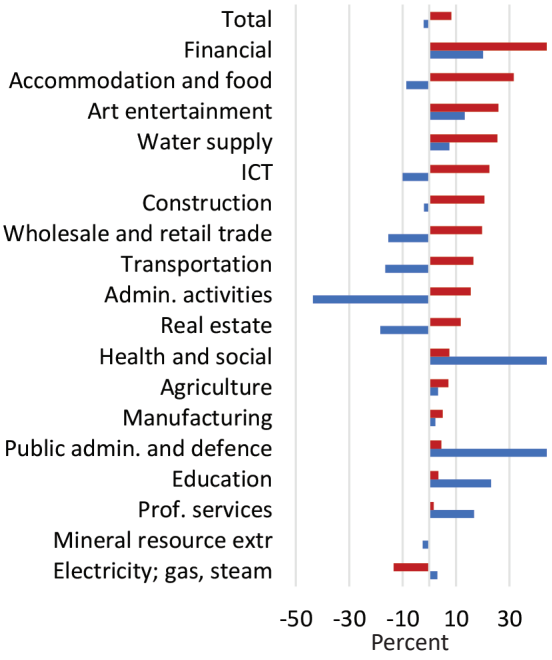
Figure 1-19: Pent-up demand supported household consumption expansion in Q2 (*Share of HH consumption in GDP*)



Source: Rosstat.

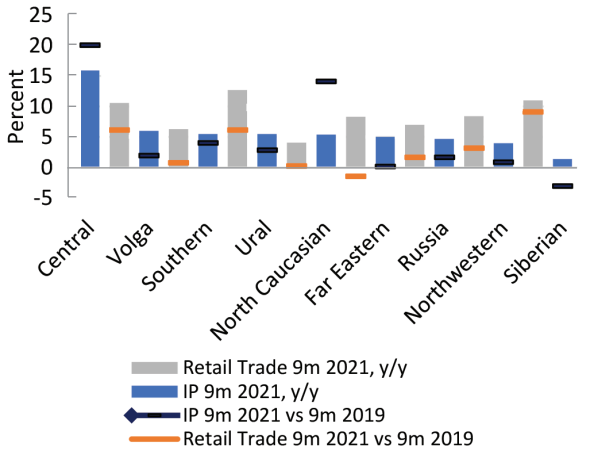
in industrial production and retail trade in the first 9 months of 2021 compared to the pre-pandemic levels (Figure 1-21 and Figure 1-22). The recovery was highly uneven, however. Overall, industrial production increased by 4.7 percent, yoy, and slightly exceeded its pre-COVID-19 level, but its recovery was weaker in the resource-extracting regions (Siberia, Ural). Automakers (Volga, Northwestern) suffered from a lack of electronic components. Industrial production recovered more strongly in the Central region and other such regions that were less adversely affected in 2020. Retail trade turnover grew by 9.3 percent, yoy, amid an improving labor market and

Figure 1-20: Investment picked up in most sectors in first half of 2021(*Large and medium enterprises*)



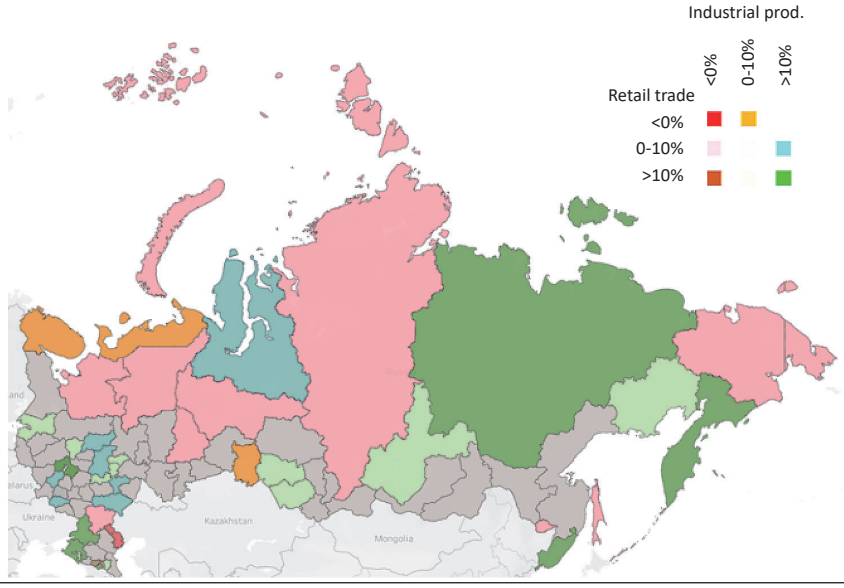
Source: Rosstat.

Figure 1-21: Recovery has been uneven across Russia's regions



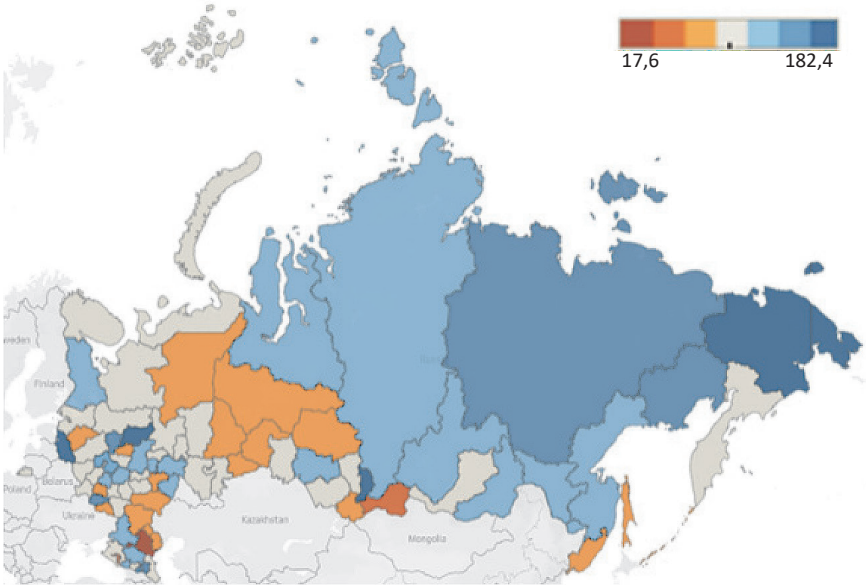
Source: Rosstat.

Figure 1 22: The majority of regions showed positive growth in industrial production and retail trade, while the Urals and Siberia federal districts saw the weakest recovery.
Industrial production and retail trade, January-September 2021, percent, yoy



Source: Rosstat.

Figure 1-23: In the first half of 2021, negative investment growth was registered in the Southern and Urals federal districts. Investment growth, January – September 2021, index, yoy

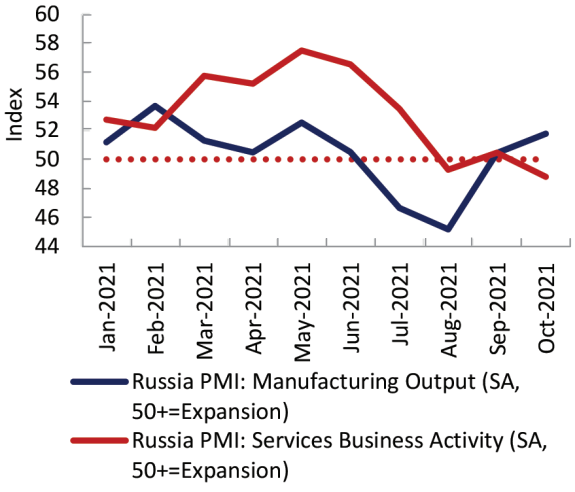


Source: Rosstat.

continued credit growth. The Southern Federal District again saw the strongest growth (13 percent, yoy). Apart from the low base effect, it may also have been supported by an increase of domestic tourism due to restrictions on outbound foreign travel. In the first half of 2021, negative investment growth was registered in the Southern and Urals Federal districts, which was only partly explained by a high base last year. Compared to the first six months of 2019, in the first half of 2021, investment growth was especially strong in the Central and South Caucasian federal districts. Budget investment was an important factor behind investment growth in these Federal Districts.

After scaling up rapidly and hitting capacity constraints mid-year, GDP growth weakened in Q3. While growth slowed down moderately, economic output in Q3 still exceeded the level of 2019. Industrial and services production growth eased as demand slackened. Since June, both industrial and services output growth rates have moderated, according to PMI surveys, roughly in line with a stabilizing demand (Figure 1-24). Retail sales vol-

Figure 1-24: Both manufacturing and services lost momentum in Q3

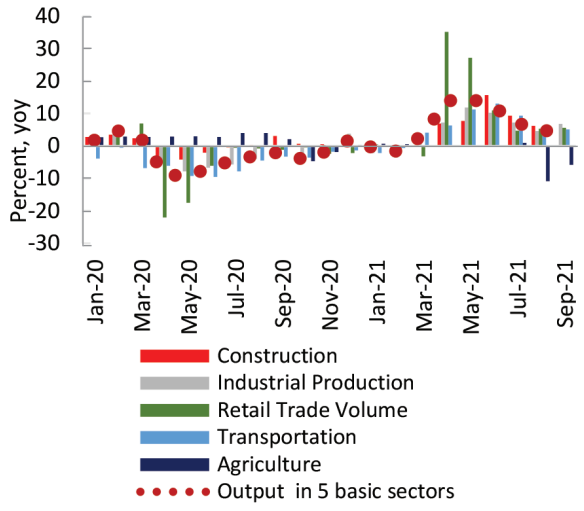


Source: Haver Analytics.

ume growth declined sharply, as pent-up demand was sated and credit conditions tightened (Figure 1-25). The boost to demand this year rapidly utilized spare capacity in the economy, with utilization in the manufacturing sector running at historically high levels from February onwards (Figure 1-26) and labor market shortages emerging (see Labor Market and Social Developments section). Agriculture also made a negative contribution to growth with grain harvests adversely affected by heat and drought in August and September.

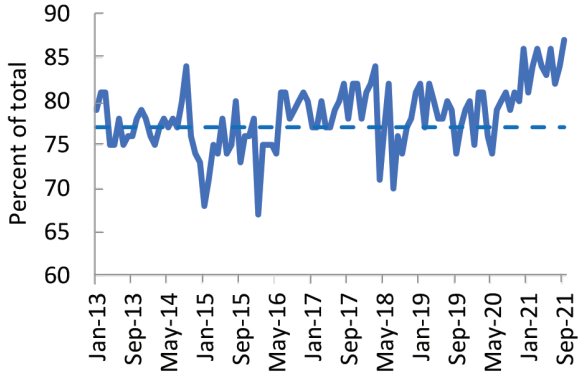
As autumn arrived, the COVID-19 epidemic began spreading at its fastest pace yet, taking lives and weighing on growth, especially in regions where vaccination rates were low. By the end of October 2021, close to 40,000 new COVID-19 cases were being identified each day. This incidence, adjusted for population, was above the average for both high-income and upper middle-income countries (Figure 1-27). Moreover, Russia's death rate from the epidemic was even worse (Figure 1-28). Official statistics on COVID-caused deaths

Figure 1-25: High-frequency statistics points to a slowdown in supply and demand in the Q3



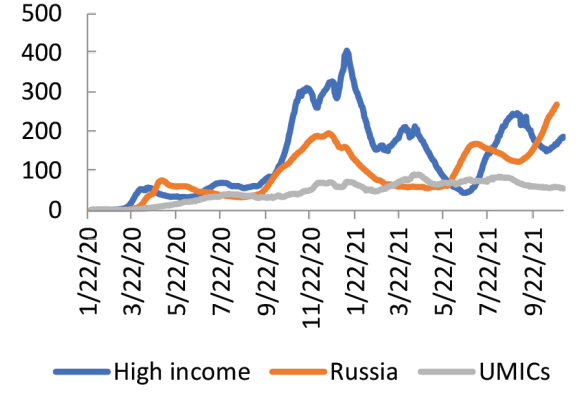
Source: Rosstat.

Figure 1-26: Capacity utilization in the industrial sectors has been above its long-term average levels in Q1 -Q3 2021 (*percent of total*)



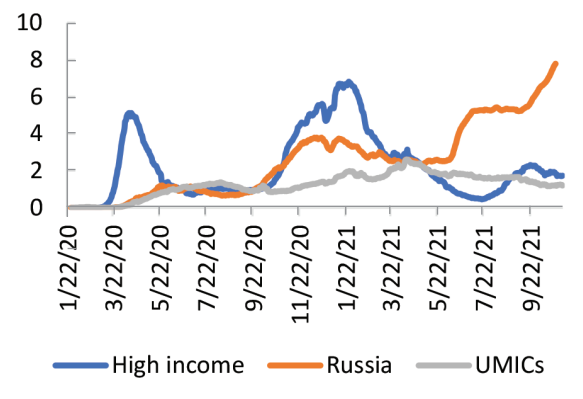
Source: Russian Economic Barometer.

Figure 1-27: COVID-19 cases reached new highs (*Daily new COVID-19 cases per million people*)



Source: Our World in Data.

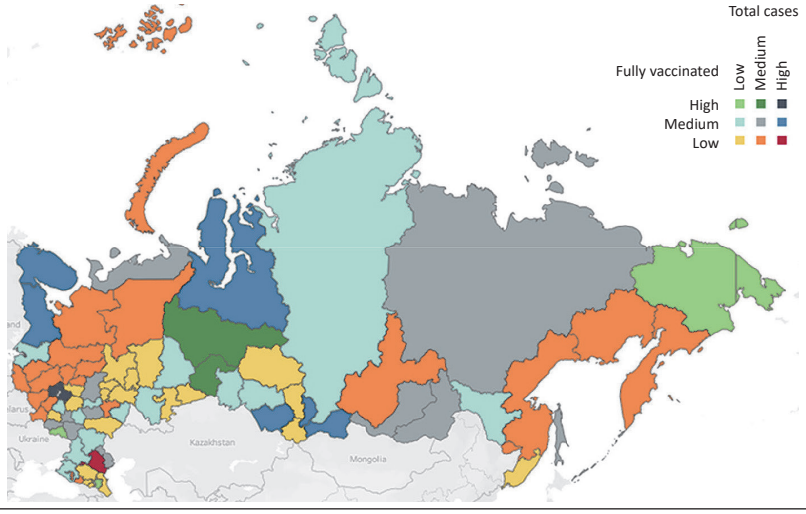
Figure 1-28: And death rates are higher than comparators (*Daily new deaths per million people*)



Source: Our World in Data.

reveal that the latest COVID-19 wave has been twice as deadly as its previous peak, in late 2020: Russia's COVID-19 death rates far eclipse the average for high and upper middle-income countries. With vaccination rates low by international standards (Box 2), this new outbreak has necessitated measures that will weigh on economic activity. In response to the rapidly worsening situation, the authorities have already begun strengthening COVID-19 controls, introducing an 11-day period of "non-working days" and lockdown in late October and early November and requirements for at least 30 percent of all business' staff to work remotely until February, while several regions have implemented QR-code requirements to access retail and commercial buildings. An inspection of the cross-relationship of vaccination rates and COVID-19 incidence indicates that many populated areas, including the Moscow region, are at high risk (Figure 1-29).

Figure 1-29: Regions in the west and far east where vaccination rates are low and cases higher are at high risk. Bivariate map-chart of total COVID cases and vaccination coverage by region



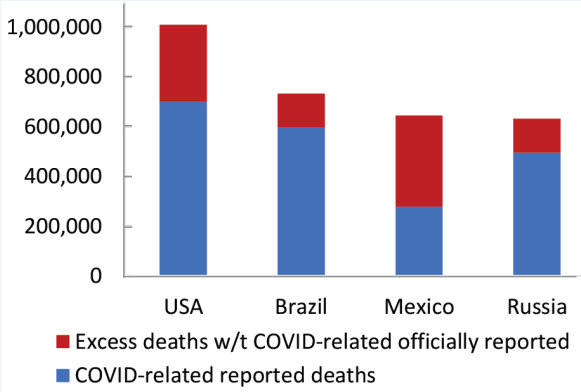
Source: Stopcoronavirus.rf.

Note: Total cases are classified as Low<4.5%, Medium>4.5% & <7.5%, High>7.5%; Fully vaccinated population is classified as Low<29%, Medium>29% & <39.5%, High>39.5%.

Box 2 Recent COVID-19 developments.

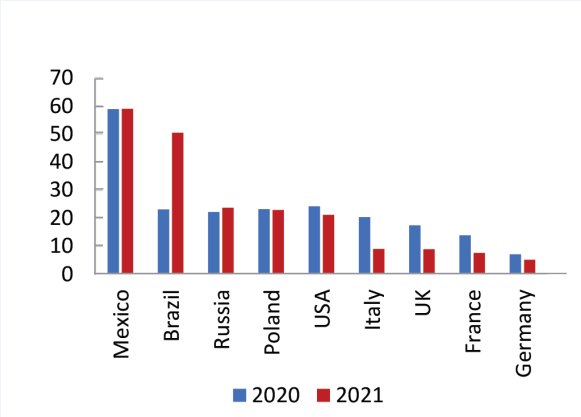
Russia is undergoing a new and even more deadly wave of the COIVID-19 epidemic (Figures B2-1 and B2-2). So far, COVID-19 has caused severe loss of life in Russia and is yet to be under control. As of November 25th, there has been a total of 9.5 million cases identified and a total of 269,057 deaths* that have occurred with their cause officially attributed to COVID-19 – the fifth largest tallies of both cases and deaths in the world and the largest death tally in Europe. However, official statistics also show that the number of deaths due directly or indirectly to COVID-19 in Russia is even higher. ROSSTAT reported that there had been 496,214 deaths of people with COVID-19 as of end-September 2021, whether or not the disease was considered to be the main cause of death. A broader measure of "excess deaths", which simply compares the number of all deaths reported since the onset of COVID-19 with average number of deaths observed over the same period in previous years, can provide an upper bound on deaths that includes those that may have indirectly been contributed to by COVID-19. Such an analysis indicates around 632,400 excess deaths in Russia from the beginning of the pandemic until September 2021, and about 22 and 24 percent increase in total death numbers in 2020 and 2021, respectively, when compared to pre-pandemic 5-year average.

Figure B2-1: In Russia, incidence of excess deaths is one of the largest in the world**



Source: Our World in Data, Rosstat.
Note: Data reflect the situation as of end September 2021. India and Indonesia also have high absolute reported death rates but are excluded due to lack of data on excess deaths.

Figure B2-2: In Russia, excess mortality increased in 2021 compared to 2020.
Changes in the number of deaths compared to the pre-pandemic 5-year average, percent



Source: Our World in Data, Rosstat.
Note: Data reflect the situation as of beginning-October 2021 or the latest datapoint before that.

Despite good access to supply of the locally produced Sputnik V vaccination, vaccination rates lag well behind peers. Thirty eighty percent of Russia's population are fully vaccinated against COVID-19, a figure which is considerably below the global average of 43 percent and the high-income average of 67 percent. Despite a relatively early start of Russia's vaccination program in early January, the rate of vaccinations peaked in the summer and since late August, have been on a steep decline. Only very recently, when the scale on the new COVID-19 wave has become fully apparent, have vaccinations begun to increase again.

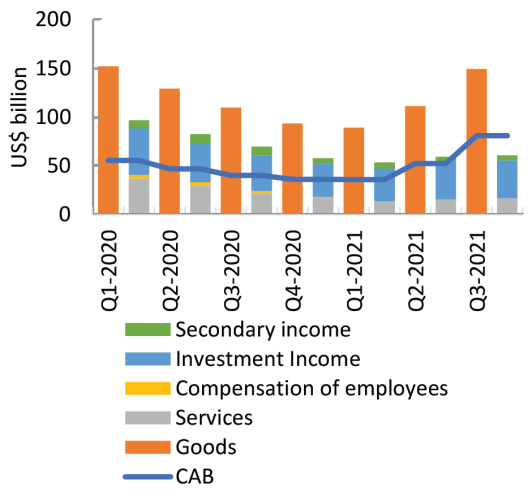
** Source: stopcoronavirus.rf*
*** Based on a comparison of official deaths (from all causes) reported in the period 2015 to 2019 with April to December 2020 and January to September 2015 to 2019 with January to September 2021. In that case, the 5-year average of deaths incidence approximates projected deaths without the pandemic. Another approach could be to calculate the projection based on the trends observed in previous years. Such an approach would produce even higher excess deaths number for Russia (https://ourworldindata.org/grapher/excess-mortality-raw-death-count?country=~RUS).* ***Based on Our World in Data projected deaths methodology, Russia has experienced the second-highest incidence of excess deaths (767,510), after the United States of America (819,013), which has a population that is more than twice as large. The Economist estimates excess deaths for Russia at 903,340 as of end October 2021 (https://www.economist.com/graphic-detail/coronavirus-excess-deaths-tracker).***

1.3 Balance of Payments: The current account is buoyed by high commodity prices

The marked rise in commodity prices, combined with continued weak outbound international tourism, looks set to make 2021 a bumper year for Russia's current account. Imports and exports rebounded from their lows last year. While crude oil production remains slightly lower than previous years according to the OPEC+ production agreement, higher prices have mostly offset that, so energy exports in the first three quarters are close to their level in 2019. Non-energy exports, led by metals, have increased sharply and are close to US$50bn higher than in Jan-Sept 2019, while the services deficit remains compacted by low outbound tourism. Overall, the current account balance in the first three quarters is at its highest since 2008. Despite strong inflows, the ruble has only appreciated gradually over the year, as net private capital outflows, as in previous years, have been high while the central bank has accumulated substantial amounts of international reserves as foreign exchange purchases according to the government's fiscal rule increased.

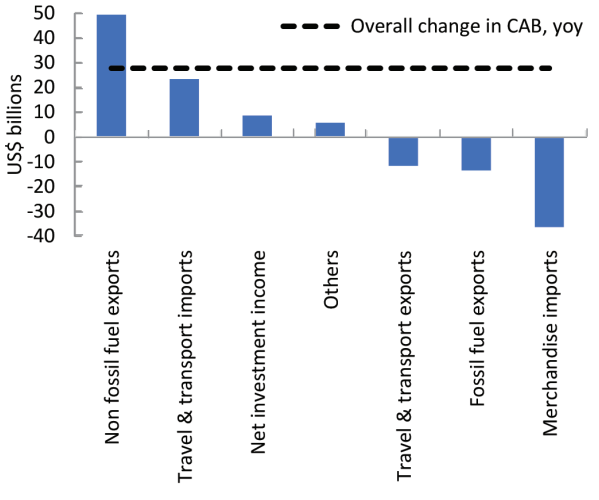
The current account surplus expanded in the first three quarters of 2021, as commodity prices reached high levels and Russian tourists stayed at home. In the third quarter, the current account turned in a surplus of US$32.6 billion, the highest quarterly surplus for more than two years (Figure 1-30). The current account surplus in 2021 to date, at US$82.2 billion, is not only above the one from the same period last year, but 50 percent higher than the equivalent figure in 2019. Indeed, the last time Russia experienced such a large surplus in the first three quarters (in current prices) was in 2008. Current account strength has been driven by high energy and mineral prices and a decline in outbound tourism. While fossil-fuel export values rebounded from lows last year, with volumes limited by the OPEC+ agreement, they remain slightly below their 2019 level. However, exports of non-energy goods in the first three quarters were well above their level in 2019. Strong domestic demand this year has also pushed up imports, so that the goods trade balance remained more or less unchanged compared to 2019. A gradually strengthening exchange rate and improving terms of trade, which recovered from a low point in mid-2020, helped to limit the increase in import values. And, as shown in Figure 1-31, a reduction in outbound tourism (reflected in *travel & transport imports*) far outweighed the drop in inbound tourism and, along with an increase in net investment income, gave rise to the stronger current account balance.

Figure 1-30: Strong CAB on rising goods exports and continued low service and income debits



Source: CBR.

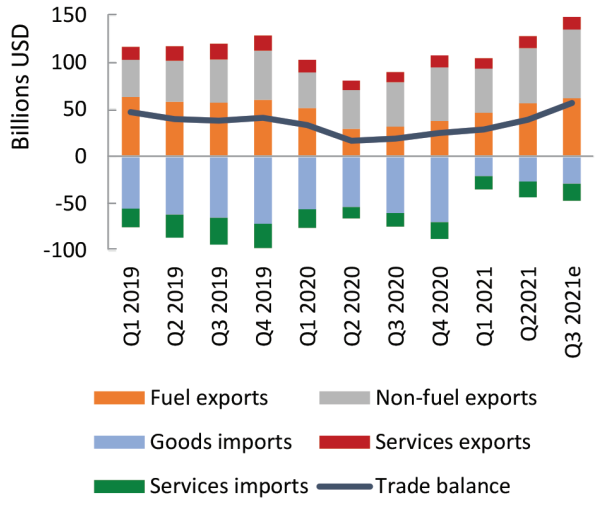
Figure 1-31: Gains relative to pre-COVID period due to non-energy exports and lower tourism exports (*Year-to-date change, 2021 on 2019*)



Source: Russian Customs, CBR.

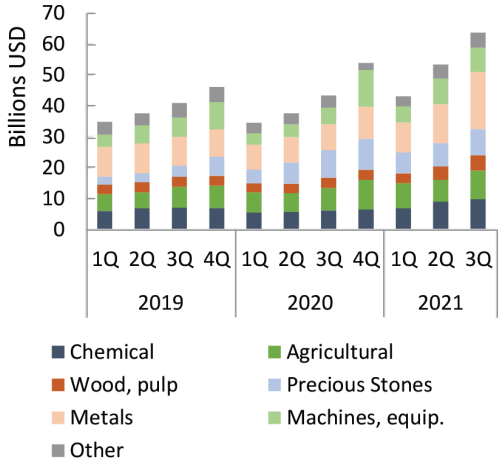
Growth in non-energy exports has been led by rising metal prices. Non-energy exports grew by 38 percent yoy in January-September 2021, largely on the back of metals exports. Metals exports rose 66 percent, yoy, most of which is accounted for by aluminum and steel, thanks to rising commodity prices and higher exported volumes. In response to the spike in metals prices, the authorities introduced temporary export duties on ferrous and major base metals, in place from August 1 to end December 2021. Agricultural and food exports rose by 23 percent, yoy, much of which was due to rising prices. Wheat exports, for example, rose by 20 percent in value terms, yoy, but actually declined 1.6 percent in volume terms due to a lower harvest and a newly introduced floating export duty[2] (starting from June 2021). This export duty reflects the aim of the government to mitigate the impact of rising global prices on the domestic grain market. Exports of precious metals and stones have also been growing considerably and now account for 6.6 percent of Russia's exports, amongst which the increase in gold exports has been particularly remarkable (Figure 1-32 and Figure 1-33).

Figure 1-32: Strong fuel exports growth



Source: Central Bank of Russia.

Figure 1-33: …and non-fuel exports on back of higher commodity prices



Source: Russian Customs.

[2] The duty on wheat is set at 70 percent of the difference between the base price, calculated periodically based on export contractual prices, and US$ 200. The government declared that the proceeds from the duty would be transferred to regions in the form of per-hectare subsidy support to farmers.

Box 3 Commodity markets and Russia: short-term and long-term developments

Commodities are a major component of Russia's economy. In 2019 they accounted for more than 10 percent of economic activity, nearly 70 percent of total goods exports, and around 21 percent of fiscal revenues. Russia is also a major producer and exporter of commodities globally, accounting for about 10 percent or more of global production of crude oil, natural gas, gold, platinum, and wheat. In turn, this reliance on commodities means Russia's economy is heavily influenced by global commodity market developments. The sharp decline and subsequent rebound in energy prices in 2020-21 is the latest example of this. This box considers how Russia's production and export of key commodities has changed over the past 10 years and examines recent trends in the energy sector.

Long-term trends. The importance of commodities for Russia has evolved over the last decade, reflecting shifts in production, commodity prices, and the U.S. dollar exchange rate. Among the commodities which Russia is a major producer, the largest increases in production over the past decade (2010-19) have been in wheat and nitrogen fertilizer, both of which saw increases of more than 70 percent, followed by gold (51 percent), and coal (36 percent), with Russia's share of global production of these commodities also increasing (Figure B3-1A and B). Oil and natural gas production rose by 13 percent; however, this was also during a period when OPEC+ was managing oil production. In contrast, production of refined nickel fell sharply by 43 percent reflecting a declining production of nickel ore as mines closed. Aluminum production also declined slightly by 7 percent, leading to a fall in Russia's share of global production of both metals. Today, Russia is the world's second largest producer of aluminum, natural gas, and platinum, and third largest producer of crude oil, gold, and nickel ore.

In terms of exports, energy commodities, notably oil and natural gas, are Russia's largest source of export revenue, accounting for more than half of total goods exports, and around three-quarters of commodity exports over 2018-20 (Figure B3-1C). However, this share has fallen from around two-thirds in 2008-10, primarily as a result of a decline in oil prices. In contrast, metal exports account for about 10 percent of total goods exports, and agricultural exports around 7 percent, both of which have risen slightly since 2008-10. Agricultural exports in particular have grown significantly; over the past decade the value of agricultural exports tripled, led by increased exports of wheat (Figure B3-1D). Russia is now the world's largest exporter of wheat.

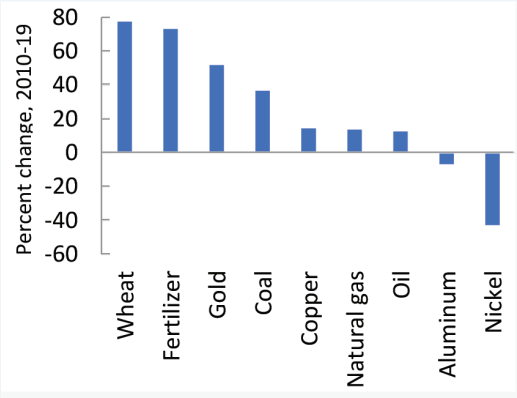
Recent developments in energy markets. Global energy markets were heavily affected by the COVID-19 pandemic (World Bank 2020). Global demand for crude oil fell by around 9 percent compared to 2019, more than twice as large as any previous one-year decline, while demand for coal fell 4 percent and natural gas 2 percent. As a result, energy prices fell sharply, with the price of Brent crude oil declining by nearly two-thirds between February and April 2020, while European natural gas prices reached a record low in May 2020. However, since then, energy prices have rallied sharply, with the price of Brent crude oil rebounding to US$84/bbl in October 2021, and European natural gas prices reaching a record high (World Bank 2021 and section on Global activity).

These developments have had a significant impact on the Russian oil and gas industry. Russia participated in the crude oil production cuts coordinated by OPEC and its non-OPEC partners (OPEC+). As a result, Russia's oil production fell nearly 9 percent in 2020 compared to 2019. As the oil market has recovered, OPEC+ have gradually been increasing their production, and in July 2021 the group agreed to raise production by 400kb/d each month (starting in August 2021) until the production cuts have been unwound. Russia's crude oil production in October 2021 was around 15 percent above its trough in 2020 but remains 4 percent lower than its pre-pandemic level (Figure B3-1E). However, as OPEC+'s production cuts continue to ease it, is expected to regain its pre-pandemic level by March 2022 and see a further modest increase thereafter (IEA 2021A).

