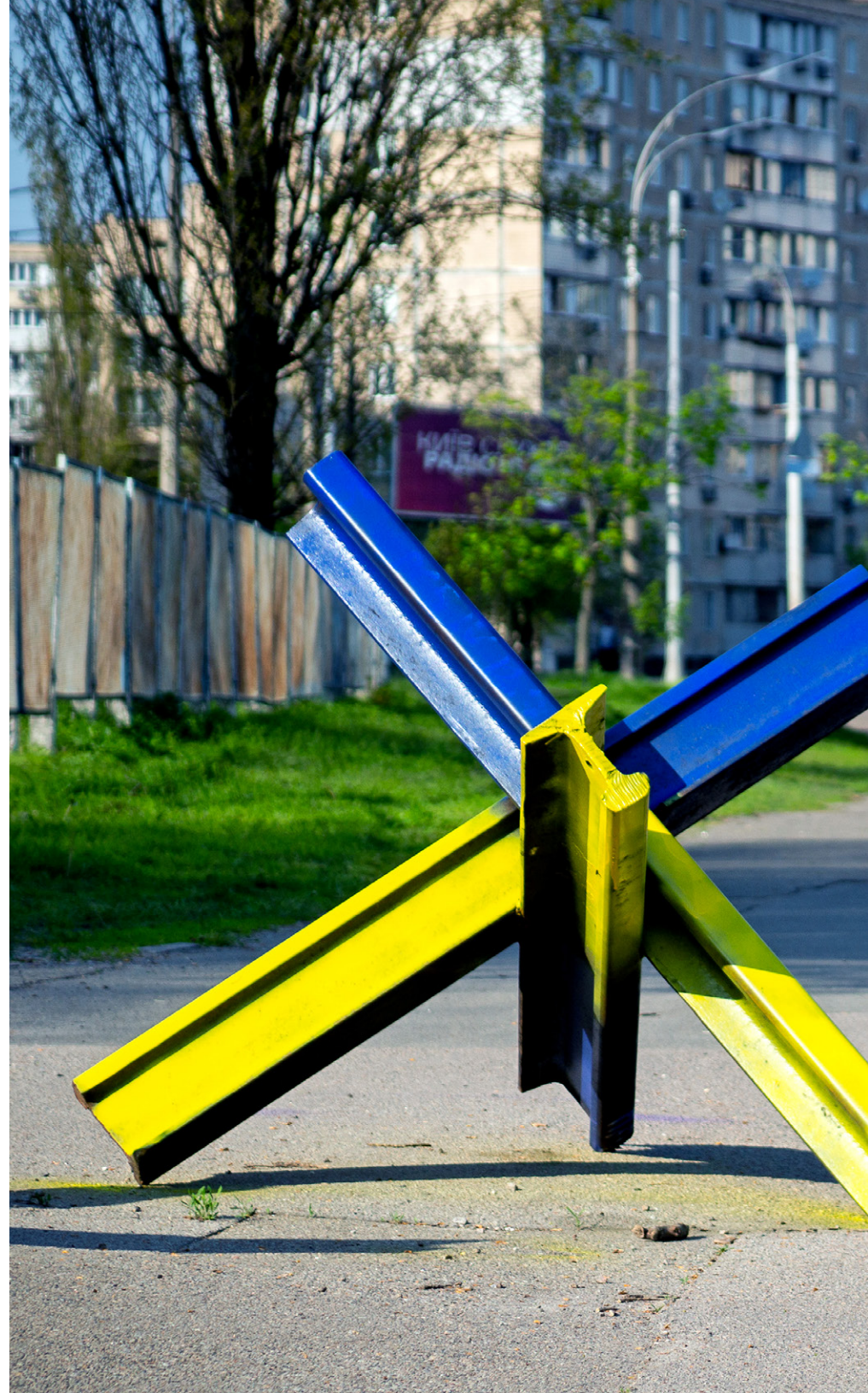


Strategy & Corporate Finance Practice

War in Ukraine: Twelve disruptions changing the world— update

Russia's war in Ukraine grinds on. In this update, we map the latest social and economic consequences.

by Olivia White, Kevin Buehler, Sven Smit, Ezra Greenberg, Ritesh Jain, Guillaume Dagorret, and Christiana Hollis



