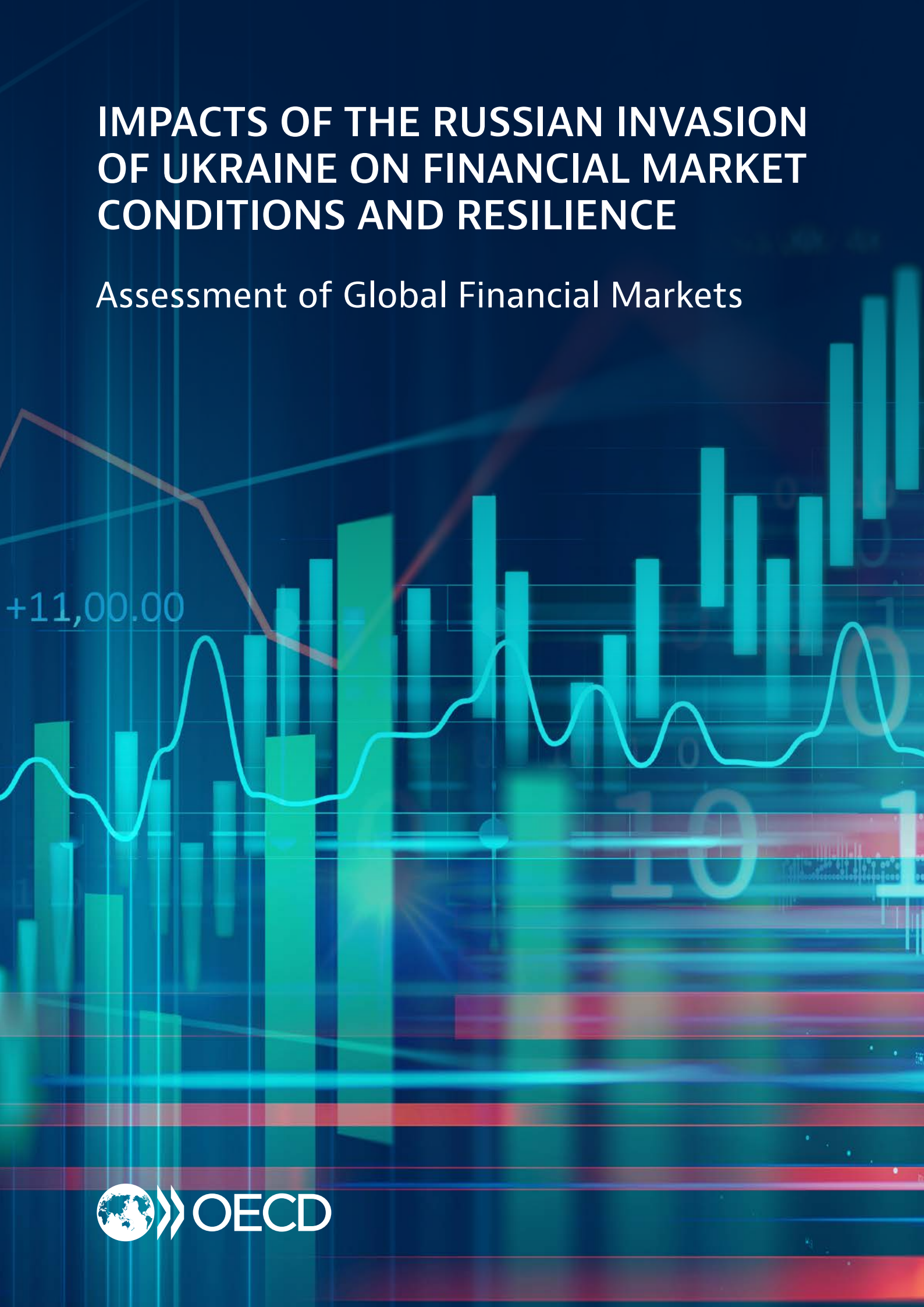
IMPACTS OF THE RUSSIAN INVASION OF UKRAINE ON FINANCIAL MARKET CONDITIONS AND RESILIENCE

Assessment of Global Financial Markets



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Foreword

This report assesses the immediate impact of Russia's war against the people of Ukraine on global financial markets, and the continuing potential for spillovers into those markets. While the war has not yet caused a number of existing vulnerabilities to fully crystallise, high levels of uncertainty remain, driven by heightened geopolitical tensions. The report reviews a range of interrelated channels which could transmit shocks from Russia's war to global financial markets, from direct exposures across sectors, to the effects of higher commodity prices, and impacts on investor sentiment. In doing so, it underlines areas within the financial system where enhanced scrutiny from supervisors and policy makers may be necessary to manage the elevated risks arising from the war going forward.

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Overview

The shock from Russia's invasion of Ukraine has cast doubt on a strong global economic recovery from the COVID-19. Considerable uncertainty remains for global economic and financial conditions, as well as geopolitical situations. Amid this uncertainty, the OECD estimates that moves in commodity prices and financial markets seen late February could, if sustained, reduce global economic growth by more than 1 percentage point in 2022, while inflation, already high at the start of the year, could continue to rise by 2.5 percentage points in aggregate across the world (OECD, 2022[1]). In turn, the materalisation of downside risks to growth would have negative spillover effects on financial markets and institutions.

Solid demand and supply chain disruptions in the post-COVID-19 environment before Russia's invasion of Ukraine contributed to substantial increases in commodity prices and input costs. Subsequently, increasing inflation pressures prompted a number of central banks to begin to unwind their asset purchasing programmes and increase their policy rates. Against this backdrop, long-term sovereign bond yields have generally continued to rise and the global levels of negative-yielding debt have declined sharply.

Since late February 2022, financial markets have reacted to the escalating geopolitical situation, and subsequent policy responses including sanctions imposed on Russia. The immediate impact of the invasion was a sharp rise in commodity prices and severe equity price declines that mainly affected Russian markets. Corporate and sovereign credit market conditions have deteriorated substantially beyond the Russian market, particularly in several emerging markets in Europe and Asia. Russian banks have experienced severely strained conditions, in part due to the disconnection of some Russian banks from the SWIFT international payments network. Spillovers have also affected international banks, particularly European banks with substantial exposures to Russia.

The combination of geopolitical uncertainty, higher commodity prices, sanctions and regional business disruptions has contributed to elevated volatility and risk aversion. Volatility has risen substantially in US Treasury and equity markets with investors concerned about the surge in global commodity prices and subsequent acceleration of monetary policy rate increases to address high inflation. Oil prices have also become more volatile. Rising investor demand for haven assets is reflected in increasing gold price and inflows into gold exchange traded funds. The rotation to value stocks and the declining performance of crypto-assets also indicate growing investor appetite for lower-risk assets.

After an initial deterioration of risk appetite following the Russian invasion of Ukraine, performance of global equity markets and credit market conditions have improved since mid-March. Investors have reassessed their outlook for risk assets and become less risk averse. Nevertheless, elevated commodity prices risk fuelling already high inflation rates globally, and eroding consumer purchasing power and corporate earnings, dampening economic activity and adding to financial risks. These developments are set against a backdrop of deteriorating economic and financial conditions in China, with renewed lockdown measures and surging COVID-19 cases, and long-standing vulnerabilities. The magnitude of the effect of the conflict and international sanctions on global credit conditions will depend on their length and severity.

The impact of the Russian invasion of Ukraine for economic and inflation outlooks are being transmitted to global credit landscape through the following main channels:

- ***elevated sovereign debt levels and high refinancing needs:*** Rising inflation pressures and tightening monetary conditions are raising refinancing risks across many OECD economies; with additional challenges posed by the Russian invasion of Ukraine.
- ***elevated debt of corporates combined with deteriorating credit quality***: Weakening economic prospects and rising refinancing costs in a higher interest rate environment would result in downgrades and defaults that may undermine the resilience of financial intermediaries and structured financial products.
- ***rising risk for banks from credit quality deterioration, and the impact of sanctions***: Elevated levels of private sector debt and the risk of deteriorating credit quality amid weakening economic prospects, exacerbated by rising commodity prices following the Russian invasion of Ukraine, could lead to substantial rise in NPLs and increasing counterparty credit risk from their exposures to non-bank financial institutions (NBFIs).
- ***rising refinancing risk of emerging market economies (EMEs):*** Debt sustainability concerns are rising refinancing risk for highly indebted sovereign and corporate issuers; EMEs with direct links to Russia and Ukraine would be particularly vulnerable to commodity supply chain disruptions and sizeable trade ties that could contribute weakening economic growth and spurring inflation further.
- ***growing market fragilities and concerns over market integrity in alternative finance markets***: Stablecoin issuance has grown substantially over the recent years, yet being vulnerable to sudden shift in investors' risk sentiment and mass redemptions that could cause forced sell-offs of underlying reserve assets and potential negative spillovers to traditional financial markets. Also, the Russian invasion of Ukraine raises a variety of implications for sustainable investment opportunities and approaches, including for ESG rating.

Indebted sovereign issuers

Elevated sovereign debt levels and high refinancing needs could increase refinancing risk for sovereign issuers amid rising interest rates, as well as the need for possible prolonged fiscal support to cushion the impacts of the Russian invasion of Ukraine. The unwinding of asset purchase programmes would be expected to put upward pressure on bond yields. Although maturities of public debt issuance have been lengthened in many OECD economies over the past decade to mitigate refinancing risk, rollover ratios are expected to be elevated and may pose significant challenges in terms of refinancing risks over the next several years.

Russian and Ukrainian sovereign debt markets are facing strained conditions following the Russian invasion of Ukraine. International rating agencies downgraded both countries' ratings to "near default" status. Concerns are also rising around the Russian government's willingness to continue paying its foreign currency denominated debt. Evidence suggests that the Central Bank of Russia (CBR) could be able to repay maturing sovereign debt denominated in foreign currency by converting part of its international reserves into foreign currencies. Nevertheless, sanctions imposed on Russia and capital controls implemented by the CBR could create difficulties in processing payments to foreign creditors. International investors may, in turn, suffer losses from their exposures to Russian and Ukrainian sovereign debt. For example, large asset managers and insurance companies have significant direct exposures to Russia and Ukraine. Some large asset managers also have indirect exposures through selling credit default swaps (CDS) on the Russian sovereign.

Leveraged non-financial corporates

Extraordinary monetary and fiscal support measures have been key to limiting the economic fallout of the COVID-19 pandemic. Corporate defaults are expected to gradually rise in 2022 despite these measures. According to Moody's, the trailing 12-month global speculative-grade corporate default could rise to 2.4% by end-2022 and, under the adverse scenario, the speculative-grade default rate could jump to over 10%. Potential threats to accommodative corporate credit market conditions are: (i) the emergence of new COVID variants that could severely disrupt the economic recovery; (ii) tighter liquidity conditions and the withdrawal of policy support before the economic recovery is self-sustaining; (iii) trade tensions and geopolitical instability intensify with negative impact on economic and inflation outlooks; or (iv) a widespread and drastic deterioration in China's credit and growth trajectories, which might be accelerated by regulatory and prudential reforms. Deteriorating credit quality of speculative-rated corporate issuers could result in losses for financial institutions and investors exposed to the corporate sector (including real estate finance products, such as RMBS and CMBS, and collateralised loan obligations, also known as CLOs).

The Russian invasion of Ukraine may raise further challenges for debt sustainability of leveraged companies globally. Heightened geopolitical risk could have a broad effect on commodity prices and inflation, as well as monetary policy normalisation and global economic growth. Prolonged conflict and its ramifications, including sanctions, have the potential to exacerbate cost pressures and dampen demand, which could lead to weaker than expected cash flow and leverage metrics. European companies are particularly vulnerable to disruptions of oil and gas supply from Russia that may lead to significant increases in production costs and reductions of their profit margins. SWIFT-related sanctions imposed on Russia are also likely to negatively affect business conditions, sales and profitability of Russian energy and commodity companies and European corporates with significant exposures to Russia.

Banking sector

Elevated levels of private sector debt and the growing risk of credit rating downgrades leave firms and households vulnerable to downside risks that, if they were to materialise, would erode asset quality at exposed banks. Notably, banks could record increases in non-performing loans following withdrawal of unprecedented support measures for households and corporates and monetary policy normalisation that could boost borrowers' refinancing risk. Vulnerabilities are also growing in the leveraged finance segments of US and European banks amid higher leverage and weaker covenants, which may also lead to strained conditions in collateralised loan obligation markets. Banks and insurance companies may be subsequently exposed to risk of losses as they have become increasingly buyers of CLOs. As the overall indebtedness of the private sector increased during the pandemic, the banking sector also increased its exposure to non-bank financial institutions (NBFIs) that could make banks increasingly exposed to market fragilities. The potential decline in the value of collateral may result in downgrades and repricing of securities with substantial losses for a wide range of financial intermediaries. In combination, these effects could erode financial market resilience and availability of credit to the real economy.

Financial consequences from the Russian invasion of Ukraine, including sanctions against Russia, are severely impacting Russian and Ukrainian banks, and having spillovers to other banking systems with direct exposures. Ukrainian banks are experiencing severe disruptions in their operations that have led to a material deterioration of their credit profiles and rating downgrades to "near default" status. Russian banks are also facing acute challenges including the inability to operate international transactions, withdrawals by retail depositors and growing risk of higher NPLs, which could cause credit conditions to tighten and make the economic pain from sanctions even worse. International banks in major OECD banking sectors are exposed to direct risks from the potential deterioration of global economic conditions and their exposure to Russia and Ukraine, which may result in higher NPLs and possible equity write-offs. International banks may be also exposed to indirect risks from the deteriorating credit quality of their corporate borrowers with trade relationships tied to Russia and Ukraine and their capital market activities.

Emerging market economies

A number of EMEs have highly indebted sovereign and corporate sectors, including foreign currency debt, that would suffer from higher refinancing costs in a higher global rate environment accompanied by rising credit risk premia. The substantial increase in refinancing risks could weight on sovereign debt burdens, especially for low-income countries, whose financial position had already deteriorated before the pandemic. As governments ease short-term support measures, an increase in COVID-19 related business and personal insolvencies could be also expected stemming from widespread business distress. Sovereign and corporate solvency risks could be further exacerbated by depreciating domestic currencies given the sharp increase in dollar-denominated debt over the past decade. Strained conditions for corporates and households are also likely to translate into higher NPLs for banks, which could pose significant challenges for the capacity of insolvency frameworks in EMEs to resolve bankruptcies in a timely manner.

The Russian invasion of Ukraine is likely to impact EMEs mainly through commodity prices and supply chains. Commodity and oil net exporters would benefit from higher prices. For EMEs that are net commodity importers, higher prices will put pressure on external accounts and lead to further currency depreciation and heightened inflation, albeit with effects that will vary by economy and depending on specific commodities exposures. For instance, energy and food typically represent a greater share of consumer price indices for lower-income countries. Increasing inflation pressures in these countries could necessitate further monetary policy tightening in net commodity importer EMEs and fiscal support to vulnerable households and corporates. EMEs with direct links to Russia and Ukraine – mainly Central, Eastern and South-eastern European (CESEE), Baltic and some Central Asian countries – would be particularly vulnerable to commodity supply chain disruptions and sizeable trade ties.

Alternative finance markets

A less accommodative interest rate environment and negative economic impacts of the intensifying geopolitical conflict may trigger bouts of investor risk aversion. As key stablecoins are redeemable at par value, they are vulnerable to unexpected redemptions with negative implications for the value of underlying assets and market resilience. Stablecoins (mainly Tether) are reportedly increasingly investing in US commercial paper as their reserve assets. In a scenario where risk aversion would increase for Tether and similar stablecoins holding short-term instruments, substantial redemptions and liquidation of underlying assets could disrupt conditions on commercial paper and other short-term debt markets.

Elevated energy prices combined with the gradual decrease of energy imports from Russia to OECD economies could incentivise companies to accelerate investment in renewables. This could in turn contribute to future improvements in their E rating. Nonetheless, the Russian invasion of Ukraine has highlighted challenges for the current approach to Environment, Social and Governance (ESG)-ratings to accurately reflect growing social and governance risks in Russia. While the implications of the military conflict and implemented sanctions are still uncertain to promote more sustainable investments, new developments will contribute to reshape investors' approach of assessing ESG ratings of sovereign and companies and their portfolio allocation strategies in the years to come.

1 Key global financial market developments amid monetary policy tightening and escalating geopolitical tensions

The uneven recovery of the global economy following the COVID-19 pandemic has occurred amidst persisting supply bottlenecks, rising input costs and the continued effects of the pandemic (OECD, 2022[1]). Stronger and longer-lasting inflation pressures have emerged in many economies at an unusually early stage of the economic cycle, and labour shortages are appearing even though employment and hours worked are still yet to recover fully. Against this backdrop, major central banks have communicated their intentions to tighten their monetary policies to address inflation pressures.

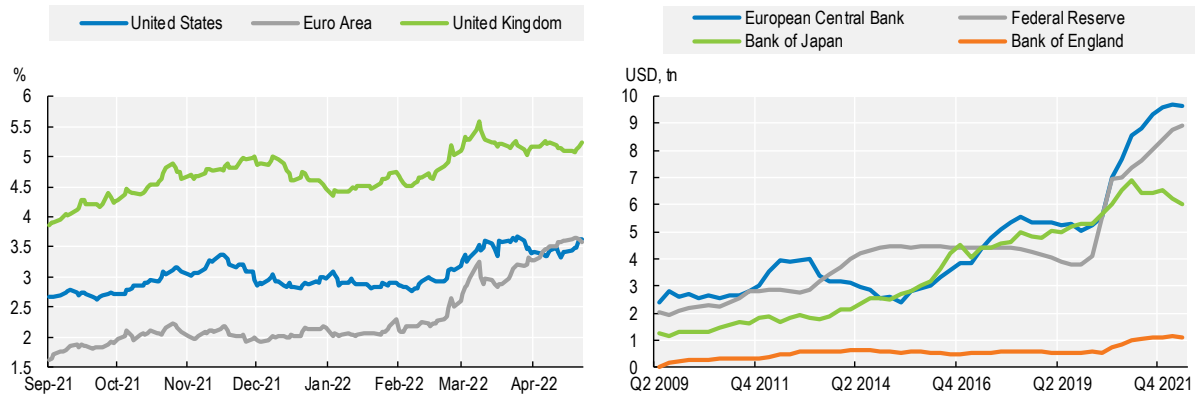
The shock from the Russian invasion of Ukraine has put the strong global economic recovery from the COVID 19 pandemic into doubt. Amid the uncertainty, the OECD estimates global economic growth will be more than 1 percentage point lower in 2022 as a result of this conflict, while inflation, already high at the start of the year, could rise by about a further 2.5 percentage points on aggregate across the world (OECD, 2022[1]). Escalating geopolitical tensions following the Russian invasion of Ukraine, and their immediate severe effect on commodity prices, have triggered bouts of market volatility. Elevated commodity prices exacerbate concerns over already high inflation globally that could erode consumer purchasing power and corporate earnings, dampening economic activity and adding to financial risks. Increasing investor risk aversion has resulted in sharp declines in the performance of a range of risky assets and a flight to safe haven assets. In addition, there is a risk that markets might anticipate a faster and larger tightening of monetary policy, which could in turn put upward pressure on government bond yields. Higher interest rates could further dampen economic growth and so this channel constitutes a stagflationary shock with an uncertain scale and duration. Subsequent tightening of macrofinancial conditions is adding risks to the credit landscape, which was already subject to long-standing vulnerabilities. Debt issuers' credit profiles are likely to be impacted by rising risk of commodity price shocks, financial disruptions and volatility. Deteriorating credit quality of leveraged issuers may exacerbate price corrections for a range of risky assets, which were already exhibiting stretched valuations, and erode credit market conditions. Negative spillovers to a range of markets and intermediaries could damage the resilience of the financial sector with detrimental implications for sustainable economic growth.

Tightening monetary policy to address inflation pressures, yet higher interest rates could weigh on economic outlook and financial market conditions

Tightening monetary policy by major central banks to address rising inflation pressures

Inflation expectations are rising in the medium-term in major advanced markets amid higher food and energy prices, supply constraints associated with the pandemic and a rapid recovery in demand from mid-2020, which resulted in an acceleration and broadening of inflation in most OECD economies (Figure 1). The war in Ukraine has created a new negative supply shock for the world economy as Russia and Ukraine are major suppliers in a number of commodity markets. To address these inflation pressures, a number of central banks have started to slow the pace of their net asset purchases, or stopped altogether, which has moderated the pace of expansion of major central banks' balance sheet. The Federal Reserve started to reduce the monthly pace of its net asset purchases in November 2021, bringing them to an end in early March 2022 (Federal Reserve, 2022[2]). The European Central Bank (ECB) also started to moderately reduce the pace of purchases under its Pandemic Emergency Purchase Programme (PEPP) in December 2021 (ECB, 2022[3]). The Bank of England has implemented reductions in its UK government bond and sterling non-financial investment-grade corporate bond holdings by ceasing to reinvest maturing assets in February 2022 (Bank of England, 2022[4]). The Reserve Bank of Australia had adopted a flexible approach to cease purchases under the bond purchase program in July 2021, with the final purchases have taken place on 10 February 2022 (Reserve Bank of Australia, 2021[5]). In contrast, the Bank of Japan has extended the duration of its special funds-supplying operations until the end of March 2022 to facilitate financing in the private sector (Bank of Japan, 2022[6]). In addition, several central banks, mainly in emerging economies and to a lesser extent in some advanced economies, have already raised their policy rates in response to evolving inflation, growth outlook, and financial conditions (Table 1). On 16 March, the Federal Reserve lifted its main interest rate by a quarter of a percentage point to a target range of 0.25% to 0.5%.[1] This is the first increase of its policy rate since the onset of the COVID-19 pandemic. According to projections, Federal Reserve officials expect to increase the policy rate about six additional times in 2022, bringing the benchmark interest rate to nearly 2%.[2] On 17 March, the Bank of England also increased its policy rate from of 0.25% to 0.75%.[3] It is worth noting the Central Bank of Russia (CBR) substantially increased its policy rate on 28 February, shortly after the invasion of Ukraine, from 9% in to 20%.[4] On 13 April, the CBR cut its policy rate by 300 basis points to 17%.[5]

Figure 1. Medium-term market expected inflation and selected major central banks' total balance sheets



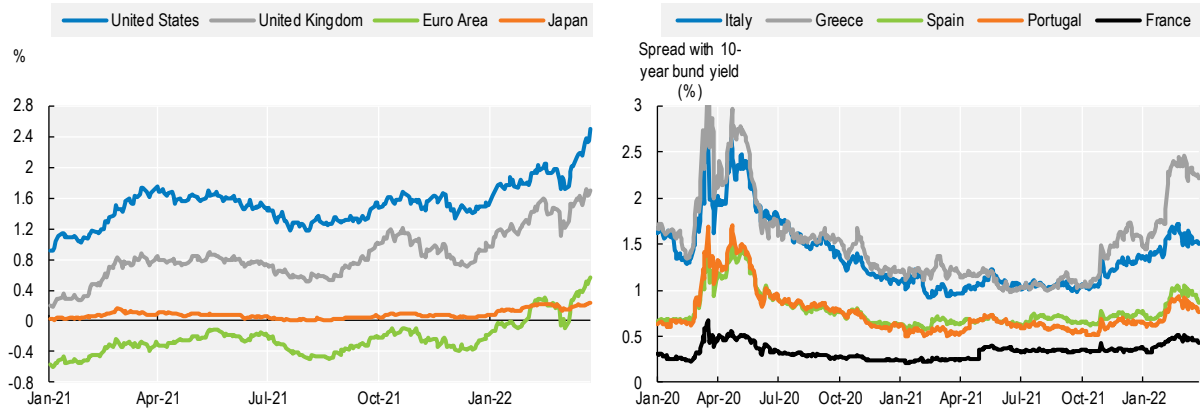
Note: The left panel shows 5-year USD, EUR and GBP inflation linked swap rates. The right panel shows total balance sheets of selected major central banks.
Source: Refinitiv, OECD calculations.

Table 1. Increase in policy rate in selected jurisdictions in 2021-22

	Minimum policy rate since March 2020	March 2022	Net change
Russia	4.25	17	12.75
Brazil	2	11.75	9.75
Argentina	36	44.5	8.5
Chile	0.5	7	6.5
Turkey	8.25	14	5.75
Czech Republic	0.25	4.5	4.25
Hungary	0.6	4.4	3.8
Peru	0.25	4	3.75
Poland	0.1	3.5	3.4
Mexico	4	6.5	2.5
Colombia	1.75	4	2.25
Iceland	0.75	2.75	2
Romania	1.25	2.5	1.25
Korea	0.5	1.25	0.75
South Africa	3.5	4.25	0.75
Norway	0	0.75	0.75
New Zealand	0.25	1	0.75
United Kingdom	0.1	0.75	0.65
United States	0.125	0.5	0.375
Canada	0.25	0.5	0.25
Hong Kong, China	0.5	0.75	0.25
Saudi Arabia	1	1.25	0.25

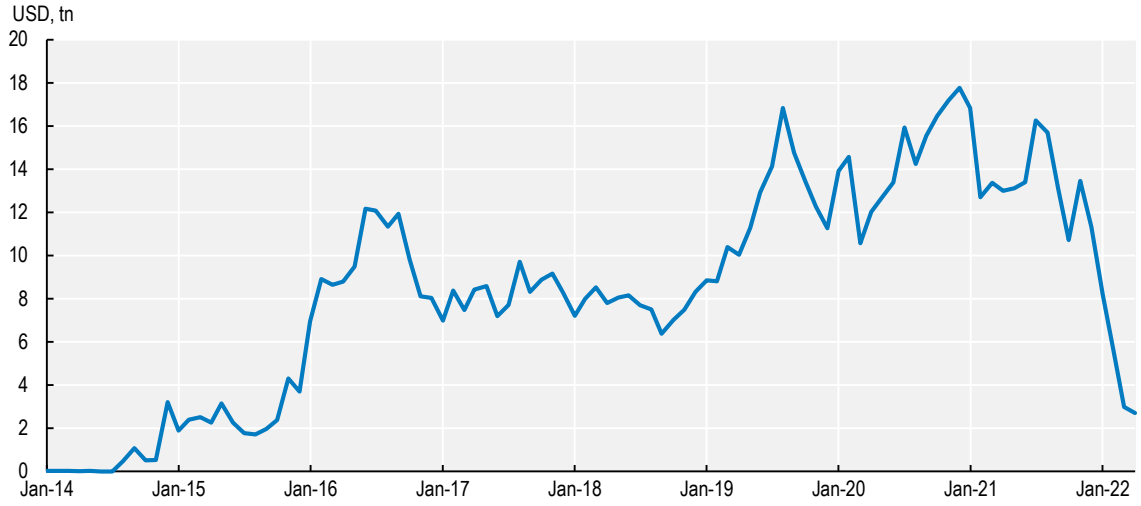
Note: This table shows policy rates in jurisdictions where increases have been performed in 2021 and/or 2022 compared to minimum levels since March 2020. Data are expressed in percentages.
Source: Bank for International Settlements.