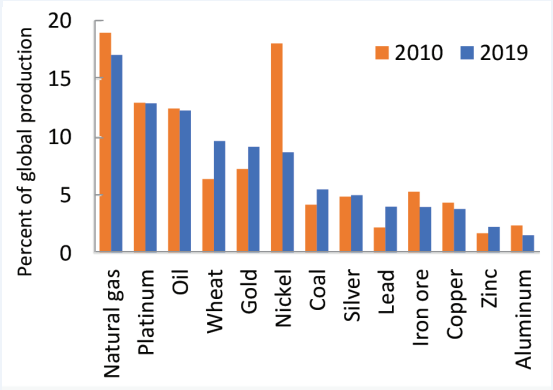
Natural gas production declined almost 6 percent in 2020, accompanied by a sharp fall in pipeline exports, which declined by nearly one-quarter. However, natural gas production has since rebounded with production in the first seven months of 2021 about 12 percent higher than the same period in 2020. Domestic consumption rose 10 percent, amid the economic recovery and cold weather, while exports rose 17 percent, led by pipeline exports which rose 21 percent (Figure B3-1F). By country, exports to Turkey and China rose sharply in 2021, assisted by new pipelines, while exports to Europe saw only a modest increase (IEA 2021B). The IEA expects Russian natural gas production and exports to see a small rise in 2022.

Figure B3-1: Russia's role in commodity markets

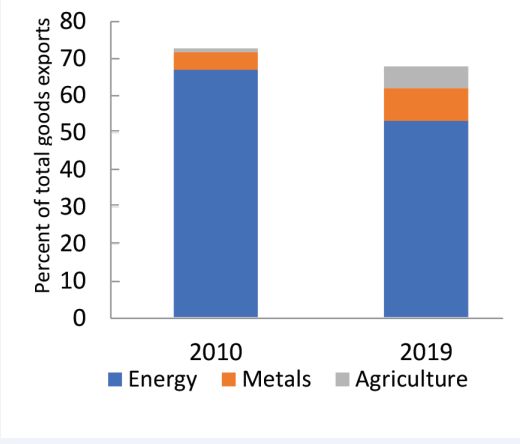
A. Growth in Russian commodity production, 2010-19



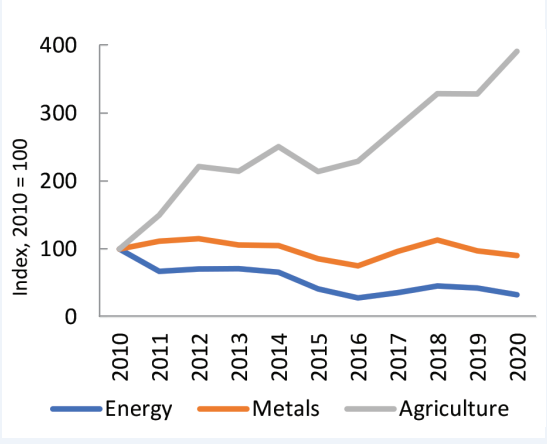
B. Russia's share of global commodity production



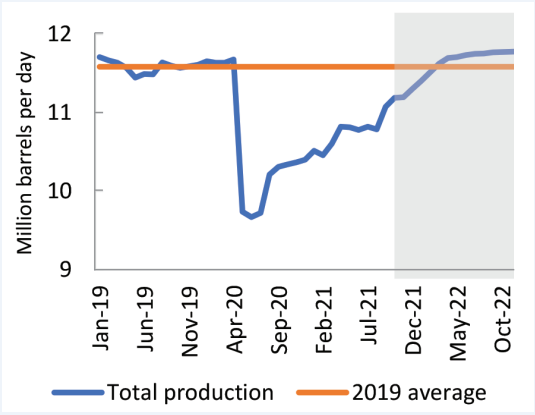
C. Share of commodities in Russia's goods exports



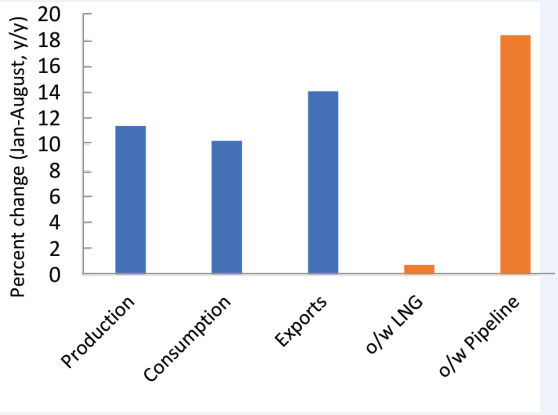
D. Value of Russia's commodity exports



E. Russia's oil production



F. Russia's natural gas production, consumption, and exports



Sources: BP Statistical Review, IEA, JODI; UN Comtrade, USDA, World Bank, World Bureau of Metal Statistics.
C. D. Agriculture includes food
E. Includes condensates and NGLs. Shaded area indicates IEA's forecast.

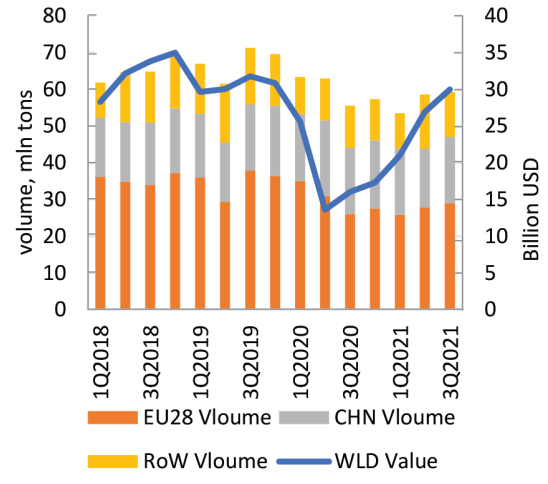
Source: IEA (International Energy Agency). 2021. "Gas Market Report, Q4 2021." IEA, Paris.; IEA (International Energy Agency). 2021. "Oil Market Report. October." IEA, Paris.; World Bank. 2020. Commodity Markets Outlook: Urbanization and Commodity Demand. World Bank, Washington, DC.; World Bank. 2021. Commodity Markets Outlook: A Shock Like no Other: The Impact of COVID-19 on Commodity Markets. World Bank, Washington, DC.

Russia's energy exports experienced growth since the start of 2021 amidst higher global prices (Figure 1-34). Energy prices have this year eclipsed their level in 2019 and are contributing to higher energy export values for Russia. However, according to OPEC+ production limits (see Section 1), Russia's oil production remained lower than the 2019 production level, though gradually increasing over the year in line with the agreed monthly increases. In volume terms, oil exports fell 5.7 percent, yoy, in January-September 2021 to 171 million tons. Natural gas exports more than doubled in value terms in January-September 2021 compared to the same period of the previous year and now account for about a fifth of Russia's energy exports,[3] which was mostly supported by higher global prices as well as increased volumes exported (which grew by around 12.1 percent, yoy). Shipments of natural gas to the EU were 2 percent lower in volume terms in the first three quarters of 2021 compared with the same period of 2020, and well below the equivalent period in 2019 (see Box 4 for more information). The value of LNG shipments was 10.5 percent lower in January-September 2021, with volumes 3 percent higher.

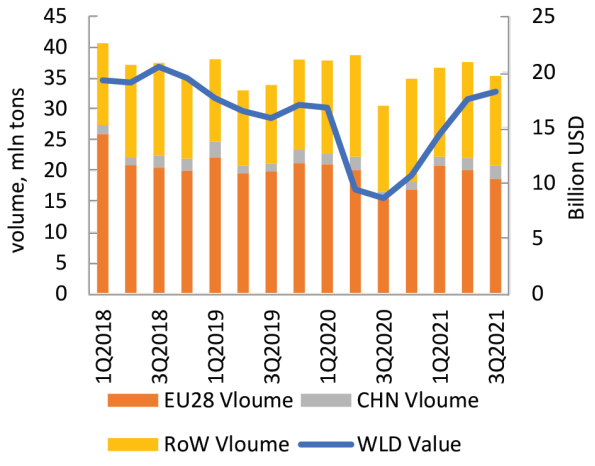
[3] Natural gas here refers to Harmonized System code 271121, LNG to HS code 271111, and energy products to HS code 27.

Figure 1-34: Energy exports grow amidst rising global prices

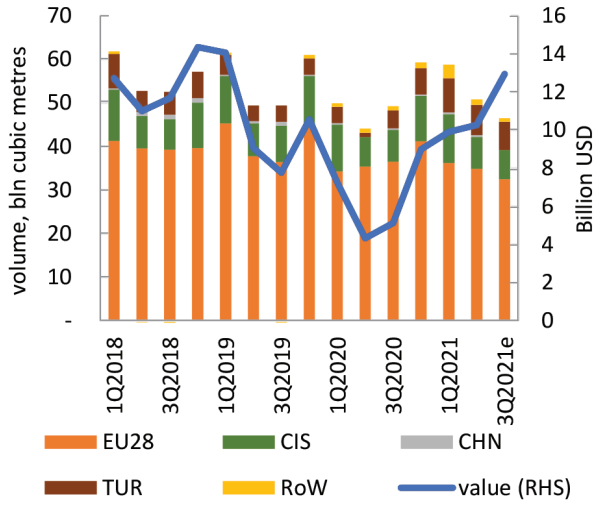
A. Crude oil



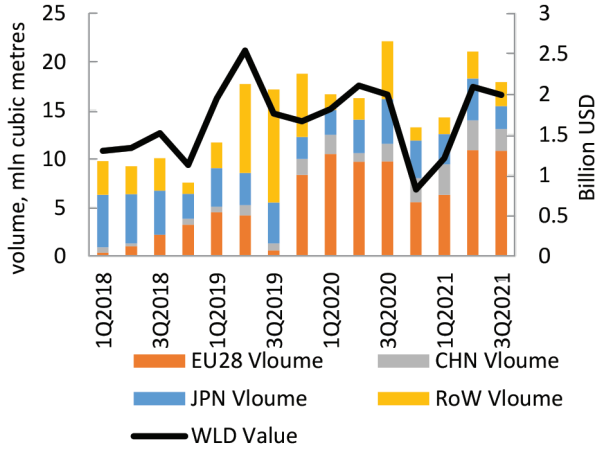
B. Refined oil



C. Natural gas (pipeline)



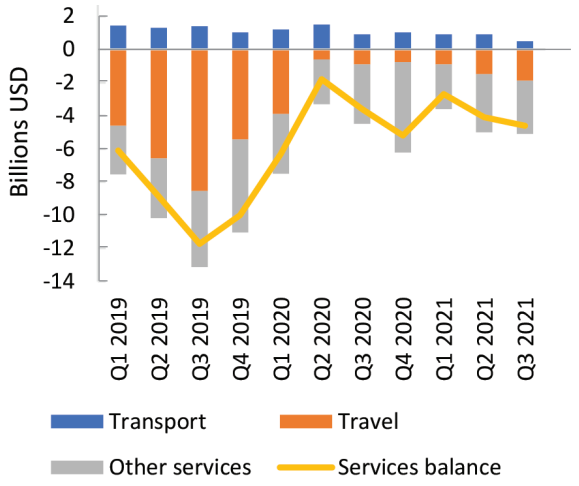
D. LNG



Source: Russian Customs.

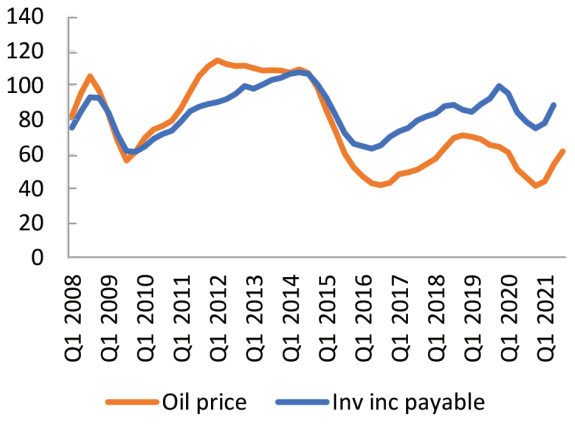
The services trade account deficit remains muted as COVID-19 continues to impede outbound tourism (Figure 1-35). The services deficit was around US$9bn in 2021 to September, similar to the level in 2020 but less than half the deficit in any similar period in the last decade. Travel exports and imports both declined, with these exports making up a mere 5 percent of total services exports, compared to 18 percent in the first 9 months of 2019. Telecommunications, computer, and information services showed the most robust growth at 15.5 percent, yoy, (and 18 percent compared to 9m2019).

Figure 1-35: Services deficit remained muted in 3Q2021



Source: Central Bank of Russia.

Figure 1-36: Trends in investment income debits and Brent crude oil price

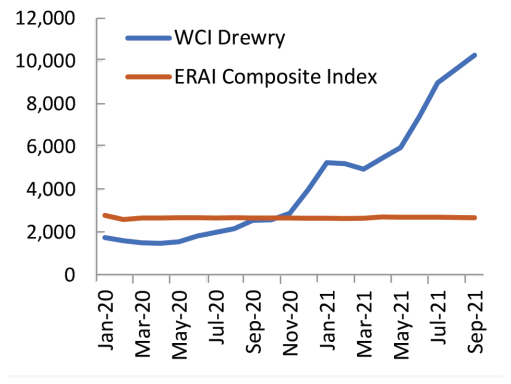


Source: Haver Analytics.

Box 4 Russia's cross-continental rail connections as a growing alternative to sea freight between China and Europe

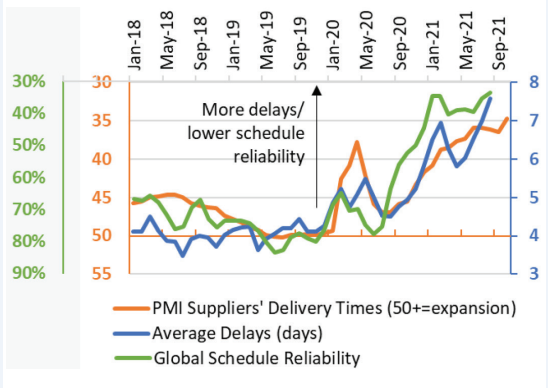
As container shipping prices spiral upward, Russian railway throughput between China and Europe is on the rise. The sharp spike in freight costs in 2021 is associated with a surge in demand for goods in line with post-pandemic recoveries, worsened by container and ship shortages and weather factors. The World Container Index (WCI) reached US$10,084 for the transportation of a standard 40-foot container (FEU) as of September 9, 2021, four times its level of a year ago (Figure B4-1). The index for Shanghai-Rotterdam stood at US$14,287 per FEU as of September 9, 2021, marking an even larger annual rise. But as container shipping rates have climbed, rail freight costs (as measured by the Eurasian Rail Alliance Index (ERAI) have remained stable and have become more competitive since September 2020 (Figure B4-2).

Figure B4-1: Ocean container shipping prices (WCI) spiral upward, exceeding rail shipping costs…



Source: ERAI, Drewry.
Notes: The Drewry WCI is a composite of 40-foot ocean container freight rates on eight major maritime lanes. The ERAI is a composite index of the cost of transit container shipments in the Eurasian rail corridor across the Eurasian Economic Union between China and the EU.

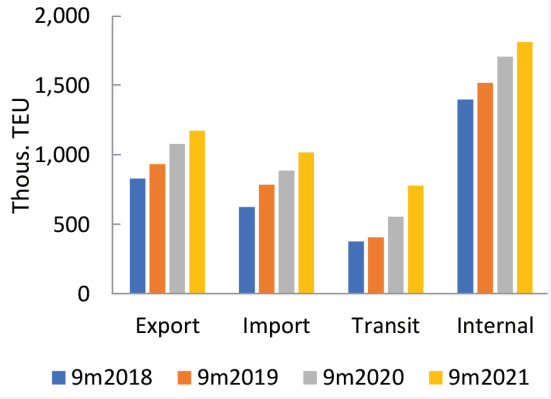
Figure B4-2: …while ocean shipping service quality declines sharply



Source: Sea-Intelligence, GLP report issue 121, IHS Markit, Haver.
Notes: Average delays= Global average delays for late vessel arrivals; The Global Liner Performance report takes into account 34 trade lanes and 60+ carriers.

The spike in ocean shipping rates is accompanied by plummeting service quality and record delays. Schedule reliability ranged from 34-40 percent in 9m2021, compared to a range of 73-84 percent in 2019 (Figure B4-2). Global average delays for late vessel arrivals rose to a record 7.6 days in August 2021, having reached 5 days in April 2020, up from an average of 4.1 days in 2019. Delays spiked in April-May 2020 and reached new record heights in August 2021. However, suppliers' delivery times show considerable variation between those two spike periods and in terms of variation between countries. The October 2021 spike in delivery times is associated not only with Covid-19 related disruptions but in contrast to April 2020 an expansion in new orders, exceeding output in most cases, with production deficit relative to demand notably high in the US. Russia has relatively lower delivery delays, in part due to lower demand growth (new orders) but also likely due to its geography and relatively lower dependence on ocean freight transportation.

Figure B4-3: Transited container freight grew by 36.3 percent and 40.1 percent in 9m2020 and 9m2021, respectively



Source: Russian Railways, Seanews.ru.

Container shipment by rail is increasing quickly in Russia, especially as a transit route from China to Europe (Figure B4-3). Rising shipping costs have contributed to a growth in container traffic transiting Russia via rail, rising 40 percent, yoy, in September 2021 to 782,000 TEU (twenty-foot equivalent unit). The China-Europe-China route accounted for three-quarters of all international rail freight transit in Russia, and the volumes on this route have more than doubled compared to the same period in 2019. The majority of goods transiting are from China to Europe (379,600 TEU), while transit from Europe to China accounts for 189,100 TEU. However, under such exceptional circumstances, these developments have also pointed to the shortcomings of the Russian rail transit, including track-change reloading times. Russia's 2035 draft transport strategy aspires to increase container transit to 3.7 million TEU with an increase in Russia's share in Asia-Europe freight traffic from 4 percent in 2019 to 15 percent in 2035, supported by railway infrastructure projects, such as the Baikal-Amur Magistral (BAM) and the Trans-Siberian.

Investment income outflows are picking up, while outward remittances remain low. Net income outflows from investments, which constitute about three-quarters of current account income debits, are returns from investments in Russia of non-residents, much of which are due to oil and gas interests. These debits were compressed over 2020 but are recovering in 2021 as oil prices rise. Positive net inflows of compensation of employees from overseas took place in the second quarter of 2021 for the first time since data began in 2007. This reflected the drop in outward income flows as migrants were less able to find work in Russia due to COVID-related entry restrictions (see Labor market and social developments sector for more on this).

Despite rising inbound private investment, strong outbound investment coupled with continued accumulation in the National Wealth Fund and Central Bank reserves has settled the balance of payments in 2021 to date. Net inflows of private capital to Russia have been rising over 2020 and 2021 (Figure 1-37), and by August 2021 were close to their highest level since 2015, while the share of non-resident holdings of government debt securities has also rebounded from a low reached in April this year. This is at least in part due to Russia being one of the most proactive countries around the world in combatting rising inflation by increasing interest rates (Figure 1-38), and thus offering relatively attractive debt and money market investment returns. Nevertheless, private capital outflows remain the largest component of the capital and financial account as they have been in previous years. Central bank reserve accumulation has also played an increasing role with an accumulation of international reserves of US$41bn recorded on the balance of payments in the first nine months of the year, much of which is accounted for by purchases of foreign exchange in according with the government's fiscal rule (Figure 1-39).

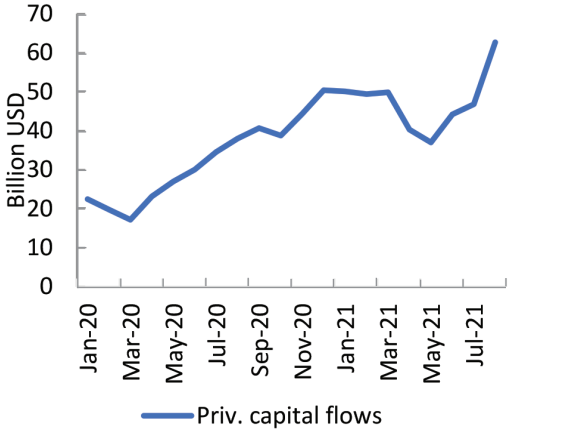
Stronger external demand for goods and assets has helped the ruble stage a gradual appreciation over 2021 so far. A strengthening current account position

and rising appetite for Russian assets has led to a moderate appreciation of the ruble against a trade-weighted basket of currencies. The nominal effective exchange rate (NEER) appreciated by 3.5 percent in the year to September while the real effective exchange rate appreciated by 5 percent over the same period (Figure 1-40).

Central bank gross international reserves have risen over 2021, mostly due to currency purchases in the fiscal rule framework and an increased SDR allocation (Figure 1-41). The value of foreign exchange in the CBR increased by US$38.8bn in 2021 to October, partly offset by a fall in the value of gold of US$6.8bn and exchange rate movements US$9.8bn. Holdings of Standard Drawing Rights (SDRs) increased by US$17.7bn following the SDR allocation from the IMF in August 2021[4]. Overall, reserves were close to US$30bn higher over the first 10 months of 2021, standing as US$624bn, and remain at very comfortable levels, well above standard adequate indicators.

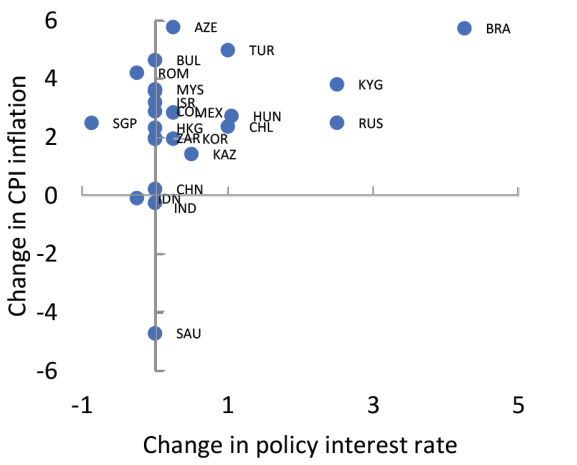
[4] A general allocation of Special Drawing Rights (SDRs) equivalent to about US$650 billion became effective on August 23, 2021. The general SDR allocation was made to IMF members that are participants in the Special Drawing Rights Department (currently all 190 members) in proportion to their existing quotas in the Fund. Russia was allocated 12,367.6 SDRs. https://www.imf.org/en/Topics/special-drawing-right/2021-SDR-Allocation

Figure 1-37: Private capital inflows rising. Private sector net capital flows, 12 month rolling sum



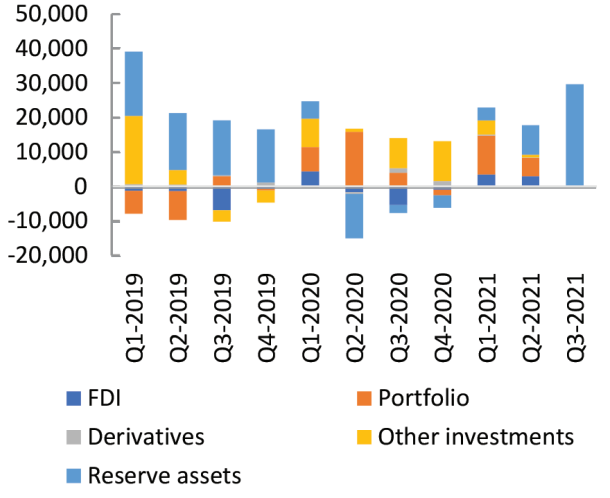
Source: Central Bank of Russia.

Figure 1-38: As Russia proactively raises interest rates (*Year-on-year change in inflation and interest rate*)



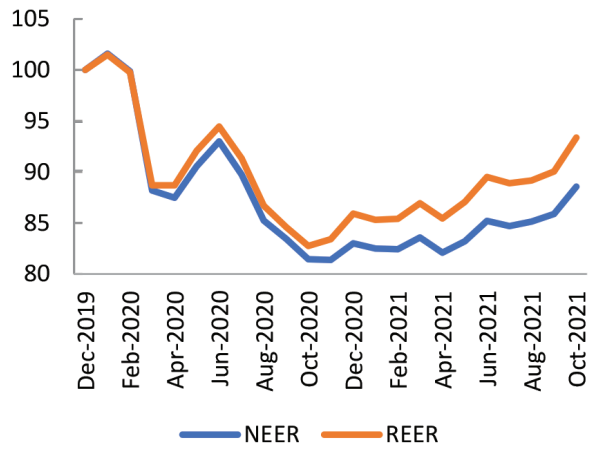
Source: Central Bank of Russia, Haver Analytics.

Figure 1-39: Portfolio flows and reserve asset changes balance the current account in 2021 to date (*Financial account net position, million USD*)



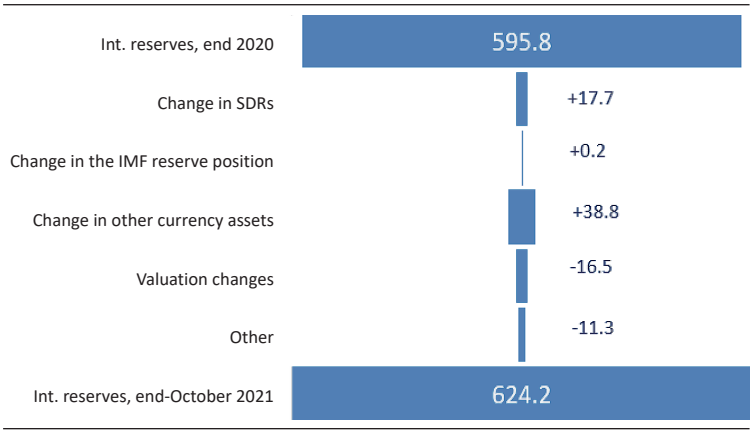
Source: Central Bank of Russia.

Figure 1-40: The ruble gradually appreciated in 2021 (*Exchange rate indices*)



Source: Central Bank of Russia, Haver Analytics.

Figure 1-41: CBR's gross international reserves have risen over 2021



Source: Central Bank of Russia.

1.4 Monetary policy: The Central Bank is on front foot in the battle against inflation

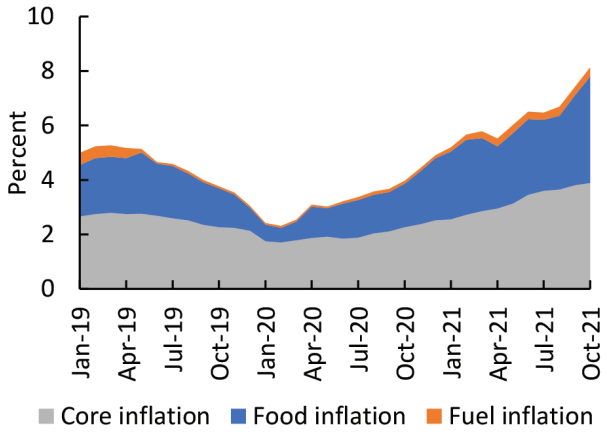
As in many countries around the world, inflation in Russia is being pushed up at an alarming rate by a combination of resurgent demand and persistent supply-side cost pressures and supply-chain problems. The Central Bank of Russia has so far increased interest rates by 325 basis points since March, making it one of the first major central banks to begin tightening monetary policy. Even so, inflation has remained high, exceeding 8 percent, year-on-year, in October. Cost pressures are most evident in the food sector, where staples such as meats and vegetables have seen sharp price increases. But inflation has been broad based and combined with rising inflation expectations, it illustrates the appropriateness of the CBR's proactive action to tightening monetary policy.

Inflation is on the rise in Russia as the economy copes with high consumer demand, rising commodity prices and ongoing supply bottlenecks. A perfect storm of supply and demand pressures has pushed inflation up in Russia, as in many other countries in 2021, with consumer price index (CPI) inflation steadily rising to 8.1 percent by October, a five-year high (Figure 1-42). The pickup in inflation has reflected a rapid recovery in demand — with the negative output gap likely already or nearly closed — as well as supply-side constraints and spikes in commodity prices, especially in food items. The lagged effects of exchange-rate depreciation in 2020 also contributed via higher costs of imports. Core inflation and inflation expectations are also rising (Figure 1-42B), raising concerns about inflation becoming more persistent.

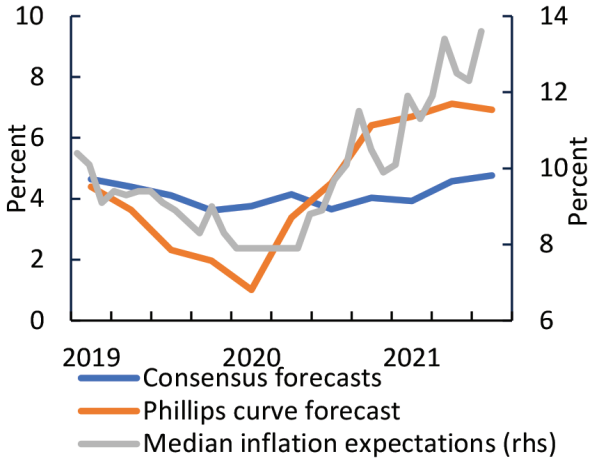
Rising inflation in Russia reflects, in large part, the combined effect of a strong surge in demand and global supply-chain bottlenecks. Resurgent domestic demand has led to supply shortages, especially as global supply chains remain clogged up, pushing up input costs and market prices. Positive demand shocks are estimated to have elevated inflation by 1.1 percentage points above its historical average in Q4 (Figure 1-42C). While aggregate supply conditions in Russia have helped to mitigate the rise in inflation, owing to capacity coming back on stream in the first half of 2021, this impact has reversed amid binding and persistent global supply chain bottlenecks, which have exerted upward pressure on energy and manufactured goods.