Russia's war in Ukraine is an ongoing tragedy, destroying lives and livelihoods in Ukraine and altering economic patterns worldwide. In May 2022, we set out an initial analysis of 12 disruptions that the war could unleash. With the passage of time, it seems increasingly likely that the war, coming so soon after a global pandemic, could presage a new economic era. We have been here before: today's shocks are reminiscent of the immediate aftermath of World War II (1944–46), the oil crisis (1971–73), and the breakup of the Soviet Union (1989–92). Each of those events changed the global landscape with the sudden release of powerful underlying forces that had been building up around a fault line over time. Each ushered in a new era.

To understand the shape of the era now unfolding, we have tracked the evolution of the war's disruptions since May 2022. At that time, some disruptions were already well under way—notably the humanitarian crisis that followed immediately from the invasion. As we highlighted, others were less predictable but worth watching—for example, we noted that the direct impact of the war on financial systems had so far been limited, but that risks from wider ripple effects might materialize.

In this update, we look at what's happened in the 16 months since the invasion. As recent events in Ukraine highlight, the ultimate outcome remains profoundly uncertain. However, we find five disruptions with clear effects that may endure: the humanitarian crisis, energy source diversification, defense spending increases, cyber as a stage for conflict, and corporations' pull-back from Russia.

Three other disruptions have eased, as connections in our global system, together with cooling of demand, buffered their effects. These include spikes in prices and supply disruptions for food, metals, and minerals, which have now dissipated.

Of course, in the past year, forces beyond the war in Ukraine have also roiled the system in compounding, intertwined ways: the steady rise of interest rates, China's lockdown and reopening, severe weather, and broader geopolitical tensions. All are contributing additional uncertainty. These forces have become the most important drivers of three more disruptions we noted in May 2022—most prominently, the burden carried by the poorest people, a splintering of tech standards, and financial-system instability.

With the passage of time, it seems increasingly likely that the war, coming so soon after a global pandemic, could presage a new economic era.

Ongoing and persistent disruption

The war's impact has persisted across several spheres, from the humanitarian crisis to energy market shifts. Although some of the conflict's long-term outcomes remain unclear, these once-emerging dynamics have begun to solidify.

The humanitarian crisis has moved past border countries

In May 2022, shortly after the Russian invasion, roughly 14 million Ukrainians fled their homes, to either a new country or another part of Ukraine. One year later, that number has dropped to about 11.8 million people. It's a vast number—but just one dimension of a global phenomenon of people seeking asylum.

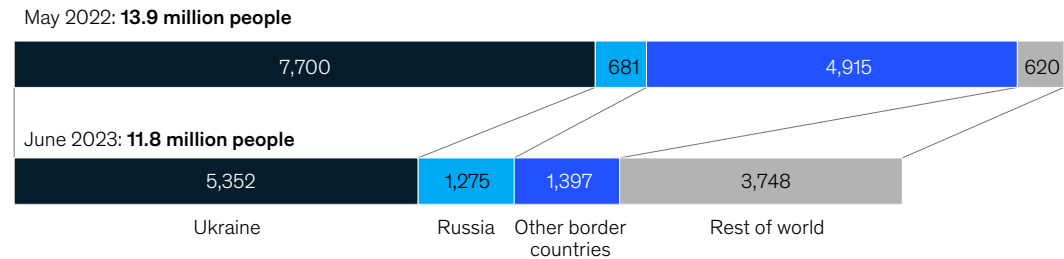
Many of those who initially found refuge elsewhere in Ukraine appear to have moved on. The number of internally displaced people in Ukraine decreased from 7.7 million in May 2022 to 5.4 million in June 2023, while the number of Ukrainian refugees abroad remained broadly stable (from 6.2 million in May 2022 to 6.4 million in June 2023).