Figure 2. Rising ten-year sovereign bond yield in selected advanced markets and sovereign yield spread in selected European economies



Note: The left panel shows the 10-year sovereign bond yield in selected advanced markets. The right panel shows the spread between 10-year sovereign yield and German bund for selected European economies.
Source: Refinitiv, OECD calculations.

Figure 3. Sharp decline in negative yielding debt since end-November 2021



Note: This figure shows the amount of marketable debt trading at negative yields globally. It is derived from the Bloomberg Barclays Global Aggregate Negative Yielding Debt Index that represents the negative yielding segment of the global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.
Source: Bloomberg, OECD calculations.

Notwithstanding a brief dip after the Russian invasion of Ukraine, ten-year sovereign bond yields have generally continued to rise, reflecting expectations of further unwinding of asset purchase programmes and less accommodative interest rate environment (Figure 2). Long-term sovereign bond yields have even turned positive in the euro area following the ECB's announcement of possible interest rate increases sometime after the end of net purchases under the asset purchasing programme (APP).[6] Expectations of less accommodative interest rate environment in the euro area has prompted an increase of the yield spreads of ten-year eurozone peripheral government bonds over German bunds to near their highest levels since the onset of the pandemic. Also, the unwinding of asset purchase programmes has pushed global levels of negative-yielding debt down to USD 2.7 trillion at end-April 2022 for the first time since January 2016 (Figure 3).

The near-term impacts of escalating geopolitical conflict on financial market conditions and spillovers across a range of market segments

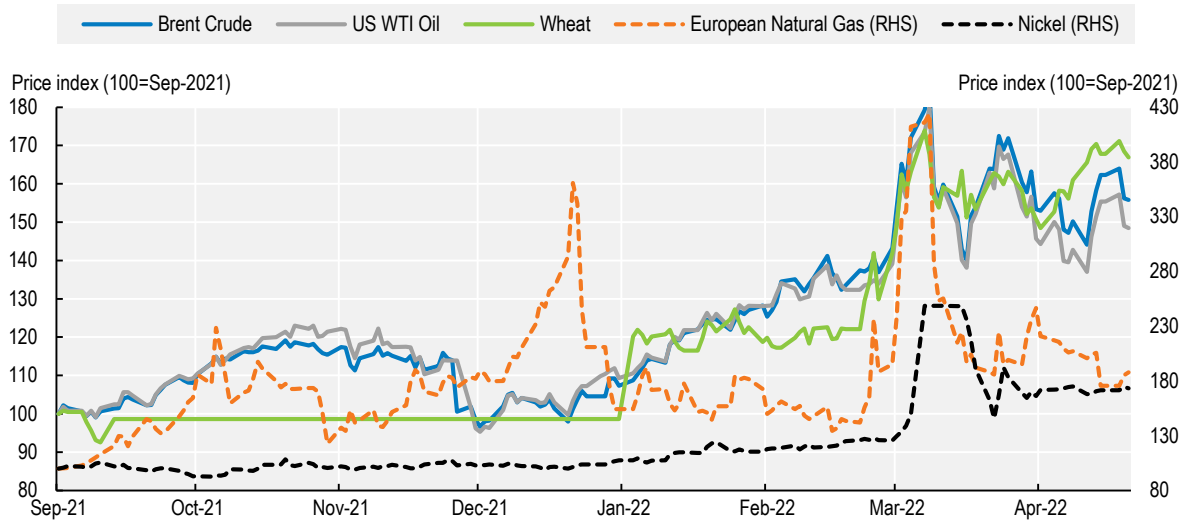
The Russian invasion of Ukraine has delivered a shock to global financial markets characterised by a sharp rise in commodity prices, and sharp equity price declines, mainly in Russian markets and to a lesser extent on several emerging markets in Europe and Asia. In addition, corporate and sovereign credit market conditions have deteriorated beyond Russian markets, particularly in emerging and European markets. Lastly, Russian and international banking sectors have been affected by the Russian invasion of Ukraine, subsequent sanctions, and exposures.

Energy prices have surged amid escalating geopolitical conflict, which triggered margin calls for leveraged intermediaries and threats for the resilience of the financial system

The Russian invasion of Ukraine has prompted an additional surge in prices of European gas, nickel and wheat (Figure 4). Energy prices were already on the rise prior to the invasion and constituted one of the

major inflationary driving forces. Russia and Ukraine together account for about 30% of global exports of wheat, 20% for corn, mineral fertilisers and natural gas, and 11% for oil. Therefore, the impact of the invasion has increased concerns about the global supply of certain commodities with significant effects on prices. The Shanghai Futures Exchange and the London Metal Exchange had to suspend trading of a vast majority of nickel contracts between March 8th and 16th[7] following the surge in nickel prices, to avoid rising financial stability risks (Hume, Stafford and Lockett, 2022[7]).[8] Price tensions on other commodities markets could also trigger substantial margin calls with similar negative consequences on the stability of the global financial system. For instance, risks of margin calls and detrimental effects for leveraged financial intermediaries prevail amid a prolonged period of elevated and volatile oil prices as hedges may exceed the cost of the physical cargos they are designed to protect.[9] Oil prices have declined from March peaks due to steady output increases from OPEC+ members, the United States and other non OPEC+ countries, massive stock releases from IEA member countries and weakening demand from China following severe new lockdown measures amid surging COVID-19 cases (IEA, 2022[8]). Nonetheless, commodity prices are likely to be more volatile in 2022 and could remain more elevated compared to pre-invasion levels, given the effects of the disruptions caused by the conflict and the implemented sanctions to those markets.[10]

Figure 4. Substantial rise in commodity prices amid intensifying geopolitical tensions



Source: Refinitiv, OECD calculations.

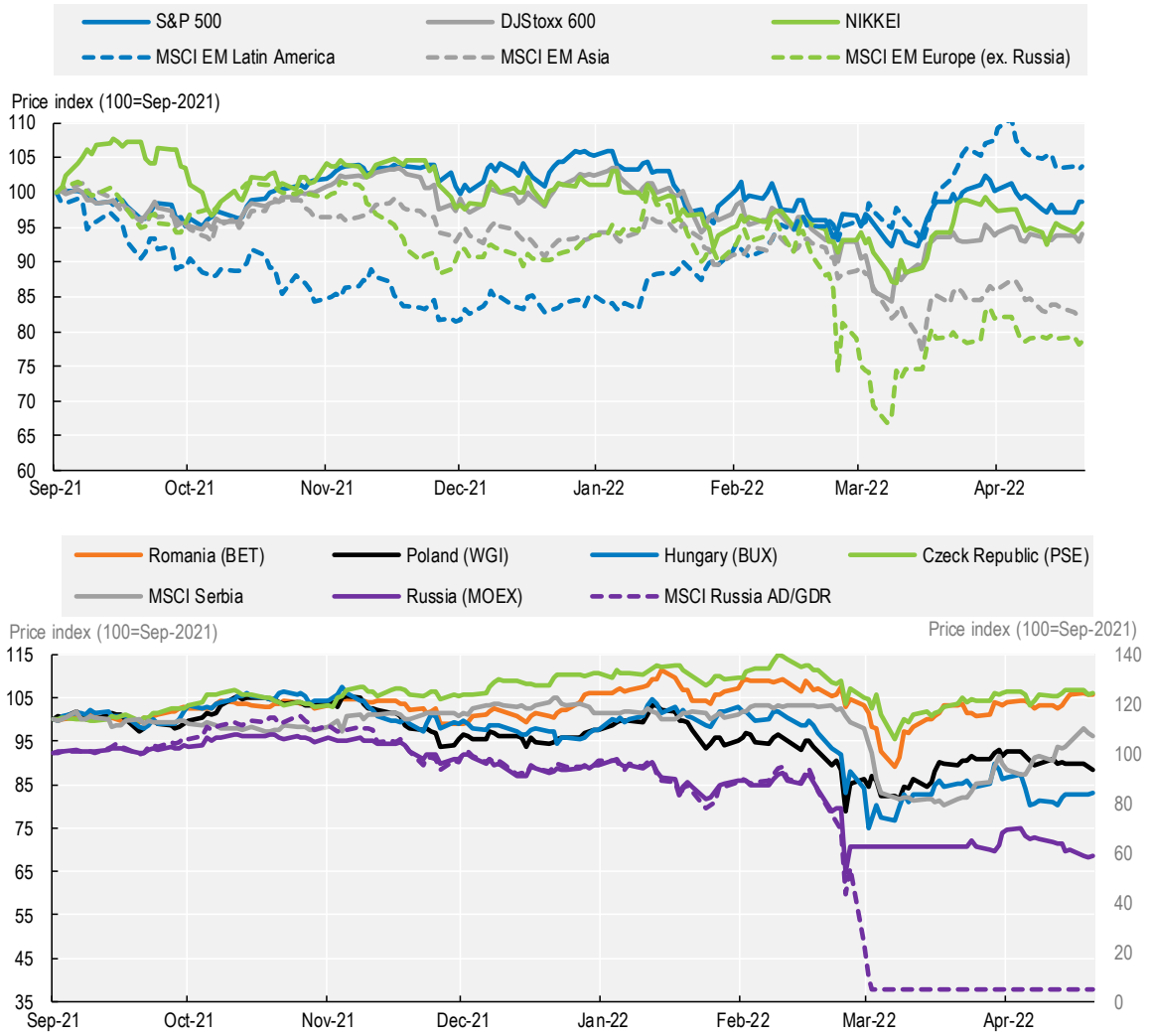
Russian equity markets have sharply declined and market spillovers have impacted several emerging markets in Europe and Asia

While Russia's equity markets have experienced acute stress since the onset of the Russian invasion of Ukraine,[11] global equity markets have remained more resilient (Figure 5). Nevertheless, market spillovers have affected several emerging Eastern European markets, including Hungary, Poland and Serbia, along with emerging Asian markets and Western European markets. US and Japanese equity markets have been negatively impacted, though to a lesser extent. After an initial deterioration of risk appetite following the Russian invasion of Ukraine, performance of equity markets has improved since mid-March as investors have reassessed their outlook for risk assets and have become more less risk averse.

Stock prices remain depressed in some jurisdictions following the Russian invasion of Ukraine. Investors are particularly concerned about the implications of elevated energy prices and implemented sanctions for business conditions and earnings prospects of Eastern European companies, given substantial trade relationships with and energy dependency on Russia.[12] Also, manufacturing companies in Asian

economies, which generate substantial shares of GDP in the Asia region, are particularly vulnerable to a sharp rise in production costs amid elevated commodity prices that would erode their profitability, in addition to the negative implications of rising interest rates on the cost of refinancing debt and renewed lockdown in China amid surging COVID-19 cases.[13] While the performance equity markets has improved after the shock from the Russian invasion of Ukraine, the effects of the disruption to commodities markets caused by the conflict and resulting sanctions are likely to weigh on corporate earnings, and subsequently their equity valuation in the medium-term.[14] In contrast, emerging Latin American equity market prices have continued to rise as companies in major commodity exporting economies in the region benefit from elevated commodity prices.[15]

Figure 5. Performance of equity benchmarks in selected major markets, Russia and Eastern European markets



Note: The top panel shows the performance of equity benchmarks in selected major advanced and emerging markets. The bottom panel shows the performance of equity benchmarks in Russia and selected Central, Eastern and South-eastern European (CESEE) markets. The MSCI Russia AD/GDR index aims to reflect the performance of Russian large and mid-cap stocks through the use of liquid depository receipts (DRs). The index constituents include level II and level III American Depositary Receipts (ADRs) listed on the New York Stock Exchange or the NASDAQ, and Global Depositary Receipts (GDRs) and ADRs listed on the London Stock Exchange. The index does not include constituents of the MSCI Russia Index that are without DR listings.
Source: Refinitiv, OECD calculations.

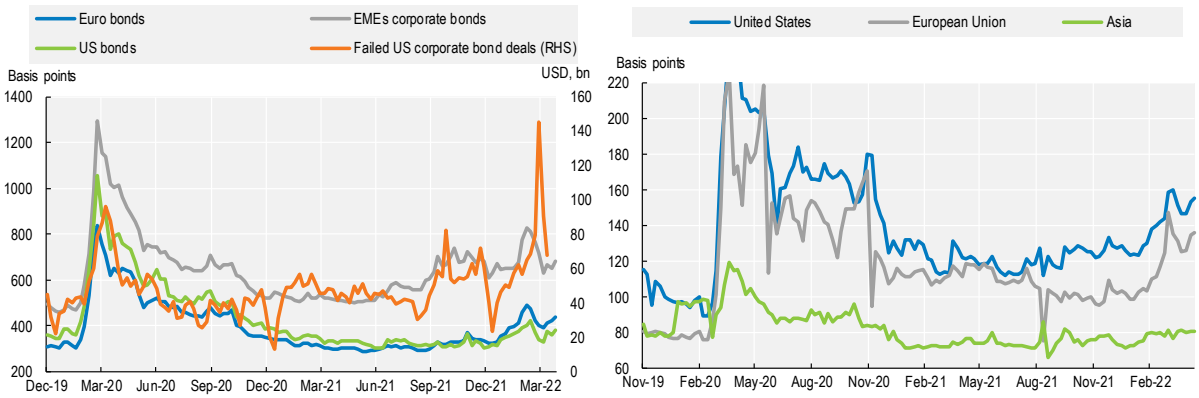
Previous geopolitical events demonstrate a wide range of market reactions (Annex A). Evidence suggests that the reaction may be mild as long as the conflict remains confined geographically, but more significant involvement by the United States and European nations in the conflict could result in more substantial price declines in global markets. With some similarities to the current aggression, the gulf war in Iraq in 1989-90, which also involved major energy source producers, prompted oil prices to rise by 135% and S&P500 index to decline by 20% in the height of the conflict compared with pre-conflict price levels.

Investor risk aversion caused an increase in credit spreads and hedging costs against corporate credit risk

Speculative-rated corporate bond spreads have started to increase at the end of 2021 amid rising concerns over the debt sustainability of leveraged corporates following the announcement by major central banks of a path of tightening in their monetary policies (Figure 6). Notably, spreads have risen in US and European markets. Thereafter, Speculative-rated corporate bond spreads widened following the Russian invasion of Ukraine that prompted a spike in investors' risk aversion, particularly on emerging and European markets and to a lesser extent on US high-yield corporate debt markets. Nevertheless, spreads have narrowed since mid-March 2022, yet surpassing pre-pandemic levels amid concerns about refinancing risk for leveraged corporates in a higher inokterest rate environment. For instance, investors are particularly concerned over the credit risk of Western European companies, as reflected by the substantial rise in credit default swap (CDS) index since the onset of the invasion of Ukraine.

Implemented sanctions after the invasion have impacted the functioning of US corporate bond secondary markets according to some market participants.[16] The number of failed trades in the US corporate bond market has risen substantially in March 2022. Differences between bank trading desks, prime brokers and other financial intermediaries in how to implement myriad sanctions against Russia have disrupted the bond change in ownership process. The several stakeholders in the chain, particularly US primary dealers, are reluctant to proceed trades potentially connected to Russia. Therefore, the debt of companies that have not been sanctioned but have large financial exposure to Russia is facing settlement problems. In addition,

Figure 6. Speculative-rated corporate bond spreads, US corporate bond failed trades and CDS indices in selected major markets

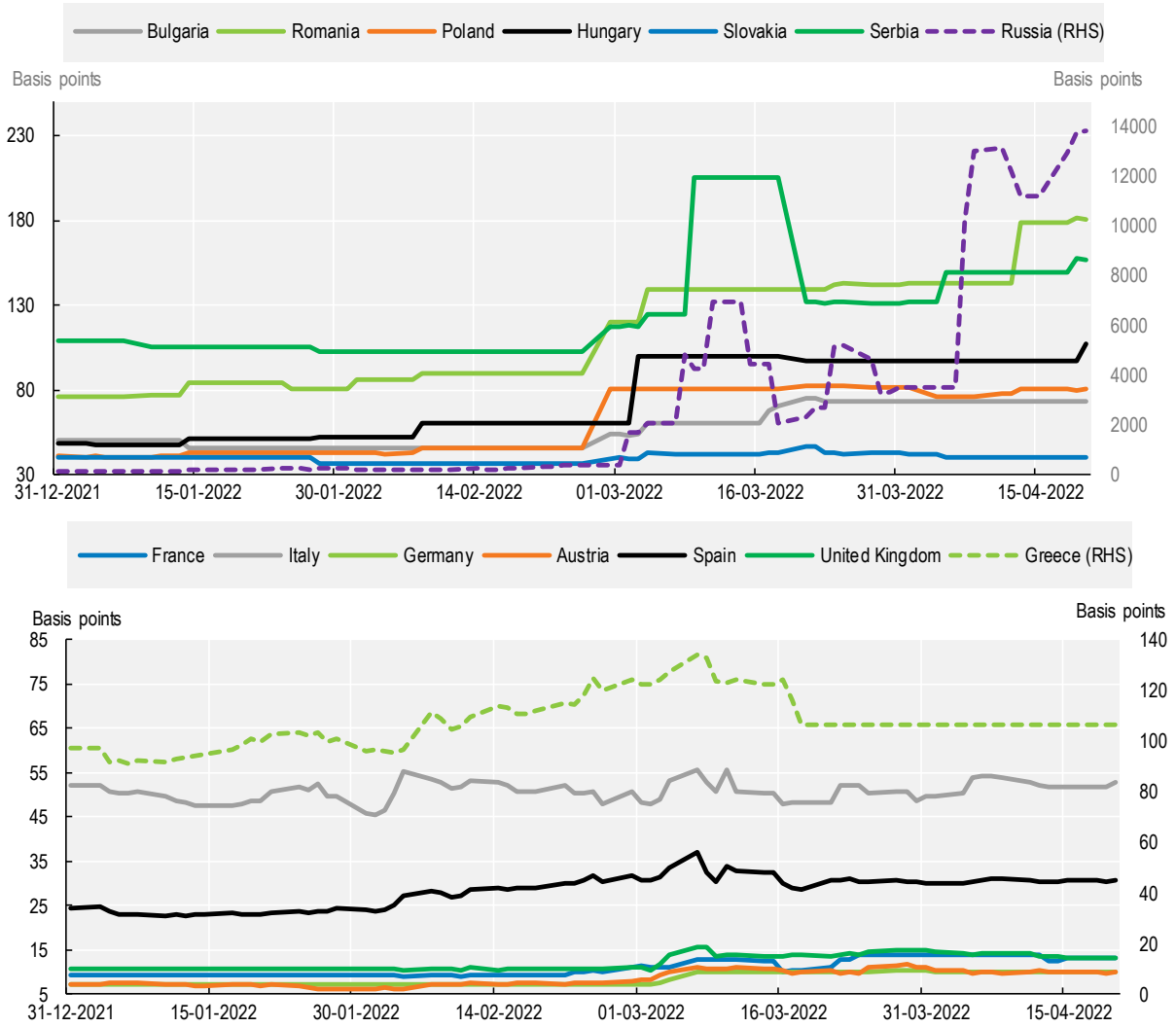


Note: The left panel shows option-adjusted spreads of speculative-rated corporate bond indices in selected major markets derived from ICE BofAM benchmarks. The panel also includes corporate bond failed trades, which reflect cumulative weekly aggregated 'fails to receive' and 'fails to deliver' for the primary dealer community. The right panel shows corporate CDS indices in selected major markets derived from Refinitiv sectoral indices.
Source: Refinitiv, Federal Reserve Bank of New-York, OECD calculations.

Spillovers have affected sovereign credit markets, particularly Russian and some Central, Eastern and South-eastern European markets

Sovereign credit conditions have also deteriorated substantially in Russia, and also in several Central, Eastern and South-eastern European (CESEE) markets (Figure 7). Notably, Russian sovereign CDS has surged due to rising investor concerns about the impact of sanctions, and the consequences of the conflict on economic conditions and public finance. Also, sovereign CDS spreads have increased significantly in Serbia, Romania, Hungary, Poland and Bulgaria as these economies could experience the consequences of waves of migration that would require additional fiscal spending. Sovereign CDS spreads have also moderately risen in several Western European markets that suggests a modest rise in hedging downside risks due to perceptions of further spillovers to banks and corporates.

Figure 7. Rising sovereign CDS spreads in Russian and some European markets

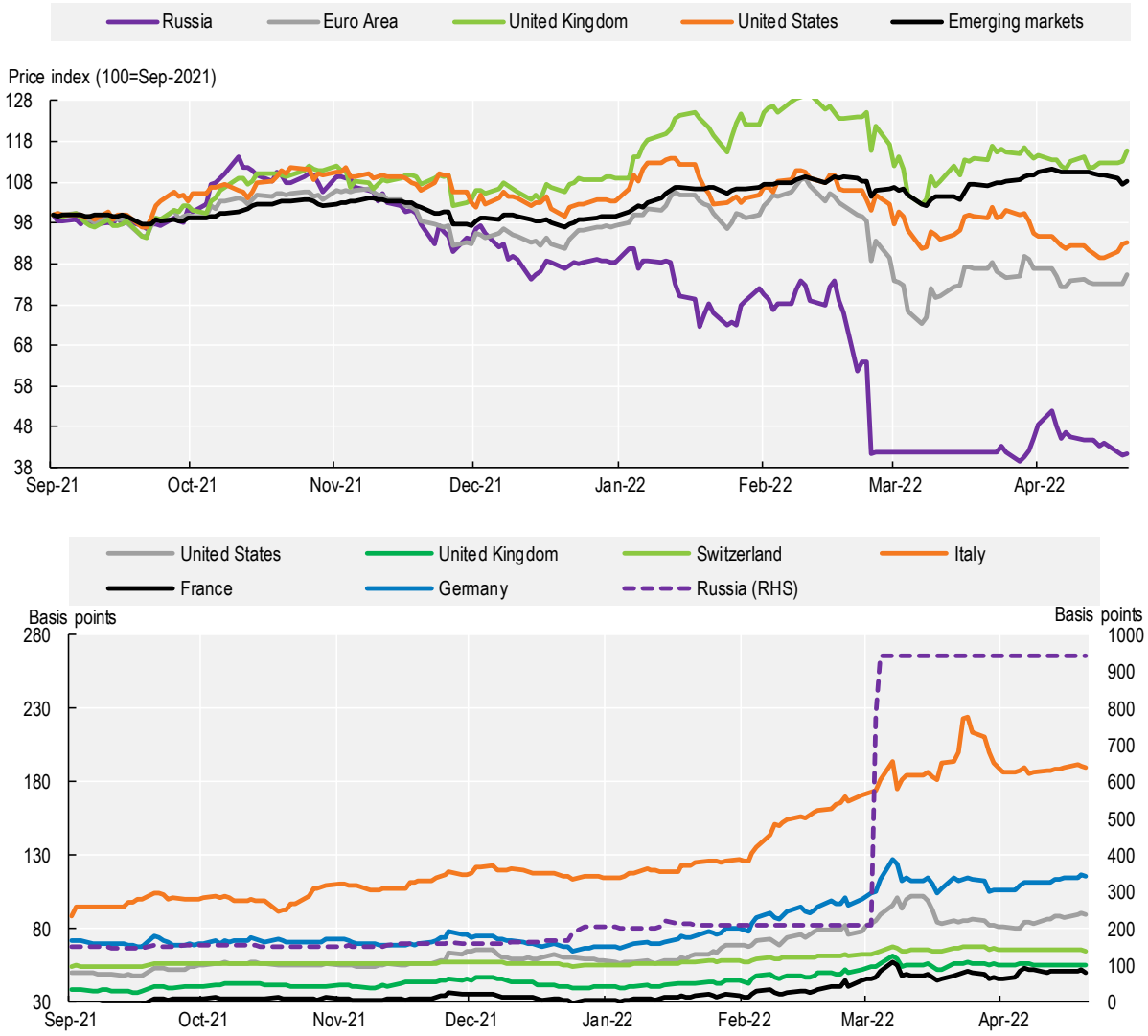


Note: This figure shows 5-year senior credit default swap (CDS) indices of selected sovereign issuers in Russia and selected European economies. Data are expressed in basis points.
Source: Refinitiv, OECD calculations.

Russian and international banking sectors have been affected by the Russian invasion of Ukraine, subsequent sanctions, and exposures

Russian banks are experiencing strained conditions as reflected by the sharp decline in their market value (Figure 8). More precisely, Russian banks are experiencing acute challenges, including the inability to operate international transactions, withdrawals by retail depositors and growing risk of higher levels of non-performing loans (NPLs), which could cause credit conditions to tighten and make the economic pain from sanctions even worse.

Figure 8. Stock performance and CDS spreads of Russian and international banks in selected major banking sectors



Note: The top panel shows performance of Refinitiv bank equity benchmarks in selected jurisdictions. Stock trading of Russian banks has been suspended since February, 28th. On March 24th, the CBR decided to hold trading in 33 shares listed in the Moscow Exchange Russia Index (IMOEX) on the Moscow Exchange, including large Russian banks. The bottom panel shows weighted average (by total assets) of CDS spreads of systemically important banks in selected major banking sectors.
Source: Refinitiv, OECD calculations.