Figure 1-42: Inflation dynamics

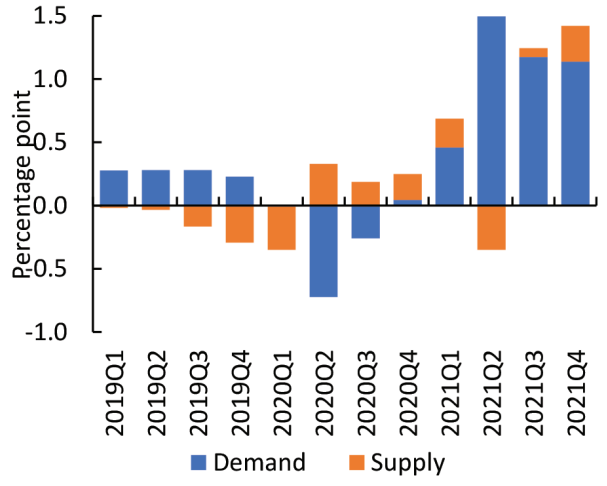
Food and core components driving high inflation
A. Consumer inflation



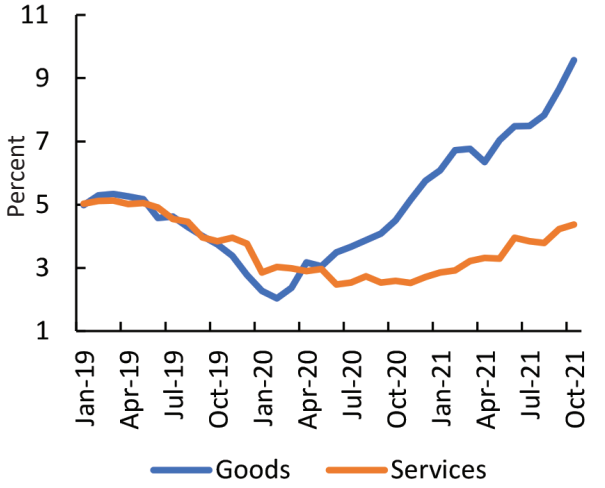
Inflation expectations are elevated
B. Inflation expectations



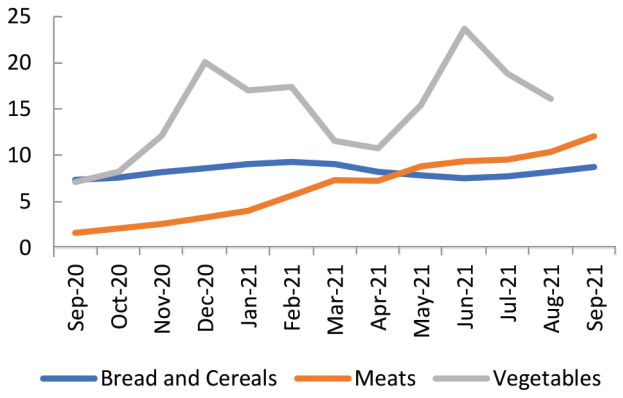
Demand factors have driven high inflation
C. Inflation decomposition



Services inflation is muted, in contrast to goods
D. Good and services inflation



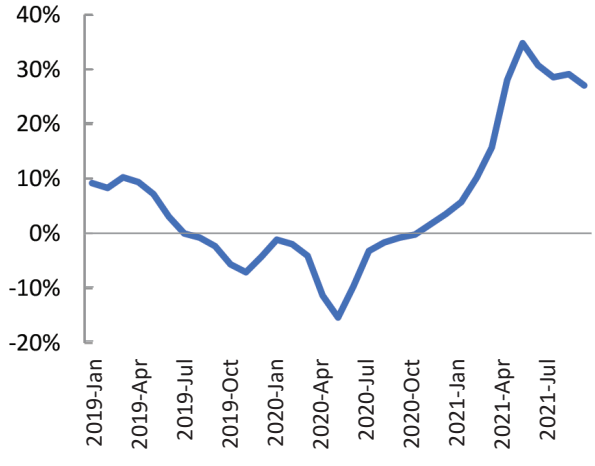
E. Vegetable and meat prices pushing up overall food inflation



Sources: Consensus Economics; Haver Analytics; Ruch (2021); Ruch and Taskin (forthcoming).
A. "Food" reflects food and non-alcoholic beverages. "Fuel" reflects fuels and lubricants for transport equipment.
B. "Phillips curve forecast" reflects inflation expectations as embodied in the Laubach-Williams model of Ruch (2021) used to determine the monetary policy stance in Russia. "Consensus forecast" are one-year ahead forecasts at a fixed horizon based on Consensus Economics.
C. Based on a sign-restricted Bayesian VAR model including real GDP, consumer inflation, oil prices, policy interest rates, and the real exchange rate. Demand and supply shocks are as deviation from a model-determined initial condition. Other shocks in the model are excluded. Forecasts used for unavailable datapoints.

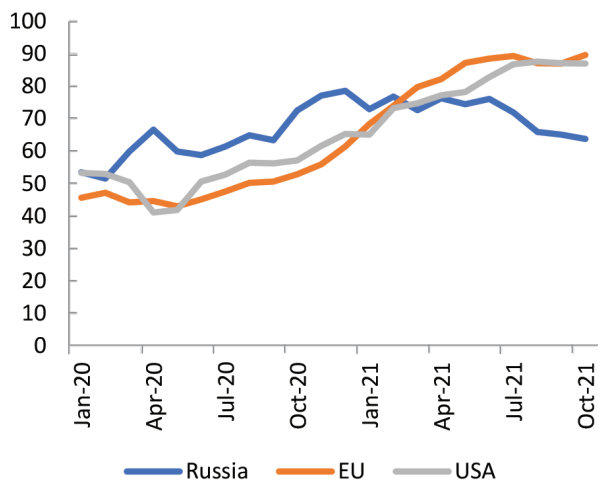
Input costs have seen sharp increases, which are only recently beginning to abate. Producer price inflation reached its highest rate in 20 years in May at 34.8 percent (Figure 1-43). It has moderated slightly since but remains very high at 27 percent in September. Purchasing manager index (PMI) surveys also illustrate the rising input costs that have been faced by businesses in Russia and elsewhere. From the second quarter of 2020 throughout the year and in 2021, the manufacturing PMI measure of inputs prices has recorded a dispersion score of far above 50, indicating rapidly increasing input costs, for Russia (Figure 1-44). Input costs for services firms have also been rising, albeit as a more moderate pace. While cost pressure seems to have abated in Rus-

Figure 1-43: Producer price inflation highest for more than 20 years (*Producer prices index inflation, year-on-year*)



Source: Haver Analytics.

Figure 1-44: Upwards pressure on input prices lessening in manufacturing. Manufacturing Purchasing Managers Survey, input price dispersion index (*>50 means input prices are rising*)

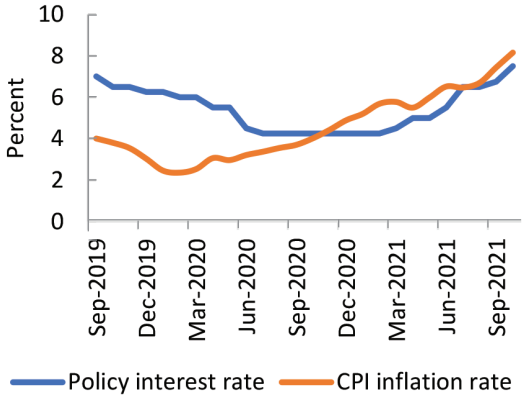


Source: Haver Analytics.

sia in the second half of 2021, input prices are still recorded as rising, just at a more moderate pace. This is in comparison to the United States and the Eurozone, where upwards cost pressure seems to be continuing unabated, and this diverging trend may be related to the Central Bank of Russia's early action to address inflation.

The Central Bank of Russia acted promptly to begin monetary tightening. The Central Bank of Russia was one of the first central banks to begin tightening monetary policy in 2021 in response to what it considered to be a persistent threat of inflation, rather than one-off cost shocks (Figure 1-45). With inflation moving above the CBR's target rate from December 2020, it began a series of policy rate increases in March 2021 and has since raised the policy rate six times, by a total of 325 basis points, to 7.5 percent as of the end of October. These policy rate increases have helped maintain real interest rates around zero and shift monetary policy into a neutral stance — implying that monetary policy is neither putting upward or downward pressure on inflation or growth — after being very accommodative in 2020 (see Box 5).

Figure 1-45: Monetary tightening began early this year



Source: Central Bank of Russia, Rosstat.

Box 5 Inflationary Pressures and Monetary Policy Response in Russia

The inflation outlook has evolved rapidly in Russia in the last year. The Russian Federation entered the COVID-19 pandemic with inflation below its target rate of 4 percent, with inflation expectations well-anchored, and with sizable policy buffers. The onset of the pandemic triggered a collapse in demand across the world in 2020, including in Russia, which was hit by the dual impact of the pandemic and a plunge in global oil prices. In a bid to support the economy, the Central Bank of the Russian Federation (CBR) cut its policy rate to a record low in 2020. By late 2020, a robust cyclical recovery was underway, underpinned by firming domestic demand and oil prices. Price pressures started to build alongside the economic recovery, with inflation surpassing its target by November 2020 and reaching a five-year high by October 2021.

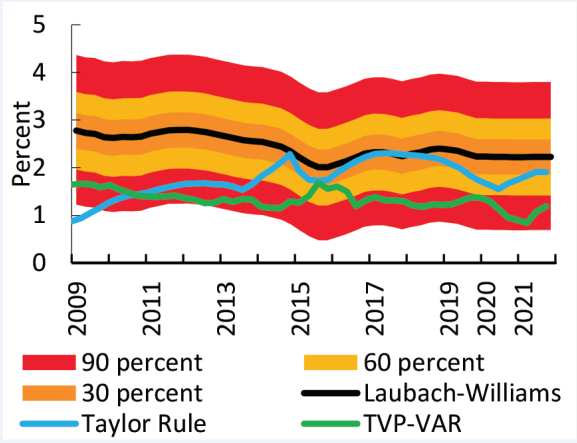
Monetary policy in Russia has responded to the rise in inflation to confront a de-anchoring of consumer inflation expectations. The CBR has raised the policy rate six times in 2021, to 7.5 percent — a total increase of 320 basis points. The CBR's response has been among the earliest and strongest of major central banks, with monetary policy rapidly normalizing, partly owing to a rapid rise in consumer inflation expectations.*

Nevertheless, rising nominal policy rates do not reflect the actual stance of monetary policy and whether policy is stimulating or restricting growth of an economy in trying to control inflation. To determine the monetary stance, three things need to be known: the nominal policy rate, a forecast or expectation of future inflation, and the neutral real interest rate. First, it is critical to estimate the real interest rate — the nominal rate adjusted for inflation. The real interest rate can be calculated in many ways, but generally refers to the difference between the nominal policy rate and expected or forecast inflation; that is, the ex-ante real interest rate. Lastly, the neutral interest rate — the interest rate which stabilizes inflation at its target and keeps the economy growing at its potential (or at full employment) —must be estimated.

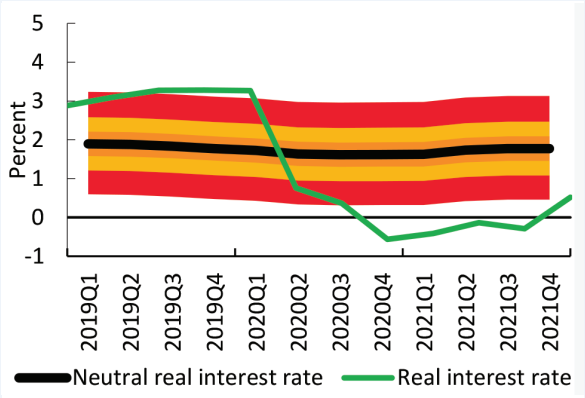
The neutral real interest rate in Russia is likely between 1-3 percent. Three methods are used to estimate the neutral real interest rate including a dynamic Taylor Rule, a time-varying parameter vector autoregressive (VAR) model, and the method of Laubach and Williams (2003), all in an open economy setting. The three methods complement each other by using alternative information to determine the stance of monetary policy including the behavior of the central bank, the empirical behavior of the data, and the behavior of potential growth. Using these three methods suggests the neutral rate has declined over the last decade, to an average of 1.8 percent by the end of 2021 (Figure B5-1A). With policy rates rising by more than the forecast for inflation, the real interest rate has increased to 0.5 percent from negative territory in 2020-21 (Figure B5-1B and C). The rise in the real interest rate has shifted the stance of monetary policy to neutral from an accommodative stance; policy is neither accommodative nor restrictive. This stance is in line with the closing out the output gap (Figure B5-1D).

Figure B5-1: Monetary policy stance

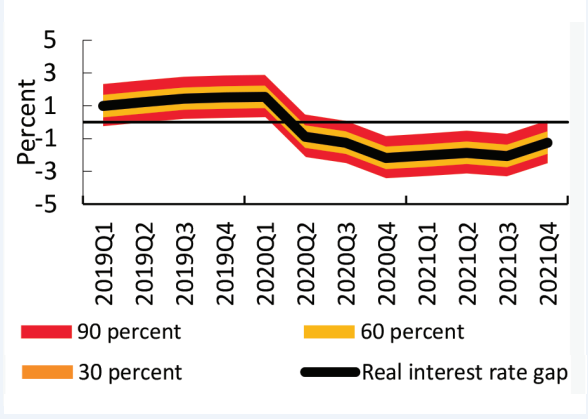
A. Neutral real interest rate



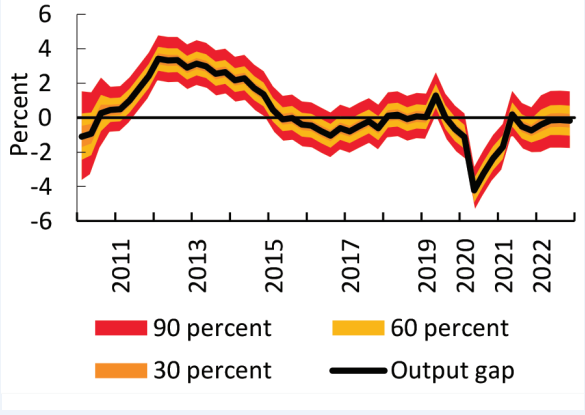
B. Monetary policy stance



C. Monetary policy stance



D. Output gap



Source: Ruch (2021).

A. Confidence bands reflect uncertainty around Laubach-Williams estimates. "TVP-VAR" is a time-varying parameter vector autoregressive model.
B. "Real interest rate" and "neutral real interest rate" reflects the average of three methods: Laubach-Williams model, Taylor Rule model, and TVP-VAR.
C. "Real interest rate gap" reflects the difference between the real policy rate and the neutral real interest rate. Average of three methods. Negative values suggest accommodative monetary policy while positive values suggest restrictive policy.

** The Central Bank of Russia has been emphatic about its interpretation of inflation dynamics in 2021 as reflecting "rapidly recovering demand and persistent supply-side restrictions" leading to a "spike in inflation expectations" and an "inflationary spiral should [monetary policy] fail to respond." [Nabiullina, E. 17 September 2021. Speech at the 18th International Banking Forum.]*

References:

Laubach, T. and J. C.Williams. 2003. Measuring the Natural Rate of Interest. Review of Economics and Statistics 85(4), 1063–1070.
Nabiullina, E. 17 September 2021. Speech at the 18th International Banking Forum.
Ruch, F.U. 2021. "Neutral Real Interest Rates in Inflation Targeting Emerging and Developing Economies." Policy Research Working Paper No. 9711. Washington, DC: World Bank.

1.5 Financial sector: Risks lessen as credit growth continues

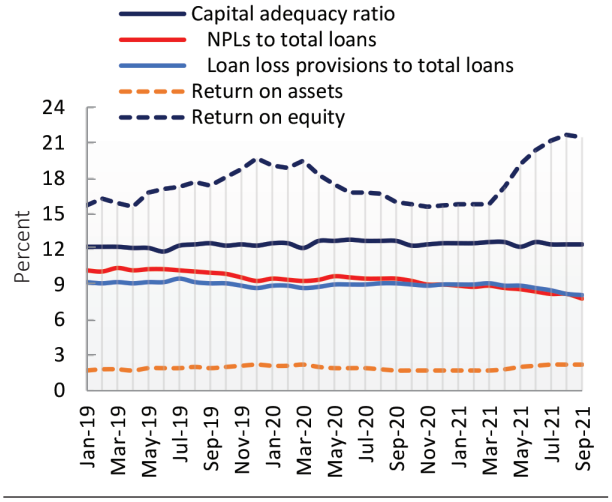
The banking sector has proved resilient over the COVID-19 pandemic so far, as the economic recovery now helps improve balance sheets. Key risk and performance indicators have remained largely resilient to the pandemic and the withdrawal of forbearance in June this year. Credit growth, especially to SMEs and households, has remained high over the last year. Credit growth and improved economic conditions this year have helped to improve corporate and financial sector balance sheets. Rates of non-performing loans, while relatively high at 7.8 percent system-wide, have declined over the year so far. Household lending has slowed in recently months with the implantation of prudential measures and rising interest rates, while the share of highly leveraged lending to households has increased, suggesting possible risk increasing in this segment.

The Russian banking sector has proved resilient over the COVID-19 pandemic so far, as economic recovery now helps improve balance sheets. The banking sector's key credit risk and performance indicators have remained largely stable since the beginning of the pandemic (Figure 1-46) while economic recovery has helped improve the banking sector's operating environment and asset quality. Following exit from regulatory forbearance[5] in mid-2021, banks' asset quality, profitability and capitalization have not deteriorated – in fact, profitability and return on assets and equity in the system are rising. Banking-sector profitability has been supported by strong lending growth fueled by the government credit support programs and improving economic conditions. As of October 1, 2021, the return on assets and return on equity were 2.2 percent and 21.5 percent, respectively, also improved over the year to date.

Rates of non-performing loans and loan restructurings have fallen. Strong lending growth, coupled with active loan restructuring, helped bring non-performing loan (NPL) rates down. The share of NPLs in total loans, while still elevated, has eased down to 7.8 from 8.9 percent at the beginning of the year. The rate of doubtful loans, which includes NPLs, stands at 16 percent. As of October, both corporate and household NPL rates, at 8.5 and 6.5 percent, respectively, had fallen since the start of the year (Figure 1-47). The SME NPL rate also fell but remains elevated at 9.1 percent, down from 10.9 at the beginning of the year. Twelve percent of banks' loans had been restructured since the beginning of the pandemic, according to the CBR monitoring. But loan restructuring trends have moderated, driven by reduced client demand for restructurings.

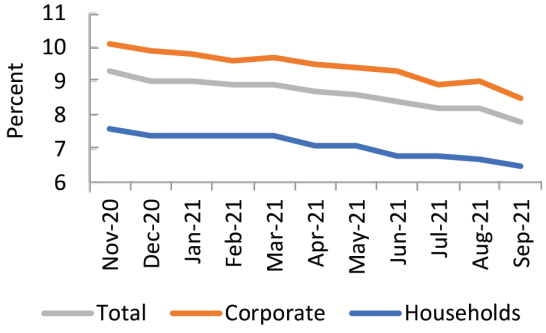
[5] The forbearance on loan provisioning was granted by CBR at the outset of the pandemic and allowed banks to delay the reclassifying of restructured loans and postpone provisioning for potential loan losses until April 1, 2021 for corporate loans and July 1, 2021 for retail loans and loans to SMEs. After these deadlines, all loans had to be fully provisioned.

Figure 1-46: The banking sector's key credit-risk and performance indicators have remained largely stable



Source: Central Bank of Russia.

Figure 1-47: Strong lending growth, coupled with active loan restructuring, helped bring NPL rates down (*share of total outstanding loans*)



Source: Central Bank of Russia.

Banking-sector funding and liquidity profiles remain solid. Highly liquid assets[6] of banks represent about 22 percent of sector assets and cover 30 percent of customer accounts. Customer deposits (almost evenly split between corporate and retail) remain the primary funding source for Russian banks, comprising nearly 80 percent of liabilities. The sector's reliance on wholesale market funding is low (under 5 percent of total liabilities), although there has been some increase in domestic capital market borrowing following US and EU financial sanctions introduced in 2014 that made it more difficult for Russian banks to access international credit. There has been a recent uptick in household deposits, which roughly aligns with the central bank's tightening on monetary policy and as Russian banks have reflected higher interest rates on deposits (Figure 1-48). Overall, household deposits increased by 6.3 percent, yoy, also supported by the one-off payments to pensioners, some of which were saved. Corporate deposits also grew (16.7 percent, yoy), mainly through the accounts of companies from the oil and gas and metallurgical industries on higher commodity prices and revenues (Figure 1-49). The currency structure of household deposits remains largely unchanged, with a high ratio of 80 percent in local currency in part reflecting the stability and credibility that the CBR has helped to build in the ruble.

Credit growth is now cooling in the corporate sector overall but remains higher in the SME segment. Credit growth for corporates, yoy, has fallen from 20 percent at end 2020 to 12 percent by October, and discounting for inflation is around four percent. SME loan growth, inflation-adjusted, was still relatively high at 14 percent, yoy, in September, exceeding pre-pandemic growth rates and supported by large-scale government programs[7]. Most recently, on the back of the deteriorating COVID-19 situation, the government and the CBR have taken new measures to support SMEs.[8] Demand for corporate and SME credit is likely to tick up due to recent COVID-related business restrictions.

Accelerated household lending growth may contribute to retail consumer over-indebtedness and asset-quality deterioration in the future (Figure 1-50 and Figure 1-51). In contrast to corporate lending, retail – or household – lending saw an increase in mid-2021 with mortgage lending remaining high and other lending types increasing. Since then, retail credit has cooled somewhat, but was still growing at above 13 percent in real terms in October. The share of risky loans to households whose payment-to-income (PTI) ratios exceed 80 percent edged up to 30.3 percent in Q2 2021, higher than the pre-pandemic level of 26.7 percent. Continued rapid retail credit growth may weaken the effectiveness of monetary policy in dampening demand-driven inflationary pressures. In this respect recent, prudential tightening measures taken by the authorities will support policy alignment. Mortgage lending has started to moderate somewhat as a result of the lower Rub 3 million maximum loan limit (compared to Rub 12 million before July) in large cities under the recently extended state-subsidized program.[9] To reduce the incentives for

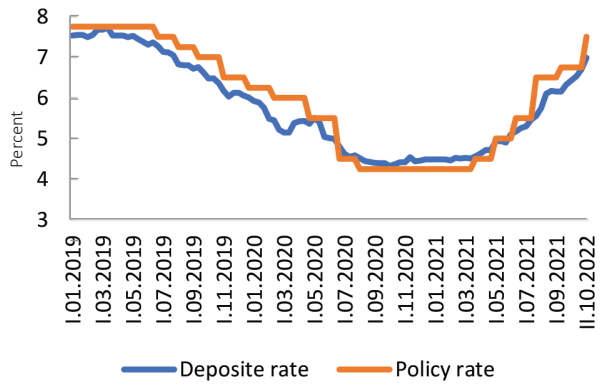
[6] This includes cash and equivalents, short-term placements with banks and unpledged government bonds.

[7] The government expanded and modified credit support programs for SMEs, focused on provision of (i) interest-rate subsidies and (ii) guarantees provided by SME Corporation and regional guaranty organizations. In addition to the government programs, at the outset of the pandemic, the CBR allocated 500 billion rubles to banks for on-lending to SMEs on preferential terms.

[8] The existing SME employment-support program has been modified and extended until the end of 2021 to provide subsidized loans at 3 percent per annum to SMEs in the most affected sectors to pay minimum wages under the condition of preserving employment, while the CBR allocated Rub 60 billion (about US$860 million) to support SME lending. The SME Lending Incentive program, under which authorized credit institutions can access low-cost funds from CBR to on-lend to SMEs, will be extended. Banks are able to receive these loans provided they either grant loans at an interest rate not exceeding 8.5 percent per annum or reduce the interest rate under existing loans to 8.5 percent per annum or below for eligible SMEs.

[9] The program was introduced in April 2020 to support the construction industry and homebuyers in response to COVID-19. Mortgage interest rates on the purchase of new homes (up to a maximum of 12 million rubles in Moscow and St. Petersburg, and half that level in the regions) were capped at 6.5 percent and down-payments were reduced to 15 percent. In June 2021, the subsidized mortgage program was extended under the modified conditions: the subsidized interest rate was increased to 7 percent per annum, the maximum loan amount was decreased to 3 million rubles and became the same for all regions. According to the Russian housing agency DOM.RF, more than 613,000 loans were issued for a total amount of 1.88 trillion rubles under this program to date.

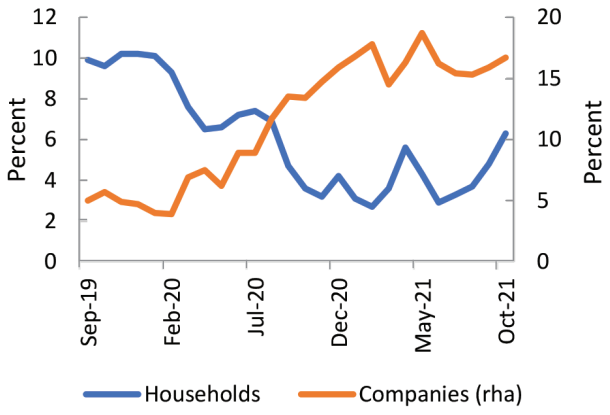
Figure 1-48: Deposit rates are growing following the policy rate



Source: Central Bank of Russia.

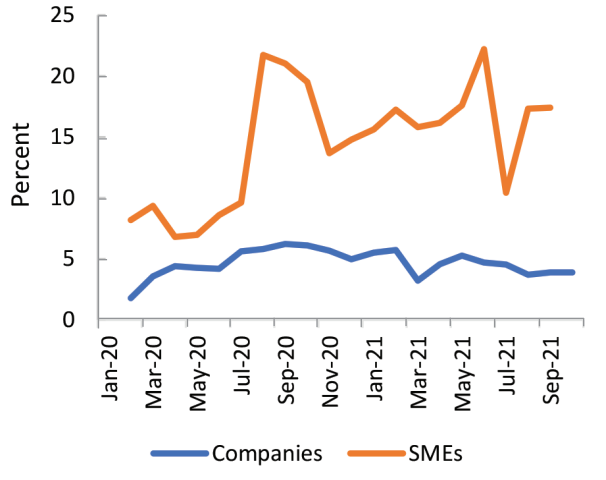
Note: The deposit rate is the maximum interest rate on deposits in Russian rubles of ten credit institutions attracting the largest volume of deposits from individuals.

Figure 1-49: Funding is supported by the deposits, both households and companies (*yoy*)



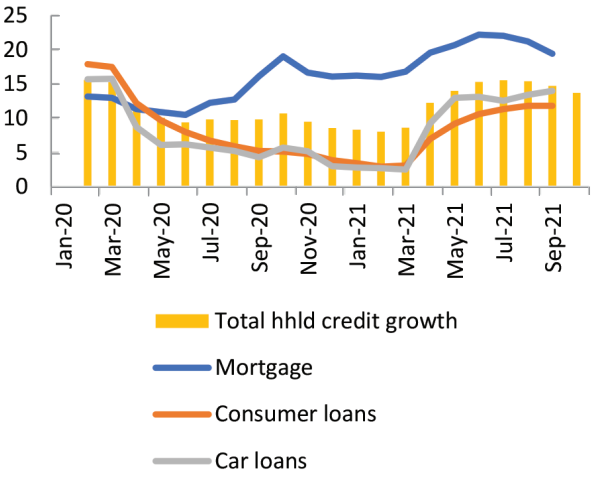
Source: Central Bank of Russia.

Figure 1-50: Corporate lending growth has been strong (*yoy, inflation-adjusted*)



Source: Central Bank of Russia, World Bank.

Figure 1-51: Retail lending continues to accelerate (*yoy, inflation-adjusted*)



Source: Central Bank of Russia, World Bank.

risky lending, the CBR has twice increased macro-prudential requirements for unsecured consumer loans: on July 1 (returning to the pre-pandemic level), and then on October 1, 2021, when risk weights were further increased. Furthermore, a draft law empowering CBR to introduce direct lending restrictions for banks and MFOs in the unsecured-loan segment is currently pending parliamentary approval.

Corporate bond market dynamics have been mixed in 2021, following strong growth in 2020. The bond market in Russia has been steadily growing, reaching 29 percent of GDP at the year-end 2020.[10] While debt-aimed sanctions on Russian entities provided additional stimulus to borrow internally, the inflow of retail investors into capital markets also supported demand. Corporate bonds accounted for nearly half of outstanding local bonds (Rub 31.2 trillion) as their issuance peaked at Rub 9.6 trillion at the end of 2020. The share of local bonds in corporate debt increased to 30 percent as of September 2021.[11] The number of bond defaults has been also increasing, reaching a nine-year high in 2020. While banks are the largest buyers of the corporate debt, its share in the banking sector assets remains modest at 5.3 percent of total assets (as of October 2021).

Interest in green finance – primarily green bonds – is growing in Russia, but volumes remain modest by international standards. Since the Moscow Exchange established its Sustainability Sector for green and social bonds in 2019, there have been 14 domestic green bonds issue by ten issuers totaling over Rub 100 billion (US$ 1.39 billion). This also includes an inaugural subnational green bond of the Moscow government, which may set a precedent for other Russian regions. By comparison, volumes of green-bond issuance have been much higher in countries like Brazil, India and China. The ongoing efforts of the Russian authorities – including the recent adoption of the national green finance taxonomy and verification guidelines, development of green-bond incentives and soft CBR regulation on responsible investment and ESG disclosures, and most recently the adoption of a CBR roadmap for greening the financial sector[12] – could help to stimulate further issuance of green and other climate-related bonds. At the same time, financial sanctions on Russia may continue to limit demand.

[10] Moscow Exchange
[11] Moscow Exchange
[12] https://cbr.ru/eng/press/event/?id=12397

1.6 Fiscal policy: Consolidation and revenue growth

After diverging from the fiscal rule last year to provide critical COVID-19 support, the authorities are on track to substantially consolidate the budget this year, towards moving back to the fiscal rule next year. For the first three quarters, both energy and non-energy revenues have been buoyant, with revenue growth outstripping expenditure. Income tax and VAT were especially strong as domestic demand ramped up and firms' health improved.

The first three quarters have seen a rapid recovery in the government budget balance. On a rolling, four-quarter basis, the overall budget deficit has shrunk from 3.8 percent of GDP at end 2020 to 0.7 percent of GDP in the third quarter of 2021 and the primary deficit, adjusted for additional oil and gas revenues according to the fiscal rule, to around 1.3 percent of GDP (Figure 1-52). Federal revenues were more than a third higher in the first three quarters than in the same period in 2020, and almost 20 percent higher than in 2019. Oil and gas revenues rose by 60 percent compared to the same period in 2020, supported by higher commodity prices and increased gas production. But non-energy revenues also grew strongly, particularly income taxes and VAT, buoyed by strong domestic demand and labor market improvement (Figure 1-53). Tax deferrals granted last year to the worst-affected sectors now being paid is also likely to have raised revenues.[13] The additional, higher personal income tax rate, introduced this year, is expected to raise about 100 Rub billion this year. Export duties introduced in 2021 for a number of products, including metals, will also support the revenue side of the budget. Discontinuation of tax-revenue support measures introduced during the onset of the pandemic (about 0.3 percent of GDP) also bolstered revenues.

Federal budget expenditure growth was subdued in 2021 (Figure 1-56). In January-September 2021, federal budget primary expenditures grew at a muted pace of 1.4 percent in real terms. The government kept in place some support measures introduced during the pandemic and introduced some new measures.[14] National-project[15] spending has lagged spending on other items (Figure 1-57), with budget execution on national projects reaching 59 percent of planned spending by August, compared to about 63 percent for the federal budget overall. With the high-spending fourth calendar quarter still to be observed, the medium-term budget[16] projects lower inter-budgetary transfers to regions in 2021, and a 1.4 percent reduction in primary federal expenditure in real terms over the full year (Figure 1-53). Yet, compared to the original budget law, federal budget expenditures are expected to be higher by 0.7 percent of GDP in 2021[17].

