

FEBRUARY 2022

RUSSIA

SANCTIONS:

CLIMBING THE ESCALATION LADDER



Russia Sanctions: Climbing the Escalation Ladder

February 28, 2022

Clay Lowery, Executive Vice President, clowery@iif.com

Elina Ribakova, Deputy Chief Economist, eribakova@iif.com, @ElinaRibakova 

Benjamin Hilgenstock, Economist, bhilgenstock@iif.com, @BHilgenstockIIF 

Greer Meisels, Chief of Staff, gmeisels@iif.com, @GreerMeisels 

Jessica Renier, Managing Director, Digital Finance, jrenier@iif.com, @jessrenier 

INTRODUCTION

We have written previously about the logic behind the use of economic sanctions, stating that they are “*a critical element of the foreign policy toolkit of both national governments and international bodies.*”¹ They are an effort to change a country’s behavior without resorting to military action, which is what we see playing out today. The United States, along with other members of the international community, is imposing “unprecedented” sanctions on Russia in response to last week’s invasion of Ukraine.

Initially, debates waged as to the scope, severity, and efficacy of the first round of sanctions on Russia. However, with the latest round of actions—selected banks being removed from the global financial messaging system SWIFT and restrictive measures being imposed on the Russian Central Bank (CBR)—the commitment of members of the international community is clear. Understanding the impact of these actions, however, is key. The bottom line is that these sanctions will have a significant impact on Russia’s overall economy, and average Russians are already feeling the cost. The sanctions target Russia’s domestic financial system, causing bank runs and forcing Russia’s central bank to continue hiking rates and/or to use its foreign exchange reserves. Furthermore, we believe that the CBR will have to institute strict capital controls and possibly declare a bank holiday as bank runs accelerate and demand for foreign exchange continues to rise sharply. As a result, we anticipate seeing negative growth in an economy that has already been hindered by increasing isolationism.

Even though we are seeing some of the most serious sanctions imposed on a country in recent history, there is still an escalation ladder and, if necessary, the United States and others can continue scaling up sanctions. These could include removing energy transactions-related exceptions from sanctions against the Russian banking system, shutting down further Euro-based transactions, and prohibiting transactions in the secondary market for existing Russian debt.

This paper will systematically look at additional sanctions that have been or could be imposed on Russia in several key areas: global payments systems, access to the U.S. Dollar, sovereign debt, hydrocarbon exports, and export controls. Equally important, it will not only analyze the effects of these latest sanctions on the Russian economy but also the broader implications for international financial markets. For example, one of the biggest impacts on the global economy is likely to be on trade. While details on how the new sanctions affect energy are still emerging, we do know that sanctions on its central bank will make it more difficult for Russia to export energy and other commodities. As a result, we may see commodity prices surge.

Sanctions are the pre-eminent tool of economic statecraft, and President Biden and other world leaders have made it clear that these sanctions were only a first step, leaving the door open for further escalation should Russian aggression continue.² In the coming days we will see limits placed on so called “golden passports,” the launch of a transatlantic task force so that today’s financial sanctions are enforced and not circumvented, and a battle will be waged against “disinformation and other forms of hybrid warfare.” In other words, we have yet to reach the top of the ladder.

¹ Institute of International Finance: “[IIF White Paper – Market Interventions: U.S. Sanctions on Russia](#)”, March 2020.

² This paper’s discussion of sanctions on Russia includes measures taken up to and until February 27, 2022.

TABLE OF CONTENTS

1. RUSSIA SANCTIONS: FROM PRE- TO POST-INVASION OF UKRAINE.....	3
2. THE ECONOMIC AND FINANCIAL IMPACT OF SANCTIONS ON RUSSIA	4
a. Sanctions on Financial System Access.....	4
i. <i>Reduced Dollar Exposure</i>	4
ii. <i>Important Vulnerabilities Remain</i>	6
b. Sanctions Regarding Global Payments Systems	6
i. <i>Development of Domestic Systems</i>	7
ii. <i>Limited International Connectivity</i>	7
iii. <i>International Financial Linkages</i>	8
iv. <i>Significant Financial and Economic Impact</i>	9
c. Sovereign Debt Sanctions.....	9
i. <i>Primary OFZ Market Sanctions</i>	9
ii. <i>Secondary OFZ Market Sanctions</i>	12
d. Hydrocarbon-related Sanctions.....	14
i. <i>Hydrocarbons' Importance for Russia</i>	14
ii. <i>Europe's Natural Gas Conundrum</i>	14
iii. <i>High Costs for Sanctioning Countries</i>	18
e. Technology Export Controls.....	18
i. <i>Export Controls in the U.S. and EU</i>	18
ii. <i>Russia-Related Export Controls</i>	18
3. CONCLUSION: IMPORTANT ACTIONS TAKEN BUT ADDITIONAL TOOLS REMAIN	18

1. RUSSIA SANCTIONS: FROM PRE- TO POST- INVASION OF UKRAINE

Sanctions on Russia can be categorized into three phases. The **first phase** followed Russia's annexation of Crimea and the beginning of the military conflict in Eastern Ukraine. In March of 2014, the United States imposed sectoral sanctions against entities operating in the financial, energy, and defense sectors of the Russian economy via inclusion on the Treasury Department's Sectoral Sanctions Identifications (SSI) List pursuant to Executive Order 13662. Among other provisions, these sectoral sanctions prohibit the participation of U.S. persons in the issuance of new debt securities with maturities above certain thresholds.

Largely unilateral actions by the United States in 2017-21 constitute the **second phase**. Congress codified Russia sanctions, imposed initially via executive action, in August 2017 through the passage of the *Countering America's Adversaries Through Sanctions Act (CAATSA)*. CAATSA also imposed additional sanctions: a) concerning cybersecurity activities; b) relating to crude oil exploration and pipeline projects; c) on financial institutions; and d) on the defense and intelligence sectors. Finally, the law includes sanctions targeting all foreign persons involved in the evasion of previously imposed measures.

Sanctions in April 2018 targeted oligarchs and their affiliated companies, including aluminum producer Rusal. Trading of the sanctioned companies was suspended, and sanctions significantly affected Russian and global aluminum markets, disrupting supply chains, particularly for European companies. After several extensions and following a change in Rusal's ownership, the sanctions were lifted.

A few months later, the first round of sanctions under the *Chemical and Biological Weapons Control and Warfare Elimination Act (CBW Act) of 1991* was imposed in response to the poisoning of former Russian intelligence officer Sergei Skripal and his daughter in the UK. The second round was enacted in August of 2019. The U.S. imposed sanctions on Russian sovereign debt for the first time, prohibiting U.S. financial institutions from participating in future primary issuance of non-Ruble-denominated sovereign debt (Eurobonds). The sanctions were narrowly defined and did not have a noticeable effect on Russian or global markets.

In late 2019, Congress passed the *National Defense Authorization Act (NDAA) for FY 2020*, which included sanctions on companies involved in the construction of the Nord Stream 2 and TurkStream pipelines. The NDAA for FY2021 expanded sanctions by broadening the list of prohibited actions to the facilitation of pipelaying, including insurance and underwriting, maintenance and upgrading, as well as testing and certification.

In April of 2021, the Biden administration took multiple actions under Executive Order 14024, which expanded sanctions on Russia, including prohibiting U.S. financial institutions from participating in the primary market for any bonds issued by the Russian Ministry of Finance, the Bank of Russia, or the National Wealth Fund after June 14, 2021. As non-Ruble-denominated securities had already been sanctioned, the most significant impact was to extend restrictions to the primary OFZ market.

The **third phase** begins with Russia's military operation in Ukraine. The United States and Europe were already on heightened alert over the past several weeks as tensions ratcheted up at Ukraine's Eastern border. However, Russia's recognition of two separatist states and the subsequent invasion of Ukraine led many members of the international community to impose new sweeping sanctions.

On February 22, following the initial deployment of Russian troops into Donetsk and Luhansk, the U.S. imposed sanctions on the secondary market for sovereign debt issued after March 1, two financial institutions—Vnesheconombank and Promsvyazbank—and 42 of their subsidiaries, as well as five Kremlin-connected elites. The EU and the UK also placed additional individuals and institutions under sanctions.

On February 23, one day after the German government's decision to suspend the certification process for the controversial Nord Stream 2 project, the U.S. also announced sanctions on the pipeline operator and its corporate officers.

Then, on February 24, the United States, along with 27 EU members and G7 allies, imposed additional economic sanctions on Russia that consist of: 1) limiting Russia's ability to transact in U.S. Dollars, Euros, Pounds and Yen; 2) limiting financing to grow Russia's military; 3) freezing the assets of four additional major Russian banks; and 4) making it more difficult for Russia to compete in the technology economy via export controls.

On February 26, the United States, together with its Western allies announced the removal of some Russian banks from SWIFT as well as a freeze of the Bank of Russia's assets and prohibition of transactions with the CBR.

As a contribution to the conversation, this paper will look at several of the actions taken in recent days and their respective economic and financial implications. Among them are further measures related to Russian banks' access to the U.S. Dollar; additional restrictions regarding the secondary OFZ market; and export controls for specific technology goods. We will also touch on some possible additional sanctions including the disconnection of Russian financial institutions from global payments messaging systems and sanctions on hydrocarbon exports.

2. THE ECONOMIC AND FINANCIAL IMPACT OF SANCTIONS ON RUSSIA

We expect sanctions imposed in recent days to have a dramatic effect on Russia’s financial system as well as the country’s economy as a whole. Strong depreciation pressure on the Ruble will force the Bank of Russia to hike interest rates significantly in order to limit FX passthrough to inflation. Furthermore, we believe that the CBR will have to institute strict capital controls and declare a bank holiday as bank runs accelerate and demand for foreign exchange continues to rise sharply. Altogether, these developments will lead to a sudden and meaningful decline in economic activity.

a. Sanctions on Financial System Access

On February 22, in response to Vladimir Putin’s troop deployment into Donetsk and Luhansk in the Donbass region and decision to recognize the two separatist regions as “independent”, the United States imposed sanctions on two Russian financial institutions: Vnesheconombank (VEB) and the defense sector-connected Promsvyazbank (PSB), along with 42 subsidiaries. All assets of these companies under U.S. jurisdiction were frozen immediately, and U.S. individuals and entities are prohibited from conducting any business with VEB and PSB, effectively cutting the two banks off from the U.S. financial system.