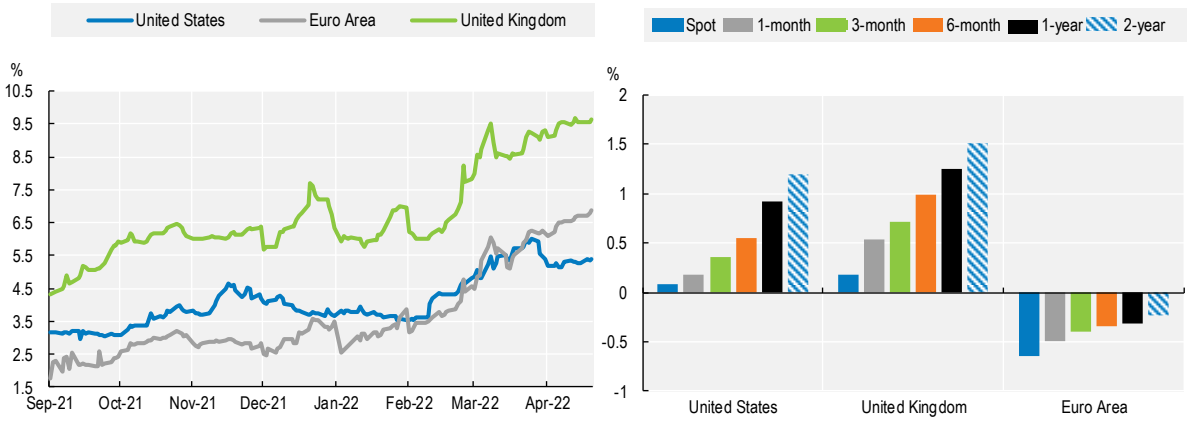
Spillovers have also affected international banks, particularly European banks with substantial exposures to Russia. Banking sectors in Austria, Italy and France have the largest absolute exposures to Russia, reflecting subsidiary banks from those countries being among Russia's systemically important banks.[17] These banks are likely to record losses following disruptions to their business activities in Russia and some potential reputational damages.[18] While CDS spreads of Russian banks have surged, CDS spreads of major global banks have risen moderately, and on average remain low compared to historical levels. Hence, while expectations for some international banks' earnings prospects appear to have deteriorated, the perceived credit risk remains low.

Monetary policy implications of prolonged inflationary pressures and deteriorating economic outlook

The Russian invasion of Ukraine has delivered a shock to commodity prices that has heightened short-term inflation expectations

Short-term inflation expectations have risen substantially since the onset of the Russian invasion of Ukraine following a sharp increase in global commodity prices (Figure 9). To address such inflation pressures, major central banks have communicated about the tightening of monetary policies in 2022-2023. Investors have subsequently reflected a significant number of additional rate increases and balance sheet contractions for central banks in most major advanced markets. OECD model simulations, based on assumptions on commodity and financial market shocks seen in the first two weeks of the conflict, suggest a sizeable hit to global growth and higher prices if the conflict persists (OECD, 2022[1]). A key potential economic risk is that energy exports from Russia to the European Union could cease completely. Disruptions in Russian energy supply to Europe would raise needs to boost supply from other sources and reduce the demand for gas from various sectors of the economy. While the impact of such a shock is difficult to quantify, a resurgence of European gas prices to the peak reach in early March 2022 could add an additional 1.25 percentage points to inflation in Europe (taking the full shock on euro area inflation to over 3.5 percentage points) and further reduce European growth by over 0.5 percentage points. Commodity price shocks raise considerable challenges for inflation outlooks and monetary policy action. For instance, monetary policy's effectiveness in influencing energy prices is limited since they are set in global markets. Also, the pace of monetary policy normalisation is likely to be impacted in certain economies where underlying (non-food, non-energy) inflation remains low, wage pressures are still modest, and the adverse impact of the conflict on growth is greatest. Major concerns relate to the persistence of geopolitical tensions and the magnitude of the effect of persistently elevated commodity prices on inflation, economic outlooks and additional fiscal spending to support vulnerable households and corporates that could lead to significant credit quality deterioration of sovereign, household and corporate issuers given elevated level indebtedness.

Figure 9. Rising short-term market expected inflation and market implied policy rates on major advanced economies



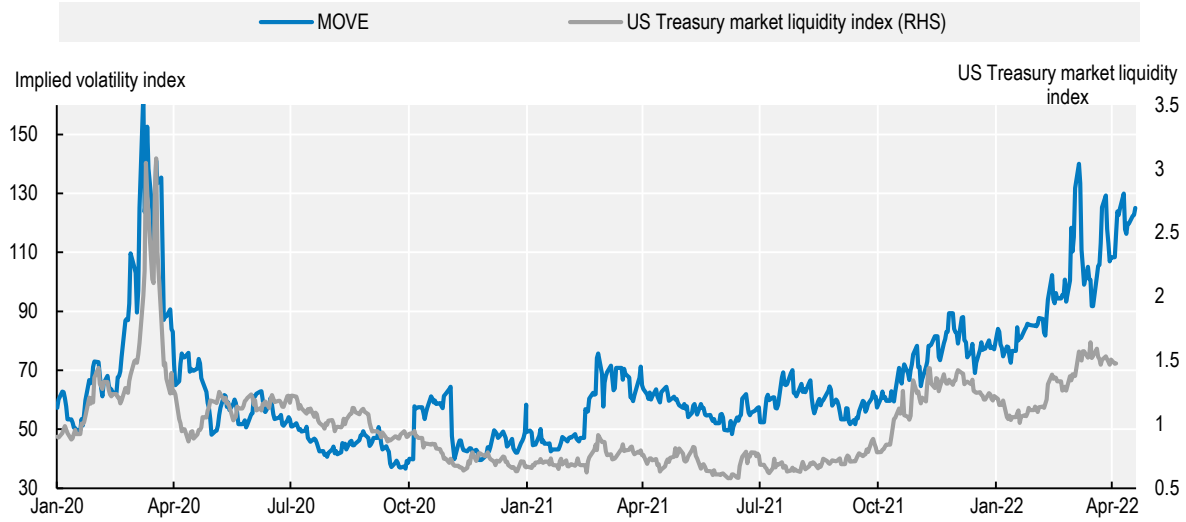
Note: The left panel shows 1-year USD, EUR and GBP inflation linked swap rates. The right panel shows overnight LIBOR spot and forward rates at 1-month, 3-month, 6-month, 1-year and 2-year horizons. Data are as of April, 21st 2022.
Source: Refinitiv, OECD calculations.

The combination of geopolitical uncertainty, higher commodity prices, escalating sanctions and regional business disruptions has affected financial market prices and volatility

Volatility rose substantially in Treasury markets at the beginning of March 2022 as the value of the MOVE peaked at 60% of its previous high in early 2020 (Figure 10). MOVE index has then oscillated over subsequent weeks and remains elevated. These trends suggest that investors are concerned about inflationary consequences of the surge in global commodity prices and the US Federal Reserve moving to rapidly tighten monetary policy to address high inflation. In turn, Treasury securities are more expensive to trade as reflected by the substantial deterioration in liquidity in the Treasury market, presumably as a results of the Federal Reserve quantitative monetary policy tightening.

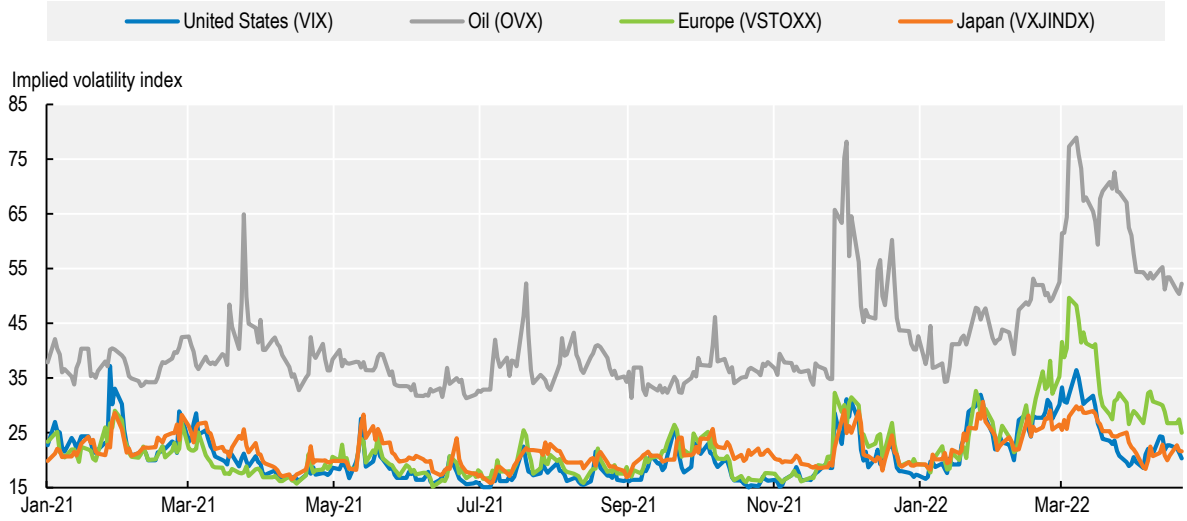
The MOVE index rose amid more range bound implied volatility in equity and oil indices following the Russian invasion of Ukraine, yet implied volatility of European equity markets rose more significantly than in US and Japanese equity markets (Figure 11). Implied volatility on equity and oil markets has since declined to below pre-invasion levels over the recent weeks. These trends suggest that investors are more concerned by interest rate movements than by uncertainty of the potential spillovers of geopolitical risks to global equity and oil markets.

Figure 10. Increasing implied volatility and deteriorating liquidity of the US Treasury market



Note: The MOVE index measures US interest rate volatility by tracking movement in US Treasury yield volatility on current prices of one-month over the counter (OTC) options on 2-year, 5-year, 10-year and 30-year Treasuries. The US Treasury market liquidity index measures prevailing liquidity conditions in the US Treasury market. This indicator displays the average yield error across the universe of US Treasury notes and bonds with remaining maturity 1-year or greater, based off the intra-day Bloomberg relative value curve fitter. When liquidity conditions are favourable the average yield errors are small as any dislocations from fair value are normalized within a short time frame. Under stressed liquidity conditions, dislocations from fair value implied by the curve fitter can remain persistent resulting in large average yield errors.
Source: Bloomberg, Refinitiv, OECD calculations.

Figure 11. Increasing implied volatility of oil and major advanced equity benchmarks

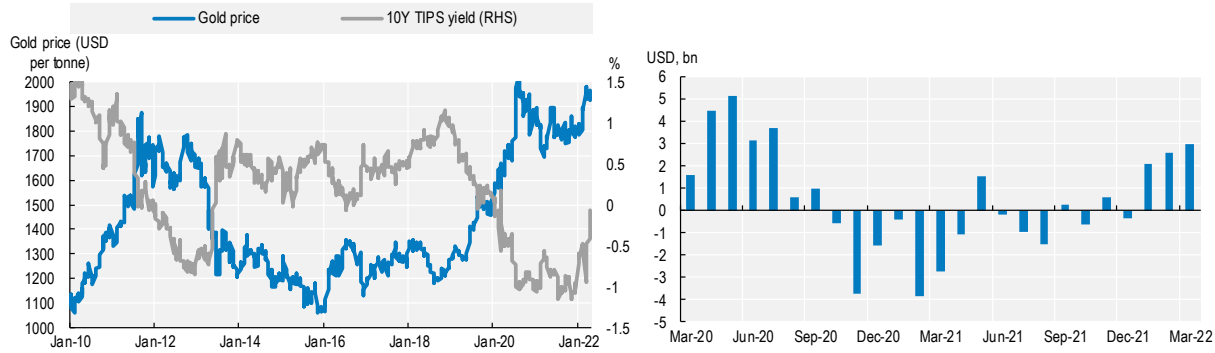


Note: The VIX, VSTOXX and VXJINDX are indices based on real time options prices of S&P 500, EURO STOXX 50 and NIKKEI benchmarks respectively. Such indices are designed to reflect the market expectations of near-term up to long-term volatility by measuring the square root of the implied variance across all options of a given time to expiration. The Cboe Crude Oil ETF Volatility Index (OVX) is an estimate of the expected 30-day volatility of crude oil as priced by the United States Oil Fund (USO).
Source: Refinitiv, OECD calculations.

Gold has outperformed stocks and bonds amid rising investor demand for haven assets. For instance, current simultaneous increases in the gold price and Treasury inflation protected securities (TIPS) yield

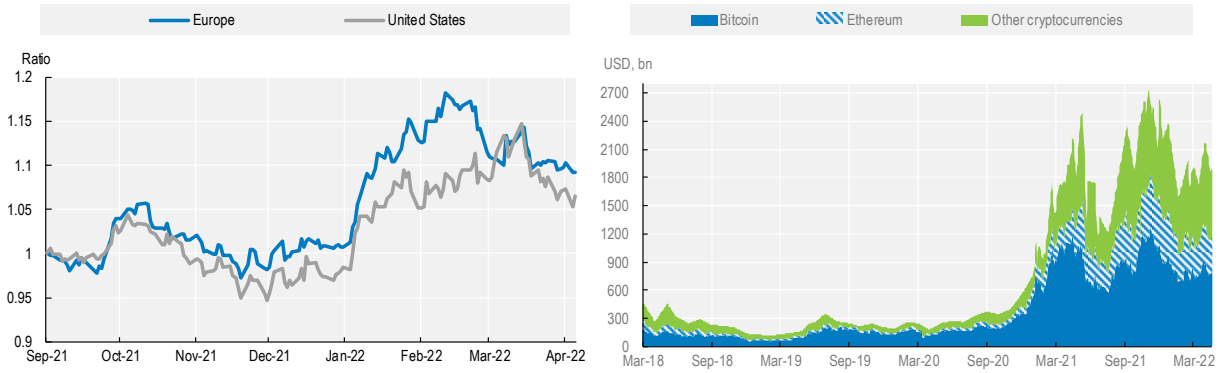
suggest rising investors' concerns about the path for the economic outlook (Figure 12). Also, gold exchange traded funds (ETFs) are recording substantial inflows since the onset of the invasion. The rotation to value stocks and the declining performance of crypto-assets reflect growing investors' appetite for lower-risk assets (Figure 13).

Figure 12. Increasing gold price, yield of Treasury inflation linked securities and inflows to gold ETFs



Note: The left panel shows the evolution of gold price of the yield of 10-year inflation linked US Treasury securities. The right panel shows the monthly inflows to the largest gold ETFs (i.e. SPDR Gold Shares). Data are expressed in USD billion.
Source: Refinitiv, etfdb.com, OECD calculations.

Figure 13. The rotation to value stocks on selected major advanced markets and the declining performance of crypto-assets



Note: The left panel shows the ratio of market values of value and growth equity benchmarks on European and US markets. The right panel shows the market capitalisation of crypto-assets.
Source: Refinitiv, CoinMarketCap, OECD calculations.

2 Assessment of risks and transmission channels

Less accommodative interest rate environment and the Russian invasion of Ukraine have triggered significant price movements in a range of financial market segments, including commodities, equity, credit, and also crypto-assets. Rising commodity prices would exacerbate already high inflation rates globally, and erode consumer purchasing power and corporate earnings, dampening economic activity and adding to financial risks. These developments are set against a backdrop of long-standing vulnerabilities. Non-financial sector debt levels are historically high, and higher interest rates could result in debt servicing challenges. Leveraged financial intermediaries would be prone to higher losses and rising market fragilities. In a period of rising investor risk aversion and tightening in financial conditions, emerging market economies could face large capital outflows.

The magnitude of the effect of the invasion and international sanctions on global credit conditions will depend on their length and severity. While the length of the crisis and its implications for monetary policy tightening are still uncertain, its negative impact is spreading across financial systems. A less accommodative interest rate environment, and the implications of the Russian invasion of Ukraine for economic and inflation outlooks, are being transmitted to the global credit landscape through the following four main channels.

- First, elevated sovereign debt levels and high refinancing needs amid rising inflation pressures and a less accommodative interest rate environment are raising refinancing risk concerns in some OECD economies. Also, intensifying geopolitical tensions are leading to strained conditions on Russian and Ukrainian sovereign debt markets with potential risk of losses for international investors exposed to these markets.
- Second, elevated corporate debt, combined with weakening economic prospects and rising refinancing costs amid higher interest rates, would lead to credit quality deterioration, downgrades and defaults with substantial losses for financial intermediaries and structured financial products (including real estate finance products, such as residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS), and collateralized loan obligations, also known as CLOs). The Russian invasion of Ukraine may raise further challenges for debt sustainability of leveraged companies globally, as heightened geopolitical risk, rising commodity prices, weaker economic conditions and less accommodative interest rate environment may also reduce profitability and raise the cost of servicing debt simultaneously.
- Third, banks are increasingly exposed to substantial rises in NPLs and counterparty credit risk from their exposures to non-bank financial institutions (NBFIs), amid elevated levels of private sector debt and the risk of credit rating downgrades that leave households and firms in a potentially vulnerable position. The economic impacts of the Russian invasion of Ukraine and resulting sanctions could be disruptive, mainly for Ukrainian, Russian and international banks (i.e. particularly for European banks). Russian banks are experiencing inability to operate international transactions as a result of their ban from the SWIFT international payment system and capital controls implemented by the CBR, withdrawals by retail depositors and growing risk of higher NPLs. International banks in major OECD banking sectors are exposed to direct risks from the

broad potential deterioration of global economic conditions and their specific exposures to Russia and Ukraine.

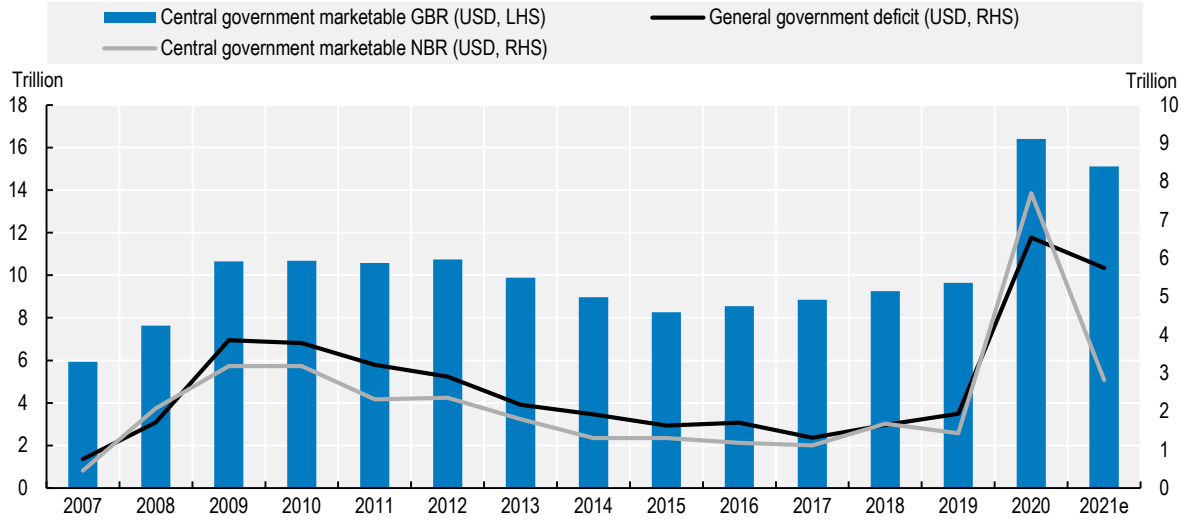
- Lastly, EMEs are prone to rising vulnerabilities to the recovery amid less accommodative interest rate environment and rising commodity prices. Debt sustainability concerns are rising for highly indebted sovereign and corporate issuers. For instance, EMEs with direct links to Russia and Ukraine would be particularly vulnerable to commodity supply chain disruptions and sizeable trade ties.

Elevated indebtedness amid rising inflation pressures and a less accommodative interest rate environment could erode debt sustainability

Sovereign: Downside risks from elevated sovereign debt levels and high refinancing needs amid rising inflation pressures and less accommodative interest rate environment; with additional challenges posed by the Russian invasion of Ukraine

Elevated sovereign debt levels and high refinancing needs could increase refinancing risk for sovereign issuers amid rising interest rates, and well as possible prolonged fiscal support to cushion the impacts of the Russian invasion of Ukraine. OECD government market borrowing remains higher than pre-pandemic levels, but is showing some signs of stabilisation. The gross borrowing of OECD governments, which jumped by 70% in 2020 following the outbreak of COVID-19, shows some sign of stabilisation as economies recover and pandemic-related fiscal support is withdrawn (Figure 14). Nonetheless, the adverse shock on global economic activity and inflation of the Russian invasion of Ukraine may require prolonged fiscal support to the most vulnerable households and viable corporates, to help offset rising living and production costs.[19] Therefore, sovereign issuers could face higher refinancing needs at a higher cost following monetary policy tightening of major central banks to control inflation.

Figure 14. Fiscal and borrowing outlook in OECD economies



Note: This figure shows central government fiscal deficit and borrowing needs. Data in 2021 are estimates for some countries. GBR stands for standardised gross borrowing requirement. NBR means net borrowing requirement.
Source: OECD Sovereign Borrowing Outlook 2021.

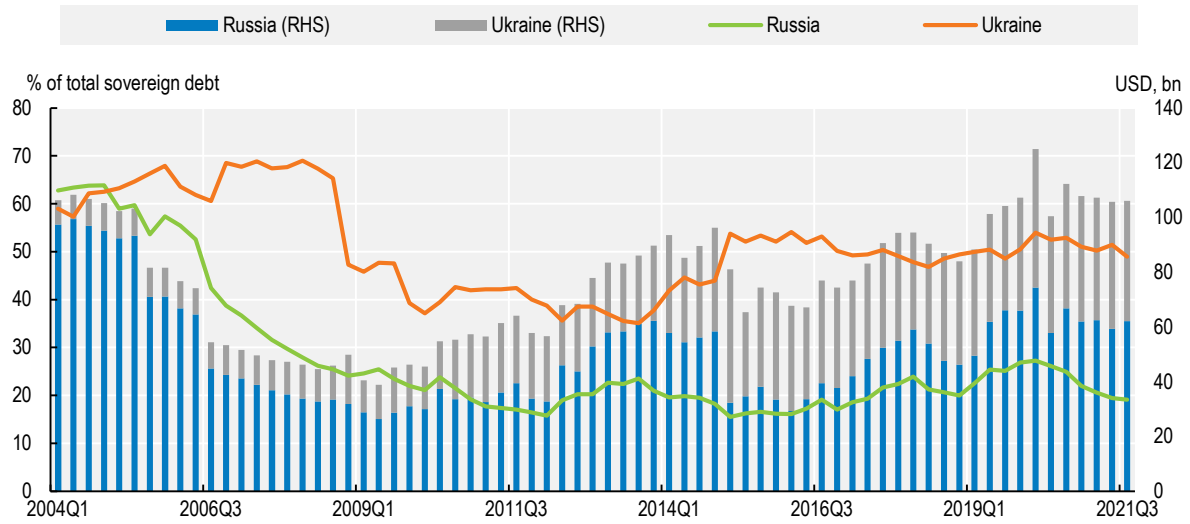
Maturities of public debt issuance have been lengthened in many OECD economies over the past decade to mitigate refinancing risk (OECD, 2020[9]). Despite the extended maturities of new issuance, debt rollover

ratios are expected to be elevated and may pose significant challenges in terms of refinancing risks, with 40% of outstanding marketable debt stock needing to be refinanced or repaid within the next three years. In addition, the outstanding amount of sovereign debt has grown substantially over the past decades in OECD economies. The high level of the observed debt redemption profiles is expected to persist, largely due to the increasing refinancing burden from the maturing debt, combined with continued budget deficits in most OECD economies. A less accommodative interest rate environment, combined with credit quality deterioration of indebted sovereign issuers including from the geopolitical conflict, would contribute to increase investors' yield requirements and the cost of debt refinancing, and possible downgrades may trigger losses for a range of financial intermediaries.

The unwinding of asset purchase programmes would be expected to put some upward pressure on bond yields, which may lead to a lower share of sovereign debt issued at very low or negative interest rates across OECD economies than during the COVID-19 pandemic (OECD, 2020[9]). Nevertheless, the extent of this pressure would depend on the pace and scale of the unwind. For instance, the Russian invasion of Ukraine creates complex policy trade-offs for monetary authorities that may slow down the pace of unwinding of asset purchase programmes and further delay substantial increases in interest rates.[20] While central banks have helped to absorb the additional supply of government securities in the market in major advanced economies, the balance sheet capacity of primary dealers may need to be assessed more carefully in planning governments' funding. Overall, government securities market resilience will depend on various factors including primary dealers' warehousing capacities, market absorption of additional bond supply, and the pace of central banks' tapering and unwinding of their balance sheet. Secondary market liquidity for government bonds, including repos, is also an important contributing factor in supporting primary market access and minimising sovereign borrowing costs over time.

Russian and Ukrainian sovereign debt markets are facing strained conditions, as reflected by numerous rating downgrades following the Russian invasion of Ukraine, that may trigger substantial losses for international investors. Notably, major rating agencies have performed several rating downgrades since end February 2022 of sovereign issuer ratings of the Government of Russia[21] and the Government of Ukraine[22] to "near-default" status. The downgrade of Russia's sovereign issuer rating results from expectations by major rating agencies that capital controls implemented by the CBR would restrict cross border payments including for debt service on government bonds. In addition, rating downgrades and negative outlooks reflect the significant risks to macroeconomic prospects posed by economic disruptions caused by the war in Ukraine and the imposition of severe and co-ordinated sanctions on Russia. The spillovers from delays to sovereign debt repayments and/or possible default, in addition to banking and corporate sector stress, are likely to have negative feedback loops for macro stability, including a prolonged disruption to the economy and financial sector both in Russia and Ukraine.[23] The share of sovereign debt denominated in foreign currency has declined significantly in Russia over the last fifteen years (i.e. from 63% of total sovereign debt at end of first quarter of 2004 to 19% at end of third quarter of 2021), yet it remains more elevated in Ukraine (i.e. at 49% at end of third quarter of 2021). In nominal terms, outstanding amounts of Russian and Ukrainian sovereign debt denominated in foreign currency totalled USD 60 and 46 billion respectively at end of third quarter 2021 (Figure 15). Russian sovereign debt was mostly held by domestic creditors (i.e. at about 80% of total domestic and foreign debt at end of third quarter 2021), while about half of Ukrainian sovereign debt was held by foreign creditors at end of third quarter 2021 (Figure 16). Therefore, foreign creditors would be exposed to a higher risk of losses than domestic creditors following a default of the Government of Ukraine.