Refugees are pushing past the first border they encountered and moving to more distant countries. For instance, Poland admitted three million refugees in the first waves of emigration; about one million remain. Russia is an exception to this pattern. The number of refugees in Russia has doubled since a year ago; Russia now houses more refugees than any other country, though not all have gone voluntarily.¹

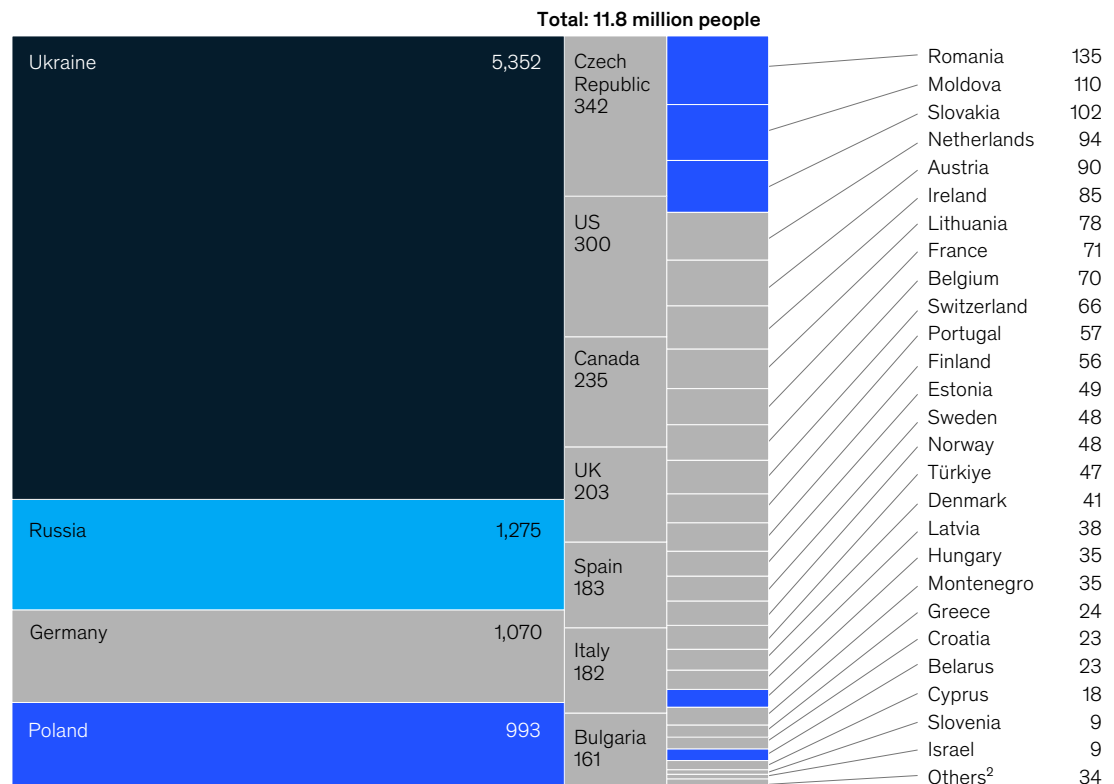
All told, 58 percent of the 6.4 million refugees abroad are now living somewhere beyond Ukraine's neighboring countries. Germany has taken in more than one million; Czech Republic, about 342,000; the United States,

Roughly 12 million Ukrainians are displaced, and refugees are moving ever farther from home.

Ukraine's internally displaced persons (IDPs) and refugees,¹ thousand



Ukraine's IDPs and refugees as of June 2023,¹ thousand



¹"The desperate uncertainty of Ukrainian refugees," *Economist*, February 22, 2023.

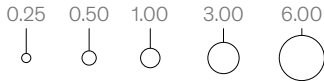
about 300,000; Canada, about 235,000; the United Kingdom, about 203,000; Spain, about 183,000; and Italy, about 182,000.

As the map shows, many refugees have moved to some of Europe's poorer countries. For example, Romania now has about 135,000 refugees, and Slovakia about 102,000. In a few cases, such as that of Estonia, Bulgaria, and Poland, these influxes represent additions of between 2 and 4 percent or more to the population, potentially straining the social safety net.