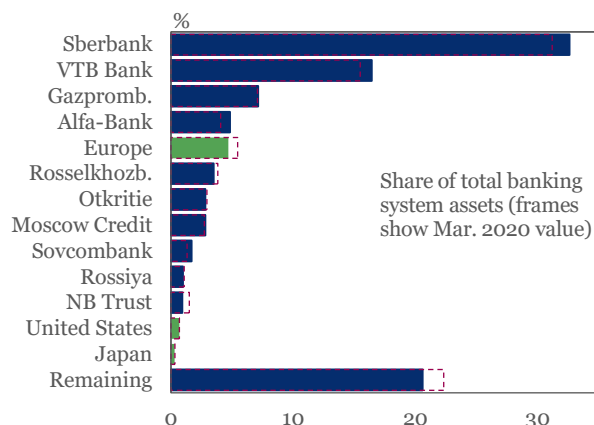
Two days later, following Russia’s full-scale invasion of Ukraine, the Biden administration expanded financial sector sanctions: to the country’s two largest banks, Sberbank and VTB Bank (plus 20 of its subsidiaries), as well as three other major domestic financial institutions, Otkritie, Novikom, and Sovcom. With the exception of Sberbank, the measures constitute full blocking sanctions like in the VEB and PSB cases. Sanctions against Sberbank differ insofar as they require U.S.-based institutions to close any Sberbank correspondent or payable-through accounts and to reject any future business involving Sberbank. The European Union and the United Kingdom imposed sanctions on Russian banks as well, limiting access to Euro and Pound funding.

On February 26, the United States and its Western allies also announced sanctions on Russia’s central bank, freezing CBR assets within their respective jurisdictions and making it significantly more difficult for the CBR to use its FX reserves to soften the blow to Russia’s financial system and the broader economy. We believe that this will have a significant effect on Russian banks (Exhibit 1)—despite efforts in recent years to reduce the exposure to risks related to a loss of U.S. Dollar access and to maintain control over FX reserves.

i. Reduced Dollar Exposure

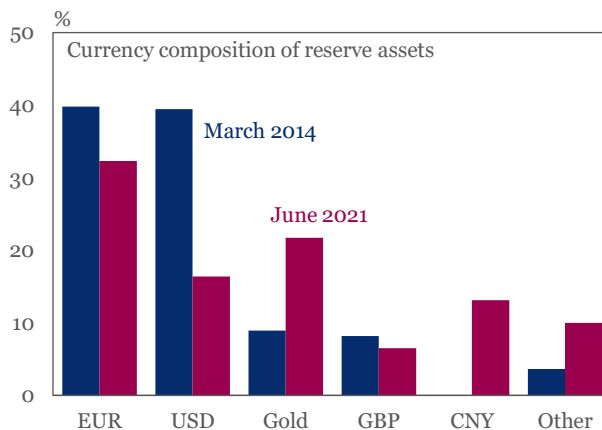
Since the onset of international sanctions in 2014, Russia has pursued a deliberate risk reduction strategy, including

Exhibit 1. Domestic financial institutions dominate.



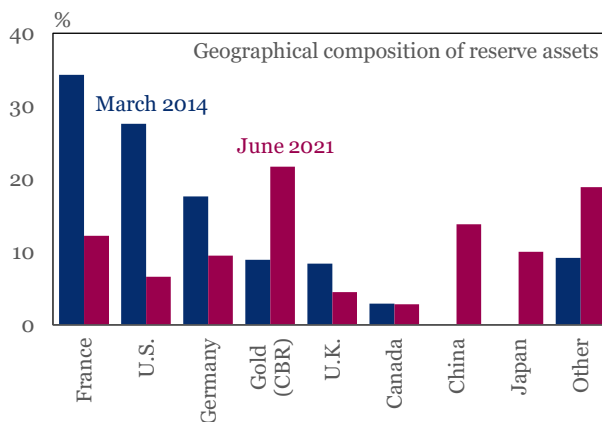
Source: banki.ru, IIF

Exhibit 2. Gold has surpassed the U.S. Dollar in reserves.



Source: Bank of Russia, IIF

Exhibit 3. Assets have been moved away from U.S. and EU.



Source: Bank of Russia, IIF

diversification and geographical relocation of reserve holdings, shifts in the currency composition of trade transactions, and domestic “*de-dollarization*.”

The Bank of Russia has reduced the share of its reserve assets in U.S. Dollars and its holdings of U.S. Treasuries markedly (Exhibit 2). Gold now surpasses the U.S. Dollar in Russia’s reserves, accounting for over 20%, with the Dollar’s share down sharply from 43% in early 2014 to 16% in mid-2021 and the Renminbi’s up to 13%. Furthermore, the geographic distribution of reserves has shifted significantly—from Europe and the U.S. to China and Japan (Exhibit 3).

As a substantial share of the country’s external debt is denominated in U.S. Dollars (\$209 bn out of \$478 bn at the end of 2021) and households as well as corporates have FX deposits of around \$200 bn, it remains necessary to hold on to a certain amount of liquid Dollar-denominated assets. However, it appears that Russia has eliminated its holdings of U.S. Treasuries almost entirely (Exhibit 4). It is possible that some were transferred to other jurisdictions and are held indirectly, but reliable data on such dynamics do not exist.

While changes to the structure of export and import settlements take longer to materialize, we see a significant increase in the Euro’s share from below 10% in 2013 to close to 30% in 2021, and a corresponding decrease of the Dollar’s share from 80% to 55% over the same period (Exhibit 5). The European Union and China are Russia’s most important trading partners, and both have expressed interest in settling with Russia in their respective currencies. Starting in 2018, the European Commission began to promote the [use of the Euro](#), including in energy markets. However, as oil, petroleum products, and natural gas tend to be traded in U.S. Dollars for [historical reasons](#) and account for close to 50% of Russian exports (over 2019-21), there may be limits to this strategy in the short and medium term.

Finally, with the implementation of inflation targeting by the Bank of Russia, the percentage of loans, as well as deposits in foreign currency, has decreased. “*Dollarization*,” which we define here more broadly as encompassing all foreign currencies, has fallen sharply since the early 2000s and appears less responsive to external shocks at this point (Exhibit 6). The share of deposits in foreign currency currently stands at 21% for households, and 26% for non-financial corporates, while the corresponding shares of loans are <1% and 23%. While FX deposits increased sharply during previous periods of external pressure, such as the global financial crisis and the 2014 sanctions episode, recently, the effect has been much less pronounced.

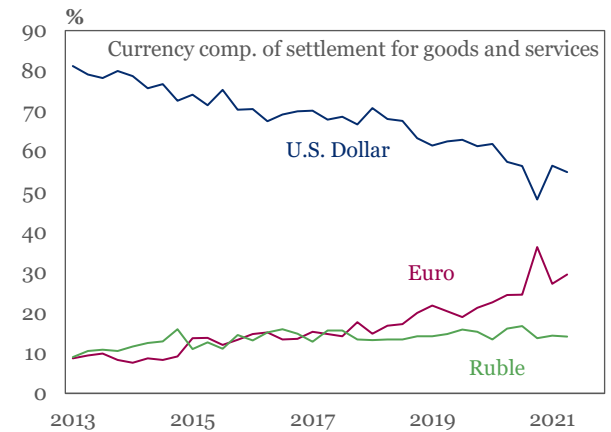
However, given that we still consider a ratio of 20% and above elevated, the central bank has more work to do to strengthen its credibility among Russian households and

Exhibit 4. Russia has reduced its U.S. Treasury holdings.



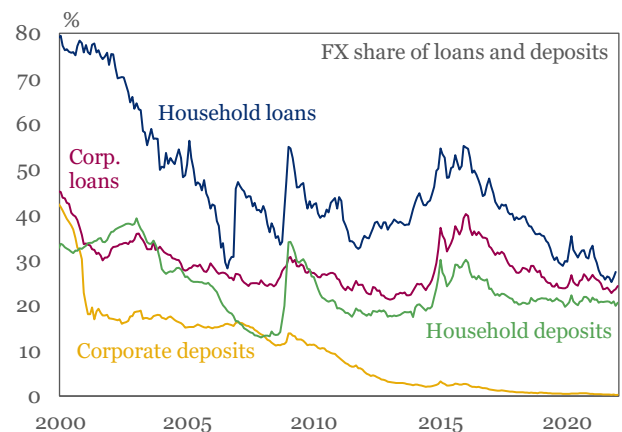
Source: U.S. Treasury Department, IIF

Exhibit 5. The Euro is gaining in importance for trade.



Source: Bank of Russia, IIF

Exhibit 6. De-dollarization of loans and deposits continues.



Source: Bank of Russia, IIF

corporates. The introduction of the Digital Ruble and continued development of domestic payments systems will likely also support further de-dollarization.

ii. Important Vulnerabilities Remain

While sanctions imposed in 2014 have forced Russian banks and corporates to deleverage significantly in recent years (by more than \$250 bn), the country’s total external liabilities remain around \$480 bn (Exhibit 7). Of these, \$135 bn are due within one year. Thus, extensive restrictions on U.S. Dollar access will likely put both financial institutions and other corporates in a difficult position. Importantly, the freezing of the Bank of Russia’s assets and prohibition of transactions with the CBR will significantly impair the central bank’s ability to supply U.S. Dollar liquidity to the economy.

We expect the cumulative effect of sanctions on the Russian economy to be strong, leading to a sizable contraction of output this year. In our view, the CBR will be forced to hike interest rates significantly as Ruble depreciation passes through to already-elevated inflation, impose strict capital controls, and declare a bank holiday. Financial conditions will also tighten as banks struggle with loss of access to FX, with important implications for the real economy.

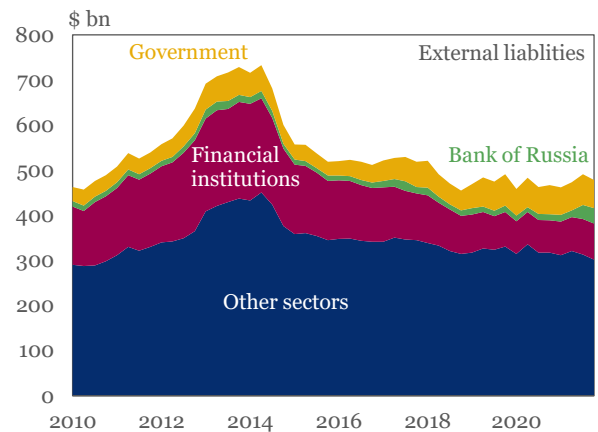
b. Sanctions Regarding Global Payments Systems

On February 26, the United States, together with the European Commission, and other countries announced that several Russian banks would be removed from the global financial messaging system SWIFT. Initial statements indicate that under these measures will fall institutions that had already been sanctioned by the international community in recent days, with others potentially being added later. This leaves some uncertainty as to the extent of SWIFT-related measures, which could range from the full disconnection of Russian banks and non-financial corporates, essentially the entire economy, to restrictions on individual companies.