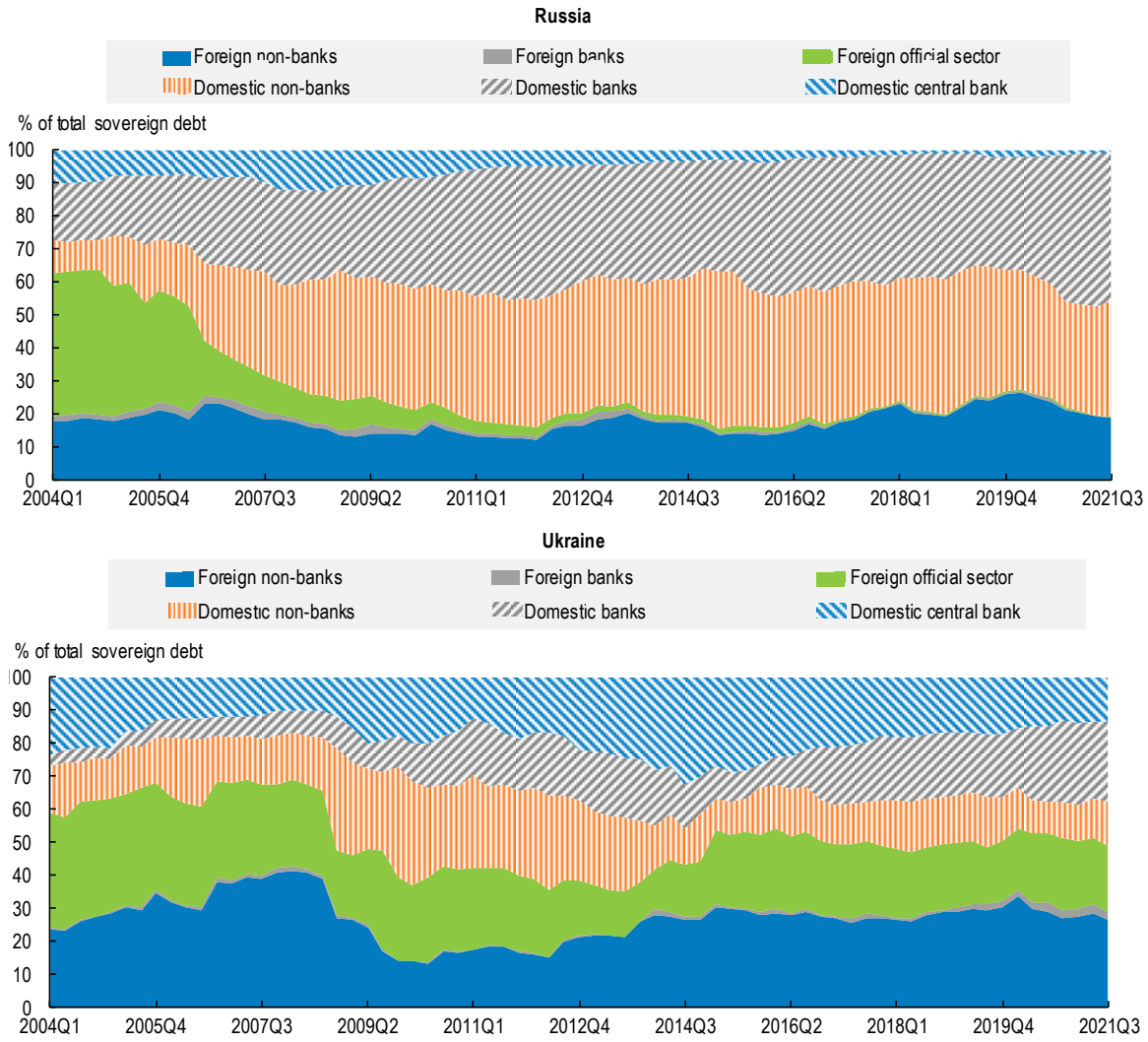
Figure 15. Russian and Ukrainian sovereign debt denominated in foreign currency



Note: This figure shows sovereign debt denominated in foreign currency in Russia and Ukraine. Data are expressed as a share of total sovereign debt outstanding (including domestic and foreign debt) and in nominal US dollars.
Source: IMF Sovereign Debt Investor Base for Emerging Markets.

The Russian government's willingness to pay and the unpredictability of government actions could also result in substantial losses for international investors.[24] On average, 26% of Russian sovereign debt that will mature over the next five years is denominated in foreign currency (Figure 17). International reserves at the CBR that have not been frozen by sanctions exceed to a large extent redemptions of Russian sovereign foreign currency bonds (mainly denominated in US dollar and euro according to Refinitiv data) over the next five years.[25] This suggests that maturing sovereign debt denominated in foreign currency could be repaid by converting part of the CBR's international reserves into foreign currencies, particularly in US dollar and euro. Instead, sanctions imposed on Russia and capital controls implemented by the CBR create difficulties in processing payments to foreign creditors. Russian debtors, both in sovereign and private sectors, are only allowed to service their US dollar and euro denominated debts in roubles. An exception is made for creditors from countries that have not imposed sanctions on Russia. In 2022, Russia will have to make interest payments on its sovereign bonds and repay or refinance sovereign debt securities denominated in US dollars. On March 16th, the Russian Finance Ministry ordered coupon payments of USD 117 million that has been processed by US bank counterparts.[26] A possible "artificial default" of the government of Russia was thus avoided. Nevertheless, a presidential decree issued on March, 5th enables for the repayment of foreign currency-denominated obligations to non-resident investors to be made in rouble. In addition, the Russian Minister of Finance also suggested the possibility of settling debt repayments in roubles. Going forward, this settlement option would not mitigate the risk of default from the point of view of international investors, particularly for the Russian sovereign debt securities that do not include a "fallback" clause allowing repayment in roubles. Also, the expiry of the OFAC general license on May, 25th would impair investors' ability to receive foreign-currency debt repayments. This means that US residents would be required a specific license to continue to receive debt repayments. At the beginning of April 2022, the US Treasury halted the ability of the Russian government to make debt payments in dollars using reserves held at US banks.[27] Russia's most recent default on its sovereign debt occurred in 1998, which was denominated in roubles. Should a default occur on its foreign currency debt, this would be the first since the Russian Revolution in 1917. In 1998, spillovers from Russia default on it sovereign debt significantly affected global financial markets, contributing alongside the Asian financial crisis in 1997 to the near-collapse of US hedge fund Long Term Capital Management (LTCM) and its bailout by a consortium of banks.

Figure 16. Distribution of Russian and Ukrainian sovereign debt by type of holders

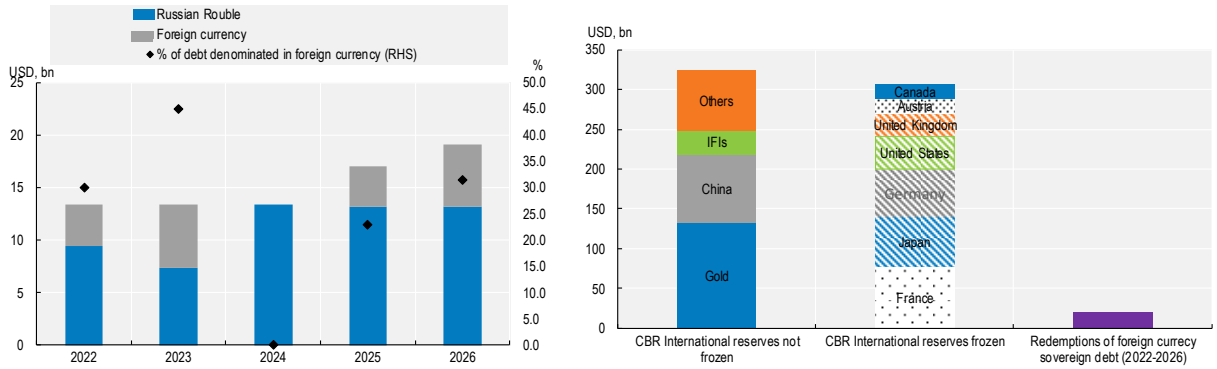


Note: This figure shows the distribution of sovereign debt (i.e. domestic and foreign debt) by type of holders in Russia and Ukraine. Data are expressed as a share of total sovereign debt outstanding (including domestic and foreign debt).
Source: IMF Sovereign Debt Investor Base for Emerging Markets.

According to financial analysts, large asset management companies could record substantial losses following a Russian sovereign issuer's default. For example, PIMCO holds about USD 1.5 billion of Russian sovereign debt and is exposed to about USD 1.1 billion of CDS on Russian sovereign debt.[28] Blackrock has already recorded about USD 17 billion in losses on its Russian securities holdings following the Russian invasion of Ukraine.[29] Closed capital markets and sanctions have made the vast majority of Russian securities unsaleable, leading BlackRock to mark them down sharply. Goldman Sachs, Payden, Ashmore and Western Asset Management are other international financial companies that have significant exposures to Russian debt, according to Morningstar.[30] According to S&P Global Ratings, for the many insurers headquartered outside Russia that have exposure to the country, their exposure is relatively limited and their capital strong enough for them to avoid a deterioration in credit quality.[31] The same is true for insurers and reinsurers with no direct exposure to Russia. While some primary insurers (mainly European insurance companies) also have operations in Russia, asset and insurance liability exposure for most of these insurers is estimated to be less than 2% of their total adjusted capital or below 1% of their

total assets and liabilities, or both. Also, S&P considers the capital positions of European insurers as a key strength.[32] As of year-end 2020, US insurers held less than USD 2 billion in bonds issued by the Russian or Ukrainian governments or Russian companies that have been sanctioned, with the largest exposure at any company still representing less than 2% of capital and surplus.[33] Also, the majority of these bonds were investment-grade NAIC-2, which means higher capital charges if the issues fall below investment-grade for an extended period or if interest payments are missed in the event of default.

Figure 17. Redemptions of Russian sovereign debt over the next five years and the geographical distribution of international reserves of the Central Bank of Russia



Note: The left panel shows the notional amount of domestic and foreign currency denominated Russian sovereign bonds that will mature over the period 2022-2026. The right panel shows the geographical distribution of international reserves of the Central Bank of Russia by foreign exchange and gold assets (i.e. as of end June 2021) and the notional amount in US dollar of foreign currency denominated Russian sovereign bonds that will mature over the period 2022-2026 (i.e. as of 1 January 2022).
Source: Refinitiv, Central Bank of Russia, OECD calculations.

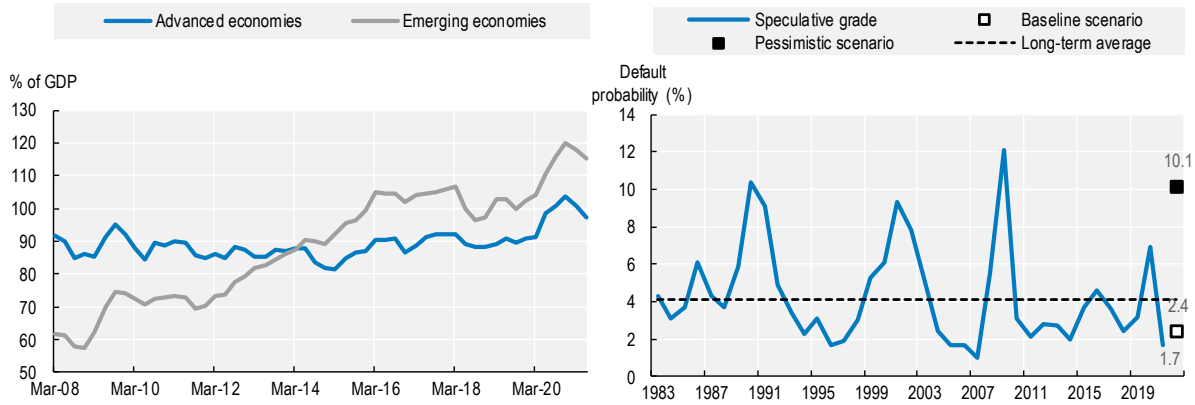
Going forward, downside risks to the global sovereign debt outlook include the emergence of new COVID-19 variants and renewed lockdowns, persistent inflation (which could quickly lead to higher and more volatile yields), and intensifying geopolitical tensions. The sensitivity of debt servicing costs to interest rate risk might be heightened in case of sudden and sharp rises in market rates. In the short to medium term, rollover risk may emerge as a key policy concern for debt managers, particularly in countries with perceived debt sustainability problems, where sudden shifts in sentiment can lead to sharp increases in borrowing costs and even periodic loss of market access. In the longer term, public debt levels are also vulnerable to macro risks to future public finances, including population ageing, risks associated with climate change, low growth and high levels of inequality. Without credible and transparent fiscal frameworks, these risks can further undermine fiscal balances and raise debt sustainability concerns (Rawdanowicz et al., 2021[10]).

Corporates: Rising downside risks for the resilience of the financial sector amid elevated corporate debt levels and refinancing risk exacerbated by the Russian invasion of Ukraine

Extraordinary monetary and fiscal support measures have been key to limiting the economic fallout of the COVID-19 pandemic. At the same time, the massive public credit provision (both directly and through loan guarantees) has resulted in an unprecedented level of debt of non-financial corporations in both advanced and emerging economies (Figure 18). Excessive indebtedness could lead to underinvestment by viable projects, misallocation of resources by financing unviable corporates, and lower productivity. There might also be a risk of widespread defaults and insolvencies, giving rise to financial stability risks. Moreover, there is an inherent interconnection between the soundness of lenders and sovereigns.[34]

Corporate defaults could gradually rise in 2022, resulting in losses to financial institutions and investors exposed to the corporate sector. The pandemic-fuelled default cycle proved to be short-lived and much less severe than prior cycles, as a strong economic recovery and abundant liquidity kept defaults low in 2021.[35] According to Moody's, the trailing 12-month global default rate for speculative-grade corporate issuers (including both financial and nonfinancial companies) was 1.7% at the end of 2021, down from 6.9% a year earlier. In 2022, the trailing 12-month global speculative-grade corporate default rate is expected to fall to 1.5% in the second quarter before gradually rising to 2.4% at the end of the year. Under the adverse scenario,[36] the speculative-grade default rate could jump to 10.1% at the end of 2022, yet well below the peak of 13.4% following the Global Financial Crisis.[37] Default rates might exceed the baseline forecasts if one or more of the following were to crystallize: (i) the emergence of new variants that could severely disrupt the economic recovery; (ii) tighter liquidity conditions and the withdrawal of policy support before the economic recovery is self-sustaining; (iii) trade tensions and geopolitical instability intensify with negative implications for economic and inflation outlooks; or (iv) a widespread and drastic deterioration in China's credit and growth trajectories, which might be accelerated by regulatory and prudential reforms.

Figure 18. Elevated corporate indebtedness and gradual expected increase in default probability in 2022

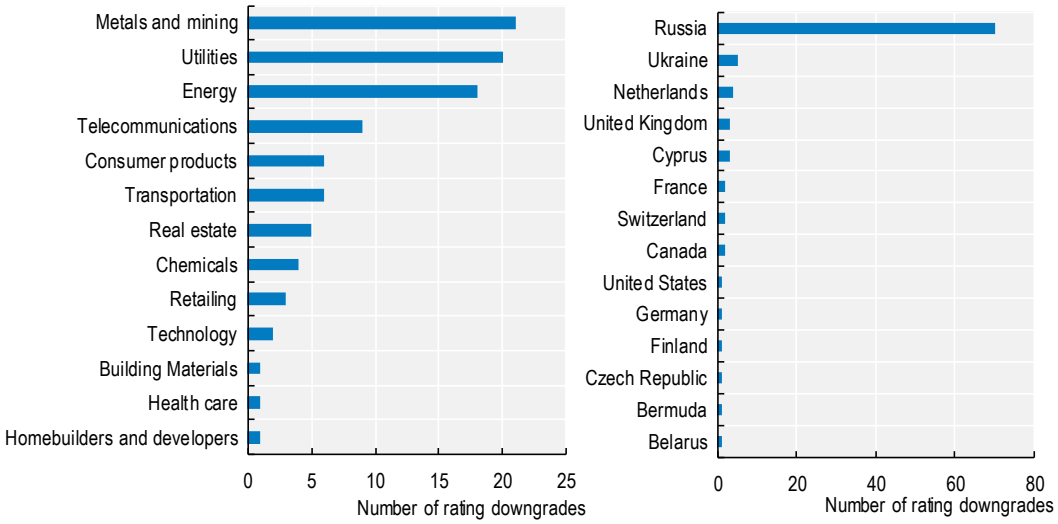


Note: The left panel shows total credit (i.e. bond and loans) of non-financial corporates in advanced and emerging economies. The right panel shows the trailing twelve months global corporate default probability. Data for 2022 are forecasts.
Source: Bank for International Settlements, Moody's, OECD calculations.

The Russian invasion of Ukraine may raise further challenges for debt sustainability of leveraged companies globally. A lengthy conflict and its ramifications, including sanctions, have the potential to exacerbate cost pressures and dampen demand, which could lead to weaker than expected cash flow and leverage metrics. European companies are particularly vulnerable as over 40% of gas and 20% of oil imported by Europe originate from Russia.[38] Any disruption to the flow of gas or oil could cause energy prices to rise sharply in Europe that may contribute to increased corporate production costs and erosion of profit margins. In addition, SWIFT related sanctions are likely to negatively affect business conditions of Russian energy and commodity companies as Russia is a large exporter of nickel, palladium, aluminium and wheat.[39] Also, market research suggests European corporates of various sectors have significant exposures to Russia and trade restrictions may affect a significant share of their sales or profit.[40] Speculative-rated corporate issuers may be more vulnerable to potential deterioration of macroeconomic conditions, including sustained high inflation, fastest pace for monetary policy normalisation or slower economic growth. In particular, corporates exposed to operational and structural headwinds and highly indebted small and midsize enterprises may be unable to rebuild revenues and earnings before their financing costs rise to more normal levels, which could weigh on their credit quality.[41] So far, S&P ratings of 97 non-financial corporates have been downgraded (i.e. mainly Russian and European firms), in which their deteriorating business conditions in Russia and Ukraine, energy prices, or both are cited as driving factors of the decision (Figure 19).[42] Russia's invasion of Ukraine has not directly affected the credit profiles

of corporates in other jurisdictions yet, as exposure to Russia and Ukraine is relatively limited.[43] Corporates with substantial exposure to Russia are suspending their operations, sales and closing business activities in Russia. According to researchers from the Yale School of Management, over 750 companies globally have announced their withdrawal from Russia since February 28th (Yale School of Management, 2022[11]).

Figure 19. Distribution of rating downgrades of non-financial corporations related to the Russian invasion of Ukraine and surge in energy prices

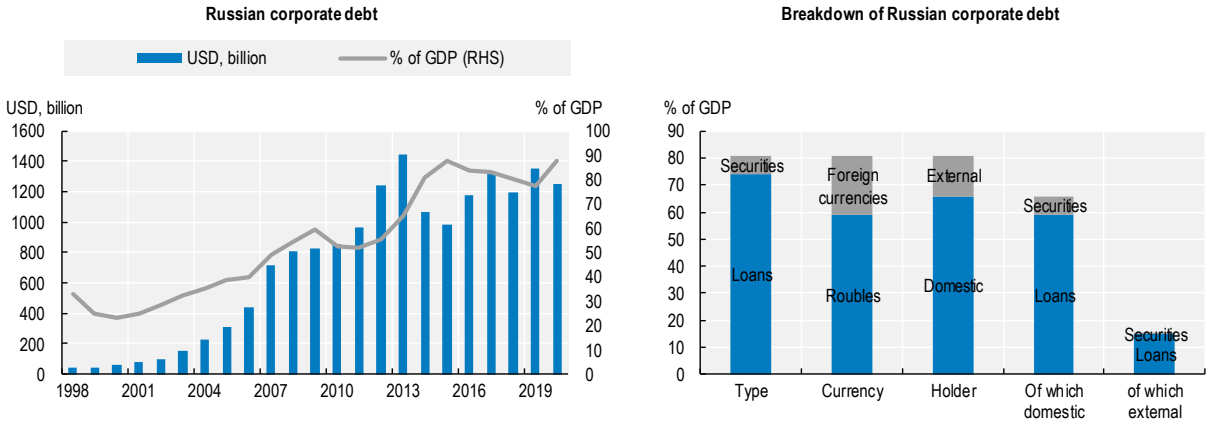


Note: This figure shows the distribution of rating downgrades of non-financial corporations by sector or country of incorporation from 25 February to 12 April 2022.
Source: S&P Global Ratings, OECD calculations.

The growing list of countries imposing restrictions on Russia's energy exports has raised the likelihood of a deeper contraction in Russia's economy in 2022 and strained conditions for Russian corporates that could lead to a wave of corporate defaults.[44] Indebtedness of non-financial Russian corporate has risen substantially over the past two decades, standing at USD 1.4 trillion or 81% of GDP at the end of third quarter of 2021 (Figure 20). A detailed debt breakdown shows that Russian corporates are mainly funded by loans (i.e. 74% of GDP at end-2021) denominated in roubles (i.e. 59% of GDP) granted by domestic counterparties (i.e. 66% of GDP). Therefore, exposure of international investors to Russian corporates through international debt markets or the banking system is relatively limited. Corporate earnings are likely to be hit hard amid deteriorating economic and business conditions. Also, revenues of export-orientated Russian companies are likely to be affected by sanctions and restrictions on international trade. For instance, an import ban of energy commodities in the European Union could significantly erode Russian energy companies' foreign currency incomes, given the greater dependency of some European countries on Russian energy sources than the United States or the United Kingdom. In addition, the sharp decline in value of the rouble against major international currencies since mid-February 2022 will contribute to increase the cost of servicing debt denominated in foreign currency. Also, capital controls implemented by the Russian government may prevent Russian corporates from repaying their foreign currency denominated debts as exporters are currently required by law to convert 80% of their foreign currency incomes into roubles. Deteriorating credit quality of Russian corporates would lead to increasing NPLs for Russian banks that would erode their capital buffers. Credit conditions could tighten and bank lending to the private sector could contract dramatically. Also, possible defaults would trigger losses for Russian counterparts (i.e. banks and Russian investors) and, to a lesser extent, for international investors. The Russian government would face increasing pressures to support vulnerable companies. Nevertheless,

deteriorating economic conditions would depress its revenues and loss of access to global capital markets would hinder its ability to raise additional financing.

Figure 20. Russian non-financial corporate debt, including breakdown by type, holder and currency



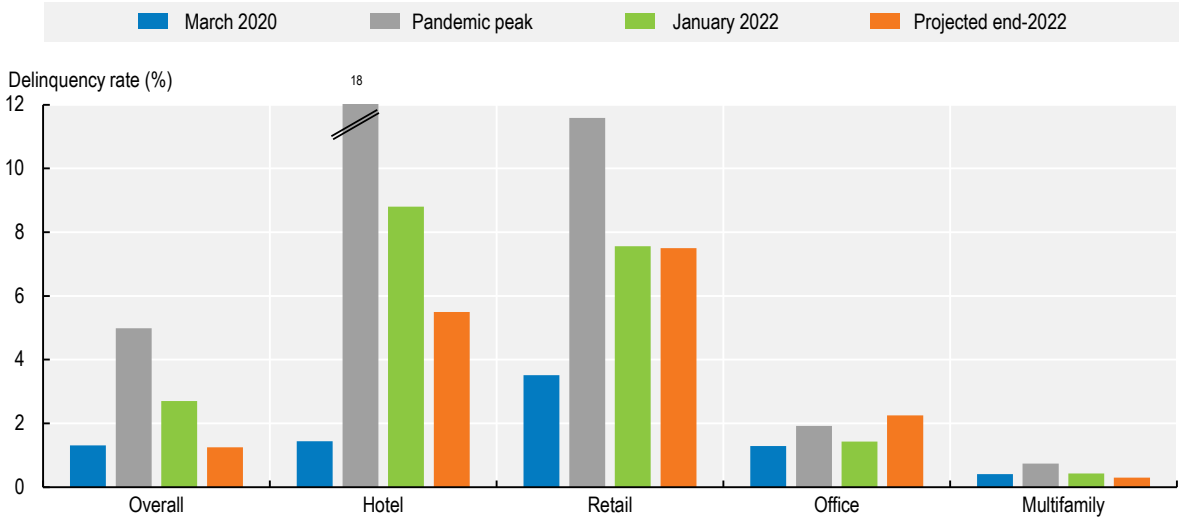
Note: The right panel shows total debt of Russian non-financial corporates, including bonds and loans. Data are expressed in billion US dollar and as a share of Russia's GDP. The left panel shows the breakdown of Russian non-financial corporate debt by type of debt, holder and currency, including some estimates performed by analysts at Capital Economics where necessary. Data are expressed as a share of Russia's GDP, as of end-2021.
Source: Bank for International Settlements, Central Bank of Russia, Capital Economics.

Commercial real estate finance: Improving conditions, yet significant uncertainty remains amid possible new virus outbreaks, rising inflation pressures and intensifying geopolitical tensions

While conditions in the commercial real estate sector are expected to improve in 2022, certain segments will remain vulnerable to possible new virus outbreaks and a weakening economic outlook. According to Fitch Ratings, CRE loan delinquency is expected to decline by year-end 2022 to 1.25% from 2.7% in January 2022, below the pandemic peak of 5%.[45] Notably, delinquency rates will decline further in the hotel and multifamily segments, but will increase in the office sector (Figure 21). Delinquency rates will remain elevated in the retail and hotel sectors. Persisting geopolitical tensions and their subsequent negative macro financial implications would contribute to rising downside risks. In addition, supply chain challenges will pressure retail sales. Within the hotel sector, urban hotels in particularly have struggled to recover, as they rely on business/corporate demand and international travel, and may experience further strained conditions amid increased operating expenses from labour shortages, higher real estate taxes, deferred property improvements and the possible resurgence of new variants.