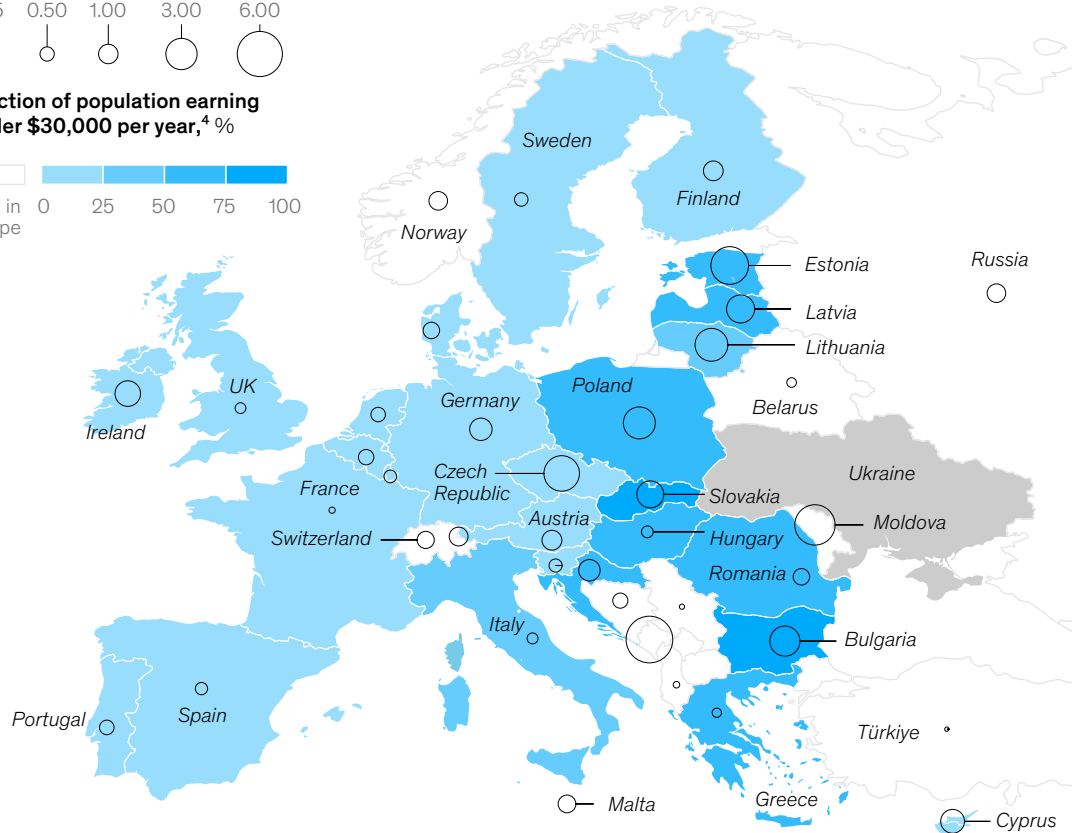
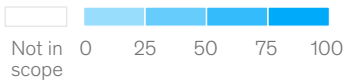
Exhibit (continued)

Roughly 12 million Ukrainians are displaced, and refugees are moving ever farther from home.

Ukrainian refugees in Europe, June 2023, as a share of recipient country's population,³ circle size = %



Fraction of population earning under \$30,000 per year,⁴ %



The boundaries and names shown on this map do not imply official endorsement or acceptance by McKinsey & Company.

Note: Figures may not sum to 100%, due to rounding.

¹For most countries, as of June, the figure shown is the net total of Ukrainian refugees in the country (for example, border crossing from Ukraine or going back to Ukraine). Figures on refugees going back to Ukraine are not available for Belarus, Hungary, and Russia.

²Others include Luxembourg, 7; Serbia, 3; Albania, 3; Iceland, 2; Liechtenstein, 0.4; Bosnia and Herzegovina, 0.2.

³EU-27 and UK.

⁴Households with \$30,000 of GDP per capita.

Source: Eurostat; United Nations High Commission for Refugees; McKinsey Global Institute analysis

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Europe is diversifying its energy sources