[13] Annual and medium-term budget documents of the Russian Federation, September 2020, Ministry of Finance.

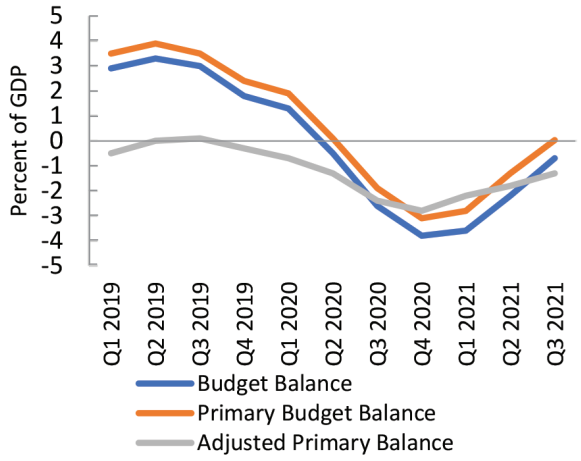
[14] Higher unemployment benefits, employment support programs and higher payments to medical staff for instance were maintained. Additional COVID-19 support measures for SMEs were introduced, as well as one-off social benefits for pensioners and military personnel due to high inflation, targeted social support measures for families with children, and additional spending on health, education and infrastructure.

[15] In 2018, 13 National Projects covering three main areas - human capital, comfortable living environment, and economic growth - were developed by the federal government as an important tool for reaching national goals. Currently there are five national goals: preservation of the population, the health and welfare of the people creating conditions for self-fulfillment and the unlocking of talent, comfortable and safe environment, decent and effective jobs and successful enterprise, and digital transformation. In 2020, one more project "Tourism and hospitality" was added. In 2021 – 2024, the government plans to spend about 2 percent of GDP annually for the National Projects programs.

[16] Main provisions for budget, tax, customs, and tariff policies for 2022 and for planned period 2023. Ministry of Finance, September 2021.

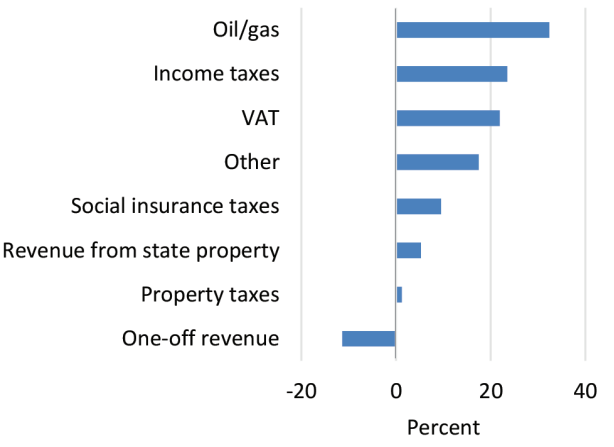
[17] The fiscal rule prescribes that expenditure could grow on par with non-oil revenues and that extra oil and gas revenues should be saved in the NWF. Higher non-oil federal budget revenues thus support higher federal budget expenditures.

Figure 1-52: The authorities are on track to consolidate the budget



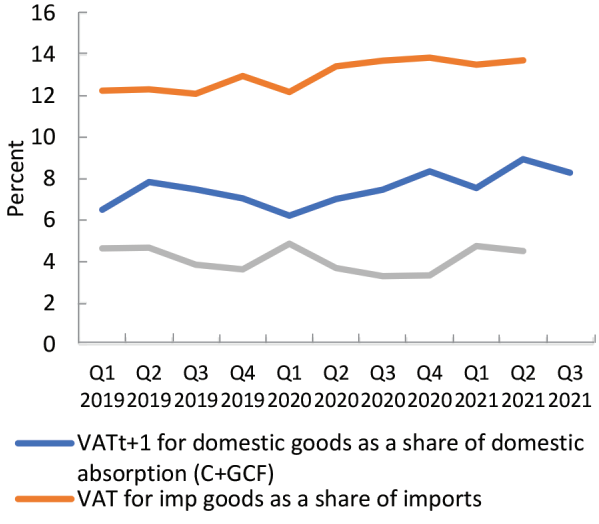
Source: Haver Analytics, World Bank.
Note: 'Adjusted primary balance' is primary balance less 'additional oil and gas revenue' to be accrued to the National Wealth Fund.

Figure 1-53: Income taxes and VAT contributed the most to the non-oil/gas revenues growth (*Share in gg budget revenues increase*)



Source: Roskazna.
Note: One-off revenue – receipts from the CBR's sale of Sberbank shares in 2020 as opposed to Norilsk Nikel payments for soil contamination in 2021.

Figure 1-54: Domestic demand recovery was an important factor behind VAT receipts growth



Source: Roskazna.

Figure 1-55: In the first 9 months of 2021, federal budgetary primary expenditures increased by about 1.4 percent in real terms, yoy (*Federal budget expenditures – billion rubles*)

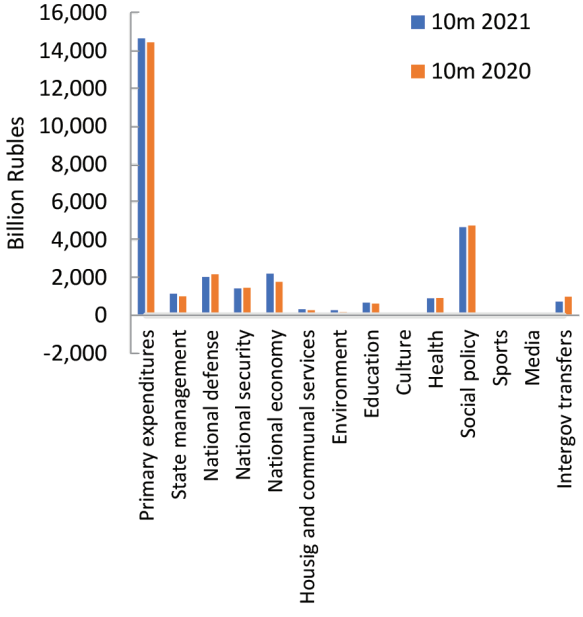
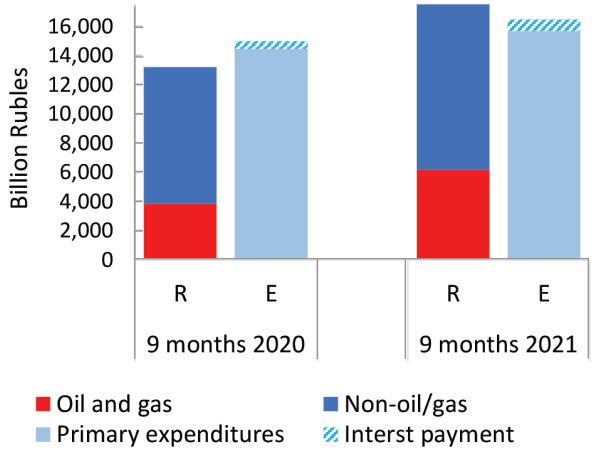
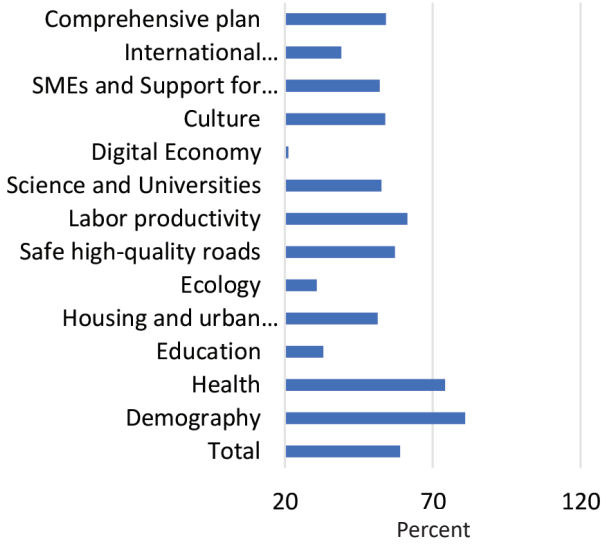


Figure 1-56: Federal budget revenues growth outpaced expenditures



Source: Roskazna.

Figure 1-57: Spending on the Digital Economy National Project was the slowest in the first 8 months of 2021 (*Share of actual spending in the amount planned for 2021*)



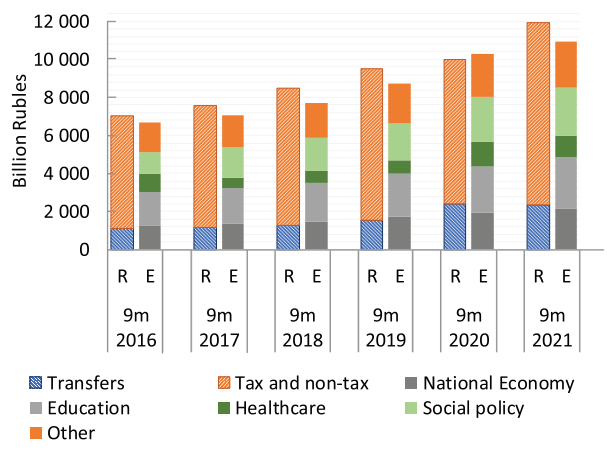
Source: Ministry of Finance.

The National Welfare Fund will gain from windfall oil and gas revenues (Figure 1-58). With oil prices running well above the benchmark US$40/bbl (2017 prices), according to the fiscal rule[18] the Central Bank purchased US$24 billion in foreign exchange in January-September 2021, which will be channeled to the National Wealth Fund (NWF) in 2022. Taking into account the amount to be paid into the NWF, the government expects an amount of 1.4 percent of GDP of budget financing in 2021. Gross financing needs are estimated at about 3 percent of GDP in 2021. The federal government debt increased by about 10 percent in nominal ruble terms by the end of September, compared to the beginning of 2021, but at 17.7 percent of GDP, it remains low.

Domestic investment from the NWF is due to accelerate unless the legislative framework is amended. As the NWF has exceeded a pre-defined threshold and significant inflows continued, domestic investment from the NWF may accelerate (see Box 6). According to their medium-term plans, investment of NWF funds into domestic infrastructure programs planned by the government could start in 2022. However, in light of the risks that high and volatile spending might pose to the stability and competitiveness of the economy, the State Duma has approved a law raising the threshold for the liquid NWF part, which allows domestic NWF investment from 7 percent of GDP to 10 percent of GDP.

[18] The fiscal rule caps federal budget primary expenditures by the sum of oil/gas revenues at the benchmark oil price (US$40/bbl 2017 prices) + non-oil/gas revenues+ 0.5 percent of GDP. Oil/gas revenues, in addition to the ones corresponding to the benchmark price are being channeled to the National Welfare Fund. In case oil prices fall below the benchmark, the NWF will be tapped to finance federal budget expenditures.

Figure 1-58: The fiscal positions of regions improved in the first nine months of 2021



Source: Ministry of Finance.

Box 6 Stabilizing institutions for oil price volatility

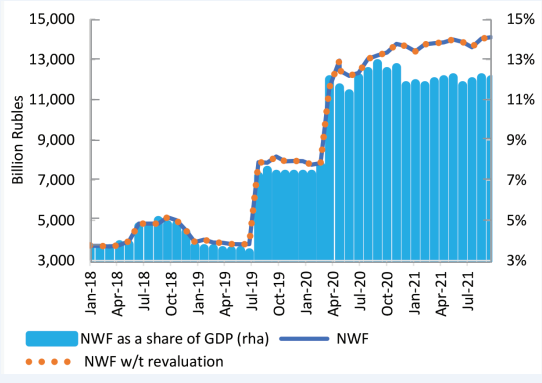
Commodity exporters have increasingly adopted funds to mitigate the adverse effects that commodity export can have on the economy. Changes in oil prices affect various parts of the macroeconomy, both negatively and positively. Higher oil prices increase government revenue and expenditure and raise domestic demand and imports. Higher domestic demand accelerates inflation. Larger exports appreciate the currency, hurting competitiveness of non-oil tradable goods-producing sector ("Dutch Disease").[a] Conversely, a sharp decline in oil prices obliges the government to cut the expenditure, affecting the rest of the economy. Volatile commodity price movements overall intensify the business cycle: commodity exporters tend to experience larger boom-bust cycle than commodity importers. Increasingly, natural resource rich countries have adopted fiscal rules to reduce this volatility. Fiscal rules can help to smooth expenditure over oil price cycles, thereby reducing the pro-cyclicality of public spending and overall volatility due to oil prices on the economy. Oil funds also enable countries to save extra export revenue as foreign assets, reducing exchange rate appreciation pressure and the "Dutch Disease" effect that this can have on the non-commodity sector of the economy. The adoption of fiscal rules and oil funds are increasing, especially for commodity exporters.

Good calibration of the thresholds in the fiscal rule is essential for effective stabilization. There are several economic approaches to calibrate the fiscal rule to achieve long-term fiscal sustainability, intergenerational equity, and accommodating higher investment (Eyraud et al. 2018a). Those ceilings can be reviewed on a regular basis to accommodate changes in the macroeconomic environment. Improvement of flexibility while preserving enforceability of the fiscal rule can be achieved through various enforcement mechanisms, such as independent fiscal councils, broader sanctions, and correction mechanisms (Eyraud et al. 2018b).

Russia's National Welfare Fund (NWF), established in 2008, has the dual purpose of savings and stabilization. The NWF is a part of the federal budget, subject to separate accounting. It is managed by the Ministry of Finance according to legislation, while certain functions of NWF management have been delegated to the Central Bank of Russia. The capital of the NWF is topped up with oil and gas revenues in line with the fiscal rule and investment earnings[b]. The fund builds up financial reserves during the times of higher oil prices, part of which may be drawn upon when the oil prices fall. The NWF provides co-financing of voluntary pension savings of citizens of the Russian Federation each year and in addition to stability, the Fund is intended to form part of the sustainable financing of the Russian pension system.

The rules under which the NWF operates were changed in 2018 with the adoption of a new fiscal rule, aimed to smoothing the impact of oil price volatility on the budget. As of 2019,[c] the portion of the oil and gas revenue the federal government may spend in a given year is determined by a fixed oil price benchmark (US$40 per barrel in 2017 prices). If actual oil prices exceed the benchmark, the difference is saved in the NWF. If the oil price is below the benchmark, the government can supplement their revenue by withdrawing an equal amount from the NWF.[d] This rule has insulated the budget and to an extent the economy from oil price volatility and protected the NWF by restricting the use of oil and gas windfalls.

Figure B6-1: NWF stood at about 12 percent of GDP (*as of end-October 2021*)



Source: Ministry of Finance.

The government can direct NWF investment domestically above a certain threshold balance of the NWF. The NWF invests its assets in foreign exchange and certain other, primarily foreign, assets.[e] According to the law, the government may direct investment of the liquid part of the NWF[f] that exceeds seven percent of GDP for domestic investment into self-sustaining infrastructure projects. By the end of October 2021, the NWF balance stood at about 12 percent of GDP (Figure B6-1), with its liquid part exceeding 7 percent of GDP. As a result, the government plans domestic investment of NWF funds for the period of 2022-2024 in the amount of 0.4-0.5 percent of GDP per year.

The success of the NWF may now warrant consideration of further improvement in the framework, to ensure that it continues to support both stability and domestic development. While domestic investment of the NWF could potentially support infrastructure development and growth potential, large-scale spending of NWFs might

also exacerbate some of the problems that the NWF framework has, so far, been effective in addressing. As long as the liquid part of the NWF remains above 7 percent of GDP, there would be no longer any significant cyclical smoothing from the fund, if almost the full amount of oil and gas revenues used for domestic purposes each year. This raises the risk of increased inflationary and exchange rate appreciation pressures. A proposal which was recently approved by the Federation Council raises the threshold for domestic investment to 10 percent of GDP[g]. This measure would somewhat support continued stabilization and resources for further stabilization or inter-generational support, especially in view of the forthcoming green energy transition, which would bring down crude oil prices in the long term.

[a] 'Dutch Disease' is a term coined to describe the effect of a commodity-led real exchange rate appreciation, which then reduces the competitiveness of non-commodity sectors in the economy, by increasing the international price of domestic non-traded goods and services.

[b] According to temporary provisions, NWF earnings are channeled to the federal budget until 2023.

[c] The fiscal rule was effectively suspended during the pandemic and introduced back 2021 with some relaxation. The government targets a primary deficit of around 1.4 percent at the benchmark oil price (additional expenditures are financed through below-the-line operations). The fiscal rule will operate in full scale in 2022.

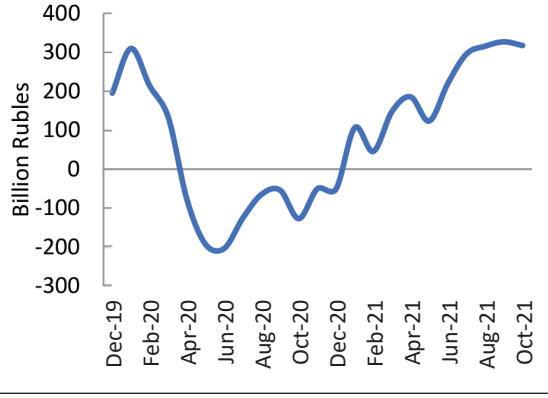
[d] In the event the balance of the NWF falls short of 5 percent of GDP, withdrawals from the NWF in the following year will be limited to one percent of GDP.

[e] The funds of NWF can be placed in foreign currency and: i) debt obligations of foreign states, foreign government agencies and central banks; ii) debt obligations of international financial organizations; iii) deposits and balances in bank accounts with banks and credit institutions; iv) deposits and balances in bank accounts with the state development corporation «VEB.RF»; v) deposits and balances in bank accounts with the Central Bank of the Russian Federation, including in precious metals; vi) debt obligations and shares of legal entities, including Russian securities, associated with the implementation of self-sustaining infrastructure projects, the list of which is approved by the Government of the Russian Federation; vii) shares of investment funds, the trust management of which is carried out by a management company, acting in accordance with the Federal Law «On the Russian Direct Investment Fund».

[f] The liquid part is the part of National Welfare Fund placed at Central Bank's the deposit accounts predominantly in FX currency and gold.

[g] The exception is made for already approved self-sustained infrastructure projects (or other infrastructure projects suggested by the President or government). NWF financing for such projects should not exceed 2.5 trillion rubles (USD 33 billion).

Figure 1-59: In 2021, NWF will gain from windfall oil and gas revenues (*Net foreign exchange purchases for NWF*)



Source: Ministry of Finance.

The fiscal positions of regions improved in the first eight months of 2021, with strong revenue growth more than offsetting expenditure (Figure 1 60). The debt of regions consists of debt to the banking sector, outstanding bond issues and debt to the federal government. The average debt burden of the regions remains low and has fallen further from 2.7 percent of GDP in September 2020 to 2.4 percent of GDP in September 2021, or 26 percent of regional revenues. However, some regions have a high debt burden, especially the Mordovia Republic, while debt has increased notably in the Tomsk oblast, the Republic of Kalmykia, and Ulyanovsk oblast. Increased indebtedness in some regions prompted the government to convert regional commercial debt exceeding 25 percent of the regions' own revenues into budget credits to be repaid to the Federal government by 2029 (Figure 1-61).

Figure 1-60: In 2021, debt burden at the regional level decreased

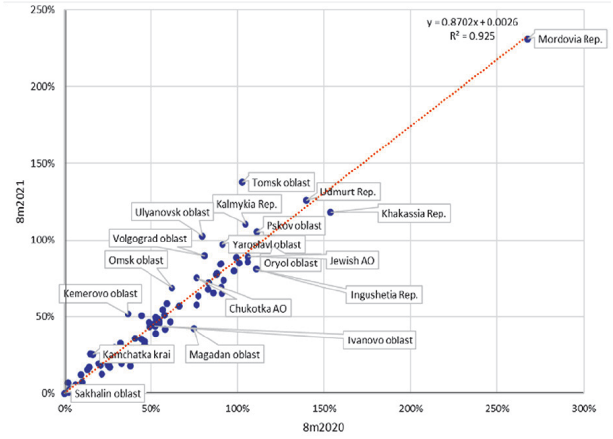
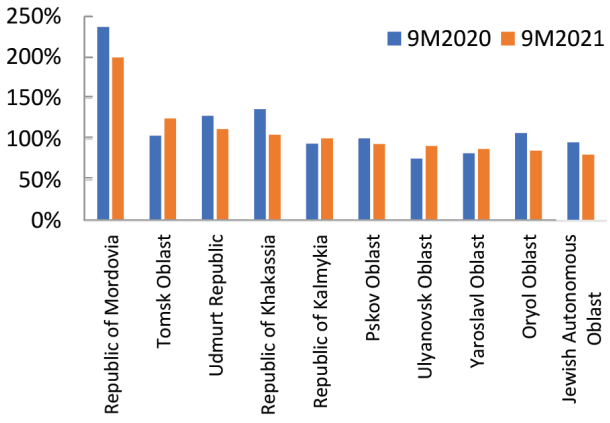


Figure 1-61: The 10 regions with the highest debt burden in 9m2021 (*percent of tax/non-tax revenues*)



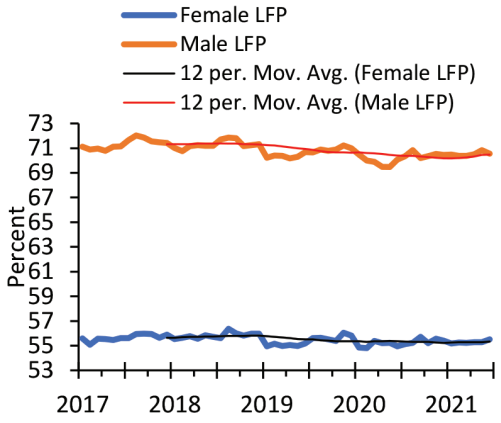
Source: Roskazna.

1.7 Labor market and social developments: A tight labor market exacerbated by a migrant-labor shortage

The first three quarters of 2021 have seen substantial labor market improvement. Labor markets tightened as demand for jobs outstripped labor force increases and the unemployment rate shrank to below its pre-pandemic level. While strong demand has evidently spurred labor markets, COVID-related disruptions in the flow of migrant workers during the year may have contributed to worker shortages, especially in certain sectors like construction. Real wages grew strongly, at 5.9 percent yoy, to mid-year although growth has moderated since then. With the introduction of a new methodology for determining the national poverty line in 2021, data are not directly comparable, although estimates suggest the new and old poverty methodologies would have provided roughly similar results in recent years.

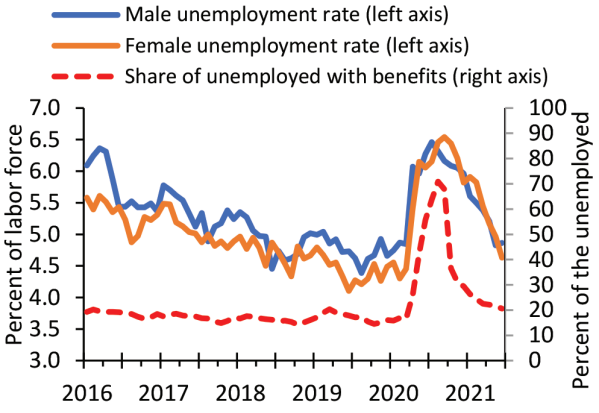
Labor force participation and employment outcomes have improved rapidly this year and labor market conditions have tightened. Labor force participation rates for both men and women have recovered to their longer-term trend levels, having increased by 0.9 and 0.3 percentage points, respectively, in Q2 2021, compared to the same quarter in 2020, when participation was impacted by the COVID-19 epidemic. This increase in labor force has coincided with a fall in unemployment rate, with the national unemployment rate falling to 4.3 percent by September 2021 – the lowest rate since 2017 – as job creation has been strong. After a compression in the labor force participation gender gap in Q2 2020, when men experienced a larger decline in participation rates than women, the gap has returned to the level it has stood at for the last three years, 15.7 percent (Figure 1-62). Unemployment rates stand at similar levels for both men and women (Figure 1-63). Job postings from employers in employment agencies in Q2 2021 jumped above their pre-pandemic levels (Q2 2019) by 24 percent, with the ratio of unemployed people to job posts falling to a value of 1.7, indicating a tightening of labor market conditions, and well below comparable estimates of 2.9 and 1.9 observed in 2020 and 2019, respectively. Labor market recovery proceeded in all regions, and the unemployment rate remains higher in the third quarter than in Q3 2019 in only two districts: Central and North Caucasian, while the ratio of unemployed to job postings has fallen below its level in 2019 in all regions (Figure 1-64).

Figure 1-62: Labor force participation rates stay on or above the trend line (*labor force participation rate by gender*)



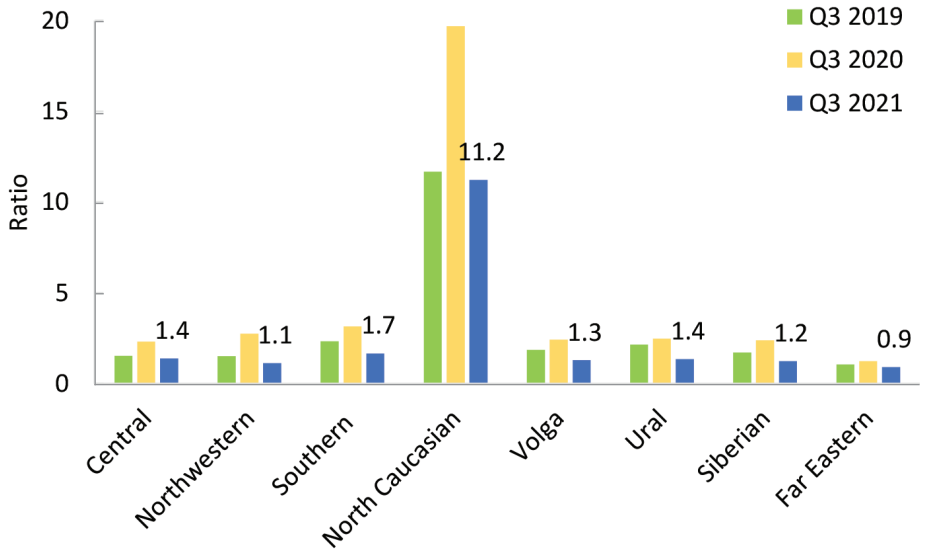
Source: World Bank staff using data from Socioeconomic Conditions of Russia, 2017-2020 and Jan-Jul 2021, produced by ROSSTAT.

Figure 1-63: Gender gap in unemployment rates closed as labor markets recovered (*unemployment rate by gender*)



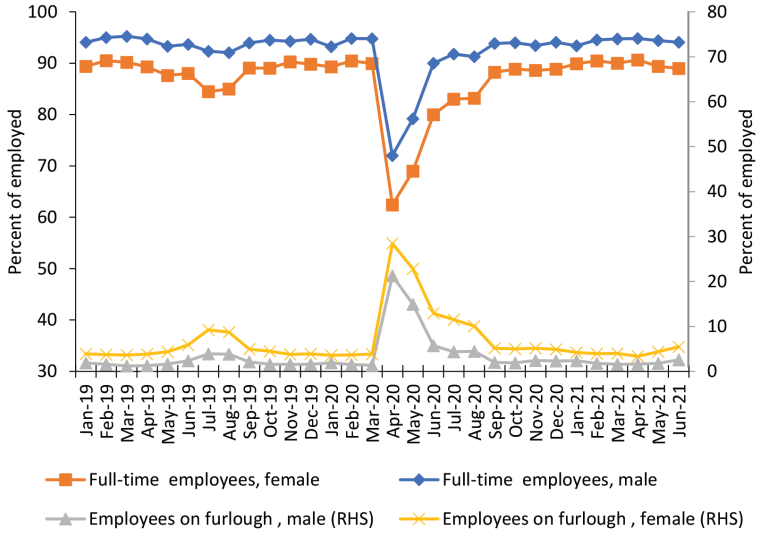
Source: World Bank staff using data from Short Term Economic Indicators of the Russian Federation, 2016-2020 and Jan-Jul 2021, produced by ROSSTAT.

Figure 1-64: Ratio of unemployed to job posts by Federal District



Source: Rosstat.

Figure 1-65: The share of women in furlough programs exceeded that of men (*share of women and men on furlough programs and full-time employment*)



Source: World Bank staff using data from Short Term Economic Indicators of the Russian Federation, 2019, 2020 and Jan-Jul 2021, produced by ROSSTAT.

Use of furloughs and take-up of unemployment benefits have returned to near pre-pandemic levels, notwithstanding the latest partial lockdown in Russia. Although use of furlough support normalized by late 2020, there was a sign of a pick-up in the latest month (Figure 1-65), while the non-working period at end October to early November is likely to entail a further increase in short-term furlough support.[19] The share of unemployed with benefits has fallen from 71 percent in Q3 2020 to 21 percent in June 2021, only slightly above the same period in 2019. This decline is likely to be related to the decision of the authorities to return to the pre-pandemic minimum monthly unemployment benefits of 1,500 rubles effective January 2021, which has been set at temporarily at 4,500 rubles monthly in 2020 to offer extra support over the COIVD-19 pandemic.[20]

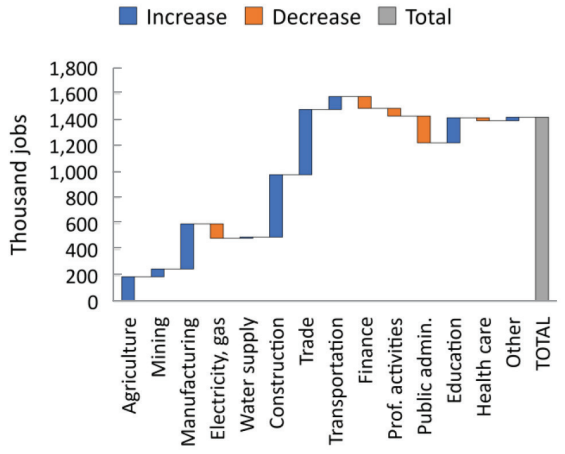
Job creation over the last year was concentrated in sectors recovering from more severe shocks from COVID-19, but informality has increased. When comparing the average employment creation between Q2 2021 and the same period the year before, around 70 percent of the total gain of 1.42 million jobs was concentrated in three sectors: trade, construction and manufacturing, with agriculture and education accounting for a further 20 percent (Figure 1-66). These five sectors had seen the sharpest falls in employment by mid-2020 due to the strict lockdown anti-pandemic measures, with the rebound now almost compensating job losses last year. Overall, the labor market recovery has broadly reflected the same sectoral distributional of labor, with no pronounced regional discrepancies. The loss of jobs when COVID-19 first struck was concentrated in the informal sector, as sectors that suffered the most were more likely to employ informal workers,[21] but the economy also shed formal jobs over the course of 2020. Strong job growth in Q2 2021 was mostly from the informal sector, elevating the share of informality in the job market to 19.6 percent, returning to a similar value as observed in Q2 and Q3 of 2019, prior to the pandemic (Figure 1-67).