Western allies seem to have opted for a targeted approach for the time being, which would leave room for continued trade settlements and, thus, soften the impact on European importers of Russian energy. But the number and systemic-nature of the institutions chosen for SWIFT-related sanctions will still matter significantly for the impact on Russia’s banking system and the broader economy. Uncertainty surrounding the possible future inclusion of additional institutions alone, however, will put pressure on the entire financial system, resulting in an exacerbation of already-occurring bank runs and, specifically, a rush on foreign exchange in light of expected Ruble depreciation.

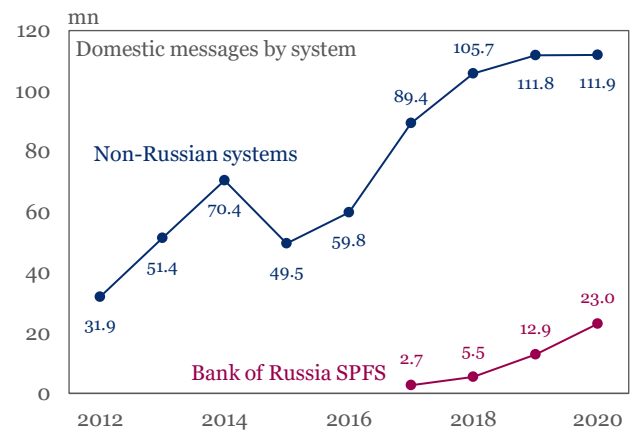
Sanctions on Iran in the aftermath of the U.S.’ departure from the nuclear deal in 2018 illustrate the potential impact of measures related to global payments systems (see Box 1).

Exhibit 7. External debt has fallen markedly since 2014.



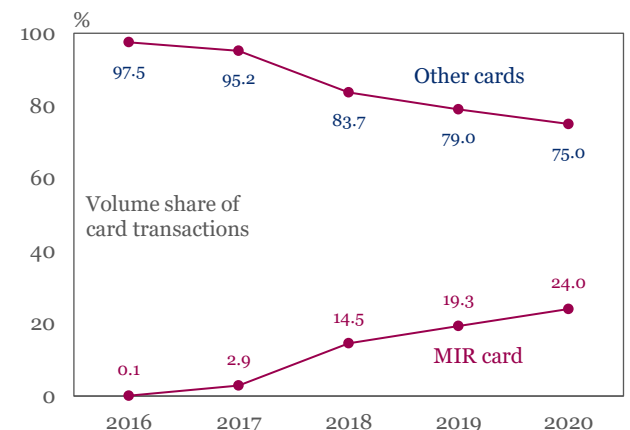
Source: Bank of Russia, IIF

Exhibit 8. Russia has developed its own payments system.



Source: Bank of Russia, BIS, IIF

Exhibit 9. Domestic credit cards are gaining market share.



Source: Bank of Russia, IIF

i. Development of Domestic Systems

In response to the introduction of sanctions in 2014 and in anticipation of additional measures in the future, Russia began to create domestic wholesale and retail payments systems and has made substantial progress in this area. Partially motivated by economic sovereignty concerns, Russia is embracing digitalization, including in finance, faster than other countries, and the implications of the COVID-19 pandemic have only accelerated this process.

In 2014, the Bank of Russia (CBR) began to develop its own Financial Communications System (SPFS), and, as of now, more than 400 primarily domestic institutions are linked to it. In 2020, the number of messages almost doubled to two million and more than 20% of total traffic is already executed via SPFS, with the CBR actively trying to increase the share (Exhibit 8). While it is less flexible than existing international systems, SPFS could handle all domestic messaging traffic.

Similar to SPFS, Russia, in 2014, launched a domestic alternative to U.S.-based card payment companies called MIR, which is operated by the National Payment Card System Joint Stock Company (NSPK JSC). About 95 million MIR cards have been issued—representing over 30% of all such cards in Russia—and the share of MIR cards in total payments stood around 24% in 2020 (Exhibit 9). MIR cards are also accepted in some Russian tourist destinations, but the system’s overall reach outside of Russia remains small. Additionally, the central bank introduced a rapid payments system, through which consumers can transfer money and execute payments almost instantaneously via a phone number or QR code (Exhibit 10). This has also contributed to the sharp rise of cashless transactions in Russia (Exhibit 11).

The [Digital Ruble](#) pilot is scheduled to begin in 2022, following a period of [extensive consultations](#) regarding its potential impact on monetary policy, financial stability, and financial infrastructure. The CBR hopes that the *Digital Ruble* will make payments cheaper and faster, and selected twelve banks covering over 60% of Russia’s financial system to be involved in the launch. Following the pilot, Russia plans to publish the roadmap for its rollout, which would theoretically put the country ahead of many countries as far as central bank digital currencies (CBDCs) are concerned.

Russia is following in the footsteps of China’s central bank—which started testing the [Digital Renminbi](#) in 2021—and is implementing a two-tier system in which the CBR will open wallets for financial institutions and these, in turn, open wallets for their customers. At this time, the *Digital Ruble* is only intended to serve for payments, i.e., as a medium of exchange, rather than to store value, as wallets will not be interest remunerated. This way, the CBR aims to avoid creating a risk of disintermediation for the banking system.

BOX 1. IRAN SANCTIONS AND SWIFT ACCESS

The United States withdrew from the Iran nuclear deal, the Joint Comprehensive Plan of Action (JCPOA), in May 2018 and imposed new sanctions on the country. Among the most significant sanctions on Iran has been curtailing its ability to use the Society of Worldwide Interbank Financial Telecommunication ([SWIFT](#)), a global messaging system for banks. SWIFT is an international cooperative of global banks that is akin to a bloodline for all international finance. SWIFT itself does not settle payments, but it helps transmit messages from one bank to another.

Prior to signing the JCPOA in 2015, the U.S. and the European Union had pressured SWIFT to disconnect the Central Bank of Iran (CBI) as well as 30 major Iranian banks from the system. Given the significance of SWIFT for cross-border transactions, these sanctions were seen as one of the most severe possible actions. What the JCPOA did was to offer Iran billions of Dollars’ worth of sanctions relief in exchange for agreeing to dismantle its nuclear program and agree to extensive international inspections.

However, the United States withdrew from the agreement in 2018 claiming that Iran was not living up to its commitments and imposed new measures on the country. As part of its sanctions regime, the U.S. threatened to sanction SWIFT itself and, despite not receiving agreement from EU countries, SWIFT disconnected a subset of Iranian banks from the system. This left the remaining signatories to the JCPOA struggling to fulfill their obligations under the agreement, such as enabling European companies to continue trading with Iran.

In 2019, Germany, France, and Britain [announced](#) a new payments messaging system to facilitate continued cross-border transactions with Iran—the Instrument in Support of Trade Exchanges ([INSTEX](#)). INSTEX is a government-controlled Special Purpose Vehicle (SPV) that allows continued engagement with Iran without the risk of defying U.S. sanctions. The only [transaction](#) to date took place in 2020 and was conducted for humanitarian purposes which are not covered by U.S. sanctions.

Despite efforts by European JCPOA signatories, U.S. sanctions had a dramatic impact on transactions with Iran; trade between the country and the EU declined by 70% in 2019 compared to the previous year, and Iranian exports to the European Union essentially came to a halt.

ii. Limited International Connectivity

Despite progress in recent years, the systems’ international connectivity remains limited, making it difficult to reduce [dependence](#) on non-Russian financial services providers.

Even some international banks that operate in Russia are not yet connected. In addition to improvements to the system, institutions may be required to link to SPFS in the future.

Sanctions on Russian banks and/or international payments messaging systems could profoundly impact banks' and corporates' ability to transfer money across borders. This would affect their ability to receive and make payments for exports and imports of goods and services as well as debt repayments and foreign investments. Trade with the European Union would be particularly hard-hit, as the EU accounts for more than 35% of Russia's gross trade flows of more than \$700 bn per year. EU imports of mineral fuels alone reach close to \$100 bn (Exhibit 12).

Due to SPFS's limited international reach, Russia has undertaken efforts to link it to China's national payments system (CNAPS). While Russian and Chinese authorities have made announcements regarding a connection between the two systems, it is not clear if the link is indeed operational. A future expansion appears possible as members of the Eurasian Economic Union, other BRICS countries, as well as Turkey and Iran have expressed interest in joining.

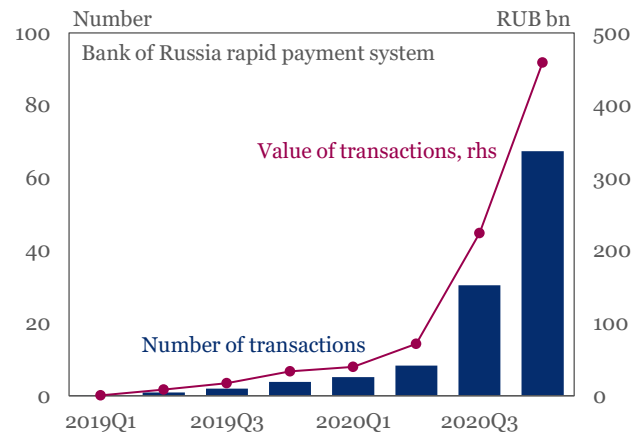
iii. International Financial Linkages

Russia's financial system is dominated by banks, which account for two-thirds of total assets or around 100% of GDP, which places Russia in the mid-range compared to other key EMs (Exhibit 13). Non-bank financial institutions' assets reach close to 50% of GDP, a higher number than in most EMs but significantly behind South Africa (145% of GDP) or Chile (130% of GDP). Russia's banking system is highly concentrated and dominated by state-controlled institutions, with foreign banks not systemically important.