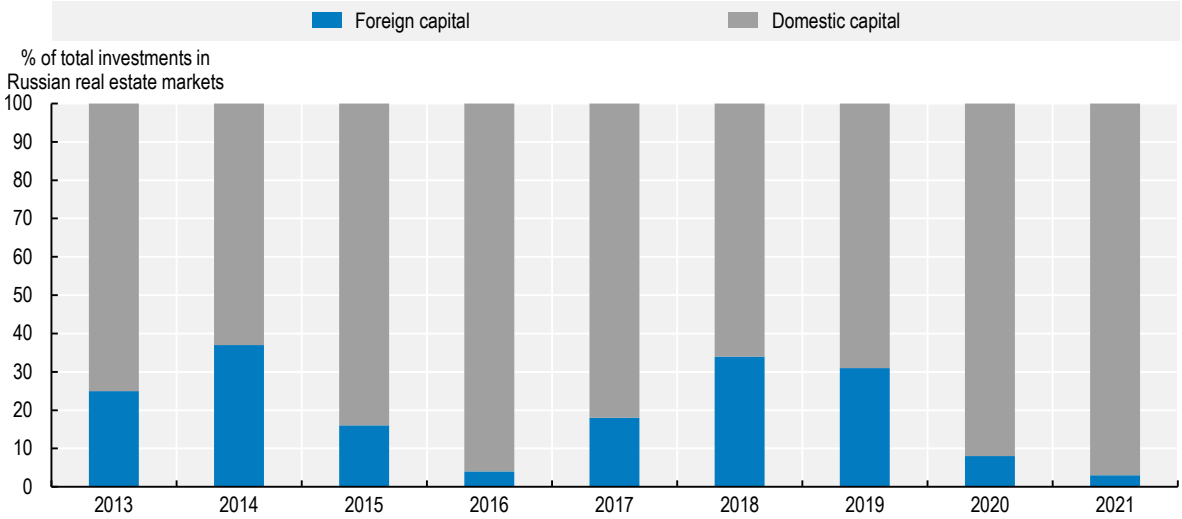
In China, the construction and building sector is likely to experience strained conditions (Annex B), as reflected by the 5% to 10% expected decline in contracted sales in the sector in 2022.[46] Funding access will likely remain tight over the next six-to-twelve months due to tightened regulations, and increased risk aversion stemming from China amid Evergrande's financial distress and recent defaults by other property developers.[47] The situation will be particularly challenging for highly-leveraged and financially weak developers with material near-term debt maturities. According to Moody's, among all the rating categories, B-rated and below Chinese developers have the largest amount of bonds maturing through the end of 2022 (around USD 24 billion). Their generally weaker liquidity and access to funding will expose them to higher refinancing and default risks.

Figure 21. Declining US CMBS delinquency rates



Note: This figure shows the sectoral breakdown of US CMBS loan delinquency rate in 2020-2022.
Source: Fitch Ratings.

Figure 22. Distribution of investment volume in Russian real estate markets by investors' nationality



Note: This figure shows the distribution of investment volume in Russian real estate markets by investors' nationality (i.e. domestic versus foreign investors).
Source: CBRE Russia Investment Market View (Q4 2021).

According to Capital Economics,[48] deteriorating business conditions in Russia are expected to negatively affect commercial property, mainly in Moscow and in core Central, Eastern and South-eastern European (CESEE) economies. The reliance on foreign financing of Russian real estate investment markets has declined substantially since 2014 (Figure 22), and has fallen last year to 3% of the market. Despite local investors largely dominating the Russian real estate investment market in 2021, which could mitigate the risk of possible shortages of available foreign financing to support investment in the sector, their restricted access to lending from Russian banks could weaken demand on the Russian real estate investment

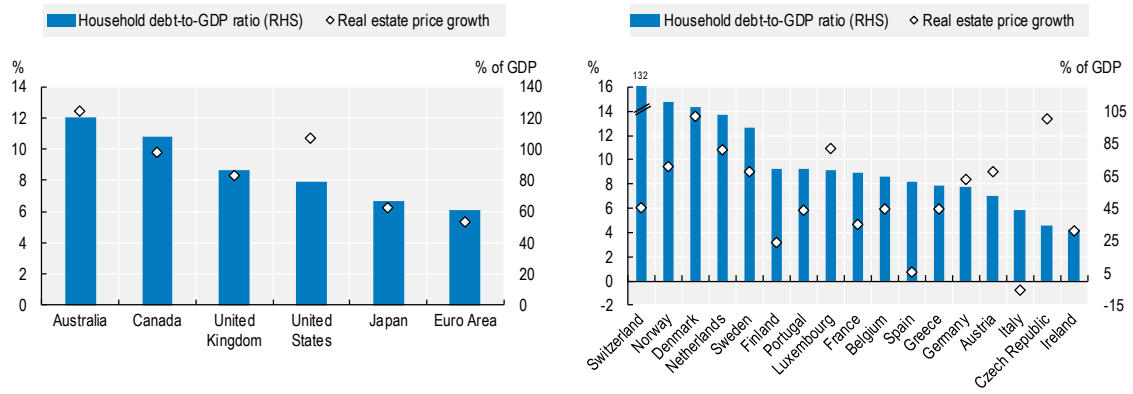
market. Also, the ban implemented on foreign exchange loans and bank transfers by Russian residents abroad could weaken investment flows to Western economies and depress Russian demand for real estate properties in these jurisdictions.

Residential real estate finance: Froth in some housing markets combined with debt accumulation of households and weakening economic prospects raise asset quality concerns for RMBS and banks exposed to property-related risks

House price and lending dynamics have been increasing rapidly over recent years in major advanced markets, and may pose significant financial stability risk concerns.[49] Residential real estate (RRE) booms and busts have frequently been associated with deep recessions and financial crises, especially when the RRE boom is fuelled by rapidly growing debt levels.[50] For instance, the substantial rise in residential property prices over the recent years have been coupled with elevated household indebtedness in major advanced markets, particularly in Australia, United States and Canada (Figure 23). In addition, household debt-service-ratios, while declining over the last decade in major advanced markets, remain elevated particularly in Australia, Canada, Korea and some European economies (Figure 24). While delinquency rates on single-family residential mortgages have declined below pre-pandemic levels, the removal of support measures combined with froth in some housing markets makes indebted households vulnerable to possible income shortages under a weakening economic outlook and higher interest rates. Deteriorating household mortgage repayment capacities may trigger rating downgrades and defaults, which could result in significant losses for banks' exposures to housing loans and RMBS markets.

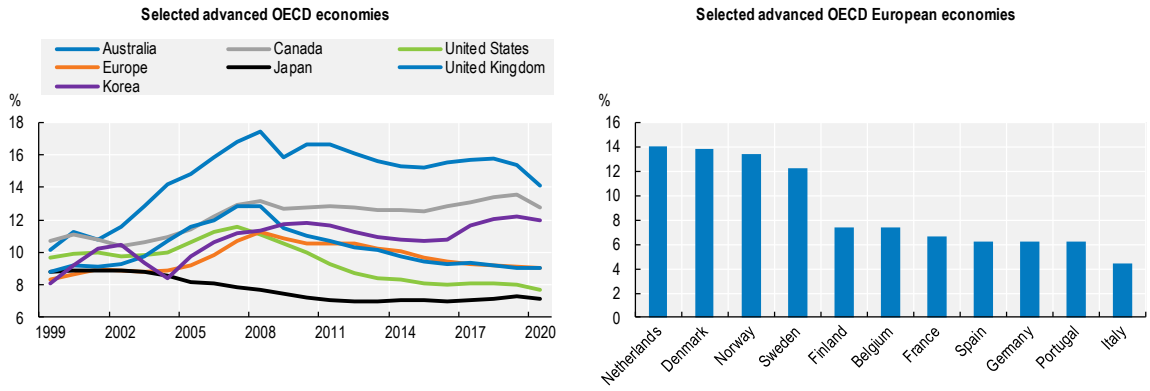
The Russian invasion of Ukraine increases downside risks for RMBS markets, particularly for Russian markets and to a lesser extent for other major markets. Weakening economic prospects could lead to credit quality deterioration of leveraged households, and substantial losses on RMBS markets and a range of investors (including banks) exposed to these markets.[51] For instance, Russian RMBS credit quality is deteriorating rapidly. Among transactions rated by Moody's, three deals directly exposed to Russia via collateral or counterparties are experiencing declining credit quality as reflected by their recent rating downgrades. Although a significant decline in credit quality and performance of RMBS in other major markets has not materialised yet, risk of future weakening as a result of several macroeconomic factors may trigger downgrades and defaults with subsequent losses for a range of intermediaries.

Figure 23. Rising vulnerabilities in some housing markets amid buoyant real estate prices



Note: This figure shows household debt-to-GDP ratio and annual percent change of residential property prices in selected advanced economies. Data are as of end-June 2021.
Source: Bank for International Settlements, OECD calculations.

Figure 24. Elevated household debt-service ratios in some selected major advanced housing markets

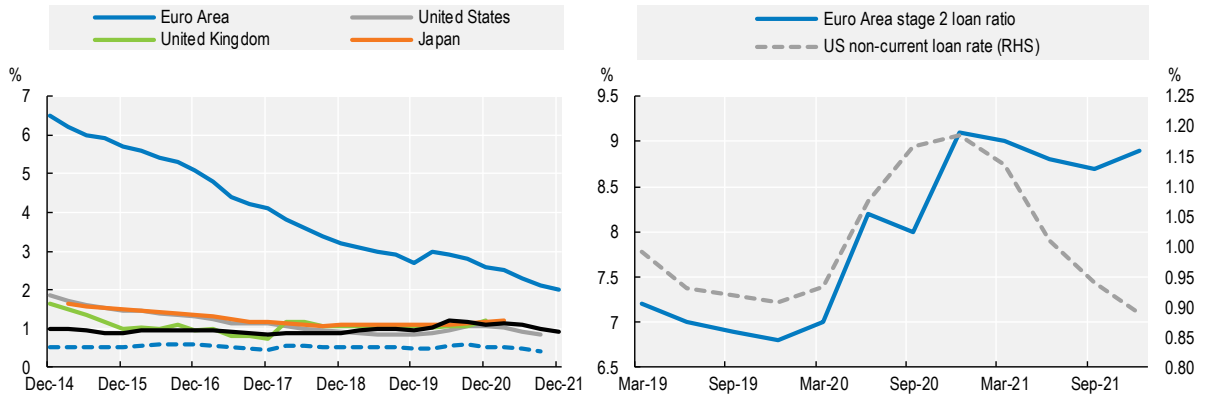


Note: The left panel shows household debt service ratio (DSR) in some selected major advanced housing markets. The right panel shows household DSR in selected European markets as of end-third quarter of 2021. The debt service ratio (DSR) is defined as the ratio of interest payments plus amortisations to total household income. As such, the DSR provides a flow-to-flow comparison, so that the flow of debt service payments is divided by the flow of income.
Source: Bank for International Settlements.

Banking sector: Risks emerging from credit quality deterioration, market fragility and sanctions

Elevated levels of private sector debt and the risk of credit rating downgrades leave households and firms in a potentially vulnerable position that could raise downside risks for banks. Notably, banks could record increases in NPLs following withdrawal of unprecedented support measures for households and corporates, and monetary policy normalisation that could boost borrowers' refinancing risk. The NPL ratio of significant European banks has continued to decline throughout the pandemic, and remains at stable low levels in other advanced markets (Figure 25). The banks with high NPLs have benefited from market stability and investors' search for yield to make substantial progress with their NPL resolution strategies. Most importantly, unprecedented support measures for households and corporates have temporarily preserved borrowers' capacity to repay loans. Nevertheless, signs of deterioration in credit quality continue to be observed. The share of underperforming loans (i.e. stage 2 loans) did not recede in 2021 for European banks. In contrast, the non-current loan rate has declined in 2021 for US banks amid strong economic recovery. In the euro area, underperforming loans are particularly elevated in the sectors that have been the most affected by the COVID-19 pandemic. Accommodation and food services, air transport and travel-related sectors are the most vulnerable.[52] In addition, loans subject to government guarantees from COVID-19 support measures also appear to have a riskier profile than the aggregate loan book. While the credit quality of bank loans seems benign, certain segments of the balance sheet remain vulnerable to rising defaults.

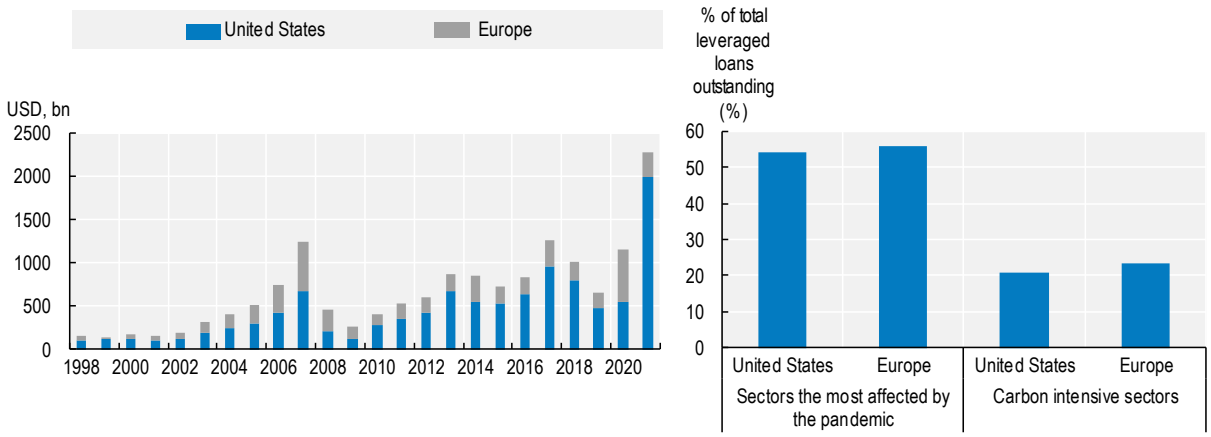
Figure 25. Relatively low stocks of non-performing loans, yet signs of deterioration in credit quality



Note: The left panel shows non-performing loan ratio is selected advanced banking sectors. The right panel shows problem loans, which have been estimated using stage 2 loan ratio for banks in the euro area and non-current loan ratio of US banks until October 2021.
Source: European Banking Authority, IMF Financial Soundness Indicators, FDIC, OECD calculations.

Vulnerabilities are growing in the leveraged finance segments of US and European banks amid higher leverage and weaker covenants, which may also lead to strained conditions in CLO markets. Leveraged loan issuance have increased substantially in 2020-2021, particularly in the United States and to a lesser extent in Europe (Figure 26). Nevertheless, credit quality standards have deteriorated with a gradual increase in lending to structurally riskier counterparties as leverage limits were lifted and investor protection covenants progressively lowered or disregarded (Annex C).[53] In 2020, US leveraged loans have been subject to a significant increase in special mention and classified exposures due to the accumulated risks in these transactions and the economic impact of COVID-19 pandemic. While some leveraged borrowers show signs of recovery, highly-leveraged borrowers remain especially vulnerable.[54] In addition, substantial shares of US and European leveraged loans outstanding are exposed to vulnerable sectors. For instance, about 55% of US and European leveraged loans outstanding relate to sectors the most affected by the pandemic. Also, more than 20% of US and European leveraged loans outstanding are exposed to carbon intensive sectors. Weakening economic growth combined with higher interest rates, rising operational costs due to energy prices and rising climate related risks could erode leveraged borrowers' earnings that could harm their ability to repay their loans and boost their refinancing risk as rising cost of refinancing could become unaffordable. Deteriorating credit quality of leveraged borrowers in a higher interest rate environment may lead to strained conditions in CLO markets. Banks and insurance companies may be subsequently exposed to risk of losses as they have become increasingly buyers of CLOs. The implications on leveraged loan performance of deteriorating credit quality of corporates operating in metal and mining, utilities and energy sectors in some European jurisdictions (i.e. as reflected by rating downgrades in which the Russia-Ukraine conflict and energy prices are cited as driving factors of the decision) should be monitored.

Figure 26. Growing leveraged loan issuance and sectoral breakdown

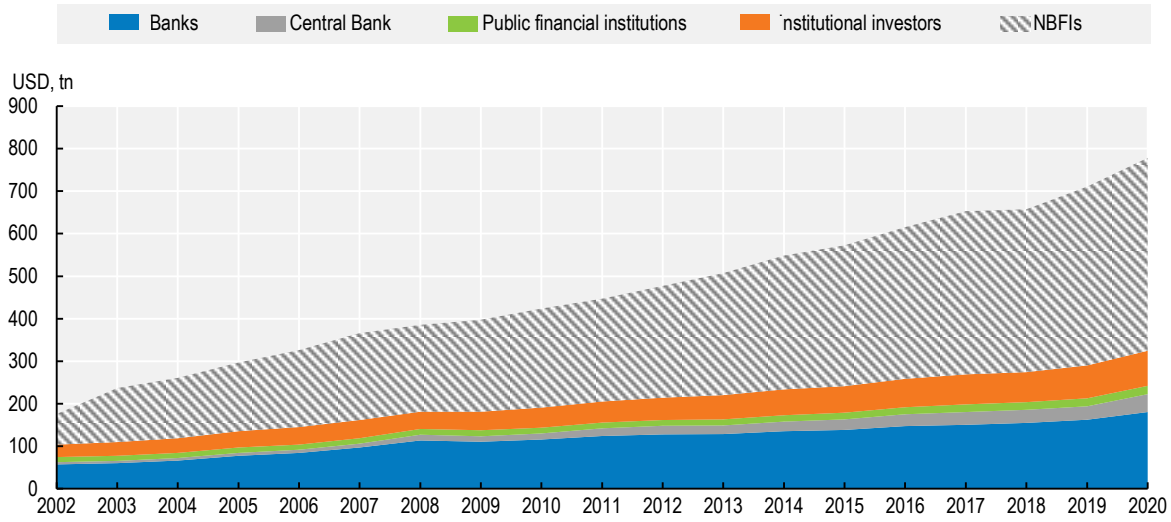


Note: The left panel shows leveraged loans issuance by US and European banks. Data includes only loans granted non-financial corporates. Revolving loans are also excluded. The right panel shows the outstanding of non-financial corporate leveraged loans in sectors that have been the most affected by the COVID-19 pandemic or in carbon intensive sectors. Sectors the most vulnerable to the COVID-19 pandemic includes energy, basic materials, industrials and consumer cyclicals based on Moody's "European banks 2022 outlook" report published in December 2021. Carbon intensive sectors includes basic materials (i.e. applied resources, chemicals, mineral resources), energy (i.e. fossil fuels) and industrials (i.e. freight and logistics services, industrial goods, passenger transportation services, transport infrastructure) based on ECB report published in November 2021 about "The state of climate and environmental risk management in the banking sector".
Source: ECB, Refinitiv, OECD calculations.

As the overall indebtedness of the private sector increased during the pandemic, banks have also increased their exposure to non-bank financial institutions (NBFIs), such as private equity-owned credit funds or family offices, to benefit from profitable alternatives to traditional banking (Figure 27).[55] These activities make banks directly exposed to counterparty credit risk and weak client management principles. Since NBFIs also grant loans to corporates, banks could be also indirectly exposed to refinancing pressures of these loan portfolios in case of a credit crunch. Corporate rating downgrades and defaults, and subsequent higher financing costs for leveraged issuers, are likely to test the resilience of NBFIs. In particular, losses from exposures to Russian, Central, Eastern and South-eastern European (CESEE) and emerging market assets could exacerbate fund redemptions and trigger mass liquidations at fire sale prices, which would in turn amplify stress in less liquid speculative-rated bond market. Also, broader financial markets volatility can trigger counterparty credit risk losses (i.e. margin calls), which remain contained so far. Cyber risk is another source of vulnerability for NBFIs. While no major event in Europe and the United States has occurred so far, it remains a concrete threat.[56] Therefore, banks are increasingly exposed to market fragilities and a substantial increase in interest rates could trigger a market decline. The fact that the failure of the family office Archegos resulted in about USD 10 billion losses for large international banks suggests that aggregate losses could be much larger under strained market conditions. In addition to the fact that most investors are net long, their exposures to interest rate markets are much larger than to equities, further raising the potential for losses.[57] Another source of risk, mainly for US banks, relates to their exposure to NBFIs with significant exposure to leveraged loans. Notably, non-bank US lenders[58] hold 56% of special mention and classified commitments compared to 25% and 19% for US and foreign banks respectively.[59] Also, non-bank lenders have historically been willing buyers of problematic loans given their higher risk tolerance.[60] The failure of leveraged borrowers' capacities to manage adverse economic conditions and weaker leveraged loan structures could result in lower recoveries than historically observed and substantial losses for non-bank lenders. Overall, banks could be exposed to losses though their indirect exposure to distressed leveraged loans and NBFIs.

Geopolitical risks from the Russian invasion of Ukraine and resulting sanctions may be disruptive mainly for Ukrainian, Russian and international banks, particularly for European banks. Ukrainian banks are facing the most adverse conditions and are already considered by major rating agencies in default. According to Refinitiv and Fitch bank issuer rating information, five Ukrainian banks have been downgraded twice since the onset of the invasion and are currently rated "CCC". Ukrainian banks have faced heighten liquidity challenges amid such protracted military conflict. In particular, banking operations have been severely disrupted that has led to a material deterioration of banks' credit profiles. On February, 24th Ukraine declared martial law and the National Bank of Ukraine imposed temporary measures on the banking system, including restrictions on certain cash transactions to address increasing liquidity challenges facing the banks.[61] Russian and international banks are also experiencing strained conditions. According to S&P Global Ratings, 37 rating downgrades have performed for Russian domestic banks and subsidiaries of foreign banks over the period from February 25th to April 12th 2022, in which the Russia-Ukraine conflict, energy prices, or both are cited as driving factors of the decision.[62] Also, three banks in Belarus, one bank in Kazakhstan and one bank in Cyprus have been downgraded.

Figure 27. The rise of non-bank financial intermediaries in the global financial sector



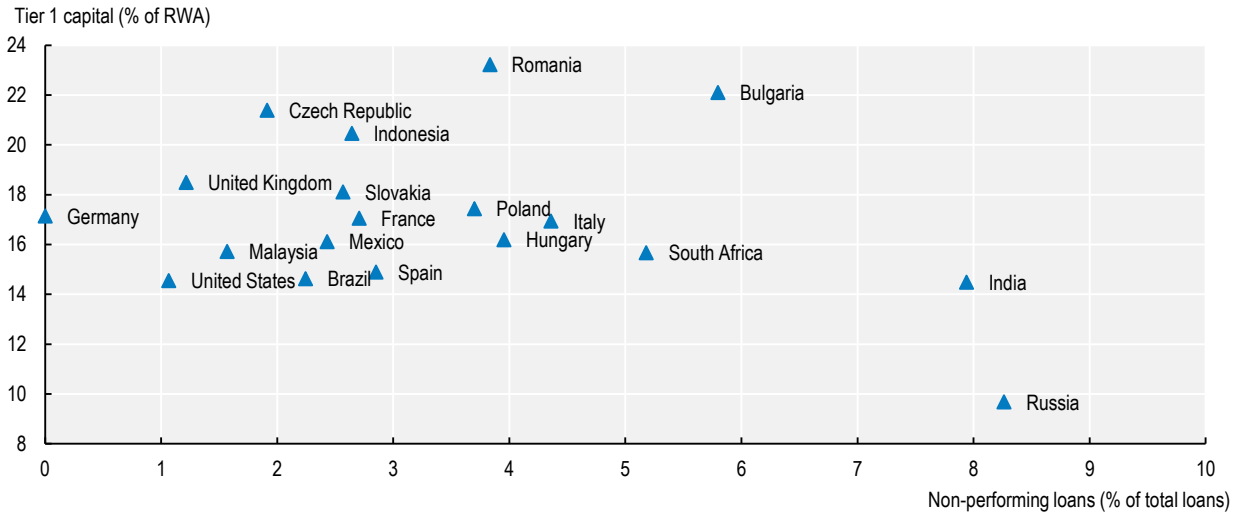
Note: This figure shows financial assets held in the euro area and 21 other countries from 2002 to 2020. Institutional investors include insurance and pensions funds.
Source: Financial Stability Board, Global Monitoring Report on Non-Bank Financial Intermediation 2021.

Sanctions have been imposed on Russian banks facing acute challenges, including the inability to operate international transactions, withdrawals by retail depositors and growing risk of higher NPLs, which could cause credit conditions to tighten and make the economic pain from sanctions even worse.[63] On February 28th, authorities in a number of OECD economies[64] agreed to remove selected Russian banks from the SWIFT international payment system. Assets of some Russian banks have been frozen in these jurisdictions and debt and equity restrictions have been imposed to some Russian banks. In particular, frozen assets would mean that Russian banks and their subsidiaries will not be able to perform any international business activities in these jurisdictions or with their nationals. In addition, international subsidiaries of some large Russian banks have also been subject to restrictions on their activities and are closing their activities in the European Union. For instance, the Single Resolution Board (SRB) determined on February, 27th that Sberbank Europe AG in Austria and its subsidiaries in Croatia (Sberbank d.d.) and Slovenia (Sberbank banka d.d.) were failing or likely to fail due to a rapid deterioration in their liquidity situation.[65] The SRB applied suspension of payments, enforcement and termination rights, known as a moratorium, to the three banks. The action led to an insolvency procedure for Sberbank Europe AG and

the transfer of all shares of the group's Croatian and Slovenian subsidiaries in order to protect depositors. The Austrian subsidiary of Sberbank has been declared bankrupt on March, 3rd and it was the first Russian bank to fail following the implementation of sanctions.[66] Sberbank AG and Russia's second-largest lender, VTB Bank, have announced that they are preparing to close their European operations after being affected by sanctions.[67]

Against this backdrop, a number of reports have emerged of large queues to withdraw deposits that suggest a substantial risk of runs on Russian banks. In particular, a fall in deposits will force banks to sell assets at depressed prices. This will cause banks' balance sheets to shrink, credit conditions to tighten and it could erode banks' capital positions. Also, Russian banks are likely to face rising NPLs. More importantly, weakening economic outlook is likely to result in substantial credit quality deterioration of debt. One particular area of vulnerability is the recent boom in rouble-denominated consumer lending.[68] The Russian banking sector already stands out globally for the high share of NPLs and low capital ratio.