[19] TASS. *"Putin 20 oktyabrya podpishet document o nerabochih dnyah".* [Putin will sign a document on non-working days on October 20]. Retrieved on Oct 20, 2021, from https://tass.ru/obschestvo/12714527?utm_source=yxnews&utm_medium=desktop&nw=1634752284000

20 Unemployment benefits, including minimum and maximum levels, vary across regions due to regional coefficients that range from 1.1 to 2 in 2021. These coefficients factor in regional average monthly wages. The upper bound for the unemployment benefits was lifted to 12,130 Rubles in March 2020 from 8,000 Rubles. The Government opted to keep the former maximum level in 2021. In addition, the authorities simplified the procedure of applying for the unemployment benefits effecting April 8, 2020 (decree 460 of the Russian Federation government), as part of the anti-pandemic measures. The decree allowed online applications via the Unified Portal of State and Municipal Services with a reduced number of supporting documents. This temporary measure was extended to Dec 31, 2021. Therefore, the decline in coverage of the unemployed with benefits is likely associated with the reduction in minimum wage and growing employment opportunities.

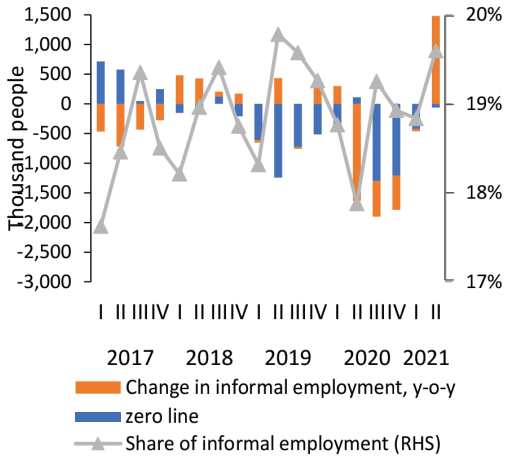
[21] Rosstat, (2019). Migrants Labor survey. (Table 1.17). Retrieved on Oct 12, 2021 from: https://www.gks.ru/free_doc/new_site/imigr18/index.html. According to the results of the survey, the share of migrants (both domestic and international) in construction, hotel and catering services exceeded that of the domestic non-migrant workers by a factor of 2. International evidence suggests that migrant workers tend to have a high incidence of informal employment (Heusala, A.-L., & Aitamurto, K. (Eds.). (2016). Migrant Workers in Russia: Global Challenges of the Shadow Economy in Societal Transformation (1st ed.). Routledge. https://doi.org/10.4324/9781315657424)

Figure 1-66: Job gains are concentrated in three sectors (*changes in employment by economic activity, Q2 2021 vs Q2 2020*)



Source: World Bank staff using Labor Force Survey results, 2020 and Jan-Jul 2021, produced by ROSSTAT.

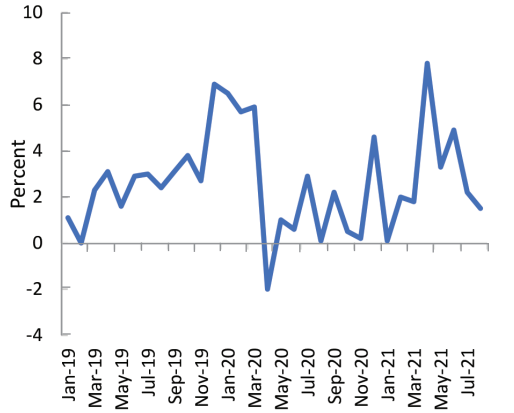
Figure 1-67: Most jobs were created in the informal sector since Q2 2020 (*changes in employment in formal/informal markets, y-o-y*)



Source: World Bank staff using Labor Force Survey results, 2017-2020 and Jan-Jul 2021, produced by ROSSTAT.

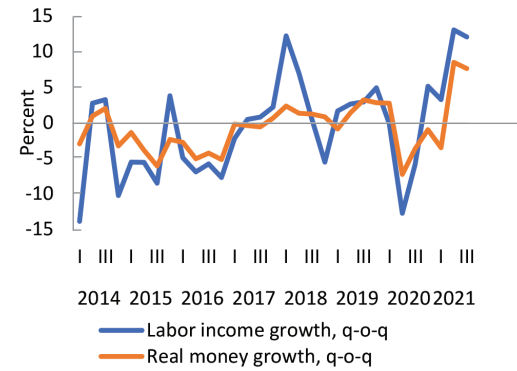
Real wages increased sharply in the second quarter, year-on-year, but growth is now subsiding (Figure 1-68). Despite the pandemic, real wage growth was positive in 2020, and labor market dynamism in the first half of this year further increased, with real wage[22] growth reaching 5.7 percent, yoy, in the second quarter. Growth was led by recovery in those sectors that experienced the worst losses during the pandemic. When compared with Q2 2020, real wages demonstrated the highest growth in hotel and catering services, construction, culture and entertainment and trade. Most of the sectors that showed the highest increase in wages since Q2 2020 tend to rely on seasonal migrant workers who mostly come from the CIS countries to fill in the demand for low-skilled positions. As the numbers of migrant workers fell, firms may have needed to substitute them with domestic labor in the short run, pushing up the wage rate. However, data on remittances and migrant worker registrations indicates that the availability of migrant workers is now recovering (Box 7) The latest data up to August suggest that, as economic activity has cooled, so too has real wage growth, averaging 1.6 percent in July and August. Nevertheless, average real incomes per capita grew 13.3 percent in Q2 2021, yoy, nearly recovering their level in Q2 2019, but still 9 percent below the 2014 level (Figure 1-69).

Figure 1-68: Real wages increased sharply in the second quarter of 2021 (*yoy*)



Source: Rosstat.

Figure 1-69: Real labor income and real money income have grown faster in Q2 and Q3 of 2021 than in previous six quarters (yoy)



Source: World Bank staff using data from Short Term Economic Indicators of the Russian Federation, 2014-2020 and Jan-Jul 2021, produced by ROSSTAT.

[22] Real wages were estimated dividing nominal wages by the CPI deflator. Quarterly real wages were calculated based on averaging the respective monthly real wages.

Box 7 Labor migration developments since the onset of COVID-19

There has been considerable concern that a shortage of foreign workers is exacerbating labor market tightness and may lead to upwards price pressures. The onset of COVID-19 meant that migrant workers were no longer able to reach Russia. The number of registered migrants from CIS countries, who are an important source of lower-skilled labor to various sectors, fell by a third in 2020. Russian authorities only resumed limited flights between Russia and major sending countries such as Uzbekistan and Tajikistan in April 2021, with the rail connection still closed as of October 2021.[a] In September 2021, for instance, the Moscow city authorities cited a shortage of 200,000 migrant workers in the city,[b] which recruitment agencies have cited as underpinning concerns over labor shortages.[c] The construction sector is feeling the shortages most acutely, as migrant workers from the CIS could constituted 80-90 percent[d] of the workforce for some contractors. The Ministry of Construction estimated the short-term deficit of workers in the construction industry is around 2-3 million, highlighting that it was caused by the pandemic and closure of the border.[e,f] The Central Bank of Russia has even voiced concern that recent labor shortages could exacerbate inflation.[g]

Statistics indicate that the migrant workforce has rebounded well this year, but remittances still lag 2019 levels. Russia's net migration[h] surplus with CIS countries fell from 256,000 in 2019 to 119,000 in 2020. Twenty-seven regions, up from 7 in 2019, experienced a net migration deficit, with Moscow, Primorsky Krai, Omskaya oblast, Smolenskaya oblast, Astrakhanskaya oblast and the Republic of Mordovia experiencing the largest deficits (Figures B7-1 and B7-2). For non-CIS countries, Russia had an overall net migration deficit in 2020 of 12,000, compared to a surplus of 29,000 in 2019. Labor migration registrations, available monthly and recording all migrant workers, whether or not they entered the country in the current year, indicate a large rebound in migrant work in 2021, with registrations, at more than 6 million by September, well above the 2 million in 2020 and 4 million in 2019 over the same period of the year. Up to a million migrants from CIS countries were able to remain in the country[i] as a result of a "pandemic migration amnesty," being in force up to September 30, 2021[j]. The sharp rise in labor migrant registrations in 2021 may partly reflect large amounts of "re-registrations" after work permits lapsed during the period of restrictions. Individual monetary transfers to CIS countries, generally remittances, fell by more than 25 percent in the second quarter of 2020, but staged a gradual recovery since then. By the second quarter of 2021, they had recovered to 4 percent below their level in 2019.

[a] Ministry of internal Affairs. *Indicators on migration situation in Russian Federation*. Retrieved on Oct 8, 2021 from: https://xn--b1aew.xn--p1ai/dejatelnost/statistics/migracionnaya. The reported statistics is related to initial registrations of migrants. Unfortunately, the 2021 numbers on initial registration are not available as the Ministry reported only the overall registration of migrants, making the comparison with previous years infeasible.

[b] https://iz.ru/1220837/2021-09-13/v-moskve-ne-khvataet-200-tys-stroitelei-migrantov

[c] RBC. *Deficit migrantov privel k rostu zarplat raznorabochih*. [The shortage of migrants has led to an increase in the salaries of unskilled workers]. Retrieved on Oct 1, 2021 from: https://www.rbc.ru/technology_and_media/23/08/2021/611fa69d9a7947f545ce3f5c?from=from_main_11

[d] https://vedomosti-spb.ru/realty/articles/2021/09/13/886305-zastroischiki-zamenu-migrantam

[e] Interfax. *Minstroi predlozhil krupnym developeram soobsha vvozhit migrantov*. [The Ministry of Constructions offered large development companies to bring migrants]. Retrieved on Oct 9, 2021 from: https://www.interfax.ru/russia/782249.

[f] https://erzrf.ru/news/boleye-50-subyektov-rf-regionov-ispytyvayut-defitsit-v-inostrannoy-rabochey-sile-na-stroykakh-osobenno-tyazhelaya-situatsiya-v-stolichnom-regione

[g] TASS. "*CB: decit kadrov v economike Rossii mozhet privesti vozniknoveniyu inflyacionnoi spirali.*" [CB: deficit of labor in Russian economy could lead to inflation spiral]. Retrieved on Oct 14, 2021 from: https://tass.ru/ekonomika/12656687

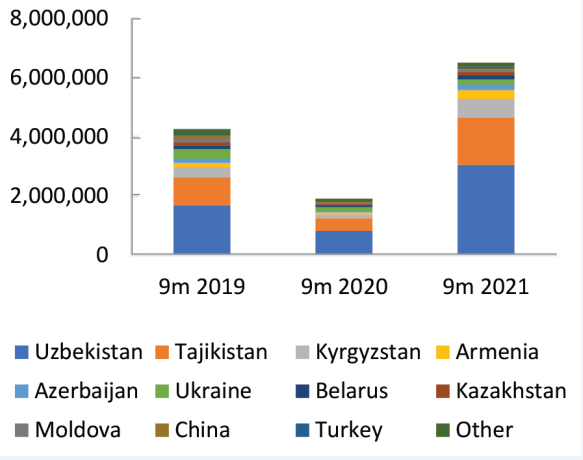
[h] Net migration data shows the difference between the number of arrivals and departures over the year.

[i] As announced by the Ministry of Interior at the press conference on September 27, 2021.

[j] According to the Decree of the President of the Russian Federation of June 15, 2021 No. 364 «On temporary measures to regulate the legal status of foreign citizens and stateless persons in the Russian Federation during the period of overcoming the consequences of the spread of a new coronavirus infection (COVID-19)»:

Figure B7-1: A sharp rise in labor migration registrations was observed in 2021

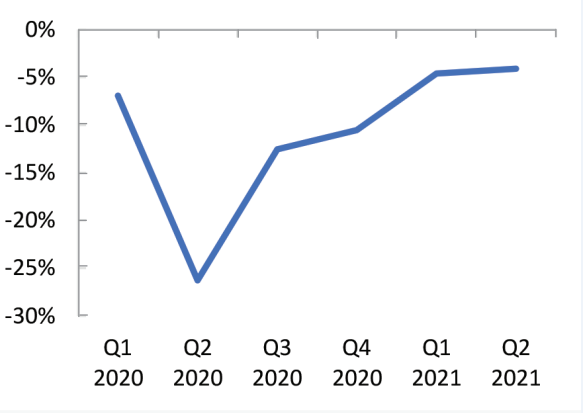
Labour migration registrations



Source: Ministry of Interior data for January-September 2019, 2020, 2021.

Figure B7-2: Remittances staged a gradual recovery since the second quarter of 2020

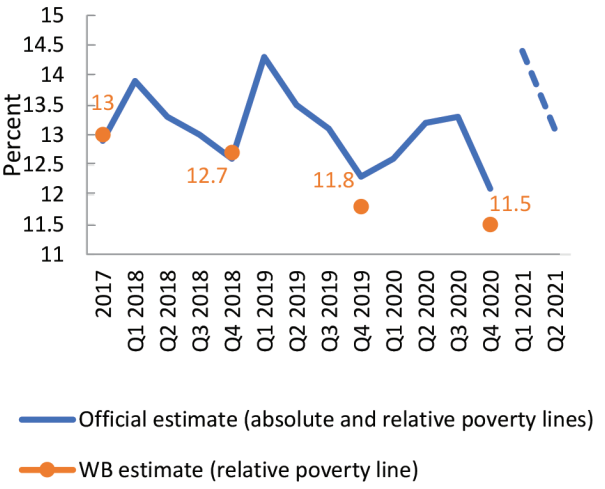
Cross-border monetary transfers, change relative to 2019



Source: Central Bank of Russia.

Following a major methodological change, official poverty statistics for 2021 are not comparable with previous estimates. Box 8 describes the methodological change implemented in 2021, which shifts to the use of two measures of minimum standard of living. The subsistence minimum, a threshold that was regularly used for computing poverty rates has changed from an absolute to a relative measure as per Federal law of December 29 of 2020. Poverty rates according to the new method published by ROSSTAT so far refer only to the first and second quarter of 2021. These are not technically comparable to the official rates published in previous years. While an approximation[23] only, an established methodology where micro-data are not available provides an indication of what poverty rates in previous periods might have looked like according to the new official methodology (Figure 1-70). Estimates of poverty rates using the new relative poverty line are similar to the official rates using the absolute line for the years 2017-2020. The spike observed in poverty in Q1 2021 is consistent with seasonal variation, whereby the poverty rate is commonly elevated in the first quarter and is associated with slower economic activity in winter. On the assumption that the two measures are comparable, however, the increase in the first quarter of 2021 vis-à-vis the fourth quarter seems larger this year than in previous years. Poverty in the second quarter fell back somewhat to 13.1 percent. Given the methodological changes, it is difficult to draw any further conclusions about recent poverty trends. In addition, as per a very recent official statement on November 26 of 2021, another poverty measure, explicitly named as "poverty rate" will also be published and updated on a regular basis.

Figure 1-70: Relative and absolute annual poverty rates in recent years are similar



Source: World Bank estimates using tabulated data.

[23] The method consists in fitting a Lorenz curve using tabulated data, and from this Lorenz curve deriving poverty rates given a specific poverty line for the period 2015 to 2020. These estimates are done through the World Bank site PovcalNet which includes a tool for estimation of poverty rates using tabulated data. http://iresearch.worldbank.org/PovcalNet/PovCalculator.aspx The method is described in Datt, G. (1998) "Computational Tools for Poverty Measurement and Analysis", FCND Working Paper No. 50, Food Consumption and Nutrition Division, International Food Policy Research Institution. Tabulated data is taken from ROSSTAT Socio Economic Conditions of Russia reports.

Box 8 Russia's new poverty measure

The methodology for official poverty measurement has recently undergone major changes. New legislation[a] has introduced a procedure according to which the value of the subsistence minimum, starting from 2021, is established as a whole for a calendar year (until 2021, it was quarterly). This subsistence level is determined at 44.2 percent of the median per capita income for the year preceding the previous reporting period, and is revised at least once every five years, based on the conditions of the socio-economic development of the Russian Federation. The value of the subsistence minimum for various socially demographic groups in the Russian Federation is set as a percentage of the subsistence minimum per capita. For the working-age population, this ratio is 109 percent: 86 percent for pensioners and 97 percent for children.[b]

More recently a new Government regulation issued on November 26 of 2021, introduces a new "poverty rate". This "poverty rate" is defined as the proportion of the population living with incomes below a poverty line defined in terms of a baseline. The baseline equals the subsistence minimum of the last quarter of 2020 (that is the old method, which defined an absolute subsistence minimum), and will be updated using the consumer price index. The national line and poverty rates will be updated quarterly, but the regional equivalent will be updated only once a year. In other words, the subsistence minimum will not define the poverty rates anymore. Instead, the new poverty line and poverty rates will be adopted for measuring the evolution of poverty while the subsistence minimum appears to continue to serve as indicator measure for the definition of pensions, social benefits and other policy instruments.

The change in the subsistence minimum implies that Russia has adopted a relative rather than an absolute measure, in line with most European countries.[c] With this change, Russia's methodology in now more similar to the measurement of poverty usually adopted in other European countries. It is similar in three aspects: first, it uses income as welfare aggregate; second, it uses a relative rather than absolute poverty line; and third, it adjusts poverty measurement to family composition. The changes adopted by Russia are in line with international experience that shows that countries tend to evolve from consumption-based, absolute-line measures towards income-based, relative-line poverty measurement as income levels increase. This is the consequence of societies realizing that an appropriate minimum standard of living is somehow related to the standard of living of the general population and that the former tends to grow with the latter.[d] The World Bank has also added a weakly relative poverty measurement in its regular monitoring of global poverty.[e]

The new methodology, however, differs from other approaches to relative poverty measurement, such as that adopted by the EU. First, the relative line in the EU is set at 60 percent of the national median equivalized income (i.e., household income adjusted by member composition) whereas in Russia the relative threshold for the minimum subsistence equals 44.2 percent of the national median of per-capita money income. Second, the welfare aggregate among EU countries refers to disposable income including social transfers, whereas the welfare aggregate in Russia is "money income" which differs from "disposable income" in Russian statistics (i.e. after transfers but before taxes).[f] Thirdly, the family adjustment is different. In the EU, household income is divided by the number of "equivalent adults", using a standard equivalence scale to assign a weight for each family member: 1.0 for the first adult; 0.5 for the second and each subsequent person aged 14 and over; 0.3 to each child aged under 14. In Russia, the threshold is adjusted, rather than the welfare aggregate, and the adjustment rates are different: working-age adults (all of them, not only one) have a line that is 21.1 percent higher than for pensioners, and 11 percent higher than for children.[g] Finally, an unusual characteristic of the new Russian relative threshold for the subsistence minimum is the reference period. While the EU line is based on 60 percent of the national median for the reference period – most lines in the World, absolute or relative, refer to a line in the reference period – the Russian line refers to "*…income for the year preceding the previous reporting period*." Namely, two years ago. So the threshold for the subsistence minimum for year 2021 is set in 2020 and refers to the median in year 2019.

Relative poverty lines tend to show more gradual changes over time and are related to reductions in inequality amongst less well-off households. In general, poverty rates experience a slower decline over time under relative than under absolute poverty lines. For instance, World Bank estimates that poverty rates under an absolute poverty line of US$5.5 fell from 16.8 percent to 11.9 between 2008 and 2018 for the Europe and Central Asia region, whereas poverty rates under the relative, societal poverty line declined from 19.4 to 16.6 percent. This "slow motion" is the consequence of poverty rates under relative poverty lines being sensitive not only to economic growth but also to its distribution. To escape poverty, households have not only to increase their incomes above an absolute level, but to get closer to the highest standard of living of the poorest half the population. Reducing relative poverty is thus also related to reducing inequality, particularly at the bottom of the distribution.

The official regulation of November 26, 2021 introduces a new measurement of the poverty rate, using a new poverty line, and may be a mechanism to keep some comparability to the previous estimates of the poverty rate (which used the old minimum subsistence measure) as well as to keep an absolute measure of poverty (which is likely to experience faster changes over time). As explained before, the poverty line will be based on the subsistence minimum of the last quarter of 2020 (that is the old method, which defined an absolute subsistence minimum), and will be updated using the consumer price index, with national line and poverty rates to be updated quarterly, and regionals to be updated only once a year. This

implies that the poverty line remains "absolute", because it takes the old basket of products and updates its price quarterly. It also implies a distinction -which was not apparent before- between the terms "poverty line" and "subsistence minimum" and hence what is meant by official poverty rates.

In operationalizing these new measures of wellbeing over time, price inflation and regional variation may also need to be considered. First is the issue of whether there will be explicit adjustment of the subsistence minimum due to inflation. In the absence of price adjustments, the subsistence minimum and the social policies attached to it may be tied to on nominal incomes two years prior. For instance, between 2020 and 2018, consumer prices increased in 8.5 percent, so the real value of the median income in 2018 is 8.5 percent lower today, and the relative poverty line should take this into account. Second, using a national median income may impose a too strict or too lenient minimum living standard across regions in Russia. Although a national minimum subsistence line is compatible with the idea of a welfare minimum defined and to be achieved by all members of society, the diversity of economic activities and living standards across the country may make social policy more difficult in some areas than others. In addition, the new official poverty measure, based on the old basket of goods, uses the general CPI for inflation adjustment, rather than an update of the prices of the goods in the basket. This is not the usual method because the CPI, which includes a much wider set of products than the poverty basket, may not always closely reflect the prices changes faced by households at the poverty line.

[a] *Federal Law No. 473-FZ of December 29*, 2020.

[b] ROSSTAT, "*O sootnoshenii denezhnyh dohodiv naseleniya s velichinoi prozhitochnogo urovnya, utanovlennoi na 2021 god, I chislennosti maloimustchego naseleniya in Q1 and Q2 2021"*. [The ratio of the population cash income to the subsistence minimum in 2021, and the number of poor people for the 1st and 2nd quarters of 2021]. Retrieved on Oct 20, 2021, from https://gks.ru/bgd/free/B04_03/IssWWW.exe/Stg/d02/143.htm.

[c] There have been previous changes to poverty lines in Russia. For a detailed history of these changes see Takeda, Y (2012) "Poverty lines in Russia", chapter 4 of *Methods for estimating the poverty lines. Four country case studies*, ILO (2012).

[d] Analysis of poverty lines across the world shows that higher standards of living in a given country tend to bring higher absolute poverty lines and that the adoption of a purely relative line, like in European Union case, is a limit case of this trend. See Ravallion, M. (2010) "Poverty lines across the World", World Bank Policy Research Working Paper, 5284, Washington, DC.

[e] The Poverty and Shared Prosperity report, corresponding to years 2018 and 2020, includes country and regional estimates using a "societal poverty line", that is a poverty line that approximates 50 percent of the national median income. For a technical presentation of the societal poverty line see Jolliffe, Dean; Prydz, Espen Beer. 2017. *Societal Poverty: A Relative and Relevant Measure*. Policy Research Working Paper; No. 8073. World Bank, Washington, DC. Formally, the societal poverty line adopted in World Bank publications equals the international poverty line of US$ 1.90 if 50 percent of the median income (or consumption) is below this threshold, and 50 percent of the median income above it. See World Bank (2018) *Poverty and Shared Prosperity Report, Piecing Together the Poverty Puzzle*, Washington DC.

[f] The disposable income is estimated by subtracting mandatory payments and transfers from the money income. Rosstat order No. 465 of July 2, 2014, specifies that the mandatory payments and transfers include direct taxes, pension, social and life insurance contribution, interest payments on consumer loans and mortgages.

[g] The adjustment of the poverty line to working adults, pensioners and children was already present in the previous Russian poverty line, also known as "minimum subsistence level".

PART II

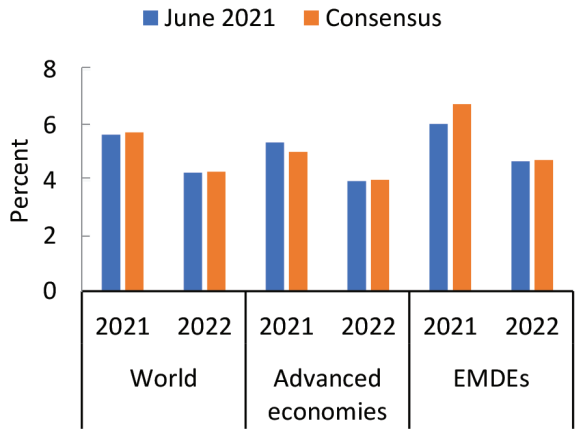
OUTLOOK

As countries move into the third year of the COVID-19 pandemic, global growth is expected to moderate down next year to 4.3 percent. Inflation is expected to ease somewhat into 2022, but inflation rates are still likely exceed their levels in 2019. Oil prices are forecast to remain high, averaging US$74/bbl in 2022 and US$65/bbl in 2023, respectively, while natural gas and coal prices are forecast to fall from their presently elevated levels. Growth in Russia is forecast to be 2.4 percent next year, contributed to by a continued strong oil sector, before moving down to 1.8 percent in 2023. On-off COVID-19 control measures, likely to be needed while vaccination rates remain low, will weigh on growth and may call for more accommodative policy, especially fiscal, frameworks to support those affected. With the Central Bank of Russia maintaining an appropriately tight monetary stance, inflation is expected to decline in 2022. Inflation has negatively surprised in Russia and around the world this year, and uncertainty over the persistence of inflation effects remains high. Combined with the Federal Reserve's planned unwinding of quantitative easing in the United States, and other monetary tightening likely in advanced economies, higher than expected inflation and capital outflows, which may call for further monetary tightening, represent a risk to the outlook.

Global growth is set to moderate in the coming years, with economies that are still struggling with COVID-19 and vaccination rates seeing even more limited growth. Going forward, global growth is set to moderate to 4.3 percent in 2022 and 3.1 percent in 2023 under the baseline assumptions established in June 2021 (Figure 2-1).[24] This recovery is envisioned to be highly uneven, with many EMDEs unlikely to return to pre-pandemic trends over the forecast horizon, in sharp contrast to most advanced economies. This divergence reflects highly unequal vaccine rollout and large differences in the size and duration of fiscal support programs. Over 70 percent of the population in advanced economies has received at least one vaccine dose compared to just 4 percent in low-income countries. Unequal vaccination rates increase the risk of new more virulent strains of COVID-19 causing a renewed global slowdown.

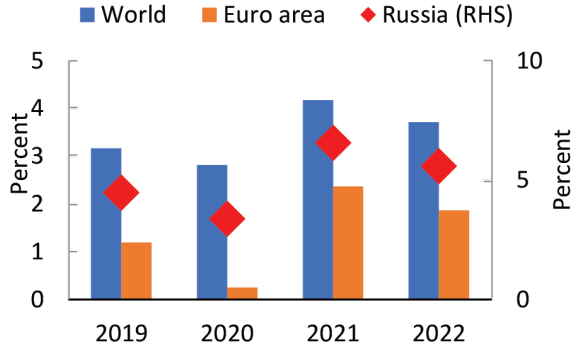
Inflation is expected to ease next year, although much depends on the course of global monetary policy action. Model-based forecasts suggest that global inflation is projected to ease somewhat in 2022 as global demand softens, production and trade bottlenecks dissipate, and energy prices decline amid increased supply (Figure 2-2).

Figure 2-1: Global growth expected to moderate next year (*GDP growth, yoy*)



Source: Consensus Economics; World Bank.
Note: Consensus growth forecasts based on October 2021 survey.

Figure 2-2: Model-based projections suggest that inflation will ease in 2022, but will likely remain above target in many economies



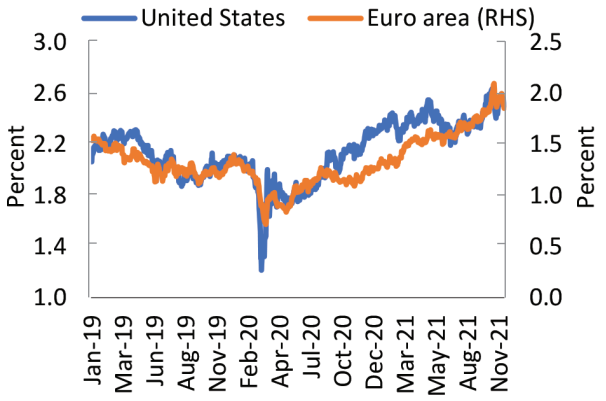
Sources: Oxford Economics; World Bank.
Note: Projections for 2021 and 2022 are baseline estimates by Oxford Economics extracted from the October 2021 vintage of the Oxford Global Economics Model.

[24] World Bank. 2021. *Global Economic Prospects,* June 2021. Washington, DC: World Bank.

Still, inflation rates in 2022 are projected to exceed those of 2019 at the global level and in most regions, including the euro area (Figure 2-3). With central banks now tightening monetary policy around the world, the persistence of heightened inflation throughout 2022 will, in part, depend on how effectively this tightening contains inflation pressure.

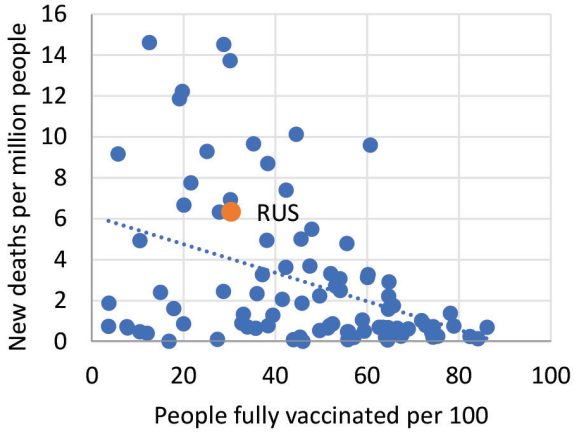
COVID-19 vaccination coverage is likely to be an important determinant of the outlook for countries in the year ahead. The extent to which countries have progressed in vaccinating their populations is emerging as an important differentiating factor in the economic outlook. By end October, over 50 percent of the world's population had received at least one vaccine dose, and around 40 percent were fully vaccinated. Two-thirds of the population in high income countries has been fully vaccinated with upper middle-income countries not far behind, with 60 percent of their populations fully vaccinated, on average. While the COVID-19 pandemic is still sweeping some countries, including those with high vaccination rates, the impact of the virus is becoming far less deadly in the countries that are well-vaccinated. This not only directly saves lives, but also reduces the need for the reintroduction of strict control measures that lead to a downturn in economic activity and incomes (Figure 2-4).

Figure 2-3: Market-based inflation forecasts in the United States and euro area are rising rapidly amid ongoing supply chain disruptions



Sources: Bloomberg; World Bank.
Note: Figure shows 5-year/5-year inflation swap rates for the euro area and the United States. Last observation is November 22, 2021.