The corporate sector mainly relies on loans for funding (domestic and external), with corporate bonds accounting for only around 30% of total borrowing. The reliance of Russian banks and corporates on external financing has been significantly curtailed by sanctions imposed in 2014. Many large institutions are impacted by sectoral sanctions on the financial, energy, and defense sectors and are largely prohibited from borrowing in the U.S. and EU markets. Foreign lenders have chosen a type of de-risking strategy and been reluctant to reengage or "re-risk" with Russian borrowers more broadly. We expect the country's financial system to continue to focus inwards as part of the "[Fortress Russia](#)" strategy and advance digital and fintech sovereignty.

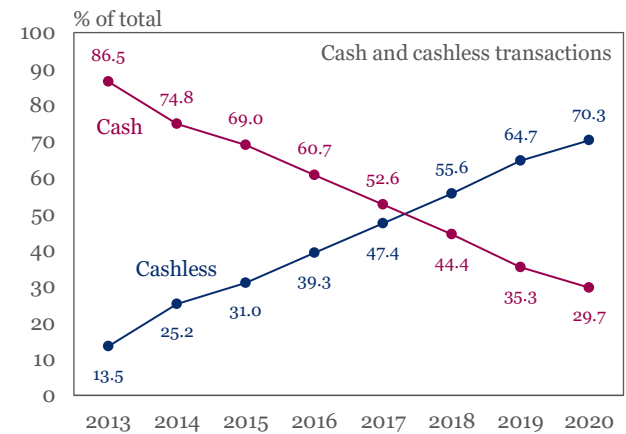
Foreign banks play a minor role, holding only 6.3% of total assets. While Russia remains an essential source of revenue for some international institutions, their exposure to the country does not appear systemic relative to their total assets (Exhibit 14). Existing sanctions, the risk of additional

Exhibit 10. Rapid transactions have picked up sharply.



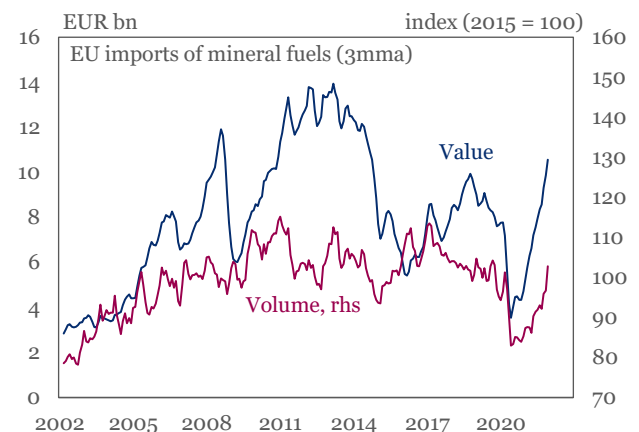
Source: Bank of Russia, IIF

Exhibit 11. Cashless transactions are rising in importance.



Source: Bank of Russia, IIF

Exhibit 12. EU hydrocarbon imports from Russia are high.



Source: Eurostat, IIF

measures, and the subsequent implementation of de-risking strategies have led many to scale back engagements.

With access to external financing significantly curtailed due to sanctions, Russian banks and corporates could not roll over amortizing debt, resulting in capital outflows and meaningful deleveraging. As a result, total external debt has declined from \$733 bn in 2014Q2 to \$478 bn at the end of 2021. Banks and corporates reduced external liabilities by \$129 bn and \$149 bn, respectively, and external assets now surpass liabilities for both (Exhibit 15). Overall, sizeable hard currency holdings could somewhat insulate the country from possible new sanctions. The CBR has reserves in convertible currencies of \$464 bn (with total reserves at a record-high \$631 bn), the NWF's FX holdings stand at \$95 bn and households' and corporates' deposits amount to \$200 bn.

iv. Significant Financial and Economic Impact

While some uncertainty remains as to the initial extent of SWIFT-related sanctions, we expect even more targeted measures to have substantial consequences for the Russian banking system and the country's economy more broadly. Independent of the specific institutions included in the first round of sanctions, uncertainty over the future inclusion of additional banks, and possibly non-financial corporates, will be hugely consequential. Furthermore, we believe that the list of institutions will most likely grow as a de-escalation of the military situation is not expected anytime soon.

Since the announcement on February 26, already-observed bank runs have accelerated and demand for foreign exchange is rising sharply due to expectations of strong depreciation pressures on the Ruble. Should Russia's largest financial institutions—in particular Sberbank and VTB—be included in SWIFT-related measures, we expect a fundamental destabilization of the entire financial system, with profound implications for the real economy.

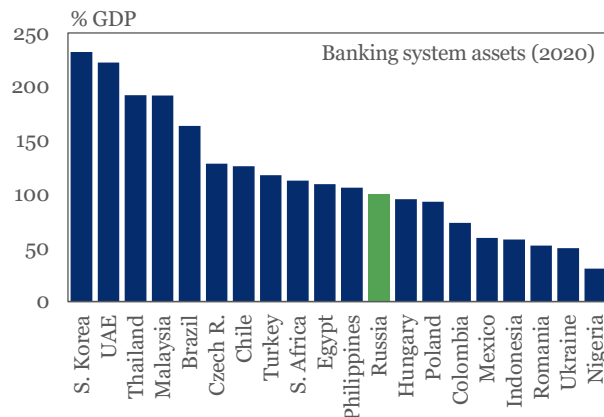
With their decision for a more targeted approach, Western allies allow continued access to SWIFT for some financial institutions, which will allow trade settlements to continue. This has been an important point of emphasis for European countries who are heavily reliant on Russian energy exports.

c. Sovereign Debt Sanctions

i. Primary OFZ Market Sanctions

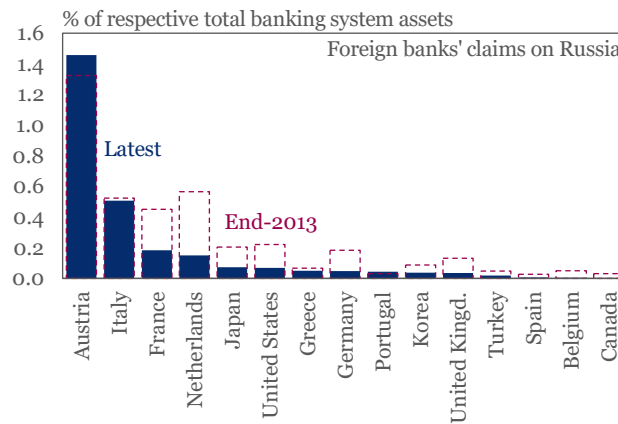
At the time of our 2020 paper, sanctions notably excluded local currency-denominated debt (OFZs). This has since changed. In April of 2021, the Biden administration took multiple actions under, which significantly expanded sanctions on Russia, including prohibiting U.S. financial institutions from participating in the primary market for any bonds issued by the Russian Ministry of Finance, the Bank of Russia, or the National Welfare Fund (NWF) after June 14,

Exhibit 13. The banking system is of moderate size.



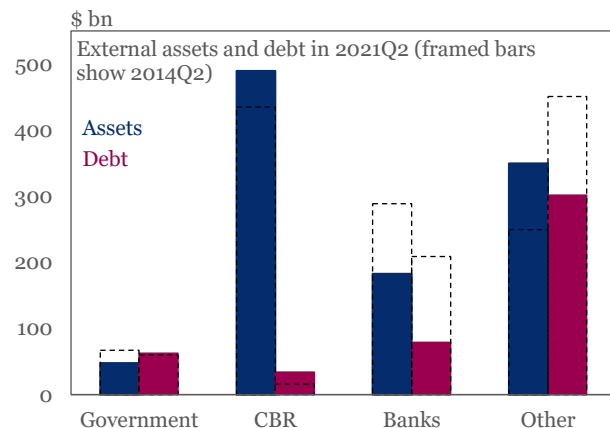
Source:

Exhibit 14. Foreign banks have reduced their exposure.



Source: BIS, IIF

Exhibit 15. Sanctions forced meaningful deleveraging.



Source: Bank of Russia, IIF

2021. As non-Ruble-denominated securities had already been sanctioned, the Executive Order's most significant impact was to extend restrictions to the primary OFZ market.

Impact on Russia

We argued in 2020 that Russia would largely be able to insulate itself from the impact of new sovereign debt sanctions through continued sound fiscal policies. This has proven to be correct despite the additional challenges of the COVID-19 pandemic. Russia's fiscal accounts have improved significantly in recent years as a result of higher revenues and substantial expenditure cuts, leading to a budget surplus of 2.6% in 2018, the first since 2011, followed by a surplus of 1.8% of GDP in 2019 (Exhibit 16).

Like other developed and emerging markets, Russia's fiscal accounts were heavily affected by the pandemic, which resulted resulting in a 7.3% decline in revenues as well as a sharp 25.3% increase in expenditures in 2020. Still, the deficit remained contained compared to international peers at 3.8% of GDP. Most importantly, the country was able to return to a surplus (of around 0.4% of GDP) in 2021, mainly due to a substantial recovery in revenues (34.6% increase).

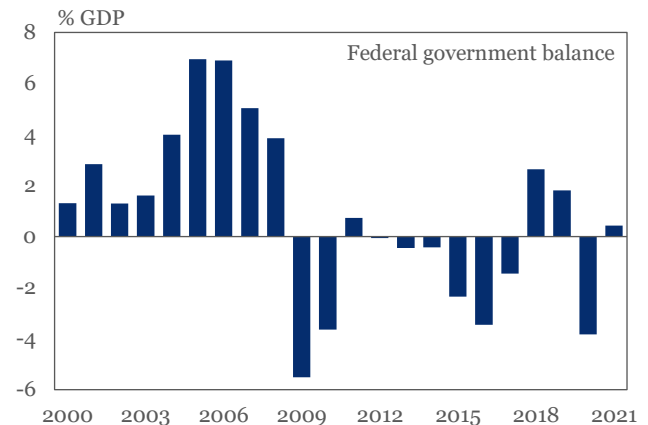
In 2014, authorities felt vulnerable since domestic markets alone could not have funded growing deficits, but this is no longer the case. While the size of OFZ issuance increased markedly during 2020 as deficits rose, domestic banks were able to provide sufficient financing while foreign investors kept their exposure to Ruble-denominated sovereign debt broadly stable during a period of risk-off sentiment in global financial markets (Exhibit 17). Russian banks' holdings of government debt securities as a percentage of total banking sector assets increased by roughly 3pp over the course of 2020. However, the share stabilized in 2021 and remains contained by historical standards (Exhibit 18).