Figure 28. Russian banks financial soundness indicators

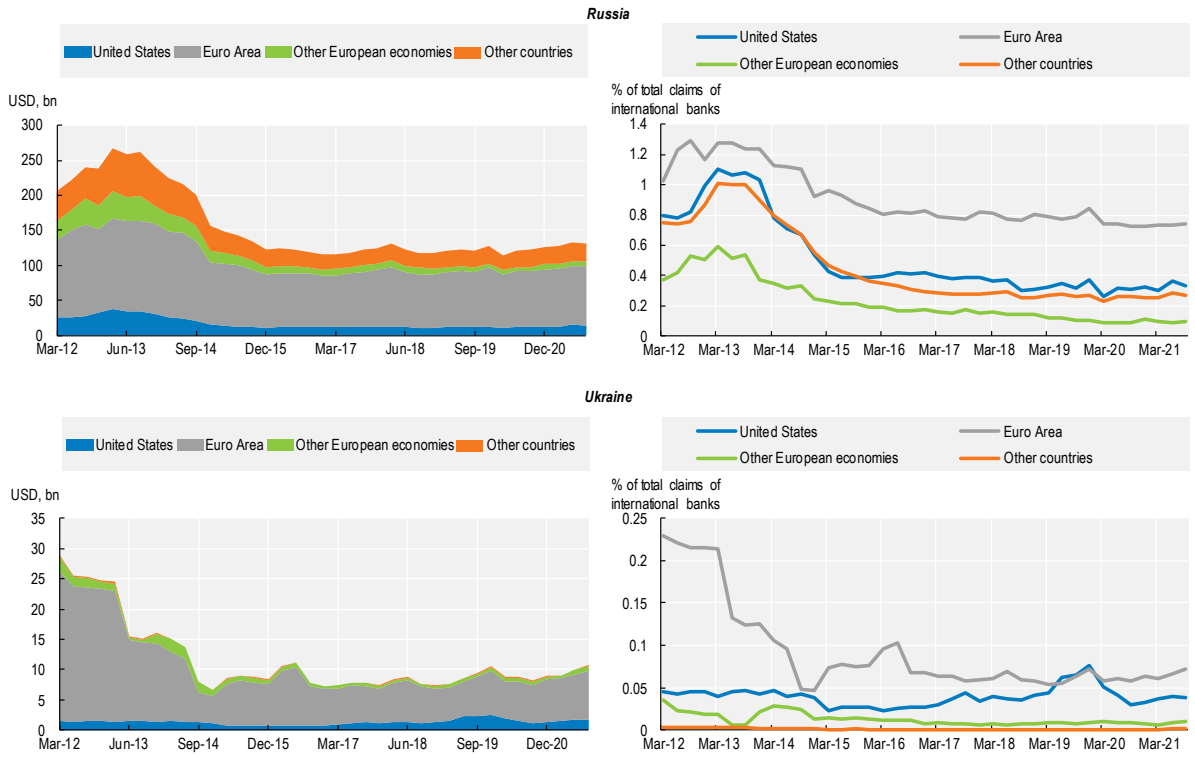


Note: This figure shows tier 1 capital ratio and NPL ratio in selected major advanced and emerging banking sectors. Data are as of end-2020.
Source: IMF Financial Soundness Indictors database, OECD calculations.

International banks in major OECD banking sectors are exposed to direct risks from the potential deterioration of global economic conditions broadly, and their exposure to Russia and Ukraine specifically.[69] Weaker-than-expected economic growth, slowing global trade flows and higher inflation would erode debt sustainability of leveraged borrowers and result in higher NPLs. In addition, international banks with local operations or material lending exposures to Ukraine and Russia are exposed to a deterioration in the credit quality of their loan portfolios and possible equity write-offs. For instance, disruptions of business and financial activities in Ukraine may lead to rising delinquencies, NPLs and higher loan-loss provisions, exacerbated by the depreciation of the Ukrainian Hryvnia. While the consolidated exposure of international banks on residents of Ukraine have been reduced by almost two-third over the last decade, Austria, France and United States have the largest exposures (Figure 29). Nevertheless, it is worth noting that international banks exposure to Ukraine is significantly lower than to Russia. Sanctions relating to the payment messaging system SWIFT would be disruptive for international institutions operating in or performing cross-border payments with Russia, notably by blocking the ability of the Russian government or private sector debtors from making repayments on their foreign debts to European banks.[70] Over the last decade, the consolidated exposure of international banks on residents of Russia have been reduced by almost half. In nominal terms, international banks in the euro area have the largest

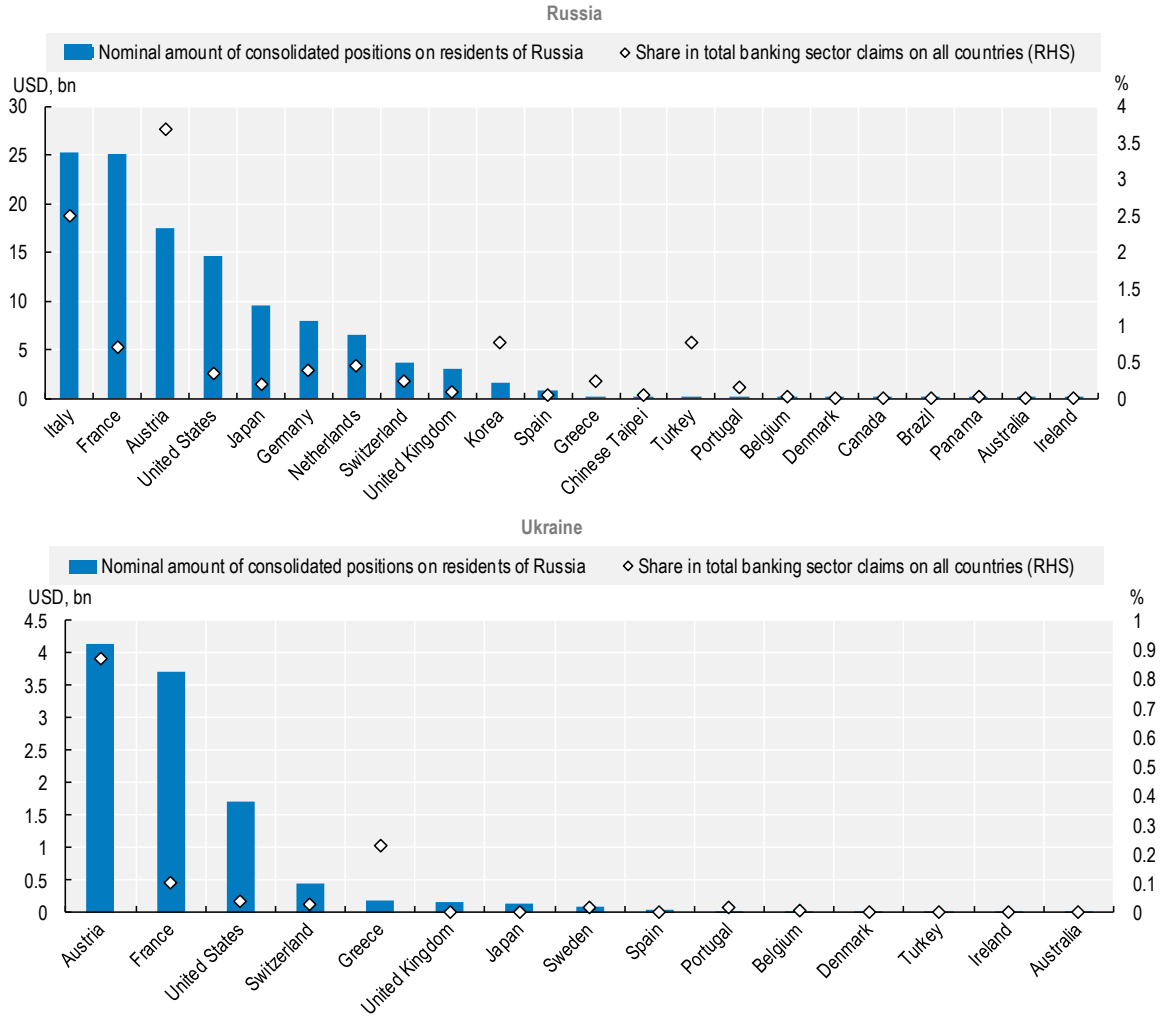
exposure to Russia, which totals USD 84 billion at end third quarter 2021 (i.e. 0.7% of their total claims). Notably, many European and US banks have reduced their exposure to Russia after the first wave of international sanctions issued in 2014 in response to Russia's invasion and subsequent annexation of Crimea. In addition, money-laundering breaches in the Baltic operations of Swedish banks hastened a retrenchment at Nordic banks. Despite international banks' relatively limited exposures to Russia, spillovers may occur beyond what can be identified from cross-border positions, including the full range of capital exposures, potential concentrated positions (e.g. some banks may be heavily exposed) and the negative effects of contagion. For instance, some of the largest US banks have notified the US administration that banning Russian banks from SWIFT would have a far-reaching fallout that could hurt the global economy and undermine the purpose of the penalties.[71] Across banking sectors with substantial exposures to Russia, the banks of Austria, Italy and France have the largest absolute exposures (Figure 30), reflecting subsidiaries of banks from those countries being among Russia's systemically important banks.

Figure 29. Consolidated positions of international banks on residents of Russia and Ukraine



Source: Bank for International Settlements, OECD calculations.

Figure 30. Geographical breakdown of international banks exposure to Russia and Ukraine



Note: This figure includes all the countries for which data are available in the BIS database. Data are as of end-September 2021.
Source: Bank for International Settlements, OECD calculations.

International banks may also be exposed to indirect risks from the reliance of their corporate borrowers on imports or exports with Russia and Ukraine and their capital markets activities.[72] In particular, supply chain disruption of raw materials and commodities, potential inability to settle international trade transactions in foreign currency, sectoral sanctions, exclusion from SWIFT and a Russian ban on foreign-exchange loans and bank transfers, is likely to hurt earnings of corporates with significant exposures to the Russian and Ukrainian markets. Also, challenging settlement of repo transactions, derivatives or money market transactions with Russian or Ukrainian banks would lead to negative mark-to-market impacts on collateral attached to some of those structures, inability to recover collateral, higher margin requirements and ultimately some trading losses. Last but not least, global banks are exposed to the financial, legal and reputational risks from their holdings of Russian securities and their relationships with Russian clients. Halted Russian securities trading prevents banks from liquidating their Russian securities and the recovery of market conditions would likely take time. Therefore, banks with large asset management arms would remain exposed to some financial, legal and reputational risks over the period.

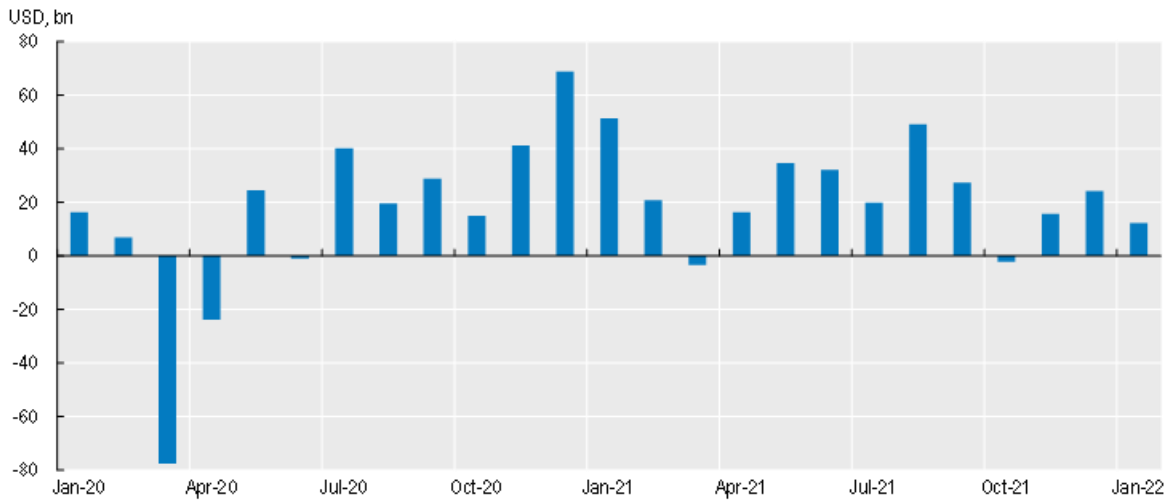
Looking ahead, downside risks to the global banking sector include rising inflation pressures and the deterioration of economic conditions following the emergence of new COVID-19 variants and intensifying

geopolitical tensions with the implementations of new sanctions. Weaker-than-expected economic growth, higher inflation and interest rates would hurt banks' business opportunities and erode the debt sustainability of leveraged borrowers, which are already experiencing weakening debt covenants. Banks are likely to record higher losses from their direct exposures to leveraged loans and Russian and Ukrainian counterparties. Banks may also record losses from their exposures to non-bank financial institutions (NBFIs) including holdings of structured products, such as CLOs and CMBS. Notably, the potential decline in the value of collateral may result in downgrades and repricing of securities with substantial losses for a wide range of financial intermediaries. In combination, these effects could erode financial market resilience and availability of credit to the real economy.

From health crisis to financial distress in EMEs: Emerging vulnerabilities to the recovery amid a less accommodative interest rate environment

Most recent data on portfolio and other inflows from the OECD Monthly Capital Flow Dataset highlight a critical weakening of portfolio net inflows to emerging markets during the second half of 2021 and at the beginning of 2022 (Figure 31). Such muted capital inflows reflect investor concerns about the implications for EMEs of tightening monetary policies in major advanced markets and the possible reallocation of investment portfolios as a range for assets will become attractive in advanced markets.

Figure 31. Weakening net inflows to emerging markets

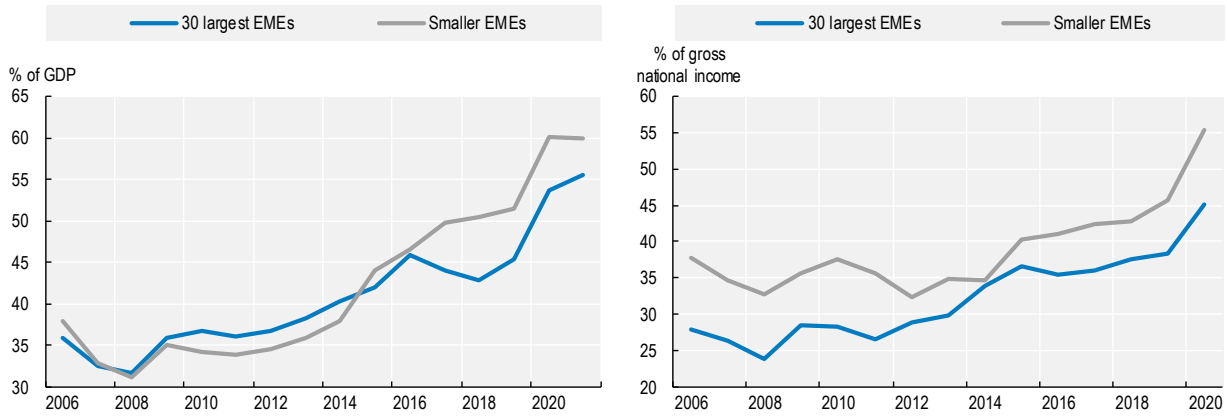


Note: This figure shows monthly net portfolio (including debt and equity) and other capital (including bank loans deposits) inflows in emerging markets. The sample includes a maximum of 16 emerging economies for equity inflows and 19 emerging economies for debt inflows. Data are expressed in billion US dollar.
Source: OECD Monthly Capital Flow dataset.

The COVID-19 crisis led to a dramatic increase in sovereign debt in EMEs (Figure 32). The median level of government debt to GDP in smaller EMEs has risen from about 50% in 2019 to almost 60% in 2021, exceeding the debt ratio of larger EMEs, which reached 56% in 2021. The upsurge in government spending and reduced revenue collection in the wake of the COVID-19 crisis means that the gross borrowing needs of governments have risen significantly in 2020 and have grown even more in 2021.[73] The substantial increase in refinancing risks could weight on sovereign debt burdens, especially for low-income countries, whose financial position had already deteriorated before the pandemic. Against this backdrop, the private sector, including firms and households, would not only be impacted by a more restricted access to credit

but also by the deteriorating capacities of governments to provide additional support in a prolonged recession, or economic setbacks during the recovery. In addition, the prospect of a slow recovery and rising interest rates places further pressure on government budgets, even as the immediate effects of the pandemic subside. Sovereign debt burdens are unlikely to decrease in the near future because they are the combined result of large fiscal support programs necessary to mitigate the worst effects of the pandemic and the contemporaneous collapse in government revenue due to the global slowdown in economic activity.

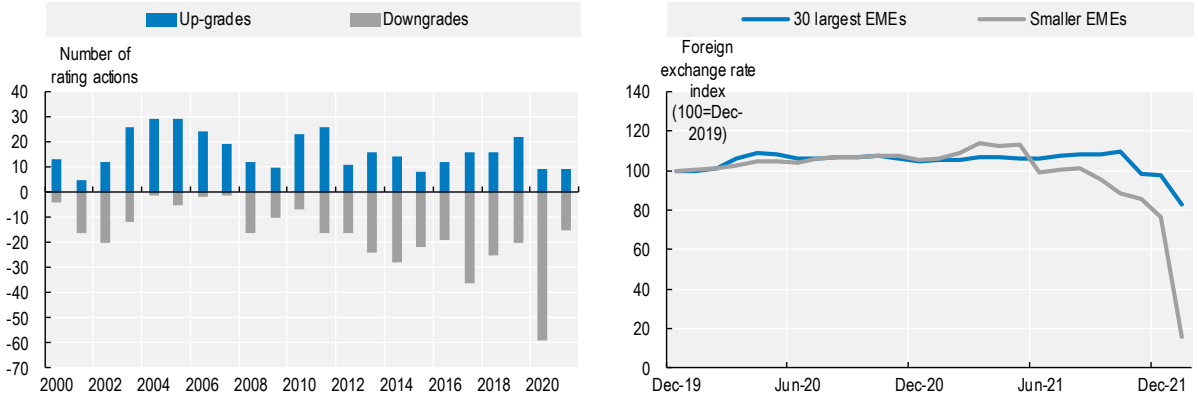
Figure 32. Sovereign debt and external debt in EMEs have risen sharply following the COVID-19 shock



Note: The left panel shows median gross government debt to GDP ratios of 156 EMEs. The right panel shows median external debt to gross national income. Countries have been ranked by gross domestic product expressed in international Dollars at purchasing power parity.
Source: IMF World Economic Outlook, World Bank Development Indicators databases, OECD calculations.

The credit quality of sovereign issuers has deteriorated substantially following the COVID-19 crisis, as reflected by the substantial increase in sovereign debt rating downgrades in 2020 and to a much lesser extent in 2021 (Figure 33). Conditions would be particularly strained for the smaller EMEs that are facing elevated sovereign debt levels with a significant share of foreign currency debt, following a shift of investor sentiment and domestic currency depreciation against major international currencies. While exchange rates against the US dollar have been stable for most EMEs in 2020 and 2021, significant depreciation pressures have arisen following announcement of monetary policy tightening by major central banks in November 2021 and gradual unwinding of asset purchases programmes. Under such a scenario, sovereign issuers in EMEs, particularly in low-income countries, could face monetary policy challenges and higher repayment on their US dollar denominated debt. Also, sovereign debt markets in EMEs have become less transparent, amid increasing complexity in creditor composition and the legal structures used to issue debt (Annex D), that could raise new challenges for governments to manage, renegotiate, and restructure their debt.

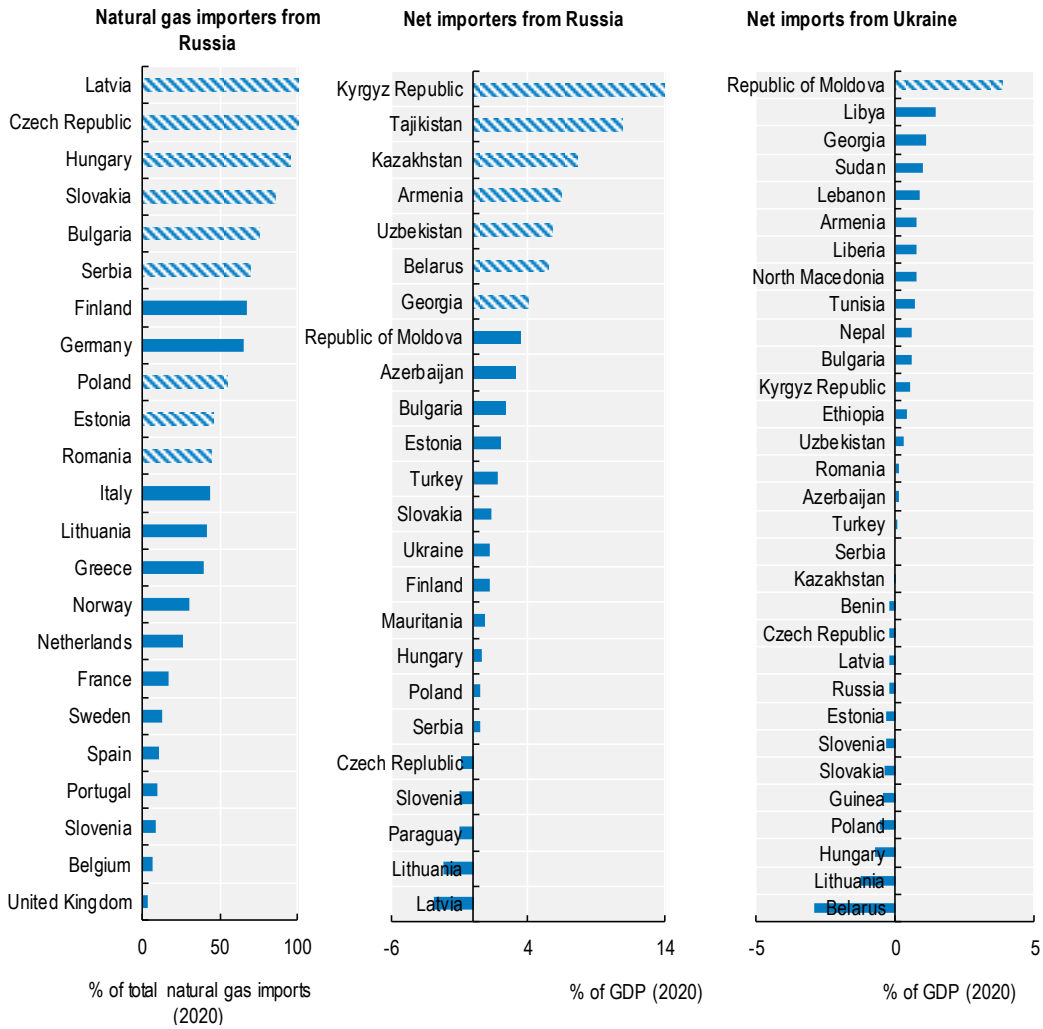
Figure 33. Deteriorating credit quality of sovereign debt and the depreciation of EM currencies against the US dollar



Note: The left panel shows the number of sovereign issuer rating actions by the three major global agencies (including S&P, Moody's and Fitch) in EMEs over the past two decades. The right panel shows monthly average exchange rate of 125 EM currencies against the US dollar. Countries have been ranked by gross domestic product expressed in international Dollars at purchasing power parity.
Source: OECD Sovereign Borrowing Outlook database, Bank for International Settlements, OECD calculations.

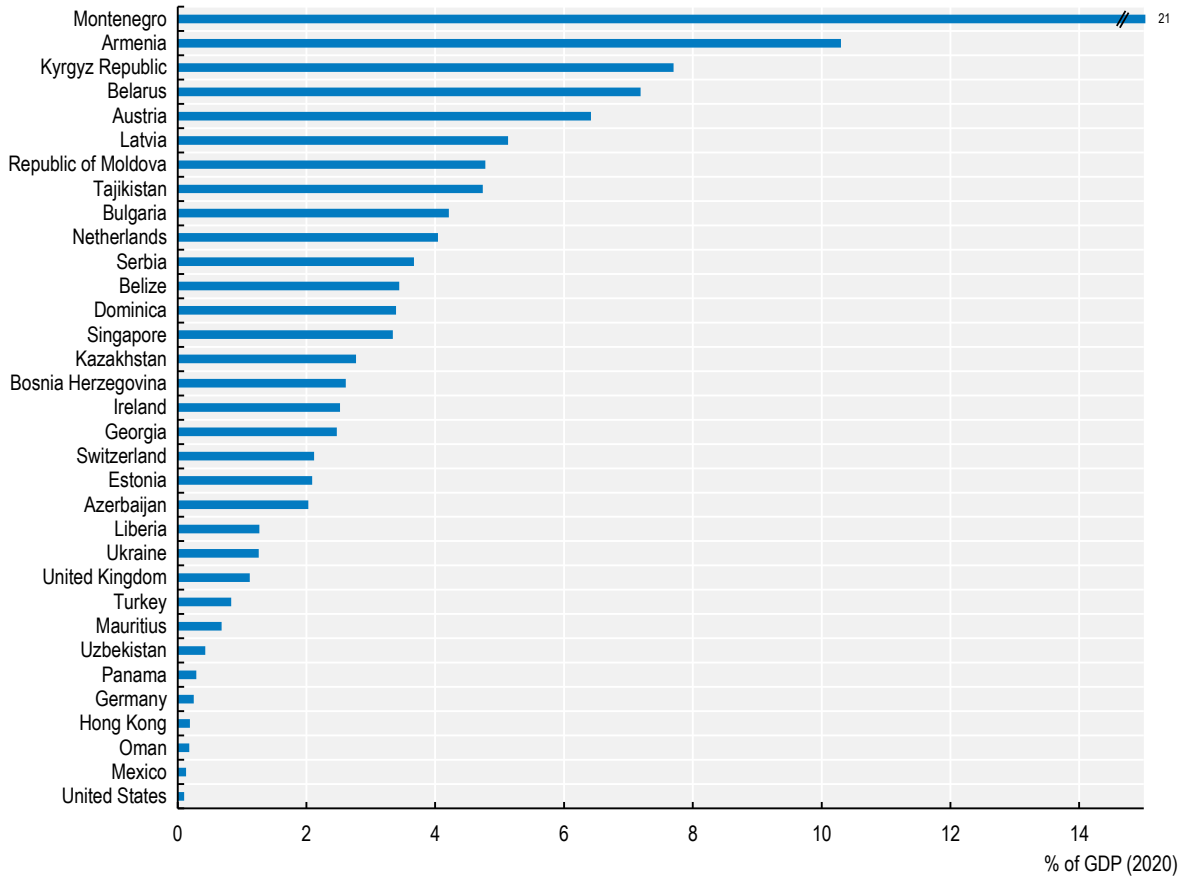
Rising geopolitical tensions from the Russian invasion of Ukraine are likely to impact EMEs mainly through commodity prices and supply chains.[74] Commodity and oil exporters would benefit from higher prices. Nevertheless, commodity price pressures could lead to further currency depreciation and heightened inflation, through imported inflation, in some EMEs, which would weaken growth and necessitate further monetary policy tightening in EMEs. Also, the rise in oil and food prices may limit household spending on other goods and increase production costs for corporates. EMEs with direct links to Russia and Ukraine, mainly Central, Eastern and South-eastern European (CESEE), Baltic and some Central Asian countries, would be particularly vulnerable to commodity supply chain disruptions (i.e. Latvia, Czech Republic, Hungary, Slovakia, Bulgaria, Serbia, Poland, Estonia and Romania) and sizeable trade ties (i.e. Kyrgyz Republic, Tajikistan, Kazakhstan, Armenia, Uzbekistan, Belarus and Georgia; Figure 34).[75] A vast majority of MENA countries are also highly dependent on wheat imported from Russia and Ukraine (Organization, 2022[12]). Against this backdrop, prolonged fiscal support measures would be needed to help offset rising living and production costs for the most vulnerable households and viable corporates. Subsequent higher interest rates combined with growing borrowing needs could increase further refinancing risks for indebted sovereign and corporate issuers in EMEs. It is worth noting that the magnitude of the effects on individual countries will depend on whether they are net commodity importers or exporters. Also, some EMEs in Central, Eastern and South-eastern Europe (CESEE) and Central Asia with significant inward foreign direct or portfolio investments from Russia (i.e. Montenegro, Armenia, Kyrgyz Republic, Belarus, Latvia, Republic of Moldova, Tajikistan and Bulgaria) could experience decline in available foreign financing that may negatively impact investment and refinancing capacities for leveraged borrowers (Figure 35).