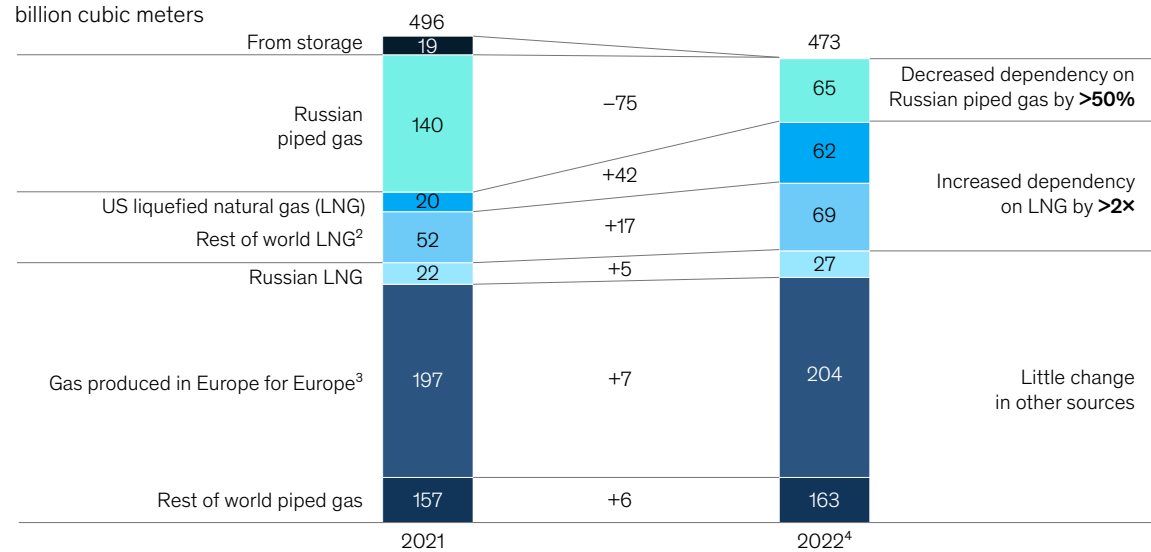
When natural-gas supplies were disrupted by the invasion, Europe focused on improving its energy security by diversifying away from Russian-piped imports—mostly with imports of liquefied natural gas (LNG). Pipeline supplies from Russia nearly halved in 2022, falling from 140 billion cubic meters (bcm) to 65 bcm, as Russia suspended several long-term supply contracts and flows through the Nord Stream pipeline system were fully suspended from September 2022 onward.

In response to these severe reductions, Europe has diversified its energy sources. It increased consumption from non-Russian sources by a total 72 bcm, of which more than 80 percent came from increased LNG imports. All told, Europe nearly doubled such imports, with most of the additional inflows coming from the United States.

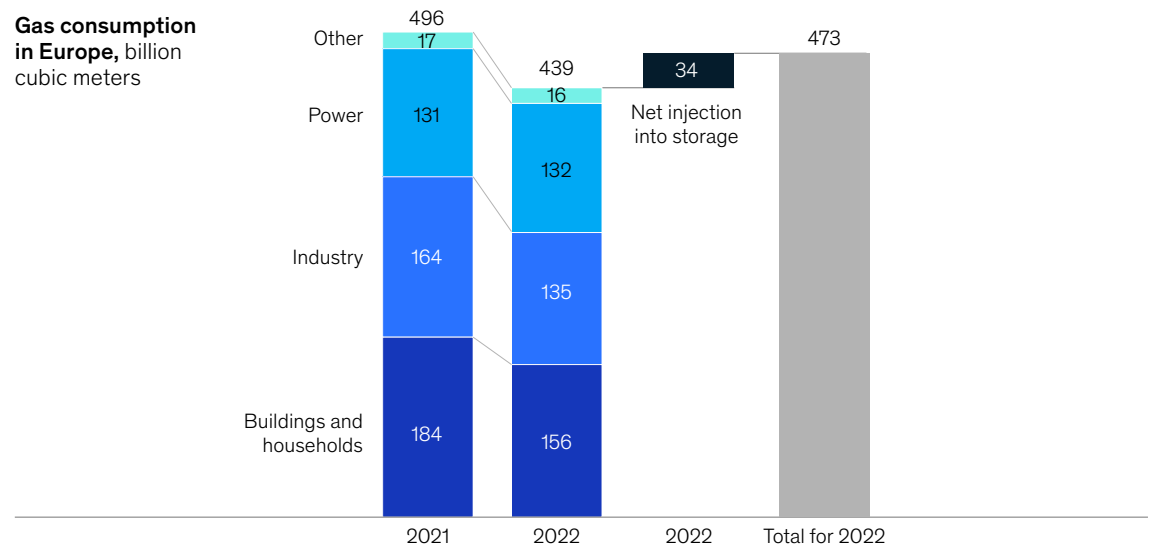
Europeans also cut back on their natural-gas demand. Natural-gas consumption fell by 12 percent in 2022, mainly in households (down 15 percent) and industry (18 percent), while consumption for power remained near constant. High prices led businesses (and some consumers) to lower demand through a variety of efficiency- and consumption-oriented measures while companies in energy-intensive industries shut some plants. Warm weather also helped ease heating needs. In fact, Europe was able to limit withdrawals from its natural-gas storage and refill it. Storage stood at 84 percent of capacity at year-end, up from 60 percent in December 2021. Across