Impact on the Asset Management Industry

We do not find that the April 2021 sanctions on the primary OFZ market negatively impacted non-residents' holdings of the asset class (Exhibit 19). In fact, we observe a pickup in foreign OFZ ownership in the aftermath, following a decline in the early months of 2021. This pattern is likely due to uncertainty regarding the extent of the measures ahead of their announcement and subsequent relief over their limited nature, especially regarding the exclusion of the secondary market from sanctions. Most international investors do not trade on the primary market; instead, they acquire the securities from Russian banks and, thus, remain able to invest in OFZ. Additionally, non-U.S. institutions remain unaffected by the measures entirely.

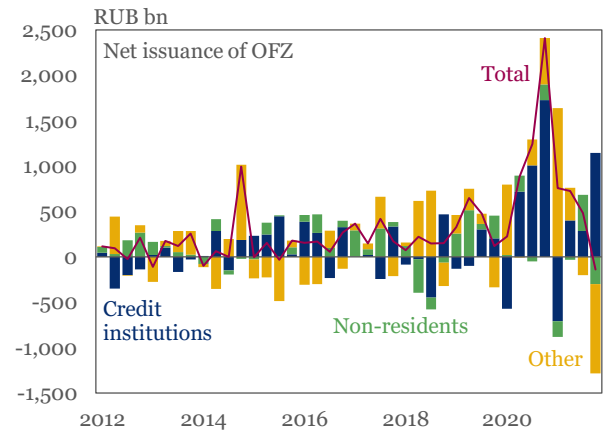
The negligible impact on the asset management industry is similar to the one following U.S. sanctions on the primary market for non-Ruble-denominated sovereign bonds,

Exhibit 16. Russia has seen substantial fiscal consolidation.



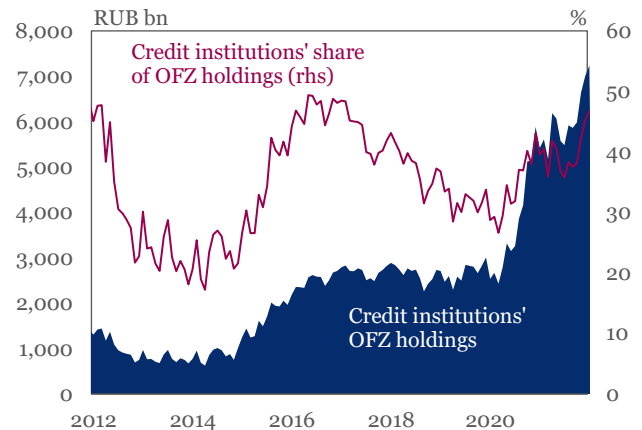
Source: Ministry of Finance, IIF

Exhibit 17. Domestic banks have financed deficits.



Source: Bank of Russia, IIF

Exhibit 18. Credit institutions' share of OFZ holdings is up.



Source: Bank of Russia, IIF

which had been imposed in August of 2019 (Exhibit 20). The country's sovereign debt continues to make up a substantial share of local currency emerging market indices such as the GBI. While Russia's weight has declined in recent years (to 7.5%), this is largely a result of the inclusion of Chinese bonds since early 2020.

Foreign participation in the OFZ market currently stands at 20% of total outstanding debt, the lowest since the post-2014 sanctions period. However, this is due to the substantial expansion of the OFZ market's overall size in 2020-21—by RUB6.6 tn or close to 75%—rather than non-residents' withdrawal of investments. The latter stood at RUB3.2 tn at the end of last year—only RUB0.1 tn below their December 2020 level. Uncertainty over potential additional sanctions, this time on the secondary OFZ market, has weighed on foreign holdings in 2021Q4 although, with investors pulling around \$1.4 bn from the market (following estimated inflows of \$16.7 bn in 2019, \$5.0 bn in 2020, and \$2.7 bn in 2021Q1-3).

OFZ ownership by country (or region) can only be determined for a portion of the stock held by non-residents—approximately 35% or \$15.1 bn. Of these non-resident holdings, European investors account for 48%, U.S.-based companies for 45%, and Asian institutions for 5% (Exhibit 21). This represents a shift compared to what we found in early 2020, with the U.S. share down by 5.8pp and the European share up by 5.9pp. While the partial data coverage does not allow for definitive conclusions, there seems to be evidence that sanctions may have led to a geographical reallocation of OFZ holdings.

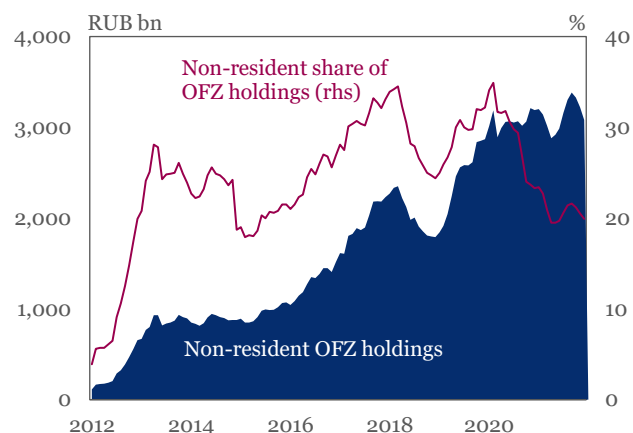
In our previous paper, we concluded that primary market sanctions on local debt could have an indirect impact on asset managers as they may signal the beginning of a further escalation leading to secondary market sanctions. This was not the case. OFZ yields stabilized after the imposition of the measures in April 2021, and only began to rise sharply once initial reports about a military buildup at Ukraine's Eastern border surfaced in October of last year. Following Russia's invasion of Ukraine and the imposition of additional sanctions, yields roughly doubled in recent days (Exhibit 22).

Impact on the Financial System

While Russia's financial sector is dominated by state-controlled banks, foreign institutions have traditionally been the key providers of banking services to global corporates and this relationship appears to have intensified after the 2014 sanctions. The share of foreign banks in OFZ trading, for example, is greater than the share of domestic banks.

In the previous paper, we stated that the imposition of sanctions on the primary OFZ market could benefit domestic banks, including those that are state-controlled,

Exhibit 19. Non-residents have shown some hesitancy.



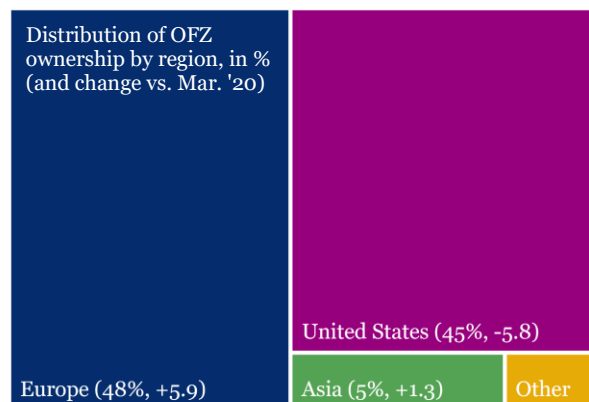
Source: Bank of Russia, IIF

Exhibit 20. Sanctions did not weigh on Eurobond positions.



Source: Bank of Russia, IIF

Exhibit 21. Europe's share in OFZ holdings has risen.



Source: Bloomberg, IIF

highlighting that domestic institutions would strengthen their position as intermediaries, acquiring OFZs directly from the sovereign and selling to foreign institutions on the secondary market. Russian banks have indeed increased their OFZ holdings by RUB4.6 tn or close to 90% since March 2020 and now possess 45% of the total outstanding stock, but these developments took place during the pandemic-driven increase in domestic borrowing and are hard to disentangle from the effect of sanctions.

While the primary purpose of sovereign debt sanctions is to limit access to funding for the Russian government, indirect effects such as on banking system liquidity cannot be ruled out. In the past, liquidity dried up during periods of market turbulence, including those related to sanctions. We find that the long-standing structural liquidity surplus of the Russian banking system dropped sharply during three different time periods: during the initial COVID-19 shock in early 2020, at the end of 2020/beginning of 2021, and finally in recent days (Exhibit 23). For the first time since 2017, the system actually experienced periods of structural liquidity deficits: in early 2021 and most recently following the invasion of Ukraine. These developments may have important implications for the banking system's ability to roll over existing debt and buy out foreign investors' holdings if necessary.

ii. Secondary OFZ Market Sanctions

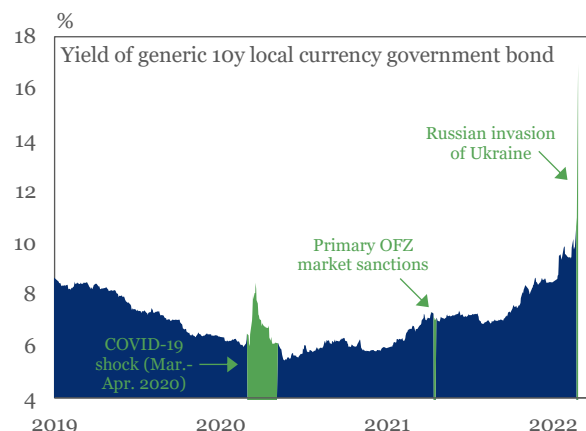
On [February 22](#), the United States imposed sanctions on the secondary OFZ market in response to the escalation in Eastern Ukraine. The measures prohibit individuals or corporates within U.S. jurisdiction from acquiring such assets issued after March 1, 2022. Furthermore, they also apply to FX-denominated government debt (Eurobonds). As far as sovereign debt sanctions are concerned, secondary market restrictions should be considered as the highest step on the escalation ladder and have been actively discussed for several years. Importantly, however, the U.S. stopped short of prohibiting trading *existing* securities, meaning that room for further measures remains.

Impact on Russia

As we concluded above, Russia was able to finance the COVID-19-related budget deficit without putting too much strain on the domestic financial system—even in the absence of strong new non-resident inflows. With a return to surpluses in 2021, funding needs declined markedly although the country regularly overborrows due to its fiscal rule.