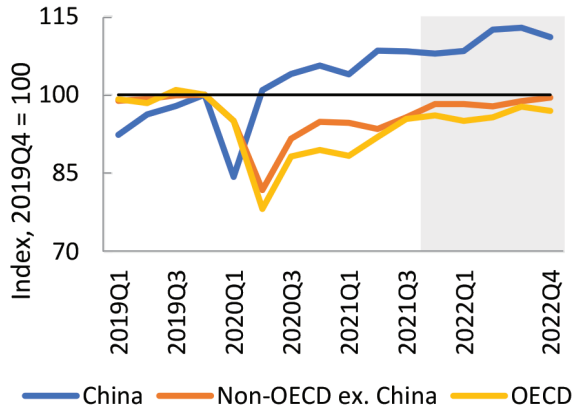
Figure 2 4: COVID vaccinations and deaths, high and upper-middle income countries, first half of October 2021



Source: Our World in Data, World Bank Staff.

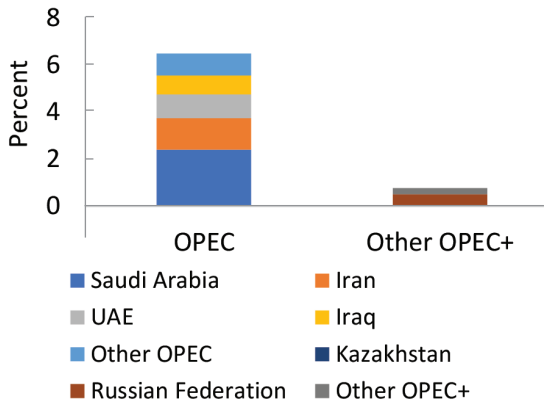
Oil prices are expected to remain high into 2022, while gas and coals prices are forecast to begin declining next year. After rising over 2021, crude oil prices are expected to be higher, on average, at US$74/bbl in 2022, before dropping back to US$65/bbl in 2023 as supply constraints ease. Oil demand is expected to reach its pre-pandemic level in 2022 as air travel recovers (Figure 2-5). Oil production should see a strong recovery of around 6mb/d in 2022 as OPEC+ unwind their production cuts and new production capacity comes onstream in some countries. OPEC+ still has substantial spare capacity (Figure 2-6). Among non-OPEC+ countries, output in the United States is expected to increase by about 1 mb/d as drilling activity picks up, and production is also expected to grow in Canada and Brazil. Natural gas and coal prices are expected to remain at high levels until the start of 2022 and begin to decline thereafter as supply constraints ease and production increases. The prices of European natural gas and Australian coal are forecast to decline by 14 percent in 2022 and by 27 and 25 percent in 2023, respectively, in response to reduced supply disruptions and government efforts to raise output. Non-energy commodity prices are forecast to modestly decline in 2022 and 2023 as the global recovery slows and supply disruptions are addressed. Metal prices are forecast to decline by 5 percent in 2022, while agricul-

Figure 2-5: Oil demand forecast



Source: International Energy Agency; World Bank.
Note: Shaded area indicates EIA forecasts.

Figure 2-6: Oil spare capacity



Source: International Energy Agency, World Bank.
Note: Data from IEA Oil Market Report November 2021.

ture prices are expected to stabilize in 2022 as the supply of grains and edible oils increases. Fertilizer prices, however, are expected to remain higher into 2022, contributing to continued elevated agricultural prices.

COVID-19 presents a major and ongoing risk for Russia until vaccination rates increase. Russia is falling far behind in vaccinating its population. With only one third of the population fully vaccinated, it is not only behind the pace of high and upper-middle income countries, but also the world average. At the same time, with Russia having removed controls relatively swiftly, COVID-19 has remained an ever-present risk. Moving into its second winter, the pandemic in Russia is experiencing one of the most deadly outbreaks in the world. An overriding policy imperative is to overcome the prevailing vaccine hesitancy in Russia and increase the pace of vaccine rollout (see Box 9). With Russia's plentiful vaccine supplies and effective healthcare delivery system, it should be technically possible to rapidly vaccinate the majority of the population, as several countries have done in a short space of time.

Box 9 Vaccine hesitancy and COVID-19

Despite good vaccine availability, vaccination rates in Russia have been stagnant. Russia's vaccination program, although ongoing for some time, has only vaccinated a third of the population and progress has slowed up to late October. Russia has developed four candidate vaccines for COVID-19, of which two – Gamalea Sputnik V and Gamalea Sputnik Lite have undergone Stage 1, 2 and 3 trials. Sputnik V was in fact the first vaccine to be announced to be developed to combat COVID-19, beginning clinical trials in June 2020. While neither is yet approved by the World Health Organization, Sputnik V has been approved for use in 73 countries and Sputnik Light in 19 countries. The other two candidate vaccines are largely only in use in Russia. Developed and with ample production facilities locally, there are no major supply issues that constrain vaccination deployment. At present, only these locally developed vaccines are approved for use in Russia, while the AstraZeneca vaccine is under trial.

Low vaccination rates in Russia are linked to vaccine hesitancy. International surveys show Russians are amongst the least willing to receive a COVID-19 vaccine,[a] with more than 50 percent of survey respondents indicating that they would not get a vaccine if it were offered to them. This reluctance seems to be relatively equally distributed amongst age groups, and even amongst those respondents that state that they are afraid of contracting COVID-19, still nearly half of those not yet vaccinated said they would not take a vaccination. The most common reason cited for not receiving the vaccination was a concern with side effects, with as many as 80 percent of the overall population being concerned about side effects.[b]

Committed efforts to overcome vaccine hesitancy can yield results. Vaccine hesitancy is not unique to Russia and many other countries have struggled with it. The United States had a similar level of vaccine hesitancy to Russia in early 2020. Although there is still a large fraction of the population who are hesitant there, the share of the hesitant population has gone down from half to just over a quarter.[c] Research suggests that the messaging of a vaccination program is important, with positive messages of the importance of being protected and gratitude from society for getting vaccinated more effective than highlighting risks to health. Means of building trust in the public around the vaccination program can also help, and this can be done by sharing accessible and complete information on trial results and explaining the options around availability and choice of different vaccinations.[d] Communications targeted to specific groups, such as the elderly, and to address misinformation about vaccines is also effective.[e]

Very recent developments suggest a renewed focus may yield results. In response to the growing pandemic, the authorities implemented a 10-day period of "non-working days" along with prohibition of visits to indoor public places and businesses. The authorities are also planning to relaunch a vaccination campaign that would pay closer attention across all of Russia's regions and strike a less negative tone than previously. After slowing over the summer, there are indications that the rate of vaccinations increased over October and into November, which some surveys suggest a very recent drop in hesitancy.

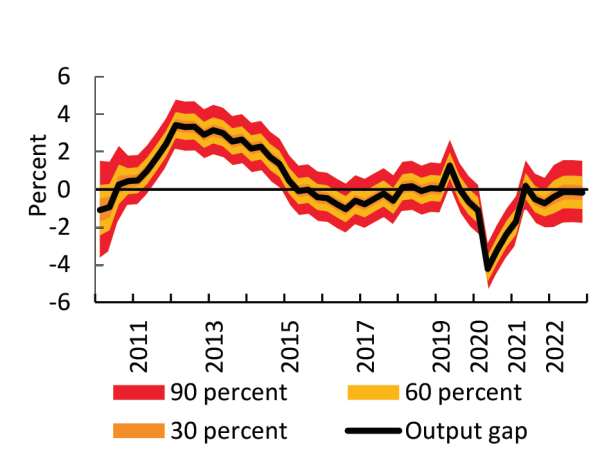
References:

World Economic Forum, How to Build Trust in Vaccines: Understanding the drivers of vaccine confidence, May 2021
https://covid19.trackvaccines.org/
https://morningconsult.com/global-vaccine-tracking/

[a] IPSOS Mori, February 2021, Global attitudes : COVID-19 vaccines | Ipsos and https://www.levada.ru/en/2021/07/13/coronavirus-and-mandatory-vaccination/
[b] The Global COVID-19 Trends and Impact Survey Results (umd.edu)
[c] https://morningconsult.com/global-vaccine-tracking/
[d] World Economic Forum, How to Build Trust in Vaccines: Understanding the drivers of vaccine confidence, May 2021.
[e] World Bank Group, 2021, Targeting Priority Populations: Recommendations and Lessons Learned from Global COVID-19 Vaccine Implementation, internal briefing and European Centre for Disease Prevention and Control, 2021 Facilitating COVID-19 vaccination acceptance and update in the EU/EEA.

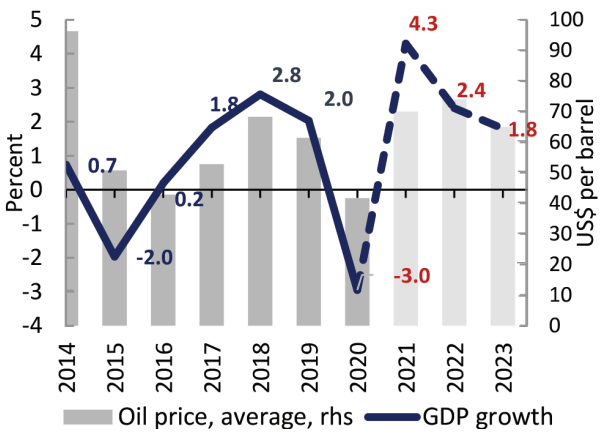
With output returning to potential sooner than expected, growth next year is expected to be lower. The strong economic recovery in 2021 has broadly returned the economy to its pre-COVID level earlier than previously expected (Figure 2-7 and Figure 2-8). Looking ahead to 2022, the outlook is affected by several short-term factors. Growth in the first quarter is expected to be high, year-on-year, driven by a low base in 2021. Also, on the upside, continued high commodity prices are expected to support increased domestic expenditure in 2022, and higher year-long crude oil production volumes, in line with rising production volumes according

Figure 2-7: Output gap projections



Source: Ruch (2021).

Figure 2-8: Growth rate and oil price chart



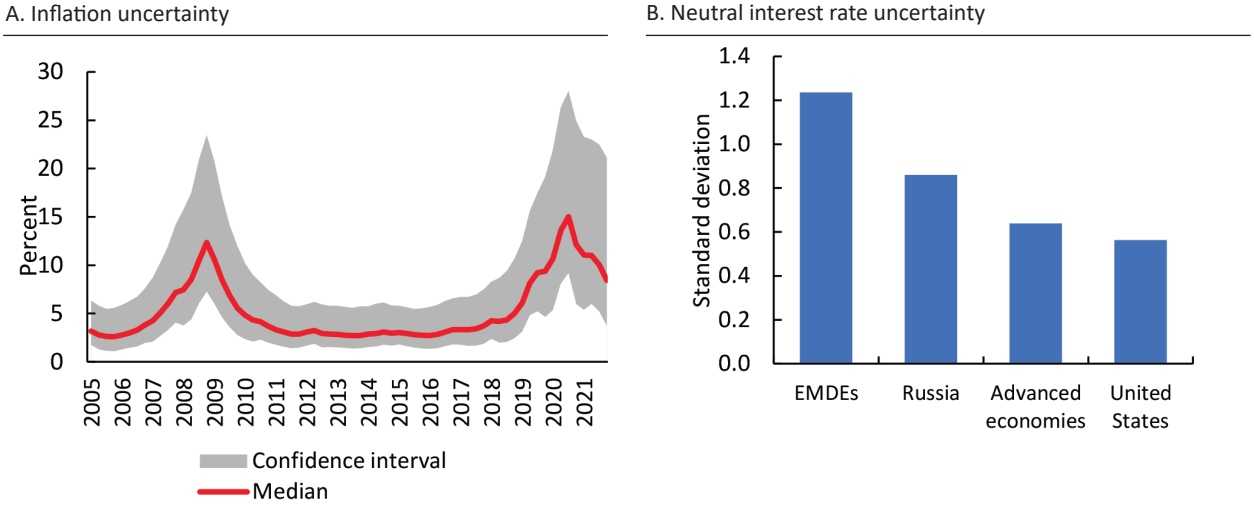
Source: World Bank.

to the OPEC+ agreement, will also add to growth. On the downside, continued COVID-19 controls are likely to weigh on growth in 2022, while tighter interest rates needed to control inflation will also limit demand. Taking these factors into account, real GDP growth is forecast to be 2.4 percent in 2022, falling to 1.8 percent by 2023. Private consumption will lead the growth moderation as pent-up demand is spent and higher interest rates limit new credit growth. Investment growth is forecast to be a step down from 2021, but remain relatively robust, with some increase in investment in the extractive sector expected. Planned investment of the NWF into infrastructure projects (about 0.4 percent of GDP) in 2022-2023 will support investment as well. Growth is expected to be strongest in the industrial sector, on the back of rising oil production volumes. By 2023, the level of output would still be about 1.7 percentage points below where it was expected to be before the pandemic, suggesting that the pandemic has had a lingering effect.

Inflation in Russia is expected to decline as the central bank maintains an appropriately tight monetary stance, but the inflation outlook is especially uncertain. Inflation is expected to decline throughout 2022 as one-off factors such as rapid commodity price increases move into the baseline and demand pressure subsides. Over the year, on average, inflation is forecast to be 6.2 percent, slightly below 2021. While higher inflation — including rising core inflation and inflation expectations — is evident in Russia, the hawkishness of the CBR's monetary approach should also balance risks and uncertainty in the outlook. Inflation forecasts — much like those for GDP growth — remain highly uncertain, due to the protracted nature of the pandemic and idiosyncratic factors, including ongoing global supply and agricultural chain disruptions, and the standard deviation on consumer inflation during the COVID-19 has been almost triple its historical average.[25] Inflation uncertainty is likely to remain above normal levels until the COVID-19 pandemic is under control and supply disruptions are resolved. Emerging markets are more susceptible to this uncertainty than advanced economies (Ruch 2021; Figure 2-9). While monetary tightening can be effective in moderating excess demand, it can also have adverse effects on the supply side, especially for more leveraged firms, and the path of demand-driven inflationary pressure is likely to be a key consideration for future monetary policy decisions.

High commodity prices will continue to contribute to a strong current account. After rising over this year, commodity prices are projected to remain elevated and contribute to robust export value growth. By the beginning of 2022, Russia's oil production will have completed the gradual increase agreed with OPEC+ and these higher volumes, expected to be maintained over the year, will also add to exports. While the current account surplus is expected to decline somewhat as international tourism

Figure 2-9: Uncertainty about inflation and monetary policy stances remains high in Russia and worldwide



Source: Ruch (2021)

Note: EMDE = emerging market and developing economies.

A. Based on estimates of stochastic volatility in a sign-restricted Bayesian VAR model. Grey area reflects the 95 percent confidence interval.

B. Based on uncertainty surrounding Laubach-Williams estimates.

[25] Average between 2001-19 (excluding the great recession).

Table 2 1: Main macroeconomic indicators

	2018	2019	2020	2021f	2022f	2023f
GDP growth, percent	2.8	2	-3	4.3	2.4	1.8
HH consumption growth, percent	4.3	3.2	-8.6	9.6	3.2	2.7
Gross fixed capital formation growth, percent	0.6	1.5	-4.3	5.3	3.8	3.6
Export growth, percent	5.6	0.7	-4.3	2.8	4.2	2.7
Import growth, percent	2.7	3.4	-12.0	16.2	5.9	5.7
General government balance, percent of GDP	2.9	1.9	-4	-0.3	1.5	1.2
General government debt, percent of GDP	14.6	14.7	20.4	20.5	21.2	21.8
Current account (US$ billions)	115.7	64.8	36.1	121.9	108.2	79.6
Current account, percent of GDP	7	3.8	2.4	7.1	5.8	4.1
Exports (GNFS), bln US$	508.6	481.6	380.4	530.9	569.9	575.7
Imports (GNFS), bln US$	343.6	352.5	303.7	364.8	406.0	432.0
Capital and financial account (US$ billions)	-78.5	3.9	-49.9	-67.0	-51.7	-34.9
Capital and financial account, percent of GDP	-4.7	0.2	-3.4	-3.9	-2.8	-1.8
CPI inflation (average)	2.9	4.5	3.4	6.6	6.2	4.0

Source: World Bank.

normalizes, with limited vaccination rollout in Russia it remains unlikely that outbound travel will return near to its pre-COVID-19 level in 2022 but will gradually recover over the next two years. With domestic demand and imports muted, overall, the current account surplus is expected to remain strong.

The budget is expected to return to surplus next year, but fiscal policy should remain responsive to the path of COVID-19. The government is already well on course to return the federal budget to a 0.5 percent primary deficit at the benchmark oil price (as the fiscal rule stipulates). With price growth moderating for non-oil commodities and some one-off revenue sources disappearing, federal budget non-oil/gas revenues are expected to decrease somewhat. As in 2021, the government is expected to continue to make use of extended or reintroduced support measures if called for by a worsening COVID-19 situation. Notwithstanding the need for significant scale up in COVID-19 support, the overall general government budget is expected to return to surplus.

Poverty, though projected to decline, will be sensitive to the severity of COVID-19 and related restrictions in 2022. The latest World Bank poverty outlook[26] projects that the poverty rate in Russia, at the upper-middle income poverty line of US$5.5 per day, is expected to have declined in 2021 and return to pre-pandemic levels in 2022. However, slower growth now expected in 2022 may mean that poverty rates will still remain above pre-pandemic levels until 2023. Poverty trends under the new official poverty line (defined as 44.2 percent of the per capita money income in 2019, that is 11,653 rubles per person per month) show a similar seasonal pattern than in previous years for the first two quarters of 2021, but it is difficult to assess how this new measure will evolve in the coming months, given the emergence of a serious, new wave of COVID-19 and less social support in place than during previous waves, albeit with much stronger labor markets. This combination of factors – unseen in previous years – makes projecting poverty rates especially unreliable. The rebound of economic growth may lead to stable or even lower poverty rate in 2021, but this downward trend may be unsustainable in 2022.

Risks to the outlook for Russia are evenly balanced. The baseline forecasts assume that Russia's vaccination program will continue to progress at a similar rate in 2022 as it has done in 2021, which would leave the majority of the population unvaccinated for most of the year. As

[26] See https://www.worldbank.org/en/publication/macro-poverty-outlook

a result, ongoing and periodic COVID-19 control measures are expected to be needed, weighing on growth. Should the authorities be successful in rolling out vaccinations at scale more rapidly, this may present a positive surprise to forecast. On the other hand, the baseline assumes a continuation of the current monetary policy stance will be broadly effective in limiting inflation pressures. However, inflation has surprised many forecasters this year, and should elevated inflation prove more persistent than expected, and necessitate tighter monetary policy than presently envisaged, this could put downwards pressure on domestic demand and growth. Energy and commodity prices, as ever, also present a risk to the outlook for Russia with considerable uncertainty over the future energy demand linked to whether economic recovery will be sustained and the speed and ambition of the green transition.

Commodity price risks. For crude oil, further shortages of coal or natural gas could increase demand for oil to meet energy needs. Conversely, renewed outbreaks of COVID-19 remain a key downside risk to the oil demand outlook. For natural gas and coal, current low levels of inventories pose the risk of further price spikes, particularly if the Northern Hemisphere winter is colder than usual. Over the longer-term, low investment in new fossil fuel production could lead to supply shortfalls in coming years unless investment in low-carbon fuels is sufficient to offset this. Additionally, changing weather patterns due to climate change is also likely to lead to greater volatility in energy prices, as weather can affect both energy demand (for cooling and heating due to extreme temperatures) and supply, due to drought- and flood-driven disruptions. The outlook for metal prices depends heavily on production decisions by China, which is the world's largest consumer and producer of all refined base metals. In addition, higher energy prices may continue affecting the production of non-energy commodities such as metals and fertilizers. For agriculture, the high price of fertilizers and diversion of food commodities to biofuels production in efforts to decarbonize global economy pose clear upside risks to prices.

Russia continues to face structural constraints to higher growth. Notwithstanding this year's recovery from the pandemic recession, Russia continues to face relatively low potential growth which, unless addressed, will impede the ability of the county to achieve high-level development goals, raising incomes and living standards. Success in this endeavor will involve strengthening frameworks and market-based incentives for firms to compete, innovation and building value, both domestically and through links to global value chains. Significant structural changes call for flexibility in economic markets, with labor, capital and firms being able to redeploy efficiently to new sectors. There are several opportunities for public action here, including in reducing barriers to competition, facilitating labor market adjustment, reducing market transaction costs, co-creation of market-directed innovation and ensuring clear and well-defined regulatory frameworks for markets and property rights.

Russia's new low-carbon development strategy present an opportunity to spur green growth. In a landmark on its journey of green transformation, the government released a new low-carbon development strategy on October 29, 2021 (see Box 10). This strategy sets out a much more ambitious scenario of climate change mitigation. Gross emissions are targeted to fall by 35 percent compared to their baseline level in 2050 and be 14 percent lower than their level in 2019. Net of sequestration of forestry and other land use change, emissions are targeted to be 60 percent lower than their present levels and 70 percent below their baseline by 2050 and on track for net carbon neutrality 10 years after that. But the plan also sets in its sights raising growth at the same time as greening the economy, targeting average growth of at least 3 percent a year. This ambitious new plan sets the challenge for a policy program that would support significant structural change. Such a twin goal of growing and greening will not be easy and will call for a simultaneous focus on addressing pre-existing economywide constraints to growth and competitiveness while limiting the costs of the green transition and taking full advantage of the opportunities it may afford.

Box 10 Strategy for socio-economic development of the Russian Federation with a low level of greenhouse gas emissions until 2050

In October 2021, President Putin announced that the country will set a target to reach carbon neutrality* by 2060. Shortly afterwards, the government issues the "Strategy for socio-economic development of the Russian Federation with a low level of greenhouse gas emissions until 2050," or the low-carbon development strategy (LCDS), a plan to scale up Russia's climate change mitigation efforts while maintaining socioeconomic development. The headline objective of the strategy is to reduce greenhouse gas emissions by 70 percent in 2030, compared to 1990 levels, and then reach net carbon neutrality by 2060, including increased absorptive capacity of forests and other ecosystems. Moreover, it is assumed that the implementation of the strategy will allow the Russian economy to achieve rates of economic growth higher than the world average (i.e., at least 3 percent).

The strategy presents two scenarios: the "inertial" scenario, based on meeting pre-existing commitments, and the target (intensive) scenario, which is designed to meet the 2060 carbon neutrality target. For each, the strategy sets out implementation details, including planned technological changes, measures to reduce the energy intensity of the Russian economy, ensure and increase absorptive capacity, as well as structural shifts in the economy.

The inertial scenario is based on the preservation of the current economic model, and structures of energy production and consumption. It includes the renewal of fixed assets, including the replacement and modernization of outdated equipment and the gradual decommissioning and replacement of housing stock. But the inertial scenario depicts only a slow decrease in the energy intensity of the Russian economy over time, and strategy suggests that the implementation of this scenario will lead to a slowdown in economic growth. The average annual GDP growth rate in 2031-2050 will be 1.5 percent, and by the end of the forecast horizon, it will drop to about 1 percent. In this scenario, net greenhouse gas emissions increase by 8 percent by 2030 and 25 percent by 2050.

The target scenario, which the strategy focuses on, is predicated on maintaining the competitiveness and growth of Russia in the context of a global energy transition. According to the strategy, implementation of the target scenario will entail support in the implementation, replication and scaling of low- and carbon-free technologies, stimulation of the use of secondary energy resources, and changes in tax, customs and budget policies. Also planned is the development of green finance, measures to preserve and increase the absorptive capacity of forests and other ecosystems, and support technologies for capturing and utilizing greenhouse gases (Table B10-1).

However, successful implementation of the intensive scenario requires ambitious investment and market growth, including growth rates of non-energy exports (up to 4.4 percent annually); growth rates of investments in fixed assets (3.7 percent annually) and continued growth in real disposable income (2.5 percent annually). The target scenario estimated the require investments to reduce greenhouse gas emissions will amount to about 1 percent of GDP in 2022–2030, rising to 1.5 to 2 percent of GDP in 2031-2050.

* "Carbon neutrality" means that an entity's emissions are fully offset by emission withdrawals and/or offsets. The difference between the concept of "net zero" is that carbon offsets may be used based on emission reductions made by another entity. Russia's plans do not at present indicate the use of offsets to achieve carbon neutrality, although emission withdrawals, especially from the forestry sector, play an important role.

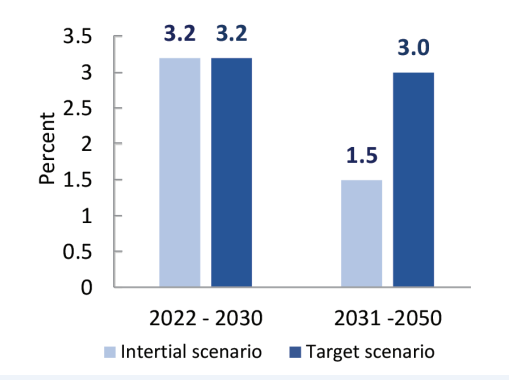
Table B10-1: Main measures for emissions reduction and their impact by 2050 in million tons of CO_2 equivalent.

		Inertial scenario		Intensive scenario
Electricity	Replacement of coal-fired generation, development of renewable sources of energy	-217	Replacement of coal generation, increase in production due to low-carbon and carbon-free generation	-333
Fugitive emissions	Reduction of fuel leaks by 60%	-129	Reduction of fuel leaks by 88%	-189
Implementation of capture technologies			Implementation of capture technologies	-278
Housing and communal services	Decommissioning of worn-out buildings in housing stock with replacement for more energy efficient	-124	Energy efficiency classes A, A + for new buildings, improving the efficiency of heat and cooling systems	-146

		Inertial scenario		Intensive scenario
Metallurgy and chemicals	Raising energy efficiency, introduction of BAT at the facilities of the 1st hazard categories, systematic modernization and replacement of obsolete equipment	-30	Low emission BAT; metallurgy and chemical industry: low-carbon production using hydrogen	-147
Transport	Electrification of passenger cars	-3	Electrification of the gas transmission system, railway transport, cars, public and freight vehicles, development of charging infrastructure	-108
Gas pipeline system	Conversion of gas pipeline systems to electric turbines			-43
Waste management	Introduction of processing facilities for municipal solid waste and waste disposal, disposal of facilities with accumulated environmental harm	-3	Separate collection and use of waste, introduction of a system for the disposal of waste industrial. equipment	-23
Agriculture			Fertilizer system optimization, precision farming	-14
Expanding carbon sequestration			Measures to combat forest fires, intensification of reforestation, refinement of estimates	-665
Total		-460		-1946

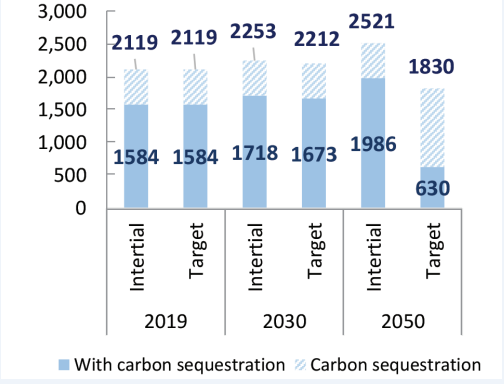
Note: Effect taking into account an increase in emissions by 46 million tons of CO2 eq. (pipeline transport, railway transport and agriculture)

Figure B10-1: Implementation of the target scenario will entail higher GDP growth after 2030 (*Average GDP growth, percent*)



Source: Strategy for the socio-economic development of the Russian Federation with a low level of greenhouse gas emissions until 2050.

Figure B10-2: Target scenario suggests that absorption capacity of all ecosystems more than doubles by 2050 (*Emissions of greenhouse gases in million tonnes CO_2 equivalents*)



Source: Strategy for the socio-economic development of the Russian Federation with a low level of greenhouse gas emissions until 2050.

PART III

RUSSIA'S GREEN TRANSITION: PATHWAYS, RISKS AND ROBUST POLICIES

While much remains uncertain about the global green transition, with more countries announcing plans to become carbon neutral, the pace of change is likely to gain momentum. There are signs of concrete policy changes in some countries around the world. It is in this context that Russia has stated its ambitions to become carbon neutral by 2060. This chapter suggests that, in an uncertain and changing global environment, proactive domestic policy action on climate change is an effective and robust strategy for managing risks that might otherwise impose a more disorderly and costly transition on Russia. Global green transition can also offer an opportunity to transform the economy for the better and thereby create potential for higher and more diversified growth. For this opportunity to become reality, however, a major overhaul of policy incentives is needed to change entrenched investment decisions and behavior of firms and households. While carbon pricing is a central enabler, a successful green transition in Russia will call for a more proactive diversification of the assets of the country – including human capital, renewable natural capital and a shift from "brown" to "green" produced capital. Investing in softer assets, such as institutions, governance, innovation and entrepreneurship, will also be essential as part of broader reform agenda to enable the emergence of a more dynamic, competitive, and innovative private sector to take the leading role in creating an internationally competitive low-carbon Russian economy.

The green transition is gaining momentum globally and Russia intends to be part of it

Across the world, environmental sustainability is moving from the periphery to the mainstream of the economic agenda[27]. Green transition here is understood here as transition to environmentally sustainable development, where economic growth does not deplete or degrade the natural basis for future growth and prosperity. The external economic policy environment is fundamentally changing as an increasingly large share of countries and major corporations around the world commit to ambitious climate-change goals and policy frameworks shifts to meet these goals. So far over 60 countries, representing over 80 percent of the world economy, have expressed aspirations to reach carbon neutrality in the coming decades.[28] Almost 20 countries, including Canada, Japan, South Korea, the EU, New Zealand, and the UK, have enshrined their commitments into law. More than 40 other countries, including Russia and some of the world's other major economies, such as Brazil, China, the US, India, South Africa, Turkey, Kazakhstan, and Ukraine, have their carbon neutrality plans included in official policy and strategy documents. The global coverage and ambition of climate policies is also advancing. Broadly, a range of green policies, with the EU's new Green Deal the most recent example, are beginning to reshape the economic landscape, with the environmental footprint of economies becoming an important factor in international competitiveness in goods, services, and financial markets. Explicit carbon prices — both carbon taxes and emissions trading systems (ETS) – are gradually increasing their coverage as well as their level.[29] The results of the COP26 in Glasgow showed that though the overall direction and timeline of travel to carbon neutrality is widely acknowledged, the decarbonization strategies of individual countries will differ mainly depending on their legacy dependence on fossil fuels. This section does not prescribe any specific pathway to carbon neutrality for Russia but provides an early analysis of Russia's own recently adopted low-carbon development strategy in the context of the emerging global trends.