In 2022, Europe turned to the United States and other suppliers of liquefied natural gas and cut consumption.

Natural gas supply in Europe,¹



Gas consumption in Europe, billion cubic meters



¹Europe refers to EU-27, Norway, Switzerland, and UK. ²Rest of world LNG is composed of a long tail of suppliers, notably Qatar (7% of the additional LNG supply); rest of world piped gas refers to Algeria, Azerbaijan, and Libya. ³Includes Norway piped gas. ⁴Includes net storage injection in 2022. Source: Bloomberg; Duke Energy; Energy Insights by McKinsey; McKinsey analysis

all of this, EU measures (to ensure adequate storage for gas, reduce demand, and stabilize the market) have also helped.²

The medium-term impact of the war on Europe's energy outlook remains uncertain. Further reductions in demand by homes and businesses may be needed, depending on gas-import dynamics, while effects may vary across sectors. Consider the power sector: in 2022, generation from gas power plants stayed nearly constant because nuclear capacity was less available due to maintenance, and sustained drought conditions limited hydroelectric power generation. The sector's future ability to cut back on gas consumption hinges on greater efficiency, consistent availability of hydro and nuclear power, continued use of coal-fired plants, the pace of scaling renewable power, and the weather.

How the war will affect the energy transition and greenhouse-gas emissions in Europe is also not yet clear. On the one hand, the push toward energy source diversification may promote scaling of renewable-energy production. However, inflation and high interest rates are putting pressure on the delivered costs of energy from new, green projects. Furthermore, it is unclear if the pace of renewables scale-up will be fast enough; several proposed projects have run into challenges.³ In the meantime, the use of coal-based power above preinvasion expectations would increase emissions.

Inflation and high interest rates are putting pressure on the delivered costs of energy from new, green projects.

² "RePowerEU" and "EU action to address the energy crisis," European Commission, accessed June 2023.

³ Camilla Hodgson, "Europe's wind industry flags further weakness in 2023 despite energy demand," *Financial Times*, January 29, 2023.