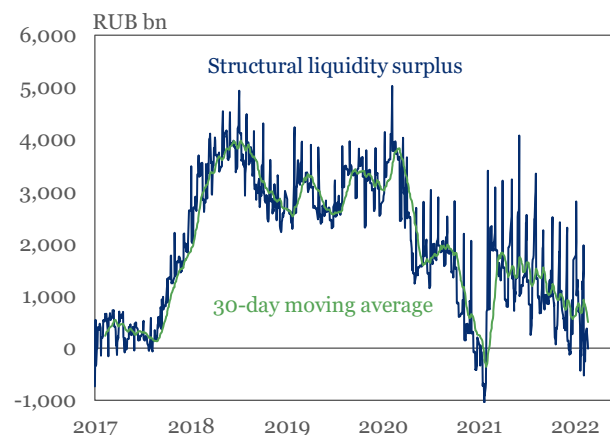
Newly imposed sanctions on the Russian financial system are expected to have a profound impact on the economy and, consequently, on fiscal revenues, while the military operation in Ukraine will also drive-up expenditures. It is, thus, unlikely that surpluses budgeted for 2022-23 will be achievable and that borrowing needs will rise sharply.

Exhibit 22. OFZ yields have roughly doubled in recent days.



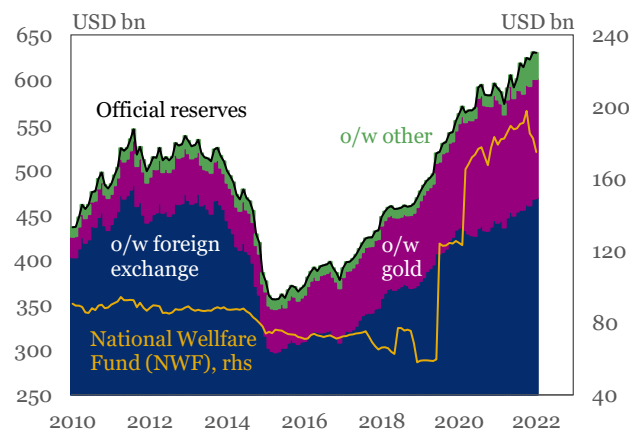
Source: Bloomberg, IIF

Exhibit 23. The structural liquidity surplus has vanished.



Source: Bank of Russia, IIF

Exhibit 24. Reserve assets are at a record high.



Source: Bank of Russia, Ministry of Finance, IIF

We believe that the Russian financial system should be able to absorb additional issuance in the domestic market. Russian authorities could also suspend the fiscal rule and focus exclusively on debt rollover rather than growing the National Welfare Fund (Exhibit 24). In addition, Russia could look at other sources of funding such as the privatization of SOEs. However, in the current geopolitical climate, attracting investments will likely be challenging.

In the long run, newly imposed sanctions on the secondary OFZ market will lead to higher costs of funding and impact fiscal policies, requiring either spending cuts or higher taxes. Such fiscal consolidation would undoubtedly weigh further on economic activity and exacerbate the country's struggle with low potential growth (Exhibit 25).

Impact on the Asset Management Industry

In contrast to sanctions on the primary OFZ market, secondary market restrictions will likely have more serious implications although last week's actions importantly exclude the trading of existing securities. Looking ahead, much depends on the comprehensiveness of future measures, which could range from forbidding U.S. financial institutions from trading in existing Russian domestic debt to, at the extreme, a requirement to divest their holdings during a pre-specified grace period.

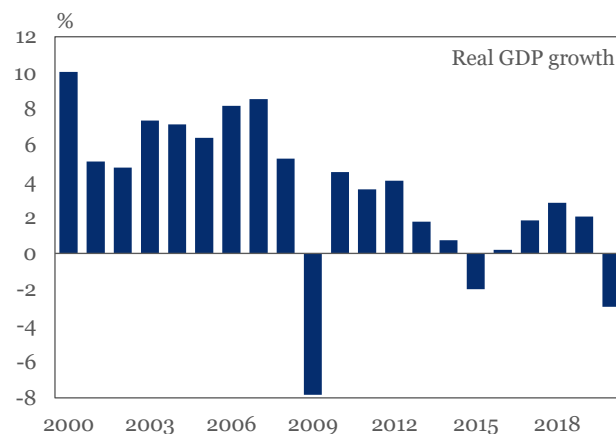
In the more extreme scenario, U.S. institutions could struggle to find an intermediary to facilitate their divestments, as the risk of running afoul of OFAC could prove too high for most—a dynamic that we saw in the case of Venezuela sanctions. Consequently, U.S. investors may have to write off holdings completely—inadvertently providing debt-relief to Russia and possibly substantially hurting the interests of their clients, which include large pension funds and public sector retirement systems.

Impact on Financial System

Sanctions beyond the primary market could force foreign financial institutions to exit from Russia as they use OFZ for Ruble liquidity management. This is primarily due to the fact that the interbank market remains highly fragmented and banks' credit lines with each other are low. Thus, banks with excess Ruble liquidity place it in OFZs or in correspondent accounts with the Bank of Russia.

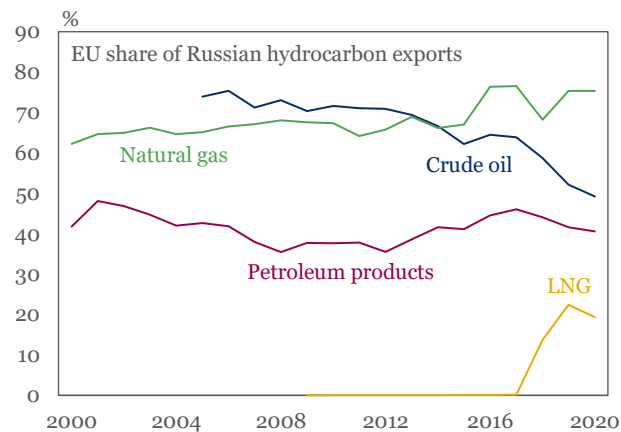
Without access to OFZ for liquidity management as well as regulatory compliance considerations—and no ability to hold correspondent accounts with the CBR—would make a presence in Russia untenable for most. To the extent that foreign corporates remain in Russia, they would have to rely on domestic players for basic banking services. Administrative uncertainty is likely to arise as well regarding banks with foreign ownership and joint projects.

Exhibit 25. Economic growth has been subdued.



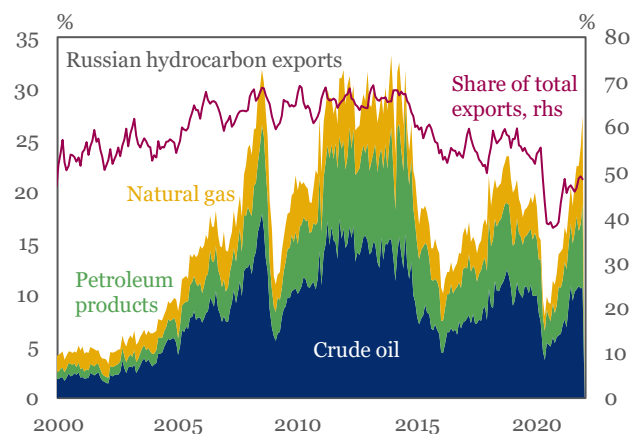
Source: Rosstat, IIF

Exhibit 26. The EU is Russia's largest oil and gas market.



Source: Eurostat, Federal Customs Service, IIF

Exhibit 27. Hydrocarbons are key for the current account.



Source: Bank of Russia, Federal Customs Service, IIF

Furthermore, the OFZ curve is important for pricing other Ruble instruments and indirectly impacts banks' ability to provide Rubles. Also, several derivative instruments are linked to sovereign debt, including total return swaps and credit-linked notes. Since foreigners gained direct access to the domestic market, these instruments have become less popular. However, financial institutions not under sanctions could use such derivative products to provide synthetic access to the OFZ market even to U.S.-based institutions.

d. Hydrocarbon-related Sanctions

On the severe end of the range of sanctions would be restrictions on key Russian exports such as natural gas. While such measures would have a strong impact on Russia, they would also pose serious challenges for countries reliant on Russia's hydrocarbon exports, primarily in Europe.

i. Hydrocarbons' Importance for Russia

Restrictions on hydrocarbon exports, if supported by European countries, would have a substantial impact on Russia, both in terms of the country's external balance as well as the government's fiscal accounts. Europe's role becomes clear when looking at the share of four major energy exports accounted for by buyers within the European Union (Exhibit 26). It is highest for natural gas (75% in 2020), followed by crude oil (49% and declining).

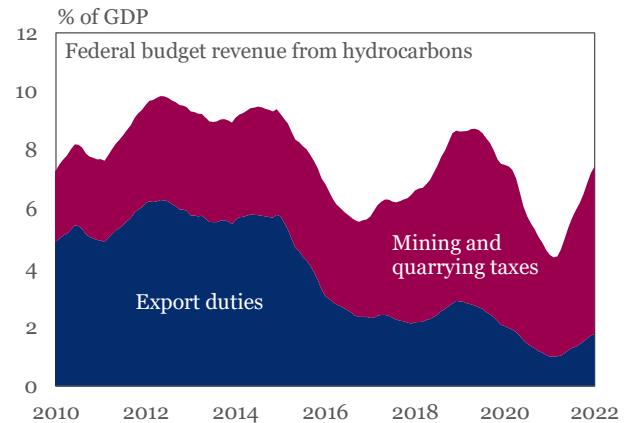
With rising commodity prices in 2021-22, especially for natural gas, Russia's energy export receipts have risen sharply once again, reaching \$27.4 bn in December alone, with the total for 2021 coming in above \$235 bn (Exhibit 27). This represented close to 50% of the country's goods exports last year and was, by itself, responsible for FX inflows corresponding to around 85% of total goods imports. Were restrictions imposed on hydrocarbon exports, a sharp adjustment of Russia's current account would follow, although its exact size is hard to project as lower exports would inevitably trigger import contraction.

In addition, revenues from oil and gas play a major role for Russia's budget. These revenues largely consist of export duties and taxes on mining and quarrying activities and rose to above 7% of GDP at the end of 2021 (Exhibit 28). Sanctions on hydrocarbon exports would directly impact the former, while they would likely also have an effect on the latter. With significantly lower revenues from these sources, Russia would have to make meaningful adjustments to government spending to avoid large deficits.

ii. Europe's Natural Gas Conundrum

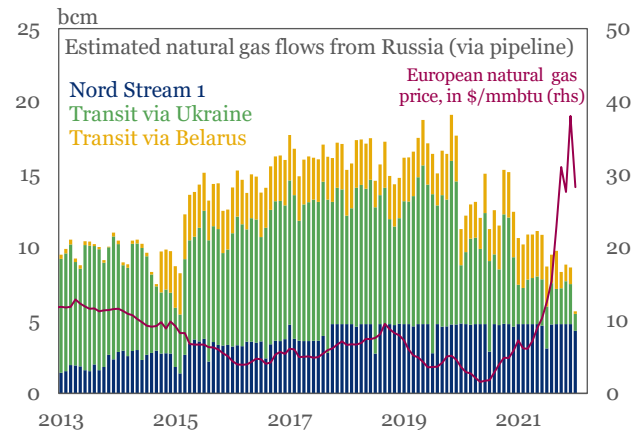
While any sanctions affecting the free exchange of goods—such as direct measures imposed on hydrocarbon exports or restrictions on Russian institutions' access to global payments messaging systems—are a challenge for Europe

Exhibit 28. Oil and gas also contribute much to revenues.