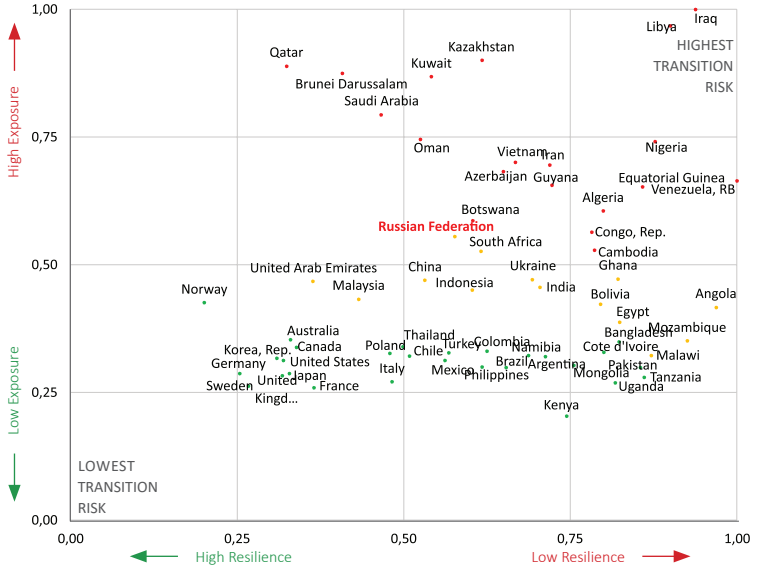
Uncertainty over the pathways and impacts of the green transition remains high. Major uncertainty exists around the future of fossil fuel markets and the barriers to international trade in emissions-intensive goods. Recent swings of energy prices are an illustration of this uncertainty and the increased short-term volatility that is likely to accompany it. Green technologies, themselves beset with uncertainty, are disrupting markets, and investors and financiers are demanding high environmental, social, and governance performance from their clients, while consumers in several high-income markets are beginning to shift their preferences away from envi-

[27] This section draws on two new World Bank reports on Russia, "*Energy Subsidies in Russia: Size, Impact, and Potential for Reform*" and "*Russia and Global Green Transition: Risks and Opportunities" (forthcoming)* and was prepared by a team led by Grzegorz Peszko and Jevgenijs Steinbuks.

[28] Energy and Climate Intelligence Unit

[29] See https://carbonpricingdashboard.worldbank.org/ and https://icapcarbonaction.com/en/ets-prices

Figure 3-1: Benchmarking Russia's preparedness (exposure and resilience) to low-carbon transition



Source: World Bank.

ronmentally harmful products. It is impossible to predict when and how the disruptive technologies, habits and business models will reach tipping points beyond which the fossil fuels, carbon-intensive technologies will become rapidly obsolete. But when this happens, it may be too late to commence transition without systemic disruption.

Russia's recently adopted low-carbon development strategy[30] recognizes that the international context is changing, and that Russian economy needs to adapt to it. The strategy, released in October 2021, seeks to ensure sustainable economic growth in the face of changing world demand for energy and carbon-intensive products and by participating in the new green markets. The strategy lays out a new and more ambitious target scenario, which enables a pathway towards net carbon neutrality by 2060. The target, "*intensive*" low-carbon development scenario, aims to bring higher GDP growth, larger investments and higher household disposable income than the continuation of the business-as-usual model (presented in the "*inertial*" scenario), through technological modernization, faster diversification and deeper integration into the world economy. The strategy does not provide full details about the policy instruments that could achieve these goals but, for instance, the "intensive" scenario, raises the prospect of reforming energy taxes and various forms of carbon pricing.

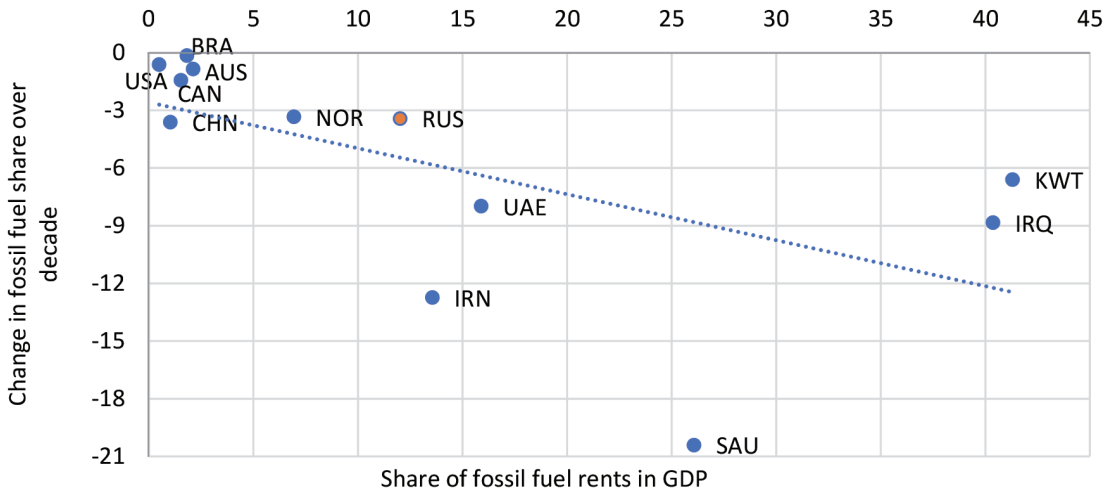
[30] The Russian Federation's "Strategy for the socio-economic development of the Russian Federation with a low level of greenhouse gas emissions until 2050," issued October 29, 2021. Box 10 in Chapter 2 provides more details on the strategy.

Compared to other large fossil-fuel exporters, Russia is moderately well-prepared to manage the impacts of the global low-carbon transition. According to an index of preparedness of countries for low-carbon transition developed by the World Bank,[31] Russia is less exposed to transition risks and more resilient to the risks than many other fossil-fuel exporters. (Figure 3-1). The resilience index, which measures a country's adaptability to external shocks is lower than, for example, in most GCC countries, but higher than in several less advanced and conflict-affected oil and gas producers. Russia's economy is more diversified than the latter group. Russia has more developed infrastructure, manufacturing sectors and financial system, and more skilled human capital, all of which will be important to support its green transition.

Nonetheless, Russia's GHG emissions (including LUCF) per unit of economic output are high by world's standards (Figure 3-3). Furthermore, unlike OECD and the other BRIC countries, Russia has made little progress in decoupling GHG emissions from economic growth since 2007 (Figure 3-2).

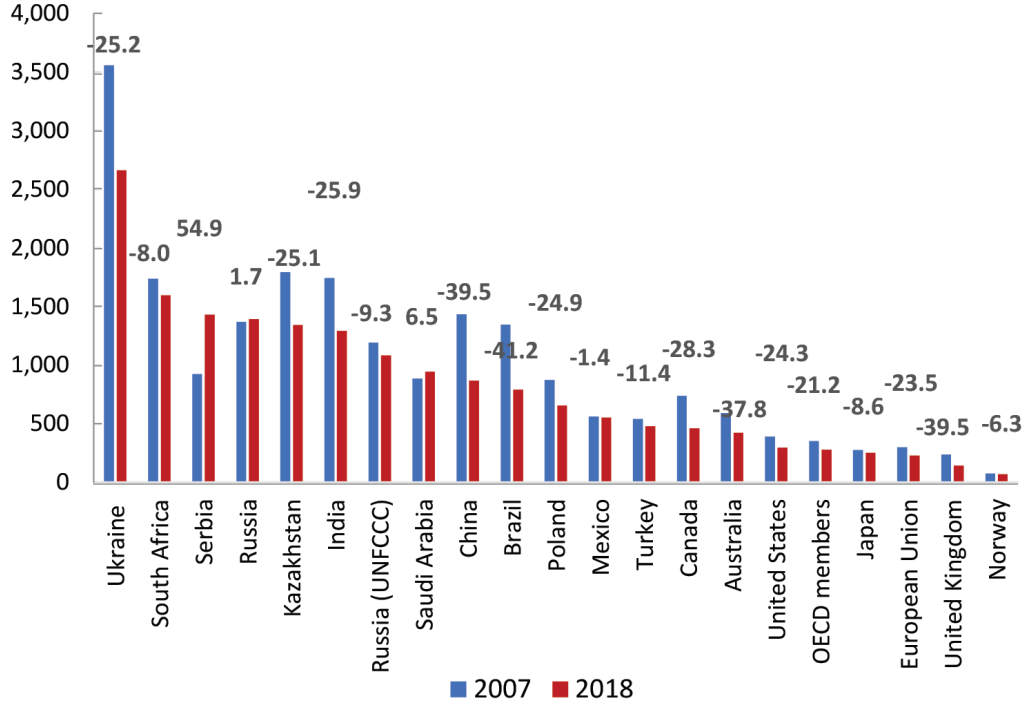
[31] Peszko et al. 2020. The index consists of four indicators of exposure and 11 indicators of resilience. Exposure indicators: (i) fossil-fuel exports as a percentage of GDP, (ii) expected fossil-fuel rents as a percentage of GDP, (iii) future emissions from existing power plants as a proportion of current annual power generation, and (iv) manufacturing exports. Resilience indicators include an index of relative position on the global fossil fuel supply curve, economic complexity, quality of infrastructure, technology adoption, human capital, financial market development, macro-fiscal performance, institutional quality, etc.

Figure 3-2: Fossil fuel rents as a share of GDP and change over time



Source: World Bank (WDI).
Note: Share is average of last 3 years. Change is last 3 years over 3 year average a decade ago.

Figure 3-3: Changes in carbon intensity of GDP, 2007-18 (including land-use change and forestry) tCO2e/ million constant 2015 $ GDP and change in percent



Source: CAIT, UNFCCC.
Note: the chart presents two data points for Russia: based on CAIT and UNFCCC data sets.

This section presents scenarios and options that can support Russia in adopting a risk management approach to navigate uncertain waters of the green transition. It offers an initial analysis of the resiliency of the authorities' low carbon development goals to possible external climate action and complements the LCDS by estimating the level of policy ambition that would be needed to achieve aspirational goals of the strategy. While it identifies some options for operationalization of the strategy, more detail will be presented in forthcoming World Bank Climate Change and Development Report (CCDR) for the Russian Federation. The CCDR will cover broader sectoral challenges and opportunities (including energy and green competitiveness across sectors and products). It will analyze innovation and structural policies and discuss poverty and social aspects of transition. It will cover special themes such as the Arctic and adaptation in agriculture, as well as special opportunities to develop a hydrogen economy, climate-action minerals and a bio-economy based on forests.

Cooperative climate action may be Russia's most robust policy response: results from a scenario analysis

The World Bank has stress-tested the performance of the scenarios in Russia's LCDS under alternative assumption around global climate action. A set of "what-if" scenarios, representing different cooperative and non-cooperative policy pathways to reach the goals of the Paris Agreement, explore uncertain but plausible climate and trade policies by other countries and possible Russian policy responses. The latter are calibrated to be consistent with emission outcomes (though not necessarily policy assumptions) of the "inertial" and "intensive" scenarios set out in Russia's LCDS (Table 3 1). All scenarios are stylized possible future policy pathways and this exercise does not reflect any judgment about which scenario is more or less likely. Running scenarios in this way reveals strengths and risks of alternative decisions under uncertainty about what other countries will do. It identifies robust strategic and tactical policy choices and informs about political economy and social challenges that will need to be addressed to achieved aspirational goals of the LCDS. The scenarios were simulated using a global dynamic recursive dynamic CGE model, ENVISAGE, with an integrated endogenous oil, gas and coal extraction module. For simulation purposes, countries are grouped into two stylized and hypothetical climate clubs: net fuel importers (NFIs) and fossil fuel-dependent countries (FFDCs). NFIs include high-income OECD countries as well as middle-income countries like China and India.[32]

Scenarios cover both global cooperation and non-cooperative climate policy pathways – the latter with and without border carbon adjustment taxes (BCAT). The cooperative climate action scenario ("*carbon price globally*") assumes a uniform global carbon price levied by both net fuel importers (NFIs) and fossil fuel dependent countries (FFDCs) including Russia, to achieve a 2°C-consistent gross CO2 emissions by 2050.[33,34] Two non-cooperative climate mitigation scenarios are based on achieving the same global emission reduction but with emission reduction actions by net fuel importers only. The "carbon price in NFIs" scenario assumes that NFIs apply domestic carbon policies without measures to protect against emissions leakage, while the "carbon price and BCAT by NFIs" scenario assumes that NFIs complement carbon pricing with border carbon adjustment taxes (BCAT)[35] on imports from fossil fuel-dependent countries, including Russia, based on the carbon content of imports. See Table 3-1 for a summary of these scenarios.

[32] See van der Mensbrugghe, 2019, Makarov et al. (2021), Peszko, van der Mensbrugghe, Golub (2020) and Peszko et al. (2021) for more details of the modelling. The resource depletion model is calibrated to the Rystad U-Cube extractive model.

[33] Rogelj et al., 2018.

[34] An additional cooperative scenario with 1.5°-consistent cumulative gross CO_2 emissions was run as sensitivity analysis. This scenario applied a globally uniform carbon price that increases up to US$256/$tCO_2$ by 2050, achieving global cumulative global gross CO_2 emissions of 777 Gt CO_2 in the period 2018-2050, in line with a range of IPCC scenarios consistent with 1.5° goal. Such a strict carbon budget could not be achieved in the unilateral policy scenarios. Therefore, this scenario is it not shown in most figures below. Please see "*Russia and Global Green Transition: Risks and Opportunities*", World Bank, forthcoming for more details.

[35] BCAT simulated here is a hypothetical but plausible and WTO-consistent border carbon adjustment tax which has the same economic logic as the EU's CBAM, but the design details differ. Like EU CBAM, BCAT is directed at the prevention of carbon leakage, but its coverage in terms of countries, sectors and emissions scopes is much broader. BCAT is imposed by all NFIs in the form of tax on region- and commodity-specific carbon content of imports from all non-cooperating fossil-fuel dependent countries.

Table 3-1: Scenario structure

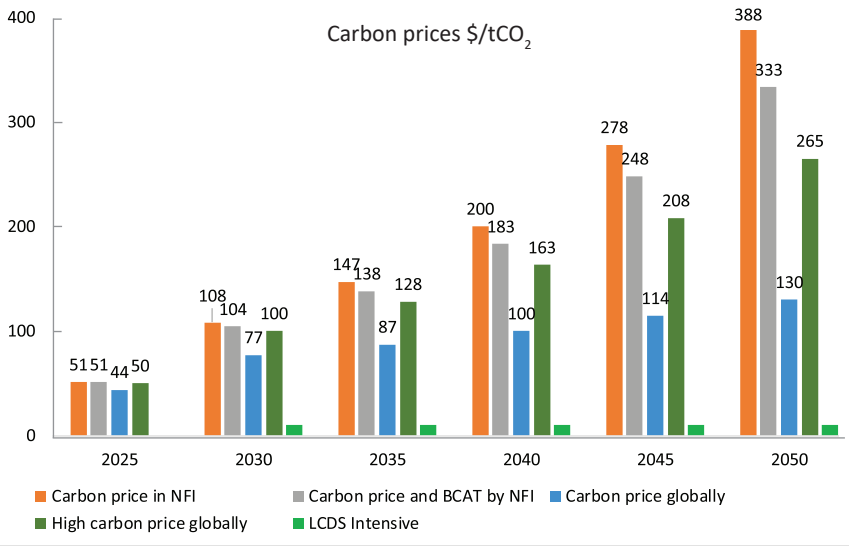
Russian LCDS scenario	Corresponding World Bank scenarios	Assumed climate policies	Trade policies
Inertial (BaU) scenario	Reference (NDC)	Reference with only unconditional NDCs *	No border carbon adjustment levied by NFIs
	Carbon price in NFIs	Unilateral carbon taxes in NFIs only	
	Carbon price and BCAT by NFIs		Border carbon adjustment taxes levied by NFIs on carbon content of imports from FFDCs
Intensive (target) scenario	Carbon price globally	Global cooperative carbon taxes including Russia	No border carbon adjustment levied by NFIs

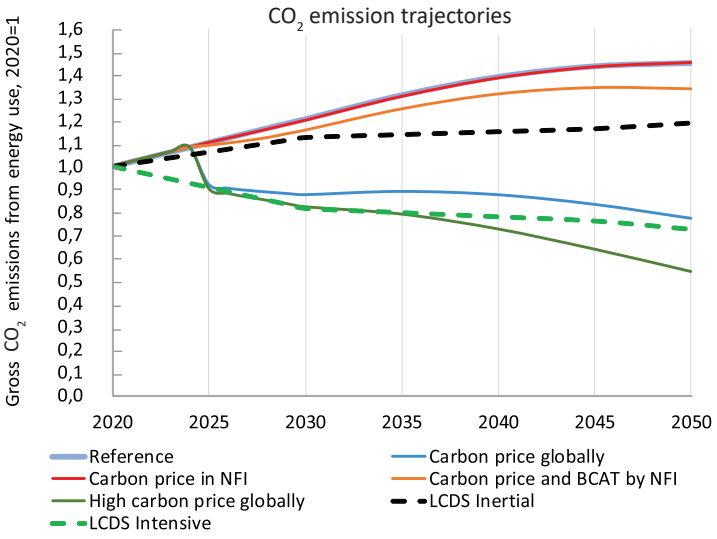
Source: Peszko et al. (2021).
Note: Unconditional Nationally Determined Contributions (NDCs) mean that country will implement its goals without any conditions, entirely based on own resources and capabilities.
** Nationally Determined Commitments which are 'unconditional' – i.e., they are commitments that are not depending on policy frameworks or support from other countries.*

More ambitious climate policies will be needed to achieve even the modest reductions of gross GHG emissions envisaged in the Government strategy. In the World Bank non-cooperative policy scenarios presented here, Russia and other fossil-fuel dependent countries (FFDCs) are assumed to continue business-as-usual policies without carbon pricing. This roughly corresponds to assumptions used by the Russian Government in the LCDS "inertial" scenario. The World Bank analysis shows however, that if NFIs implemented ambitious unilateral climate action, Russia's gross domestic CO_2 emissions in the "Inertial" scenario would be significantly higher than in the Government LCDS (Figure 3-4, right panel).

The World Bank also estimated what carbon prices would be needed to achieve aspirational objectives of the LCDS. Such a carbon price equates to the one that would be applied in the "cooperative" scenario. The carbon price required to induce the planned gross GHG emissions reduction, covering all energy-related CO_2 emissions in the economy, starts at US$44/t$CO_2$ in 2025, increasing to US$130/t$CO_2$ by 2050 (Figure 3-4, left panel). It should also be noted that the reduction of gross GHG emissions is only by 14 percent by 2050 relative to the current level, with the majority of net emissions reduction in the LCDS expected to be achieved through biological sequestration by forests.

Figure 3-4: Carbon prices and emission trajectories under different climate policy scenairos





Source: Makarov et al 2021, based on data from Peszko et al. (2021).
Note: The presented carbon price applies to the group of countries to which carbon policy is applied to – the CAC in all scenarios, FFDCs where there is global action and applied to their exports in the BCAT scenario.

Table 3-2: Summary of GDP and welfare impacts compared to baseline by 2050 in different scenarios

Cooperation scenario	Possible outcomes	Welfare	GDP
Cooperative (Russia implements carbon price)		-4.9%	-3.8%
Non-cooperative (Russia doesn't implement carbon price)	No BCAT / BCAT	-3% / -9.2%	-0.9% / -4.6%

Notes: Changes in welfare are measured using Hicksian equivalent variation measure.

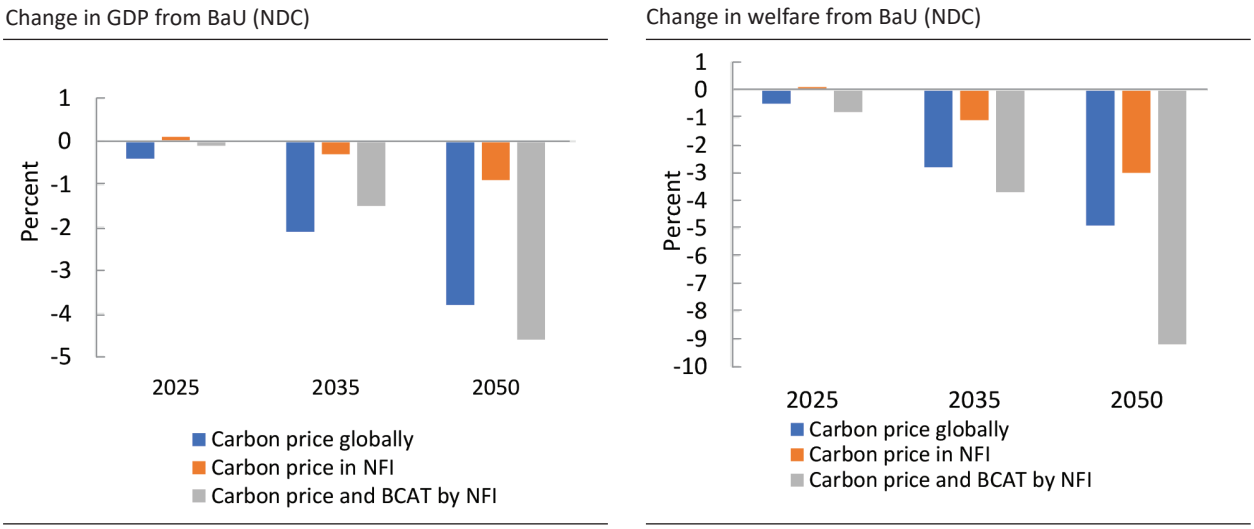
The outcomes of Russian domestic climate-policy scenarios can be significantly altered by the simultaneous policy actions of its main trading partners. There is not one expected outcome of any single strategic policy decision. Each depends on what other countries will do. For example, the continuation of the current, "brown" growth model by Russia (consistent with the LCDS "Inertial" scenario) might leave Russia better off in one state of the world, but not if major fossil fuel importers apply BCAT against non-cooperating countries. The model illustrates that under some unique external conditions, it is possible that Russia may be better off by not taking ambitious domestic climate action, although this is based on strong assumptions that might not hold in practice.[36] This scenario may be tempting, as it builds on familiar value chains, skills, capabilities and business models for Russia. However, this policy path leaves Russia exposed should other countries apply BCAT measures. While the probability and timings of a broad coalition of countries applying BCAT is impossible to determine, if it is implemented, it could result in the worst outcome for Russia's growth and the welfare of its citizens, especially over time.

Table 3-2 and Figure 3-5 summarize model-based estimates for these different outcomes. The EU has already announced plans to implement a CBAM — a much more modest version of BCAT simulated here (Box 11). A large coalition of countries applying BCAT with bigger market power would have more significant effects on Russia, because the possibility of redirecting exports to different markets would be reduced.

A domestic cooperative climate action in Russia is therefore a more robust strategy. The cooperation strategy may come with slightly higher costs should a BCAT never be introduced, but it would be far preferable than a non-cooperative scenario with BCAT. Figure 3-5 sum-

[36] When major fuel-importing economies (NFIs) apply a high unilateral carbon price in the non-cooperative scenario, global demand for fossil fuels declines, lowering Russia's export revenues from energy commodities. This depreciates the value of the ruble, boosting the competitiveness of exports of refined and manufactured products of fuel-intensive industries, strengthening Russia's pre-existing comparative advantage. Furthermore, a decline of global fuel demand dampens producer prices, and hence lowers the opportunity costs of using these fuels at home.

Figure 3-5: Changes in GDP and welfare



Source: Makarov et al 2021, based on data from Peszko et al. (2021).

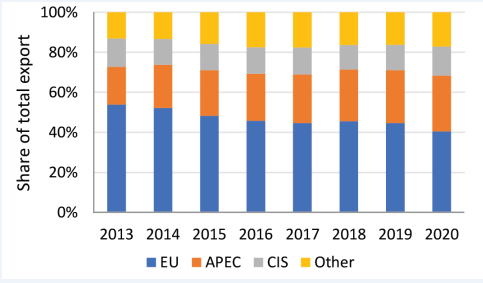
marizes the stylized results of different possible scenarios. Cooperative domestic carbon pricing may increase production costs in the large carbon-intensive part of the economy, compared to scenarios in which polluters do not pay for the environmental damage they cause. It is the more robust strategy however, because it hedges a risk of BCAT. In contrast, non-cooperative scenarios minimize GDP losses but increase exposure to external shocks such as BCAT.

There are other external risks, not simulated in these scenarios, that climate cooperation would also mitigate. This includes some risks mentioned in the Government LCDS, such as increased international economic and political isolation and disconnection from access to modern technology and finance. Scenarios presented so far also do not capture innovation and growth opportunities that are associated with modern climate policies and not with business-as-usual ("inertial") scenario. This will be explored in the discussion on asset diversification below.

Box 11 The case of the EU's planned Carbon Border Adjustment Mechanism

The European Union has announced a new Carbon Border Adjustment Mechanism (CBAM). The EU is Russia's largest trading partner and accounts for almost 41 percent of Russia´s exports, despite the fact that the share of trade between Russia and the EU in total Russian external trade has declined by 13 percentage points from 54 percent in 2013 (Figure B11-1). Therefore, the introduction of a CBAM is an important development for Russia. The CBAM was announced as part of a larger package of climate-policy instruments aimed at accelerating emissions-reduction efforts. The EU CBAM is to be introduced to protect domestic energy-intensive and trade-exposed (EITE) firms participating in the EU Emissions Trading System (ETS) from competition by importers of similar products from jurisdictions that do not make polluters pay. The CBAM seeks to replace the existing mechanism of addressing the risk of carbon leakage through allocating emissions allowances free of charge to the emissions-intensive and trade-exposed (EITE) sectors and products. It is not the first CBAM instrument that exists. California's 10-year-old emissions trading system has already required carbon border adjustments for imports of electricity from other states and Mexico that do not have a carbon-trading framework linked to California's ETS.[a] Going forward, the EU is likely to expand the CBAM to cover more sectors and more products after 2030.[b]

Figure B11-1: The EU is the largest Russia's trading partner, although the share of Russian export to the EU has declined since 2013



Source: Customs RF, Haver Analytics.

The EU CBAM was designed to have a targeted and limited impact. It covers imports of relatively few products from only five EITE sectors covered by the EU ETS, such as electricity, cement, fertilizers, steel and aluminum. It applies only to direct emissions from production processes, and not emissions associated with indirect inputs to production, such as electricity and heat.

Recent World Bank simulations have assessed the implications of EU CBAM on Russia's economy using the computable general equilibrium (CGE) model ENVISAGE. The analysis is based on scenarios that approximate the design of the EU CBAM announced in July 2021, and possible future expansions of its scope. The results are compared to a base-case scenario that does not include CBAM but does include the impact of EU Green Deal policies. The model estimates how the Russian economy would respond to external shocks such as EU CBAM, and how this would interact with possible domestic policy responses.

Results show that the EU CBAM reduces Russia's exports to the EU, partly offset by increased exports to other countries. Compared to the reference scenario, the introduction of CBAM (Scope 1 emissions only) would result in an average loss of 2.8 percent of Russia's real exports to the EU in 2030-2035. If Scope 2 emissions are covered by the CBAM, the loss will account for 7.1 percent, with the largest reductions in chemical products (above 60 percent in 2030-2035), mineral products (30-40 percent), electricity (nearly 30 percent), ferrous metals, and petroleum and coal products (each around 20 percent). On the other hand, exports of services, non energy-intensive goods and oil to the EU would increase. The loss of exports to the EU would be partly compensated by a rise in exports to other regions. Taking these effects together, the loss of exports by 2035 would be equal to only 0.4 percent, if the EU CBAM covers scope 1, and 1.2 percent if scope 2 is also included.

While the introduction of EU CBAM has significant implications for the selected sectors of the Russian economy and individual companies, in the current form it has limited impact at the macroeconomic level even if Russia does not implement equivalent domestic carbon pricing. The economy-wide macroeconomic effect is estimated to be negligible. GDP by 2035 GDP would be only 0.06 percent lower than in the reference scenario if only scope 1 emissions are covered, and an 0.12 percent lower if both scope 1 and scope 2 emissions are covered. Even under a further scenario whereby the U.S. joins the EU in introducing a CBAM, Russia's losses will only marginally expand.

The EU CBAM is more impactful in encouraging cooperative carbon pricing in other countries than in causing economic harm at this stage. It will apply only after 2025 and then will be phased gradually until 2035. This transition period is to allow for operators (importers and exporting firms) to adjust and become familiar with the new administrative requirements without any financial impacts, and to allow Competent Authorities in both exporting countries and EU member states to gain operational experience. Only from 2026, EU importers of these goods will be required to start buying carbon certificates corresponding to the carbon price that would have been paid, had the goods been produced in the EU under the EU ETS. After 2026, the costs of these certificates will only gradually approach full EU ETS price over 10 years, as free allowances in the EU are gradually phased out by 10 percent a year. So the full impact of the EU CBAM would be experienced by importers only after 2035.

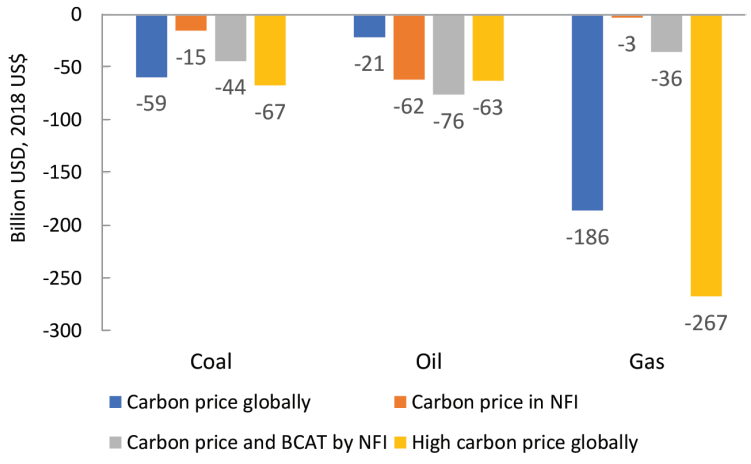
The affected Russian exporters will therefore have time and many options to adjust even without the intervention by the Russian Government.

1. Reduce the selling price to EU importers, who will have to buy carbon certificates for emissions that are above the EU benchmark in the absence of credible MRV that would prove that actual emissions intensity is lower.
2. Install credible monitoring, reporting and verification systems (MRVs) to prove that actual emissions are below EU benchmark.
3. Modernize production processed and reduce emissions intensity to EU benchmarks.
4. Redirect exports of affected products to domestic consumers or to other external markets
5. Shift exports by exporting products from cleaner plants to the EU and selling more carbon-intensive products elsewhere (so called "resource shuffling")

The impacts of domestic carbon prices differ depending on how revenues are used. Recycling revenues of carbon prices for investments boosts GDP to 5 percent above the scenario with EU CBAM and without Russian carbon pricing, but at the expense of lower household consumption. Export growth is also stronger with carbon pricing revenue use for investments.

[a] (CARB (2011), §95852(b) https://perma.cc/TK6X-MWJ7)
[b] As publicly stated by the EU Commission's Director General for Taxation and Customs Union.

Figure 3-6: Change in the value of Russian fossil fuel assets w.r.t. BaU, Billions, 2018 US$



Source: Makarov et al. 2021, based on Peszko et al. 2021

Note: The value of assets was calculated as NPV of resource rents created over the lifetime of individual deposits in the 2018-2050 period @4% discount rate in 2018 US$. The high carbon price scenario is a sensitivity scenario where globally uniform cooperative carbon prices increase to US$388/t$CO_2$ in 2050, reducing cumulative global gross CO_2 emissions from energy use to 777Gt, which is consistent with the 1.5C scenarios.