Figure 34. Energy and trade dependency to Russia and Ukraine



Note: The left panel shows selected top natural gas importers from Russia. The middle and right panels show net importers from Russia or Ukraine. Countries shown are among the top 20 importers or exporters from Russia and Ukraine respectively. Data are as of end-2020. Bars have been hatched for some Central, Eastern and South-eastern European (CESEE), Baltic and Central Asian countries with significant natural imports and net imports from Russia or Ukraine.
Source: Capital Economic, Eurostat, IMF, World Bank.

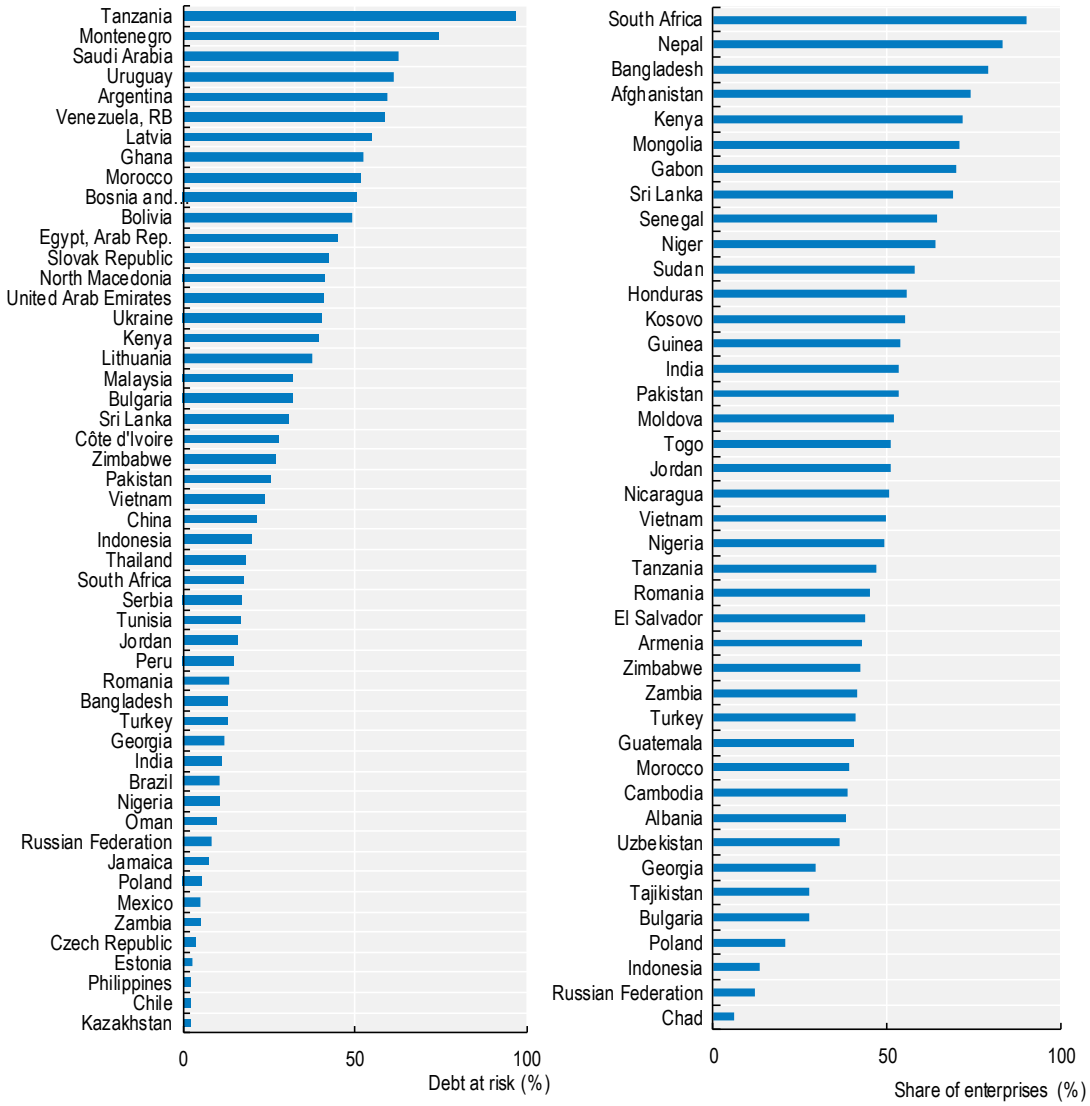
Figure 35. Inwards of foreign direct and portfolio investments from Russia in selected economies



Note: This figure shows the sum of foreign direct and portfolio investments from Russia in selected jurisdictions. Countries included are among the top 20 countries that receive inwards of foreign direct or portfolio investments from Russia. Data are as of end-2020.
Source: Capital Economic, IMF, World Bank, OECD calculations.

There are signs that financial risks are rising in the corporate sectors in EMEs with potential spillovers from interlinked balance sheets of corporates, households, banks and sovereigns. Notably, a number of developing countries have dangerously indebted corporate sectors (Figure 36). As governments ease short-term support measures, World Bank estimates suggest an expected increase in COVID-19 related business and personal insolvencies stemming from widespread business distress (Apedo-Amah et al., 2020[13]). Corporate solvency risks could be further exacerbated by depreciating domestic currencies given the sharp increase in dollar-denominated debt over the past decade. The exposure to currency risk is likely to become more acute if the recovery proceeds more quickly in advanced economies than in the rest of the world, which will lead to a further weakening of emerging market currencies (World Bank, 2022[14]). It is worth noting that sovereign rating downgrades also have negative implications for the private sector, because the downgrade itself deteriorates macroeconomic fundamentals and the access to capital by private firms. Strained conditions for corporates and households are also likely to translate into higher NPLs for banks in EMEs, although no substantial increase has been recorded yet amid moratoria and other borrower support measures that have remained in place in many EMEs concomitantly with relatively accommodative global financial markets in 2021.[76] Nonetheless, rising bankruptcies and loan defaults would pose significant challenges for the capacity of insolvency frameworks in EMEs to resolve bankruptcies in a timely manner.

Figure 36. Dangerously indebted corporate sectors and many enterprises experiencing financial distress in EMEs



Note: The left panel shows the percentage of corporate debt at risk after a simulated 30% shock to pre-COVID-19 crisis earnings in selected EMEs. The right panel shows the share of enterprises in arrears or expecting to fall into arrears within six months (i.e. between May and September 2020) in selected EMEs. This figure has been sourced in the introductory and third chapters of the World Bank report published in January 2022 titled "Finance for an equitable recovery".

Source: World Bank (2022[14]), "Finance for an equitable recovery", January.

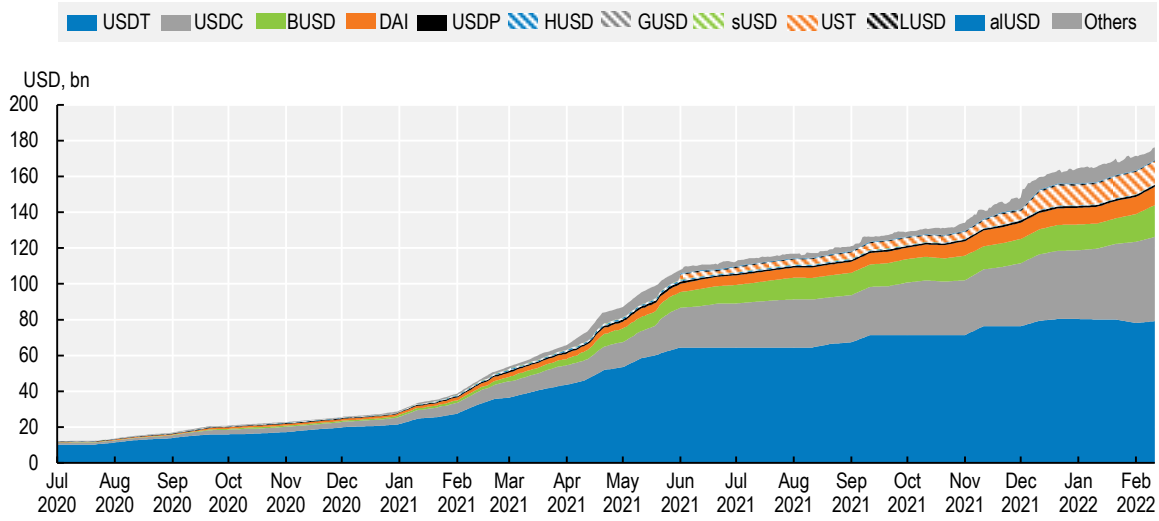
3 The rising importance of alternative finance markets and risk implications

Alternative finance markets are also prone to emerging downside risks from less accommodative interest rate environment and intensifying geopolitical tensions. Notably, some major stablecoins (i.e. Tether) are vulnerable to a sudden shift in investors' risk sentiment amid escalating geopolitical tensions and reallocation towards safer assets. As stablecoin issuance has increased substantially over the recent years, mass redemptions of stablecoins could have negative effects on the value of their underlying reserve assets and the resilience of traditional financial markets. Also, the military conflict and implemented sanctions raises a variety of implications for sustainable investment opportunities and approaches, including for ESG rating.

Emerging risks from a less accommodative interest rate environment and a possible shift in investor risk sentiment amid escalating geopolitical tensions for stablecoin markets

Stablecoins are increasingly used to facilitate trading, lending and borrowing and other transactions involving digital assets.[77] Stablecoin issuance has grown substantially, reaching almost USD 180 billion in February 2022 from less than USD 20 billion in July 2020 (Figure 37). This market is highly concentrated, as reflected by the limited number of issuers and the top two stablecoins, Tether and USDC, account for 70% of total issuance. Stablecoins are also used by participants in DeFi markets to mitigate crypto-asset volatility (OECD, 2022[15]).

Figure 37. The surge of stablecoin issuance in 2020-21



Source: CoinMetrics, OECD calculations.

Stablecoins are redeemable at par value that renders them vulnerable to unexpected redemptions with negative implications for the value of underlying assets and market resilience. A fall in the price of reserve assets, storage problems, lack of information about redemption terms or operational risks (i.e. cybersecurity) can undermine investor confidence. This could, in turn, lead to self-reinforcing cycles of redemptions and fire sales of underlying assets. A less accommodative interest rate environment and negative implications of intensifying geopolitical tensions for economic prospects may trigger bouts of investor risk aversion. Stablecoins are reportedly increasingly investing in commercial paper as part of their reserve assets. For instance, Tether holds USD 30 billion of commercial paper and is among the largest holders globally. Information about issuers of commercial paper held by Tether is not available, although some market participants suggest the presence of Chinese issuers. Against this backdrop, the increasing use of stablecoins combined with higher risk aversion for Tether holdings could trigger substantial redemptions from Tether and liquidation of underlying commercial paper, which could disrupt conditions on commercial paper and other short-term debt markets (FSOC, 2021[16]).

The use of stablecoins in DeFi markets strengthens the link between DeFi and traditional finance (OECD, 2022[15]). In a scenario where a major stablecoin loses its peg due to solvency issues related to the reserves backing the stablecoin, or due to its under-collateralisation, decentralised exchanges would experience severe stress and liquidity pools would perform mass liquidations at fire sale prices that could disrupt the functioning of funding markets with potential negative implications for financial system resilience (Nassr, 2022[17]).

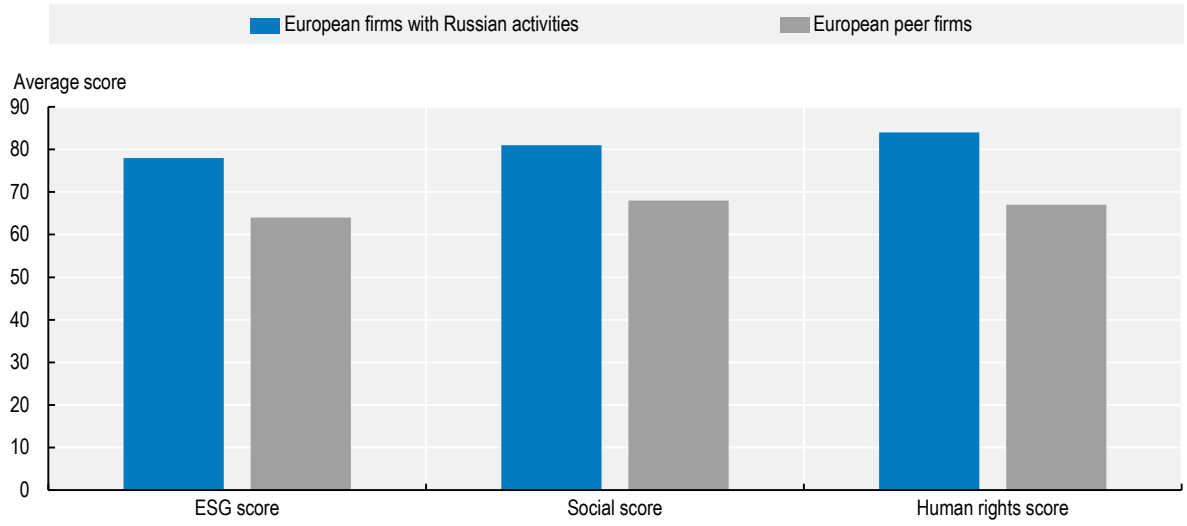
The various outcomes for ESG ratings from the Russian military intervention in Ukraine and implemented sanctions

The Russian aggression against Ukraine raises a variety of implications for sustainable investment opportunities and approaches, including for ESG rating. Notably, elevated energy prices combined with the gradual decrease of energy imports from Russia to OECD economies could incentivise many energy distributors and users to accelerate their transition to renewables to become more energy independent.[78] Should companies make accelerated investment in renewables, this could in turn contribute to future improvements in their E rating.

The military conflict, implemented sanctions and deteriorating political climate have highlighted the challenges for ESG ratings to accurately reflect growing social and governance risks in Russia. According to some sustainable finance analysts, ESG-focused frameworks may not have been sufficient to capture relevant ESG factors, such as the impact of the annexation of Crimea by Russia in March 2014 on ESG labelled sovereign issuance.[79] Despite controversy from past historical events for ESG labelling of Russian assets, ESG-focused funds globally had substantial exposures to Russian assets right before the Russian aggression against Ukraine. According to Bloomberg,[80] ESG-focused fund managers held at least USD 8.3 billion at beginning 2022.[81] Bloomberg analysis also found that at least 13 of the ESG funds holding Russian assets were classified as so-called Article 9 funds, which is a category within Europe's Sustainable Finance Disclosure Regulation that denotes the very highest level of sustainability. A further 137 funds were labelled Article 8, which indicates to investors that they "promote" ESG characteristics. Also, empirical findings of the study performed by Lev at al. (2022[18]) do not provide evidence that Russia-based companies had significantly lower ESG scores than companies without that exposure (Figure 38). This study highlights the absence of a Russia effect on ESG ratings with a simple comparison of ESG scores of companies with and without Russia exposure.[82] While the challenges of ESG rating methodologies to foresee the deteriorating political climate in Russia would not be qualified as an ESG weakness, these outcomes certainly cannot be presented as a strength for the current methodologies.

These trends are totally at odds with the negative implications of the current conflict for Russia sovereign and corporate ESG issuer scores and the withdrawal of international companies from Russia. Beyond the negative implications of the aggression against Ukraine, these studies have also exposed that some ESG-rated Russian companies could be suspected of human rights abuses or corruption allegations. With this in mind, the current conflict may also prompt ESG-focused investors to rethink ESG labelling of firms in some sensitive sectors, such as the defence sector, given the importance of the defence industry to provide safety and security. [83] Therefore, potential adjustments in the current approach for ESG labelled securities in the defence sector could lead to potential revisions of S and G ratings. While the implications of the military conflict and implemented sanctions are still uncertain to promote more sustainable investments, new developments will contribute to reshape investors' approach of assessing ESG ratings of sovereign and companies and their portfolio allocation strategies in the years to come.

Figure 38. ESG measurement services missed the Russia Effect



Note: The Human rights performance is a subcomponent of the social pillar.
Source: Lev et al. (2022[18]) "The False Promise of ESG", Harvard Law School Forum on Corporate Governance, April.

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Annex A. Consequences of selected military conflicts on global financial market conditions

Comparison between geopolitical conflicts in the last 20 years indicates that financial markets react in accordance with the geographical scale of the conflict, its duration and its direct linkage to energy-related commodities (Table A A.1).

The first gulf war had the most prolonged and significant effect on asset prices among the several conflicts considered in this analysis. Notably, decline in equity prices had been recorded (i.e. by 20-30%) during the several months leading up to the international military response to Iraq's invasion of Kuwait. The war not only affected equity prices, but also prompted a rise in sovereign bond yields, probably due to expected future military-related fiscal expenses. Corporate bond yields rose by almost 20 percentage points and oil prices experienced a very sharp rise. The S&P 500 had reached its low before the actual invasion by the United States and its allies. Markets were particularly turbulent during the period of uncertainty that preceded the military intervention.

In contrast, the 2003 war in Iraq had a weaker impact on financial market conditions. The sell-off period lasted only a few days, as the duration of major combat operations has been shorter than expected. The effects on bond yields were minimal. Nonetheless, oil prices experienced a significant rise within a short period of time (i.e. of about 10%).

The two latest military conflicts between former soviet countries and Russia had short lived and moderate effects on overall financial market conditions. During the annexation of Crimea, European and emerging equity markets did not experienced severe price corrections (i.e. declining by 3%). Sovereign bond, corporate bond and commodities markets were mostly unaffected. Nonetheless, the US speculative-rated corporate bond market did experience some moderate rise in yields and implied volatility. The market reactions to the Russo-Georgian war were of a similar magnitude. The war coincided with the unravelling of the global financial crisis, which might partially explain the significant rise in implied volatility during this period.

Empirical evidence based on historical financial market performance during a range of military conflicts suggest that small scale conflicts in former soviet countries had only slight negative effects on global financial market conditions. However, more substantial involvement by major advanced nations could result in a significant increase in commodity prices and severe equity price corrections, especially if the conflict has a direct effect on the supply of commodities.

Table A A.1. Consequences of selected military conflicts on global financial market conditions

		Russo-Georgian war	***Annexation of Crimea***	***First gulf war***	***2003 war in Iraq***
	Date conflict began	*01-08-2008*	*20-02-2014*	*17-01-1991*	*20-03-2003*
	Days from high to bottom[1]	*8*	*5*	*63*	*6*
	Days from bottom until recovery to prior high level[2]	*1*	*12*	*89*	*16*
10-year sovereign bond yields*	*United States*	*-0.15*	*-0.15*	*0.48*	*-0.30*
	United Kingdom	*-0.24*	*-0.13*	*-0.06*	*-0.27*
	Germany	*-0.33*	*-0.11*	*0.64*	*-0.25*
	Japan	*-0.15*	*0.00*	*1.12*	*-0.05*
2-year sovereign bond yields*	*United States*	*-0.20*	*-0.03*	*-0.14*	*-0.29*
	United Kingdom	*-0.31*	*-0.04*		*-0.29*
	Germany	*-0.36*	*-0.02*	*0.40*	*-0.23*

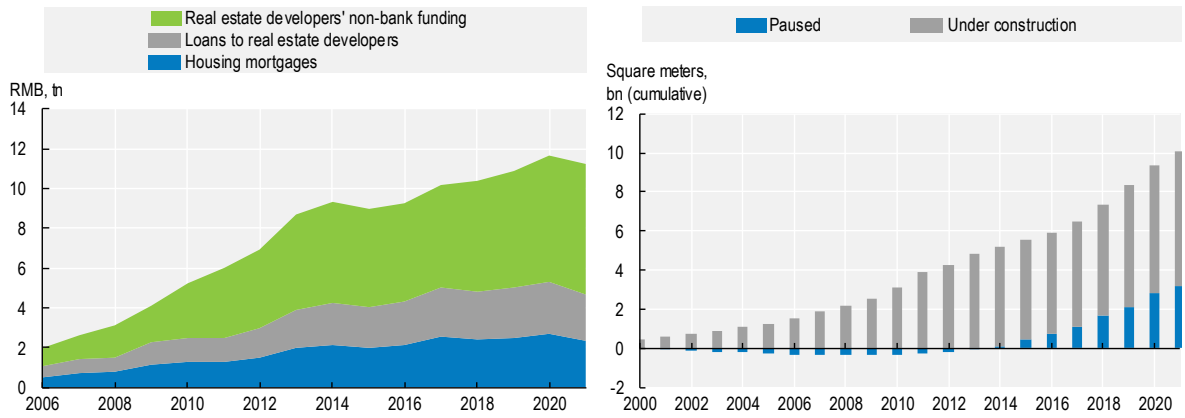
		Russo-Georgian war	Annexation of Crimea	First gulf war	2003 war in Iraq
	Date conflict began	01-08-2008	20-02-2014	17-01-1991	20-03-2003
	Japan	-0.10	0.01	0.93	0.00
Equity prices**	S&P 500	-3%	-2%	-20%	-5%
	NASDAQ	-2%	-2%	-31%	-6%
	DJStoxx 600	-3%	-3%		-8%
	FTSE 100	-3%	-3%	-14%	-6%
	NIKKEI	-3%	-6%	-32%	-3%
	Shanghai Composite	-3%	-3%		2%
	MSCI EM Equities	-4%	-3%	-22%	-4%
Energy and commodity prices**	Brent Crude	-4%	-1%	132%	10%
	US WTI Oil	-2%	-4%	117%	13%
	S&P GSCI Industrial metals	-6%	-3%	3%	-5%
	S&P GSCI Agriculture	-3%	0%	-8%	0%
	Gold	-2%	3%	7%	1%
Corporate bond option-adjusted spreads*	US high-yield corporates	2.18	3.71	17.23	0.48
	Europe high-yield corporates	-6.50	4.60	26.70	-12.10
	EM high-yield corporates	-3.54	1.69		
Implied volatility of US equity, bond and oil markets*	VIX	68.00	17.00		3.00
	MOVE	84.00	14.00		-23.00
	OVX	22.00	25.00		10.00

Note: (1) period in days from the local maximum to the local minimum of the S&P500 close to when conflict began. (2) days from the bottom that was reached at the end of (1) and until the S&P500 value caught-up to its value at the beginning of (1).* values in the table are the difference in percentage points during period (1); **values in the table are the change in percent during period (1).
Source: OECD.

Annex B. Strained credit conditions expected for Chinese real estate developers in 2022

Sustained debt financing growth has supported the substantial development of the Chinese property market over the past fifteen years, which now suffers from excess capacity which could exacerbate vulnerabilities.[84] Over the past decade, housing mortgage loans and indebtedness of Chinese real estate developers have increased significantly alongside a rapidly growing stock of housing where construction has been paused or not completed (Figure A B.1). In August 2020, the "three red lines" rule was implemented to limit real estate developers' borrowing, as Chinese authorities became increasingly concerned over the level of indebtedness in the sector and of implications for the real economy. Such policies are aimed at limiting financing of speculative activities in the Chinese property sector. This should contribute to a deleveraging of China's corporate sector, which has the highest debt load among large economies.

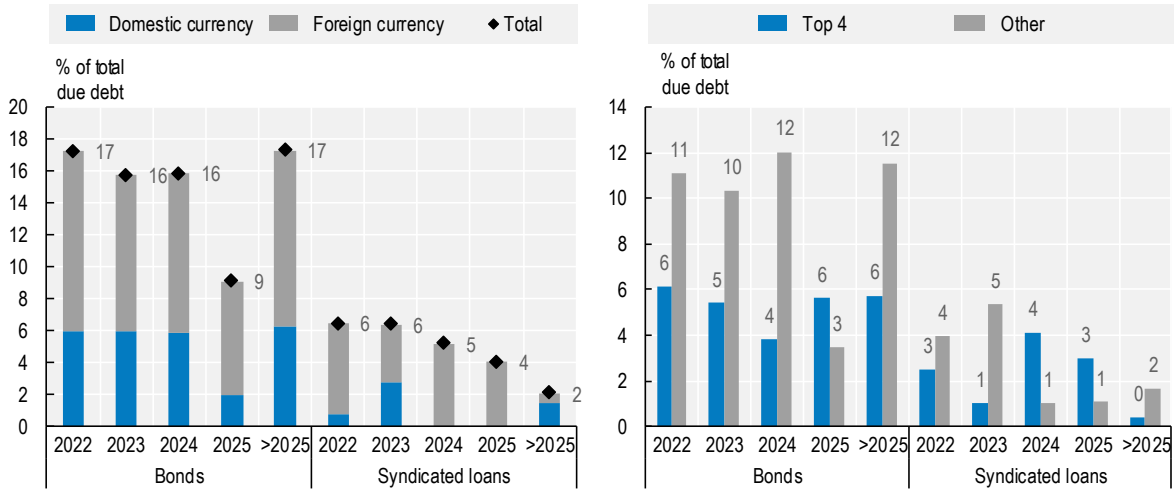
Figure A B.1. Debt accumulation and rising excess capacities in the Chinese real estate sector



Note: The left panel shows Chinese banks housing mortgages and total debt of Chinese real developers, which includes bank and non-bank financing. The right panel shows the volume of housing under construction and paused in China.
Source: The Peoples' Bank of China, Refinitiv, OECD calculations.