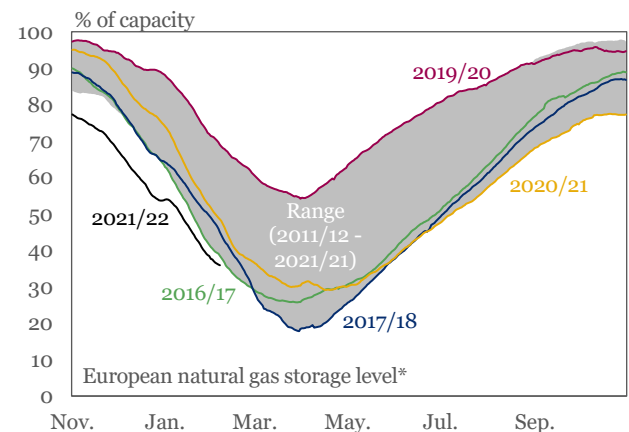
Source: Ministry of Finance, Rosstat, IIF

Exhibit 29. Natural gas imports from Russia have fallen.



Source: Bloomberg, Haver, IIF

Exhibit 30. As a result, storage levels are at a record low.



Source: GIE-AGSI, IIF * including U.K.

in the best of times, current record-high natural gas prices only exacerbate the problem. And natural gas supply structures are significantly more challenging to alter due to pipelines being the dominant mode of transportation.

Based on our analysis of the current situation as well as natural gas supply diversification options, we conclude that European countries will likely be able to manage a disruption of Russian exports for the rest of the winter. However, in the medium-term—due to a number of issues, including extraction constraints, lacking infrastructure, and political factors—demand-side measures would be inevitable. While last week’s decision by the German government to suspend the certification of Nord Stream 2 (see Box 2), by itself, should not have an effect on supplies, it increases the likelihood that Russia will not step-up natural gas exports to Europe anytime soon.

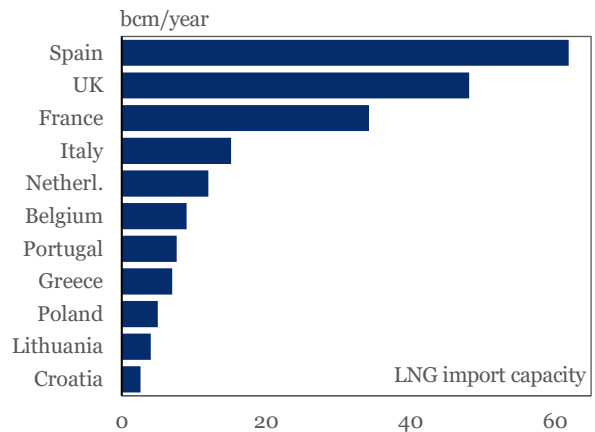
Europe’s current natural gas predicament is primarily the result of significantly smaller flows of Russian pipeline gas in 2021, especially in the second half of the year. While *Gazprom* appears to honor its long-term contractual obligations, the company has largely stopped selling additional amounts on the spot market. Based on daily data for seven cross-border interconnection points, we estimate that, relative to the average of the previous five years, monthly deliveries were 4.7 bcm (or 30%) lower in 2021H1 and 6.5 bcm (or 42%) lower in 2021H2 (Exhibit 29).

The situation worsened further in January (-9.8 bcm or 64%) with flows via Nord Stream 1 below capacity for the first time, outside of the usual July maintenance period. However, data for early February indicate that volumes are increasing again across interconnection points. Nonetheless, and despite a significant increase in imports of liquefied natural gas (LNG), storage levels in Europe are at an all-time low of 36% for this time of the year (Exhibit 30). This has had a meaningful impact on European gas prices, which remain almost 400% above their end-2020 level. While prices in the U.S (+70%) and Japan (LNG, +100%) have also risen significantly, it is evident that we are looking at a distinctly European problem.

According to Brussels-based think tank *Bruegel*, the European Union as a whole would likely be able to survive even a dramatic disruption of Russian gas imports in the coming months, with storage levels reaching a low of 140 TWh (or 12.5% of capacity) in April. This is, however, dependent on weather conditions, with an extremely cold rest of the winter possibly leading to empty storage facilities at the end of March. An additional complication arises regarding the distribution of the available supplies.

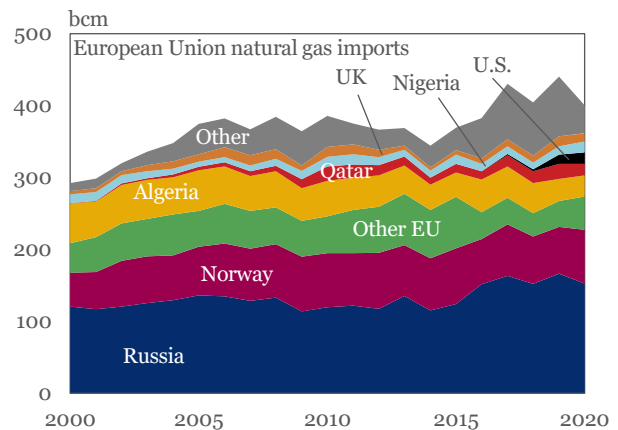
For instance, most LNG import terminals are located in Western Europe—with Spain, the United Kingdom, and France alone accounting for 70% of the total capacity

Exhibit 31. LNG terminal capacity in Europe is sufficient.



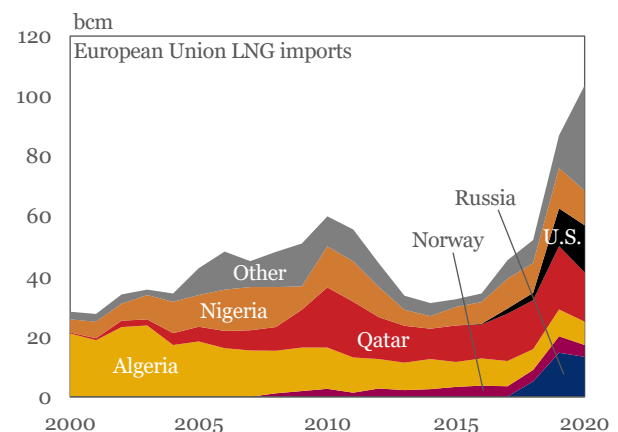
Source: EntsoG, IIF

Exhibit 32. Russia is Europe’s largest natural gas supplier.



Source: Eurostat, IIF

Exhibit 33. The country has also gained in the LNG field.



Source: Eurostat, IIF

(Exhibit 31)—and pipeline systems, especially in Central and Eastern Europe, remain focused on transporting gas from East to West, despite efforts in recent years to increase reverse-flow capacities. Additionally, technical factors and different standards restrict the ability to seamlessly distribute natural gas across the continent. Thus, certain countries could be forced to implement demand-reducing measures, although Europe-wide supply may be sufficient.

While the situation over the winter 2021/22 may be manageable, a look at the medium term raises serious questions about Europe's ability to diversify import sources and reduce dependence on Russia. For a number of reasons, among them declining production within the EU, the critical role of natural gas in Europe's climate change-related efforts, and growing demand in other regions, Russia's importance is likely to grow in the absence of a concerted effort.

Even then, options are more limited than they may appear at first glance. In the case of a halt of Russian imports altogether, EU countries would need to replace the equivalent of 1,600-1,700 TWh of pipeline gas or LNG—roughly one-third of their total imports (Exhibits 32 & 33). In the following paragraphs, we will take a look at several alternatives: i) an increase in the EU's own production; ii) larger imports from Norway and Algeria; iii) additional flows from Central Asia; and iv) heavier reliance on LNG imports.

Increasing EU Production: The challenge regarding expansion of natural gas production within the EU itself is largely a political issue. Behind this lies the fact that most of the known reserves would need to be extracted through hydraulic fracturing (or “fracking”), which is highly unpopular in Europe and restricted by law in a number of countries. The *U.S. Energy Information Administration (EIA)* estimated in a 2013 [report](#) that Europe's technically-recoverable shale gas resources amount to roughly 17 tcm, with Poland (4.2 tcm), France (3.9 tcm), Ukraine (3.6 tcm), and Romania (1.4 tcm) possessing, by far, the largest quantities. This would be sufficient to cover Europe's total natural gas consumption, at 2021 levels, for roughly 40 years.

While extraction in these areas would not begin for a considerable amount of time, more natural gas could be extracted from existing fields with spare capacity such as the *Groningen field* (Netherlands, 3 bcm), Europe's largest onshore field. However, production has decreased markedly in recent years due to concerns over earthquakes, and the Dutch government has decided to end operations in 2022.

Larger Imports from Norway or Algeria: Norway and Algeria are the second- and third-largest single suppliers of natural gas to EU countries, accounting for 15-16% and 8-10% of total imports in recent years, respectively. Both largely export via pipelines, with LNG making up around

BOX 2. NORD STREAM 2 SANCTIONS

The Nord Stream 2 project has been under intense criticism from both Eastern European governments as well as the U.S. since its inception in the early to mid-2010s. Arguments have mainly focused on Europe's energy dependence on Russia and the circumvention of existing pipeline infrastructure in Eastern Europe, particularly in Ukraine, which became more urgent in the aftermath of Russia's annexation of Crimea in 2014 and the outbreak of armed conflict in the Donbass.

The first round of sanctions was put in place by the U.S. in late 2019 with the *National Defense Authorization Act (NDAA) for Fiscal Year 2020*. The law's provisions allowed for measures against entities involved in the provision, sale, or lease of vessels engaged in pipelaying activities and include inadmissibility of corporate officers and shareholders to the U.S. as well as the blocking of assets in the U.S or under the control of U.S. persons.