Green transition in the rest of the world may also induce a long-term devaluation of value of fossil-fuel assets.[37] High cooperative carbon prices consistent with 1.5 degree IPCC scenarios represent the worst-case scenario for the Russia's fossil fuel wealth, which can drop by US$400 billion (in 2018 US$) below the baseline in the 2018-2050 period (Figure 3-6). This is mainly a result from the sharp reduction in the value of natural gas assets.[38] The value of the oil assets is the least impacted in percentage terms, as a significant share of the transportation sector, still relies on petroleum. Coal loses up to 37 percent of its asset value. The reduction in resource rents is also associated with the loss of export revenue, which in percentage terms is particularly large for coal and natural gas.

The cooperative scenario is likely to lead to less loss of Russian oil wealth but more of coal and gas. Globally cooperative carbon pricing in Russia may be in the strategic interest of the Russian oil companies. In this scenario, Russia's export revenues and resource rents from crude oil and refined petroleum are consistently higher than in both non-cooperative scenarios in which the high carbon prices foreign fuel importers implement dampen global demand for oil and accelerate transition away from internal combustion engines, especially in transport. This decreases Russian oil export revenue more than in cooperative scenarios, where overseas consumers face a more gradual increase in fuel prices. In contrast, Russia's coal and gas rents and export revenues are higher in non-cooperative scenario, especially without BCAT. Gas exports are higher in non-cooperative scenarios also because more ambitious climate policies abroad accelerate the phase-out of coal in NFIs, and natural gas serves as a transition fuel . Russian natural gas is also relatively cost-competitive globally, and hence even if global demand falls[39] Russian exporters benefit from higher export prices (even after BCAT) as some more costly competitors shut down their operations, creating temporary supply crunches and price spikes.

[37] Asset value is measured here as the discounted value of the future resource rents over the lifetime of producing and proven reserves with high probability of being extracted. See World Bank 2021.

[38] The model does not account for the use of natural gas assets in developing a hydrogen sector.

[39] Makarow et al. 2021

What domestic policy action is needed to achieve the government's low-carbon vision?

A successful shift away from fossil fuel-intense activity will support Russia's development goals. Since 2014, Russia's economic growth has stagnated at very low levels, and low potential growth is projected to maintain the slow pace of increase in real incomes.[40] An overarching challenge is to sustainably raise growth and make it more resilient to external shocks. There are various factors that combine to limit potential growth, and as the preceding analysis shows, the reliance on carbon-intensive economic activity is a major risk and vulnerability to plausible scenarios of future global developments. A green transition offers an opportunity to develop growth drivers, such as innovative activities, knowledge-based services and lower-carbon manufacturing that will be more resilient to global changes in fossil fuel demand and use. But opportunity becomes reality on the ground only with right incentives for economic agents. A broad set of policies needs to be called for in Russia to enable a green transition. This section focuses on one especially central policy area of fiscal policy that is related to carbon pricing and energy subsidies. The World Bank's forthcoming Russia Climate Change and Development Report will explore the broader set of critical policy enablers and opportunities arising from a green transition in Russia.

While the Russian Government is aiming for carbon neutrality by 2060, it is yet to establish key policy frameworks and identify specific investments that will spur firms and consumers to engage in low-carbon economic opportunities. Russia's low carbon development strategy makes clear that Russia will require significant investment, both public and private and foreign and domestic, to raise its growth potential and decarbonize the economy. While the vision for such a shift has been set out, the specific policy mechanisms are not yet clear, and these will be critical to supporting an effective transition. At present, demand for green investments is latent rather than effective, with policy and institutional incentives that still favor "brown" rather than "green" activities.

[40] Recent estimates of potential growth from the World Bank and several other economic forecasters agree that potential growth of real GDP in the medium-term is around, or below, two percent per year.

Energy taxation and carbon pricing

Policy incentives will be needed to attract investors into modern, low-carbon assets and prevent further accumulation of emissions-intensive assets. Fiscal policy will be central to correct often distorted prices for energy to ensure that they convey incentives to reduce carbon emissions and air and water pollution and enhance the sustainable use of natural resources. The greening of the fiscal strategy can be combined with lowering the fiscal burden on labor and profits. This opens the opportunity for green fiscal reforms by gradually shifting the tax base from economic goods, like income, to economic "bads", like pollution and wasteful use of resources.

Putting a price on carbon is the bedrock for the broader range of climate policy instruments. Carbon pricing can take a number of forms – usually as a tax or a tradeable permit system. Making polluters pay for the prevention of costs they impose on society is in fact addressing a market failure rather than creating a distortion. While the goal of such a policy is to reduce emissions – thus eroding the base of tax or permit payments – in the transition period, this policy also produces fiscal resources that can be used to accelerate the transition and/or extend protection to those that may otherwise lose out. While carbon pricing always needs to go together with an array of other policies, it can be seen as a horizontal foundation for coherent incentives to shift the direction of economic development to more sustainable and resilient pathways in a market economy.

Energy, transport and industry would be the most important sectors to reach with a carbon price. Energy, transport and major industrial plants are some of the most common sectors to have carbon pricing applied either via a carbon tax, tradeable permits or a combination of both. Including these emissions in carbon pricing would cover 79 percent of emissions in Russia. Explicit carbon pricing is more difficult to apply to fugitive and process emissions, which are disproportionally large in Russia's energy, transport and industrial infrastructure. The use of carbon pricing in agriculture and waste is more challenging, and comprehensive policy packages would need to be designed carefully, while the issue of the fuel use by the household sector is covered by the following section.

An emissions trading scheme (ETS) can cover major emitters in energy and industry. Cap-and-trade systems involve putting a joint limit on multiple polluting installations (a cap), and further dividing it into plant-by-plant emission allowances. Allowances are often initially transferred to operators of polluting installations free of charge, especially for emissions that are lower than the benchmark of the best available technologies in industry. Eventually, most ETSs aim to auction all initial allowances[41]. Once distributed, emission allowances can be sold by firms who have more of them than needed to cover actual emissions (for example, because they improve their emission efficiency or face a drop in output) to firms that do not have enough allowances. Through such decentralized trading, firms are expected to collectively reduce emissions below the cap in a way that is most flexible and least costly to the whole industry. An ETS, if adequately enforced, can offer greater certainty than emission taxes that the targeted emission reduction will be met. But the carbon price, a costs to firms, is less certain because allowance prices fluctuate with markets. ETSs are intended to countercyclically adjust prices to economic cycles, lowering them during economic slowdowns when demand for emitting activities goes down, and increasing prices when demand for emissions goes up, such as during economic booms. Several instruments, such as banking, future contracts and derivatives, are being developed by financial markets to hedge the risk of price volatility. ETSs are not easy to extend to small emitters because of transaction costs. To function efficiently, ETSs require many market participants with similar market power and strong regulation of competition.

Emissions-based energy taxes and carbon taxes are another way to implement carbon pricing. Energy excise taxes are very low in Russia by international benchmarks (Figure 3-7). Not only can their rates be increased to encourage energy efficiency, but their base can also be delinked from physical quantities (liters, tons) and linked more to the energy content and embedded emissions of GHG and local pollutants. Several countries already levy excise taxes on polluting transport fuels based on their average emissions intensity, and also levy them on other energy products, such as gas and other fossil fuels supplied to homes and businesses. Carbon taxes can also be implemented on a similar base as ETS allowances, that is on actual, verified or estimated emissions. A carbon tax involves lower transaction costs for government administration than an ETS. Taxes also offer more predictable costs to firms and revenue to government, but more uncertainty about emissions outcomes and are less countercyclical. Shift tax incidence from other taxes, such as income, to emissions generates incentives for energy efficiency and clean technology innovation, and it helps to facilitate transformation to a modern, complex, resource-efficient and competitive economy.

[41] For instance, the EU ETS, in operation for 15 years, still offers free allowances to cover most emissions of emission-intensive and trade-exposed sectors. Free allocation in the EU ETS is expected to be phased out gradually between 2026 and 2030, over the same period that the carbon border adjustment mechanism is introduced.

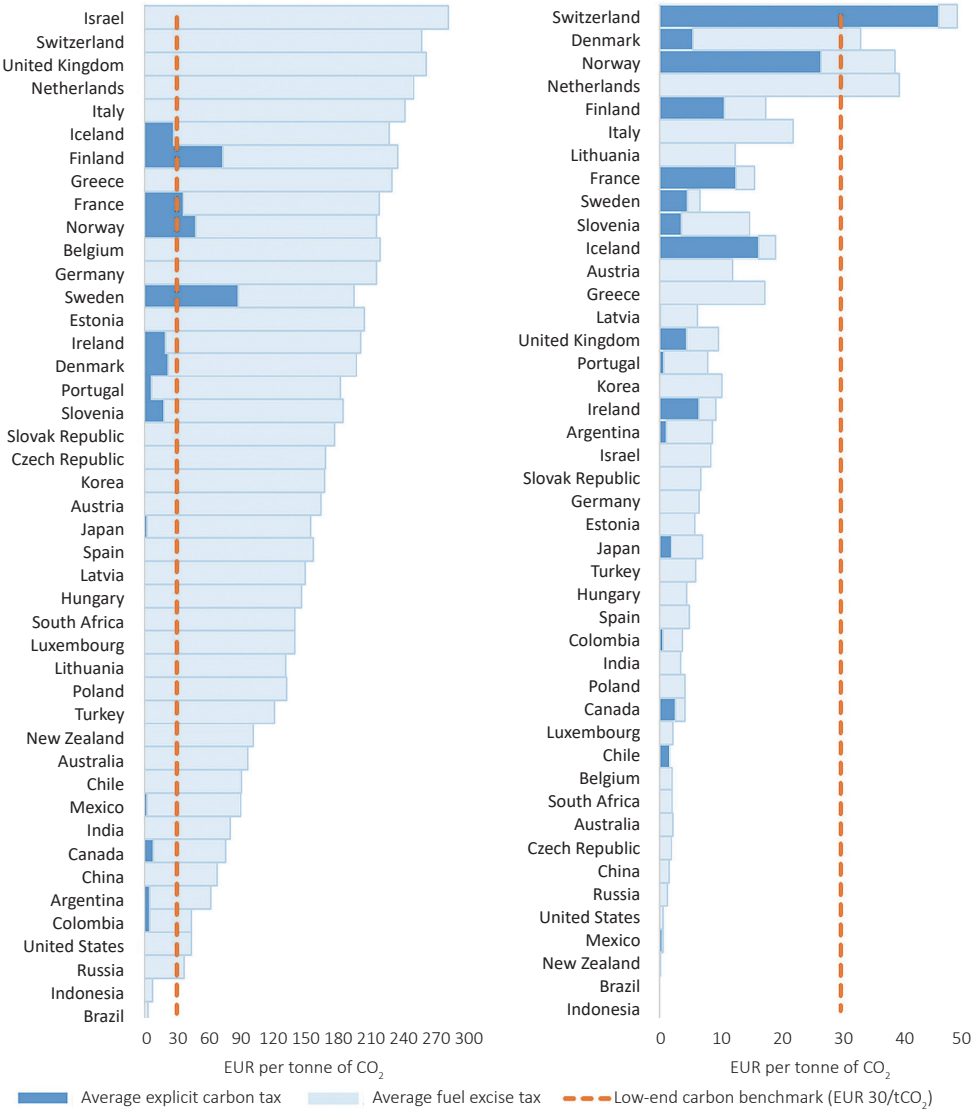
Reforming subsidies for consumers of fossil fuels

Russia provides significant energy subsidies to both industrial and residential consumers. The International Energy Agency (IEA) ranks Russia 19th among 41 countries in terms of fossil-fuel subsidies as a share of GDP, and 4th in terms of the absolute value of subsidies (after Iran, China, and Saudi Arabia). As in many other fossil fuel-exporting economies, Russia has been reluctant to cut energy subsidies because of the multiple policy objectives they serve and the potential negative impacts of their removal on households and firms.

Russia's uneven economic performance has been a factor in the government's approach to energy subsidies. Concerns about economic growth feature widely in Russia's political discourse on reforming energy subsidies, prompting an approach that has favored a slower increase in regulated energy prices. The economic boom of the 2000s was accompanied by bold reform measures to reorganize the electricity and gas markets. Major steps to raise domestic gas prices were also taken during this period. By contrast, weak economic growth since 2013 has coincided with a cautious approach to further changes in the gas and electricity markets. Furthermore, economic growth has impacted domestic energy demand, indirectly affecting the government's plan for subsidy reform. It is common for energy-exporting countries to prioritize energy-subsidy reform when rising domestic demand raises concerns over future energy export revenues and the growing fiscal costs of energy subsidies.

Russia remains an upper-middle-income country where a rise in energy prices constitutes a considerable affordability challenge. With a per capita income of US$11,584 in 2019, about a third of the average level for the European Union, household budgets are more sensitive to increases in energy prices. Russian policymakers recognize affordability as a major constraint that has contributed to their cautious approach to subsidy reform. Focus-group discussions conducted by the World Bank confirmed that respondents tend to view the cur-

Figure 3-7: Effective taxes on road and non-road emissions in OECD and other countries



Source: OECD.

rent tariffs as high and unfair. Given the relatively low income of Russian citizens compared to those elsewhere in Europe, and that Russia is a large fossil fuel producer, focus group respondents have difficulty accepting that energy is underpriced in Russia. Thus, a modest increase in energy prices would translate into significant discontent directed at the government. Access to "cheap energy" appears to be a widely shared goal among the public.

Total consumer energy subsidies are sizeable and estimated to be around 1.4 percent of the country's GDP in 2019. A new World Bank analysis[42] has estimated the value of consumer energy subsidies. The methodology used to estimate consumer energy subsidies employs the price-gap approach (i.e., assessing the difference between the observed and the 'competitive market' price for an energy commodity) and focuses on consumer subsidies in natural gas, electricity, and oil products. According to this analysis, the size of consumer energy subsidies in 2019 were as follows:

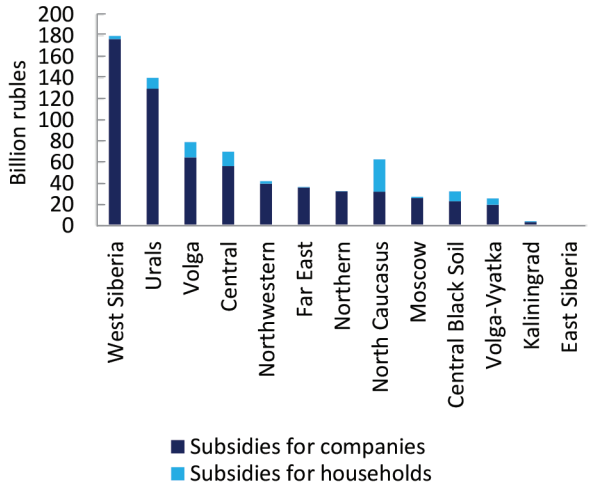
1. Direct subsidies for natural gas were estimated at US$11.3 billion, or 0.7 percent of GDP, of which US$3.7 billion, or 0.2 percent of GDP, was allocated to electricity production.

[42] "*Energy Subsidies in Russia: Size, Impact, and Potential for Reform*", Sanghi and Steinbuks (2021).

2. Cross-subsidies in electricity and natural gas amounted to a further US$6.2 billion, or 0.32 percent of GDP, respectively.
3. Subsidies in petroleum products, stemming from the reverse excise tax, amounted to US$6.6 billion, or 0.4 percent of GDP.

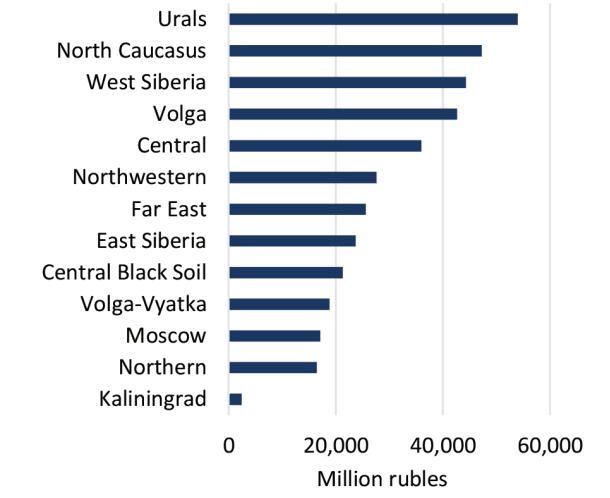
Russian regions benefit differently from consumer energy subsidies. The West Siberian and the Urals regions are estimated to gain the most from natural gas subsidies (Figure 3-8). The Urals, the North Caucasus, and the West Siberian regions receive the largest amount of electricity subsidies, jointly accounting for almost 38.6 percent of the total amount of cross-subsidization (Figure 3-9).

Figure 3-8: Natural gas consumer subsidies across Russian regions



Source: World Bank estimates.

Figure 3-9: Electricity consumer cross-subsidies by Russian regions



Source: World Bank estimates.

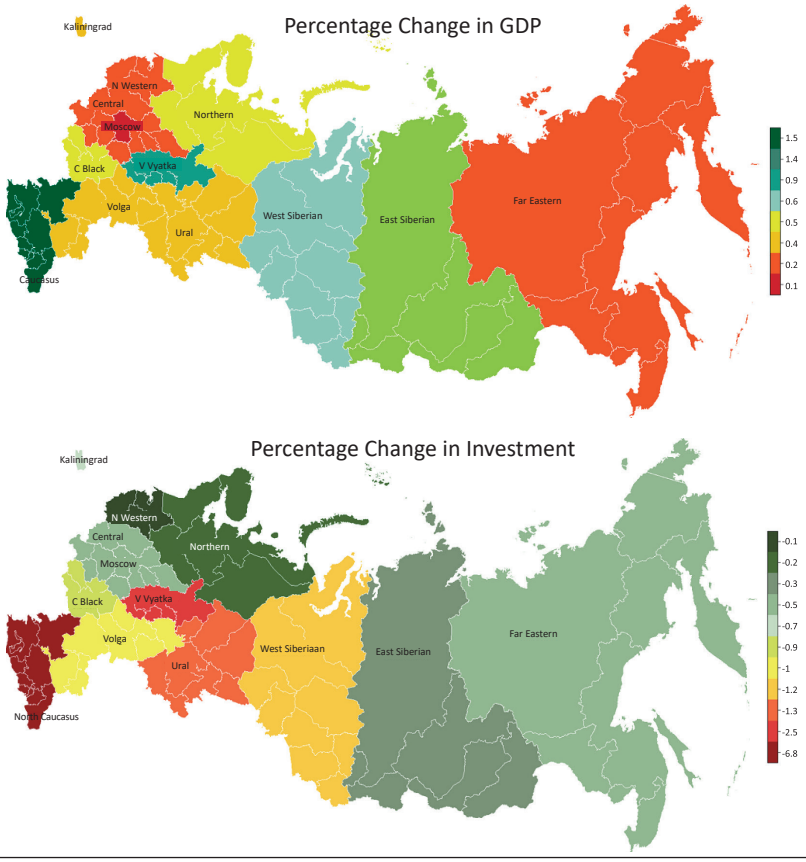
A macroeconomic analysis has estimated the national and regional implications of consumer energy subsidy consolidation. Analysis of the impact of removing energy subsidies was conducted using both a computable general equilibrium model and a welfare analysis based on microeconomic survey data, including detailed coverage across the 13 regions of the Russian Federation.[43] Three scenarios were designed to estimate the impact of subsidy eliminations on various attributes such as GDP, employment, investment, output, trade, market prices, and consumption:

- **Base-case scenario:** All subsidies are eliminated on industrial and private household consumption. This results in positive allocative efficiency gains reallocated back to the regions through government transfers, in proportion with the government revenues received.
- **Regional-support scenario:** Same as the base case, but the subsidy expenditures saved are transferred to the three economically weaker regions: the Volga-Vyatka, the North Caucasus, and the Central regions.
- **Investment-support scenario:** Abolishing energy subsidies for energy-consuming industries may reduce their economic efficiency and adversely affect their competitiveness in world markets. Same as the base case, but this scenario simultaneously compensates energy-consuming industries for the loss of subsidies. Government transfers are allocated to these sectors to ensure that investments in them do not fall, while investments in other sectors may be allowed to rise or fall organically.

Removing consumer energy subsidies is estimated to boost the GDP and to benefit regional economies. Based on the CGE modeling analysis, a reasonably positive outlook for Russia emerges in the base case scenario (Figure 3-10), which may further be improved by compensating the poorer regions more (as in the regional support scenario) or compensating sectors adversely affected by the reform (as in the investment support scenario). In the base case, when subsidies are eliminated, Russia's GDP could increase by 0.52 percent, private consumption by 0.50 percent, government expenditure

[43] Central, Central Black, East Siberia, Kaliningrad, Moscow, Northern Russia, North Caucasus, Northwestern, Volga, Ural, Volga-Vyatka, and West Siberia.

Figure 3-10: Regional economies would benefit from the removal of energy subsidies



Note: Base case scenario results.
Source: Rosstat, World Bank staff calculations.

by 0.54 percent, and exports by 0.43 percent. Gross regional product (GRP) increases in all regions. In the regional support scenario, there is a sharp increase in the GRP of the three poorest regions: the Volga Vyatka (2.61 percent), the North Caucasus (2.72 percent), and the Central region (0.69 percent), whereas the increase in the GRP of other regions is lower than in the base case. Investment in all regions declines in the first two scenarios but increases in the investment support scenario, in which energy-intensive sectors are compensated for subsidy withdrawal.

In general, the economic gains resulting from eliminating subsidies stem from the following factors:

- The savings available from subsidy elimination offer more fiscal space to the government and pave the way to increased spending on other productive sectors of the economy.
- Because subsidies are eliminated, the energy sector uses fewer distorted resources allocated to other non-energy sectors. This increases allocative efficiency while boosting the economy.
- While subsidy elimination leads to a decline in the output and consumption of certain energy sectors, others do not experience a similar decline. They may even gain due to inter-fuel substitution. Because electricity and gas have cross-subsidies, there could be an increase in industrial consumption if the amount of cross-subsidy elimination exceeds the effect of direct subsidy removal.

Eliminating energy subsidies would also yield climate benefits with carbon emissions declining by 0.43 to 0.75 percent. Phasing out subsidies on consumer energy products would reduce energy demand in carbon-intensive sectors of the economy and boost economic activity at both national and regional levels. More economic activity, however, leads to higher emissions through the "rebound effect." In this case, though, the net effect is estimated to be a reduction in emissions, indicating a combined gain in economic activity and lower emissions.

Welfare losses from the removal of energy subsidies can be fully compensated for. A welfare analysis based on the 2019 Russian Household Survey and administrative data yields a more recent estimate of the social impacts of potential subsidy reforms than previous analyses. The findings indicate that:

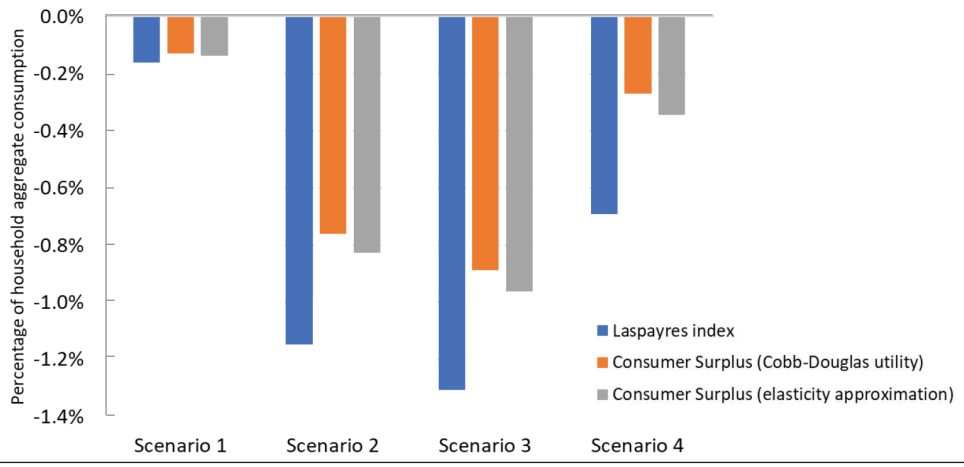
- Removing subsidies would adversely affect household welfare (Figure 3-11).
- Subsidies are progressive in relative terms; they represent a larger share of household consumption among poorer households.
- Subsidies are regressive in absolute terms; that is, most of the budget for subsidies goes to groups at the top of the distribution.

uses, such as promoting energy efficiency or supporting long-term economic and environmental benefits. Alternative compensatory policies could also be designed to strengthen the social safety net, depending on the goals and instruments deployed. Alternatively, these revenues could be used elsewhere in the economy. Regardless, the findings demonstrate that the removal of pipeline gas and electricity household subsidies can be implemented with adequate compensatory policies.

Using revenues to support green innovation and asset diversification

Refraining from domestic carbon pricing in Russia increases the likelihood that in the future, revenues from such taxes will be collected and retained abroad. Carbon pricing policies elsewhere influence resource trans-

Figure 3-11: Removal of subsidies would adversely affect household welfare



Source: Authors' calculations using Russian Household Budget Survey, 2019.
Note: Under Scenario 1, pipeline gas household prices are not subsidized, while electricity prices remain unchanged. Scenario 2 indicates unchanged pipeline gas prices without subsidies for the price of household electricity. Under Scenario 3, neither gas nor electricity household prices are subsidized. Scenario 4 includes an adjustment to prices due to equilibrium estimates of general consumer price changes, in addition to changes in gas and electricity prices.

A compensatory policy can be designed that fully protects the poorest segments of the population from welfare losses due to subsidy removal while still leaving resources for investments in energy-efficient production and consumption. A simple simulation exercise of redistribution of only one-third of the additional revenues collected from higher utility prices through lump-sum transfers shows that the population at the bottom 40 percent of the income distribution can be fully shielded from welfare losses in the short term. This indicates that all people most vulnerable to subsidy removal can be protected from the impact of price changes in the short term, even if a large share of additional revenues caused by price hikes is directed towards investment. This has important policy implication, since the additional revenue for other

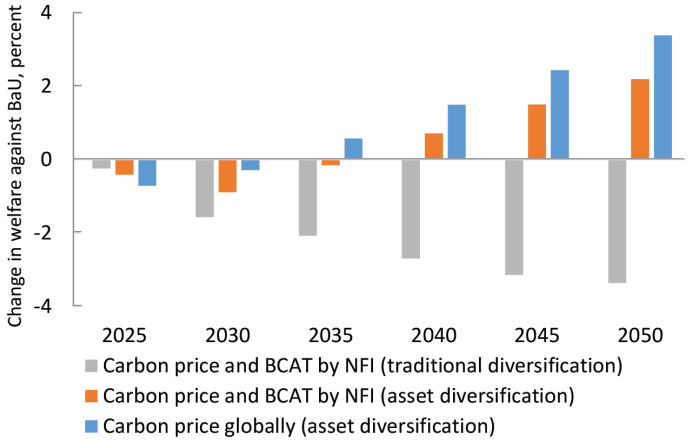
fers in two ways. First, even without imposing a BCAT, when countries that import Russian oil, gas and coal put a carbon price on their own emissions from burning these fuels, they in fact capture a portion of Russian resource rents and collect them as their carbon tax revenue. Russian export prices of these fuels fall as a result to account for the impact that the tax has on demand. Second, if foreign importers also impose tariff-based border carbon adjustment measures (BCAT or CBAM), they collect additional carbon-price revenues from Russian emissions-intensive goods sold abroad. In cooperative climate action scenarios, the rent transfer abroad is smaller and carbon price revenues are collected by the Russian government instead of being sent abroad. These

revenue streams can be used to support households and to make investments in innovation and skills for future sustainable, technology-driven growth.

Carbon pricing is a necessary condition for a green transition, but it needs to be complemented by a broader reform agenda to succeed in needed structural transformation and to improve growth prospects. Model results support the conclusion that carbon pricing alone is not enough to fundamentally diversify Russia's economy away from fossil fuels, and most importantly from fossil fuel-intensive industries. Even in cooperative scenarios, Russia makes big strides to decarbonize energy and transport systems, but otherwise continues to specialize in areas of existing comparative advantage of relatively carbon-intensive activities. Ultimately, this leaves Russia still vulnerable to green transition risks, such as technology obsolescence and loss of international competitiveness in a world economy increasingly dominated by emerging green sectors. Recognizing this, the LCDS identifies the need for scaled-up investment and innovation in green sectors. But beyond this, a strategy to build a diversified asset base, including the nation's human capital and renewable natural capital, will be needed to enable a more fundamental shift of economic structure to new, more sustainable and productive activities. This will also call for the overhaul of institutions, governance and development (Figure 3-12) as part of a broader structural reform program. It is only in such a scenario that Russia has to potential to raise its growth performance and achieve welfare gains[44] beyond what it could expect in the baseline.

Russia has stated its intention to start on a long journey of green transition, which will be difficult but holds the promise of more secure and higher incomes for its population in the future. The discussion in this chapter is predicated on unknowns: in particular, the pace and scope of the global green transition. But this is the reality in which policymakers must make difficult decisions. Our analysis supports this move, by suggesting that in plausible scenarios of global green transition, Russia's domestic action can protect it from the worst effects. Beyond that defensive motivation, there is an opportunity that the proposed transition offers, but only with the institutions and policies that enable a confident, dynamic private sector to make forward-looking decisions and move into new green sectors. Achieving this transition will require sustained efforts to implement a range of policy frameworks, both those targeted at low-carbon sectors and those to enhance economy-wide competitiveness. The train of disruptive green transition of the world economy has left the station, but Russia still has the time, capabilities and self-interest to be an important global partner in this journey.

Figure 3-12: Active asset diversification policies could increase both GDP and welfare above BaU, especially with cooperative carbon pricing, fulfinling all aspirations of the Russian Low Carbon Development Strategy.



Source: Makarov et al. 2021 based on Peszko et al. 2021

competition policy to encourage the market entry of new, dynamic private-sector firms. Figure 15 provides an illustrative example of such a scenario, where carbon pricing is applied as a broad incentive to shift investment and consumption from "brown" to "green" activities and additional revenues are used to support innovation and human capital

[44] These results are consistent with Peszko, van der Mensbrugghe, and Golub (2020) who first developed this approach to simulate induced innovation and asset diversification with the CGE model, and like Makarov, Chen, Paltsev (2020), showed that recycling energy/carbon tax revenues into the development of human capital and R&D would significantly mitigate the risks of a reduction in fossil-fuel exports, although the delayed return to such investments may decelerate growth and household consumption during the first years of implementation.

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RUSSIA ECONOMIC REPORT No 46, DECEMBER 2021

AMIDST STRONG ECONOMIC RECOVERY, RISKS STEMMING FROM COVID-19 AND INFLATION BUILD

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