A major concern is the financial soundness of leveraged Chinese real estate developers relying on non-bank funding sources. Notably, large Chinese real estate developers are likely to face greater refinancing risk amid deteriorating credit quality and high debt redemption profiles over the coming years. For instance, 25% of maturing bonds and syndicated loans will become due by end-2022, 45% by end 2023 and 80% by end 2025 (Figure A B.2). Considering the four Chinese real estate developers with the highest debt redemption profiles, 10% of maturing bonds and syndicated loans will become due by end-2022, 15% by end 2023 and 32% by end 2025. In addition, 70% of total due debt of large Chinese real estate developers is denominated in foreign currency (i.e. 36% of due debt denominated in foreign currency relates to the four large Chinese real estate developers). So far, financial distress of several large Chinese real estate developers has contributed to the deterioration of credit market conditions of other property developers and Chinese leveraged corporates (OECD, 2021[19]). Notably, spillovers through Chinese speculative-rated corporate bond markets have resulted in weakened funding access to developers, and intensified credit polarization amid rising investor concern about the impact of tighter regulatory conditions on funding and distress of large real estate developers. Looking ahead, leveraged Chinese issuers would face a higher cost of debt, regardless of their sector, to compensate investors for possibly weaker covenants.

Figure A B.2. High debt redemption profile of Chinese real estate developers



Note: The left panel shows annual redemptions of large Chinese real estate developers listed in Refinitiv expressed as a share of total due debt. The right panel shows annual redemptions of the four Chinese real estate developers listed in Refinitiv with the highest debt redemption profiles. Figures are calculated based on current RMB amounts outstanding using the debt comparable application data.
Source: Refinitiv OECD calculations.

The rapidly slowing property sector will hit local and regional governments (LRGs), which derive one-quarter of their revenues from land sales. With diminished revenues, LRGs will have less capacity to support their local government funding vehicles (LGFVs) and the rising number of loss-making state-owned enterprises (SOEs) (OECD, 2022[20]; S& P Global Ratings, 2021[21]). In contrast, only some financial institutions, such as small regional banks and trust companies, are expected to suffer losses from exposure to Chinese real estate developers.[85] For example, the direct exposure of China's big four state-owned asset management companies, large banks and rated Chinese insurers is not significant. In the longer-term, financial distress of Chinese real estate developers is likely to trim economic growth in China as the real estate sector may not recover as strongly as in previous cycles.[86] Tightening budget conditions for LRGs would curb infrastructure financing and undermine growth. Nonetheless, given the size of China's economy and financial system, as well as its extensive trade linkages with the rest of the world, weakening Chinese demand for goods in advanced markets could negatively affect investor risk sentiment in global financial markets, and have a direct impact on global equity valuations, especially if global economic growth starts to stall.[87]

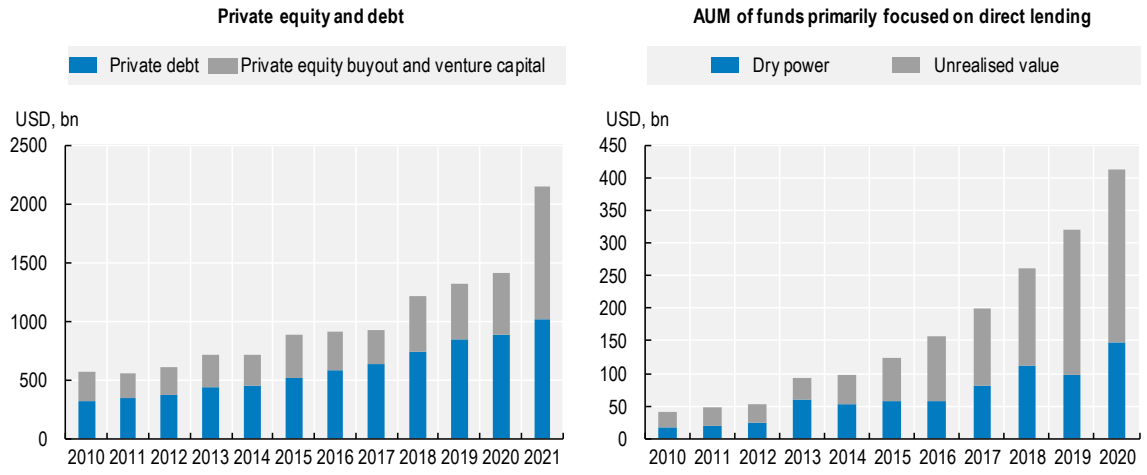
Annex C. Signs of strong risk appetite in private credit and equity markets raises concerns for leveraged loans and CLO markets amid higher interest rates

Recent trends show the attractiveness of private equity and credit financing, with substantial amounts of capital raised in 2020-2021 (Figure A C.1). In recent years, private markets have attracted investors in the hope that venture capital, private equity, real estate and infrastructure seeking higher yields in the face of a dimming outlook for returns in mainstream public stock and bond markets. For many companies, private market financing has been an alternative source of funding at a time when banks have been subject to tighter liquidity and capital requirements, which make them more reluctant to grant loans to increasingly leveraged and financially fragile companies.

A major concern is that private equity groups have benefited from low borrowing costs to fund acquisitions or dividends through their already highly leveraged portfolio companies, underlining concerns around excessive company leverage and rising downside risks for leveraged loans and CLO markets. Nevertheless, leveraged borrowers in the United States have breached loan limit guidance at record pace in 2021. For instance, 33% of the 954 US leveraged loans issued in between January and November 2021 had a ratio of debt to earnings that exceeded six times.[88] These loans breached the threshold set by the Federal Reserve, Office of the Comptroller of the Currency and Federal Deposit Insurance Corporation in 2013 that was adopted by the banking industry as a cap on leveraged lending. In 2021, the credit quality of US leveraged loan borrowers deteriorated. In particular, out-of-court restructurings and distressed debt exchange have become more commonplace in the US leveraged loan segment, as evidenced by 40% of 2021 defaults by volume involving this type of action. This is up from 22% and 32% in 2020 and 2019 respectively.[89] The potential risk is that high indebtedness and rising financing costs could trigger corporate rating downgrades and defaults, with negative spillovers to a range of intermediaries exposed to these markets and possibly also to the real economy.

Lack of transparency, eroding standards of investor protection and illiquidity are key risks of the growing private debt market.[90] Notably, lenders typically lend with the intention of holding the debt to maturity, as private debt loans are often less liquid than broadly syndicated loans. Also, borrowers in this market segment tend to be smaller, more highly leveraged than borrowers in leveraged loan markets and usually unrated. Assets under management of funds primarily involved in direct lending surged to USD 412 billion at end-2020 as institutional investors, with a fixed-income allocation, have increasingly waded directly or indirectly into the market. More recently, private debt funds have been marketed as an alternative asset and are increasingly accessible to individual investors through new classes and funds. Therefore, strained conditions in private credit markets in a higher interest rate environment, amid deteriorating credit quality of highly-leveraged small corporates, could result in losses for a range of retail investors and financial institutions directly or indirectly exposed these markets.

Figure A C.1. Increasingly attractive private equity and debt markets

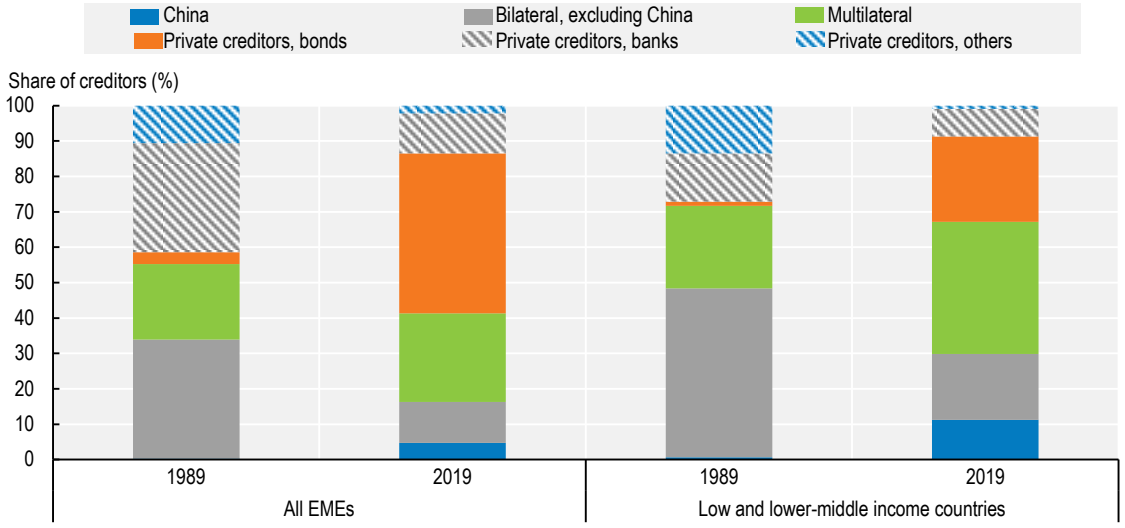


Note: The left panel includes global private debt from Prequin Global Private Debt reports and capital activities on US and European private equity buyout and venture capital segments. The right panel shows the global asset under management (AUM) of funds primarily focused on direct lending.
Source: Prequin, Refinitiv, OECD calculations.

Annex D. Challenges for sovereign debt markets in EMEs from less transparency and increasing complexity

Sovereign debt markets in EMEs have experienced profound changes over the past decades, characterised by the increasing complexity in creditor composition and the legal structures used to issue debt (Figure A D.1). Less transparent sovereign debt markets in EMEs combined with the rising importance of the private sector and China as creditors have raised new challenges for governments to manage, renegotiate, and restructure their debt when debt sustainability problems become apparent. For example, China's loan agreements have been the subject of intense debate and controversy over recent years.[91] Some have suggested that Chinese creditors are pursuing "debt trap diplomacy", imposing harsh terms on its government counterparties and writing contracts that allow it to seize strategic assets when debtor countries run into financial problems and/or that require the debtor to channel all revenues into special escrow accounts and submit budgets to Chinese creditor for approval.[92] These arrangements are meant to secure the loan deal but contracts are governed by Chinese law and disputes, if they arise, must be settled by arbitration at a Chinese court.

Figure A D.1. The rising importance of the private sector and China as creditors in EMEs



Note: This figure shows the creditor composition of sovereigns in EMEs in 1989 versus 2019. The data are for 120 low- and middle-income countries, of which 73 are low- and lower-middle-income countries. This figure has been sourced in the fifth chapter of the World Bank report published in January 2022 titled "Finance for an equitable recovery".
Source: World Bank.

Low-income countries are likely to experience substantial debt repayments and refinancing risk in a higher interest rate environment. According to the World Bank, the poorest countries face a USD 10.9 billion surge in debt repayments in 2022 after many rebuffed an international relief effort and instead turned to the capital markets to fund their responses to the COVID-19 pandemic (World Bank, 2022[22]).[93] When compared to other EMEs, sovereign issuers in low-income countries have experienced more restricted market access than issuers in large EMEs. While financing costs on government securities have declined

in recent years, yields remain high, particularly in countries experiencing acute stress from the pandemic. During the COVID-19 crisis, both for low-income countries and other EMEs, the maturity of borrowings shortened dramatically and issuances of short term instruments have grown remarkably, possibly given the higher liquidity of the instrument, the increased difficulty in pricing risk of instruments with longer maturities, and a decrease in demand from institutional investors due to the increase in debt vulnerabilities (OECD, 2021[23]). The high amount of short-term instruments issued in 2020 and 2021 could raise refinancing risks, although this may depend on the extent to which the buyers are domestic or foreign, level of debt, and the economic conditions that support its repayment. The World Bank warns of risk of 'disorderly defaults' as pandemic-era relief schemes expire. Moreover, refinancing risks related to amounts denominated in foreign currency are generally more challenging. Therefore, more attention needs to be given to foreign currency denominated debt, as external monetary developments could have unexpected effects on the debt servicing situation of low-income countries.

Notes

[1] Federal Reserve (2022). "FOMC meetings", Press release, March.

[2] Federal Reserve (2022). "Summary of Economic Projections", March.

[3] Bank of England (2022). "Monetary Policy Summary", March.

[4] Central Bank of Russia (2022). "Bank of Russia increases the key rate to 20% per annum", February.

[5] Central Bank of Russia (2022). "The Bank of Russia cuts the key rate by 300 basis points to 17% per annum", April.

[6] ECB (2022). "Monetary policy decisions", April.

[7] LME (2022). "Suspension of LME nickel market", March.

LME (2022). "Nickel market update: arrangements for the resumptions of trading", March.

[8] Financial stability concerns have arisen following the financial distress of a prominent Chinese metals tycoon amid surging nickel prices in March 2022. In particular, China's leading stainless steel and nickel producer Tsingshan Holding Group struggled to mobile cash to settle margin calls from his bets that the market would fall, contributing to boost nickel prices at even higher levels.

[9] Financial Times (2022). "Oil supply chain: spiralling margin calls elevate risk of Lehman moment", March.

[10] Capital Economics (2022). "Three ways the war has changed the markets outlook", Global Markets Update, March.

[11] The domestic Russian stock exchange has been closed on February, 28th. On March 24th, the CBR decided to hold trading in 33 shares included in the Moscow Exchange Russia Index (IMOEX) on the Moscow Exchange. Foreign exchanges have decided to halt trading of Russian stocks listed abroad in the first days of March. Some large benchmark providers have also removed Russian securities from their benchmarks; and asset managers have started to liquidate their portfolios of Russian securities.

[12] According to the International Energy Agency (IEA), significant gains can be achieved already in 2022. The 10 Point Plan report released in March 2022 suggests immediate actions to reduce reliance on gas imports from Russia by between one-third and one-half over the next year.

International Energy Agency (2022). “A 10-Point Plan to Cut Oil Use”, March.

[13] Moody’s (2022). “Russia-Ukraine conflict carries risks for Asian growth, commodity-dependent sectors, high-yield issuers”, March.

[14] Capital Economics (2022). “Three ways the war has changed the markets outlook”, Global Markets Update, March.

[15] Financial Times (2022). “Latin America: region benefits from new commodity supercycle”, March.

[16] Financial Times (2022). “US corporate bond trades fail as banks avoid Russia links”, April.

[17] A detailed analysis of the implications of the Russian invasion of Ukraine for Russian and European banks has been performed in section 2.

[18] Fitch Ratings (2022). “Major European banks face weaker profits after strong 2021”, March.

[19] IMF (2022). “IMF Staff Statement on the Economic Impact of War in Ukraine”, March.

[20] Capital Economics (2022). “Central banks likely to push ahead with monetary tightening”, March.

[21] According to Refinitiv, S&P Global Ratings has downgraded Russia's long-term issuer rating to “BBB-” from “BB+” on February 28th. On March 3rd and 18th, S&P Global Ratings has lowered further Russia's issuer rating to “CCC-” and “CC” respectively. On April 11th, S&P has stopped issuing rating of the Russia’s sovereign issuer by assigning a “NR” rating status.

On March 3rd, Moody’s has downgraded Russia's long-term issuer rating to “B3” from “Baa3”. On March 7th, Moody’s has lowered further Russia's issuer rating to “Ca”.

On March 3rd, Fitch Ratings has downgraded Russia's long-term issuer default rating to “B” from “BBB”. On March 9th, Fitch Ratings has lowered further Russia's issuer default rating to “C”.

On April 19th, Moody’s and Fitch Ratings have stopped issuing rating of the Russia’s sovereign issuer.

[22] According to Refinitiv, S&P Global Ratings has downgraded Ukraine's long-term issuer rating to “B-” from “B” on February 28th.

On March 7th, Moody’s has downgraded Ukraine's long-term issuer rating to “Caa2” from “B3”.

On February 28th, Fitch Ratings has lowered Ukraine's issuer default rating to “CCC” from “B”.

[23] Moody’s (2022). “Moody's downgrades Russia's ratings to Ca from B3; the outlook is negative”, March.

[24] The willingness to service debt may have a range of unintended consequences, including for ESG investors. ESG investors could be exposed to losses as the willingness to service debt may affect Russia’s ESG score, in addition to high exposure to environmental and social risks. Indeed, some global rating agencies consider willingness to service debt as a governance consideration under their ESG frameworks.

Moody’s (2022). “Moody's downgrades Russia's ratings to Ca from B3; the outlook is negative”, March.

[25] Redemptions over the next five years of Russian sovereign bonds denominated in foreign currency account for 4.3% of international reserves at the CBR that have not been frozen by sanctions.

[26] Moody's (2022). "Risk of investor losses remains high despite reports of recent coupon payments", March.

[27] Reuters (2022). "US stops Russian bond payments, raising risk of default", April.

[28] Bloomberg (2022). "Pimco amassed billions of exposure to Russia debt facing default", March.

[29] Financial Times (2022). "BlackRock funds hit by $17bn in losses on Russian exposure", March.

[30] Morningstar (2022). "Which Funds Had Heavy Holdings of Russian Debt?", February.

[31] S&P Global Ratings (2022). "Credit Quality Of Insurers Is Weathering The Geopolitical Storm", March.

[32] S&P Global Ratings (2021). "EMEA insurance outlook 2022: Fighting fit for 2022", November.

[33] Reinsurance news (2022). "US insurers face significant Russian exposures: AM Best", March.

[34] Financial Stability Board (2021). "Promoting Global Financial Stability", October.

[35] Moody's (2022). "Annual default study: After a sharp decline in 2021, defaults will rise modestly this year", Global Default Trends, February.

S&P Global Ratings (2021). "Can corporate defaults stay low?", Global Credit Outlook 2022: Aftershocks, future shocks, and transitions, December.

[36] Under the baseline scenario, the global economy is expected to stabilize over the course of 2022 after a strong recovery in 2021. The adverse scenario assumes weaker market conditions than in the baseline scenario, with the US high-yield spread ranging between 782 and 1314 basis points and the US unemployment rate reversing its current declining trend and rising to the 6.5%-9.1% range over the same period.

[37] Moody's (2022). "January 2022 Corporate default report", Global Credit Outlook, February.

[38] Deutsche Bank (2022). "Russia/Ukraine: Assessing the risks to the European economy", January.

[39] Capital Economics (2022). "Russia and SWIFT: key questions answered", Emerging Europe economic up-date, February.

[40] Reuters (2022). "Factbox: Russia-exposed European stocks at risk if Ukraine tensions escalates", January.

[41] S&P Global Ratings (2022). "The macro and credit effects of Russia's invasion of Ukraine", February.

[42] S&P Global Ratings (2022). "Ratings actions waypoint: The Russia-Ukraine conflict", March. Such negative rating actions are concentrated in metal and mining, utilities, energy and telecommunication sectors, mainly for companies operating in Russia and to a lesser extent for European companies located in the Netherlands, the United Kingdom, Ukraine, France and Cyprus.

[43] Fitch Ratings (2022). "US corporate exposure to Russia is low, but indirect risks are broad", March.

[44] Capital Economics (2022). “A deep dive into Russian corporate debt risks”, Emerging Europe Economic Update, March.

[45] Fitch Global Ratings (2022). “Overall 2022 US CMBS delinquency rate to dip below pre-pandemic levels”, February.

[46] Fitch Global Ratings (2022). “Overall 2022 US CMBS delinquency rate to dip below pre-pandemic levels”, February.

S&P Global Ratings (2021). “Real Estate: Is A Reckoning On The Doorstep?”, Global credit outlook 2022;, December.

[47] Moody’s (2022). “More property developers in China will default in 2022 as liquidity remains stretched”, March.

[48] Capital Economics (2022). “Russia/Ukraine and the risks to commercial property”, February.

[49] ECB (2021). “Financial Stability Review”, November.

[50] Jordà, Ȯ.,Schularick, M., and A. M., Taylor (2016). “The great mortgaging: housing finance, crises and business cycles”, Economic policy Vol. 31(85), pp. 107-152.

[51] Moody’s (2022). “For European securitizations, negative effects of Russia-Ukraine crisis will vary across asset classes”, March.

[52] ECB (2022). “Speech by Andrea Enria, Chair of the Supervisory Board of the ECB, at the press conference on the results of the 2021 SREP cycle”, February.

[53] ECB (2022). “Speech by Andrea Enria, Chair of the Supervisory Board of the ECB, at the press conference on the results of the 2021 SREP cycle”, February.

[54] Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency (2022). “US Shared National Credit Program”, February.

[55] ECB (2022). “Speech by Andrea Enria, Chair of the Supervisory Board of the ECB, at the press conference on the results of the 2021 SREP cycle”, February.

[56] ECB (2022). “Speech by Andrea Enria, Chair of the Supervisory Board of the ECB, at the Morgan Stanley European Financials Conference”, March.

[57] Oliver Wyman (2022°. “Finance In 2022: Five key policy issues”, January.

[58] Non-bank US lenders primarily include CLOs, loan funds, investment managers, insurance companies, and pension funds.

[59] Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency (2022). “US Shared National Credit Program”, February.

[60] Moody’s (2022). “US Shared National Credit review reveals weakness in commercial real estate and rise in leveraged loans”, Global Credit Outlook, February.

[61] Moody’s (2022). “Shockwaves from military conflict in Ukraine will be felt globally”, March.

[62] S&P Global Ratings (2022). “Ratings actions waypoint: The Russia-Ukraine conflict”, March.

[63] Capital Economics (2022). “Russia’s banks on the brink”, Emerging Europe economic up-date, February.

[64] These countries include the United States, the United Kingdom, the European Union, Japan and South Korea.

[65] SRB (2022). “Sberbank Europe AG: Croatian and Slovenian subsidiaries resume operations after being sold while no resolution action is required for Austrian parent company”, March.

[66] Financial Times (2022). “Sberbank’s Austrian unit is first bank to fail after sanctions on Moscow”, March.

[67] Financial Times (2022). “Sanctions-hit Russian bank VTB prepares to pull out of Europe”, March.

Sberbank Europe has about 800,000 retail and corporate customers in Central, Eastern and South-eastern European (CESEE) counries with almost 4,000 staff. Also, VTB has an investment bank in London and a retail bank in Germany with 160,000 customers.

[68] Capital Economics (2021). “Russia’s lending boom: Time to ring the alarm bells”, August.

[69] Deutsche Bank (2022). “Russia/Ukraine: Assessing the risks to the European economy”, January.

[70] Fitch Ratings (2022). “Large Western European banks face risks from Russian exposures”, March.

[71] Bloomberg (2022). “Wall Street counsels Washington against kicking Russia off SWIFT”, February.

[72] Moody’s (2022). “Shockwaves from military conflict in Ukraine will be felt globally”, March.

[73] World Bank (2022). “Finance for an equitable recovery”, January.

[74] Moody’s (2022). “Russia-Ukraine crisis injects new risks into global economic outlook”, March.

[75] Capital Economics (2022). “The war in Ukraine and the impact on EMs”, March.

[76] Moody’s (2021). “Outlook 2022: Bank in Emerging Markets”, November.

[77] Stablecoins are digital assets created, or “minted”, in exchange for fiat currency, and designed to maintain a stable value relative to a national currency or other reference asset.

[78] Sustainalytics (2022). “ESG Implications of Russia’s Invasion of Ukraine on the Chemicals Industry”, April.

[79] Financial Times (2022). “ESG investors accused of ‘failing’ over Russia”, March.

[80] Bloomberg (2022). “ESG funds had $8.3 billion in Russia assets right before war”, March.

[81] Bloomberg has performed this analysis by including roughly 4,800 ESG funds representing more than USD 2.3 trillion in total assets. About 300 funds were directly exposed to Russia, though the figure may be higher.

[82] The study by Lev et al. (2022[18]) examines the ESG scores and response to the Russian invasion of Ukraine for all European firms with a substantial presence in Russia, which are defined as companies with Russian subsidiaries that generate more than USD 100 million in sales and that have more than USD 100 million in total assets. The final sample includes 75 non-financial European firms that have significant subsidiary activities in Russia with available Refinitiv ESG scores. On average these firms earned 6% of their sales in Russia.

[83] Seeking Alpha (2022). “The Long View: Russia-Ukraine war has lasting implications for investing”, March.

[84] Fathom (2022). “Round-up: from UK corporate debt to Chinese housing glut”, January.

[85] S&P Global Ratings (2021). “China's banks face a doubling In real estate NPLs”, December.

[86] Moody’s (2021). “China's actions on Evergrande are likely to avoid financial, social instability, but not preclude economic costs”, September.

[87] Federal Reserve (2021). “Financial Stability Report”, November.

[88] Financial Times (2021). “US borrowers breach loan limit guidance at record pace”, December.

[89] Fitch Ratings (2022). “U.S. Leveraged Finance and CLO Weekly (Out-of-Court Defaults More Prevalent; Expansion of Investment Capacity May Raise Credit Risk)”, February.

[90] S&P Global Ratings (2021). “Private debt: A lesser-known corner of finance finds the spotlight”, October.

[91] Chellaney, B.(2017). “China’s debt trap diplomacy”, Project syndicate, January.

Moody’s (2018). “Sovereigns: Africa, China's lending supports growth, exacerbates fiscal and external pressures in Sub-Saharan Africa”, November.

Parker, S., and G. Chefitz (2018). “Debt book diplomacy”, Paper, Belfer Center for Science and International Affairs, Harvard Kennedy School, May.

[92] Gelpern, A., Horn, S., Morris, S., Parks, B. and C., Trebesch (2021). “How China lends: A rare look into 100 debt contracts with foreign governments”, Peterson Institute for International Economics, Kiel Institute for the World Economy, Aid Data and Center for Global Development, March.

[93] A group of 74 low-income countries will have to repay an estimated USD 35 billion to official bilateral and private-sector lenders in 2022, with Sri Lanka seen as one of most vulnerable. Concerns are also rising particularly for Ghana, El Salvador and Tunisia.

OECD