As these measures apply to entities outside of the law's immediate jurisdiction, they constitute so-called secondary sanctions that raise important questions regarding European economic sovereignty. While the EU's blocking statute aims to protect individuals and companies from having to comply with the extraterritorial application of third-country laws and measures, in reality, their dependence on access to the Dollar and U.S. markets leaves little room. In this case, the suspension of pipelaying by *Allseas* led to a delay of roughly one year before Russian vessels restarted construction. The NDAA for FY2021 expanded sanctions by broadening the list of prohibited actions to the facilitation of pipelaying, including insurance and underwriting, maintenance and upgrading, as well as testing and certification.

In early 2021, the Biden Administration attempted to mend fences with important European allies, first and foremost Germany, by refraining from imposing additional sanctions on Nord Stream 2, essentially acknowledging the advanced state of the project. In response, new legislative initiatives emerged in Congress, but a key amendment to the *NDAA for Fiscal Year 2022*, which would have extended sanctions to pipeline operations, did not reach the procedural threshold of 60 votes in the Senate.

Despite the aforementioned sanctions, construction was completed in the fall of 2021. However, EU competition policy issues, particularly the unbundling of pipeline operations and use, would have likely delayed certification by Germany's *Bundesnetzagentur* and, thus, the commencement of operations until 2022H2.

5% of Norwegian and 20% of Algerian deliveries. While some analysts argue that *Norway* could step up production by around 13 bcm in 2022, Prime Minister Støre has stated that additional exports are not possible. Similarly, *Algeria* will likely not be able to provide EU countries with large quantities due to production constraints.

Southern Gas Corridor and Central Asia: A pipeline system connecting Azerbaijan's natural gas fields to Europe without running through Russian or Iranian territory has long been an important project for the EU and has materialized in a system of three separate pipelines which constitute the so-called *Southern Gas Corridor*: the South Caucasus Pipeline (SCP), the Trans-Anatolian Pipeline (TANAP), and the Trans Adriatic Pipeline (TAP). However, the system's 16 bcm capacity is currently maxed out and, even if it was raised, there are doubts about Azerbaijan's ability to step up production in a way that addresses Europe's needs. As far as *Central Asia* is concerned, pressure from Russia and domestic policy considerations have prevented exports to Europe, and gas is largely used for domestic consumption.

Heavier Reliance on LNG: Replacing Russian natural gas imports with LNG poses a multi-faceted challenge that involves a) import terminal and pipeline infrastructure, as well as b) availability of LNG from existing sources.

Based on 2021 numbers, European LNG terminals would be able to handle an additional 1,000 TWh (or roughly 50% of total capacity) which would go a long way to close the gap resulting from a potential disruption of Russian deliveries. But the regional distribution of terminals and structure of European pipeline infrastructure would not necessarily allow distribution of the required amounts based on individual countries' needs, in particular as countries in Eastern Europe are generally more dependent on Russian imports and pipeline systems are not designed for this direction of flows.

The main issue with the LNG option, however, is the limited availability of additional supplies on the market. Global liquefaction [capacity](#) is almost fully used up, and LNG vessels are in very high demand as well. Furthermore, LNG is sold and acquired largely via long-term contracts so that European buyers would compete for a relatively small share of the market. Finally, additional demand of around 1,000 TWh, which represents roughly 20% of the existing global LNG market, would put strong upward pressure on prices. While favorable market conditions for producers and exporters will likely trigger additional investments in LNG infrastructure, their impact will not be felt for several years.

What does all of this mean now for Europe's medium-term options to diversify natural gas imports and reduce their dependence on Russia? [Bruegel](#) concludes that, for the reasons laid out above, a full replacement of Russian

NORD STREAM 2 SANCTIONS (CONTINUED)

However, on February 22, the German government announced that it had halted the certification process in light of escalating tensions in Eastern Ukraine. Shortly thereafter, the Biden Administration imposed sanctions on the pipeline operator, Nord Stream 2 AG, as well as its corporate officers. Based on recent developments, we do not believe that Nord Stream 2 will enter into service unless geopolitical conditions change in a meaningful way.

For EU countries, any restrictions on importing Russian natural gas are highly problematic even in the best of times. At this point, however, matters are complicated by substantially lower gas flows in recent months, which have driven up prices from around \$7.30/mmBtu in January of 2021 to above \$38/mmBtu in December.

The effect of Nord Stream 2 on transit countries such as Ukraine are more serious. Current levels of Russian natural gas exports to Europe could be channeled in their entirety through the Nord Stream pipelines given their combined capacity of 110 bcm/year. This would allow Russia to essentially eliminate transit through Ukraine following the expiration of the 2019 agreement between Gazprom and Naftogaz, which establishes a minimum transit quantity of 40 bcm/year in 2024. Pipeline transportation receipts have already fallen by roughly 50% since 2019 and reached approximately \$400 mn per quarter in 2021Q2-Q3.

On the positive side, Ukraine has succeeded in significantly increasing non-pipeline transportation-related services receipts, which more than makes up for the losses. Thus, it seems that the country would likely be able to withstand a further reduction of pipeline volumes, and its European partners could compensate for the losses. This would support the transition away from reliance on gas transit and reduce Russia's leverage.

natural gas will not be possible. In the event of a complete disruption of flows, the continent would have to rely on demand-side measures to address the situation. Some would be politically difficult, such as a higher reliance on coal-fired power plants or a delay in Germany's exit from nuclear energy; others would be economically painful, such as forcing the closure of non-critical industries.

While it is clear that Europe will not be able to fully replace Russian natural gas imports for the foreseeable future, it should nonetheless begin to invest in strategies to gradually reduce its reliance on the country in light of geopolitical tensions that are unlikely to disappear any time soon.

Among the possible measures are a) the construction of additional LNG import terminals, especially in Central and

Eastern Europe; b) improvements to the continent's pipeline reverse flow capabilities; c) enhanced storage capacities to limit risks from temporary disruptions; d) an acceleration of the transition to renewable energies; and e) increased natural gas extraction within Europe via hydraulic fracturing.

iii. High Costs for Sanctioning Countries

Among the measures discussed in this paper, restrictions on Russian hydrocarbon exports may have the most significant impact on the targeted country. At the same time, they would also impose the highest costs on some of the countries imposing them, in this case, Europe. Thus, we do not believe that such measures are particularly likely under the current circumstances.

e. Technology Export Controls

Export controls have become an integral part of economic statecraft. We define export controls as limitations or restrictions on trade (exports from home country) of certain goods, including sensitive technologies or software. They range from military equipment to microchip technologies. Export control measures can include the outright prohibition of exports or licensing requirements and can even include goods produced outside the sanctioning jurisdiction.

i. Export Controls in the U.S. and EU

Historically, export controls were used to pursue a narrow set of foreign policy objectives in humanitarian and defense spheres but have evolved into a sophisticated tool that can be directed at specific users and non-state actors. There are a few key types of export controls that can be imposed by the United States: traditional export controls pertaining to military and dual-use technology and, increasingly, measures aimed at protecting U.S. competitiveness in certain areas, particularly technological know-how. (introduced with the Export Control Reform Act of 2018).

The recent reform introduced a unique degree of extraterritorial application through the Foreign-Produced Direct Product Rule (FDPR). Even if a product is made by a foreign entity outside of the United States, the U.S. can still reach it if it contains any U.S.-controlled products or technology. For example, there are few, if any, chips made globally without U.S. software or tools. Using this rule, the U.S., in 2020, expanded its export controls on Huawei preventing it from buying technology from third parties. The measures' impact was considerable, as the company estimated a 30% decline in revenues in 2021.

Compared to the EU, the U.S. has considerably more legal leverage to implement wide-reaching export controls. However, authorities in the U.S. understand the importance of multilateral coordination, particularly as no single country holds undisputed leadership in any given technology. And

measures could backfire and lead to foreign companies moving away from U.S. technology inputs in their activities. While the EU's ability to impose export controls is significantly more limited, the EU may be more open to export controls compared to more controversial measures, such as sanctions on energy and financial sectors.

Export controls in the EU are legislated at the EU and member-state levels. As export controls are implemented at the national level, there is significant variation and flexibility in their implementation in Europe. EU-wide measures are focused only on dual-use export controls and products for military purposes. As of now, the EU does not have a model of export controls with broader national security considerations or economic statecraft objectives.

ii. Russia-Related Export Controls

Most recently, the U.S. announced that it is considering wide-reaching [export controls on Russia](#), curtailing the country's access to microelectronics produced using U.S. technology. Russia is already subject to export controls since 2014 through [measures](#) targeting the energy and defense sectors. The development of new oil fields has been affected by restrictions on items needed for deep water, Arctic offshore, or shale exploration and production. Following the poisoning of Sergei Skripal in the UK as well as of opposition leader Alexei Navalny, Russia came under sanctions in accordance with the CBW Act, including the prohibition of chemical and biological weapons exports to Russia.

Export controls on critical technology may contain an element of surprise for Russia and could be difficult to circumvent. Many of the other measures examined above have been under discussion for several years and Russia has had time to prepare. Developing critical technology without global integration would likely be almost impossible. Export controls would impose significant costs on Russia's economy by stunting technological progress and, thus, productivity growth. However, since the effect of export controls would be spread over time, they might not be as effective as a deterrent. Furthermore, there is a non-negligible risk of pushing Russia towards other partners, including China.

3. CONCLUSION: IMPORTANT ACTIONS TAKEN BUT ADDITIONAL TOOLS REMAIN

Following Russia's invasion of Ukraine in February of 2022, sanctions on Russia entered a third phase. The first phase took place in 2014 in the aftermath of the annexation of Crimea and the outbreak of military confrontations in the Donbass when the United States and its Western allies imposed comprehensive sanctions on critical sectors of the Russian economy. The second phase spans from 2017-21 and is characterized by multiple episodes of unilateral measures put in place by the U.S.—in response to Russian

interference in the 2020 presidential election, continued malicious cyber activities, and violations of chemical and biological weapons conventions.

While sanctions imposed in recent days—including on U.S. Dollar access, the Bank of Russia, SWIFT, sovereign debt issuance, and technology imports—constitute unprecedented and synchronized multilateral actions, the door remains open for even more drastic steps should the geopolitical situation warrant it. The United States and its European allies could further tighten Russian banks' access to U.S. Dollars and Euros, expand the removal from SWIFT to additional institutions, sanction the secondary market for *existing* OFZ, and/or cut off energy imports from Russia.