Defense spending is rising

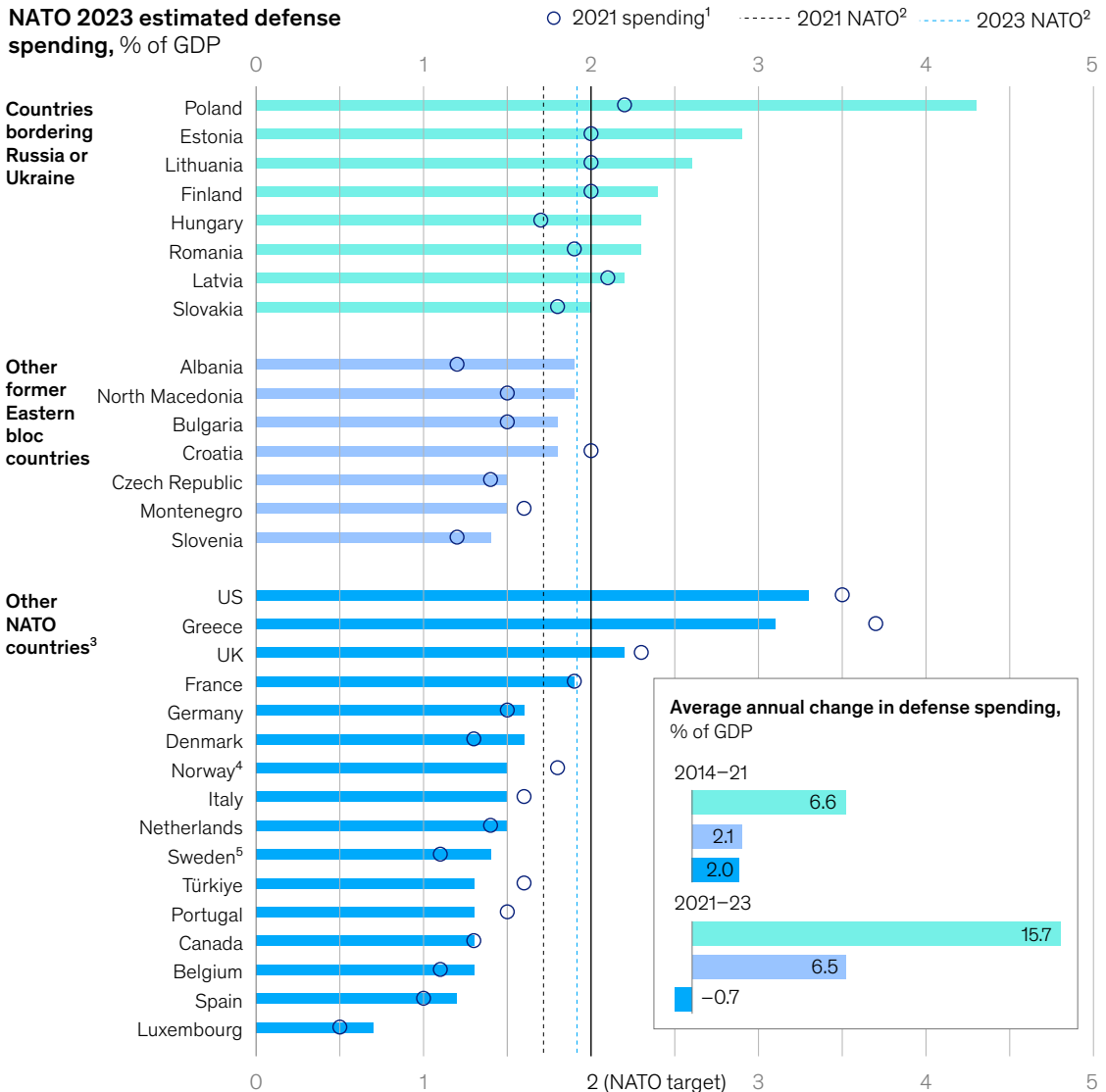
NATO defense spending has been rising since 2014, when Russia annexed Crimea. At that time, only three member countries spent more than the target 2 percent of GDP—Greece, the United Kingdom, and the United States—and the average spending of member countries was 1.4 percent of GDP.

By 2021, average NATO defense spending had reached 1.7 percent of GDP. Five more countries had reached at least 2 percent: Estonia, Latvia, Lithuania, and Poland—all bordering Russia or Ukraine—as well as Croatia. Finland too was spending 2 percent, though it was not yet a NATO member. Nearly all countries had increased their spending (the only exceptions were the United States, already well above the 2 percent target, and Albania).

The war in Ukraine has triggered further increases in spending primarily among countries closest to Russia or Ukraine. Bordering countries are projected to accelerate the rate at which they have been increasing defense spending and by 2023, all will be at least at the 2 percent mark. Former Eastern bloc countries will also start spending more—increases that most hadn't been spurred to in 2014—though none is estimated to reach 2 percent by 2023.

Since the invasion, NATO countries that are less proximate to the war have slightly scaled back their defense spending. Twelve will spend an estimated 1.6 percent or less of their GDP in 2023. Yet, following the invasion, many members did announce an intent to increase

Following the invasion of Ukraine, defense spending accelerated in most border and former Eastern bloc countries.



¹Military spending as percent of 2021 GDP. ²Unweighted average. ³Excluding Iceland. ⁴Norway shares a 197 km border with Russia in the extreme north of the country. ⁵In May 2022, after Russia's invasion of Ukraine, Sweden submitted an official letter of application to join the NATO alliance. Sweden is an official NATO invitee. At its summit in July 2023, NATO said that "it looks forward to welcoming Sweden as a full member of the Alliance."

Source: Data are taken from Florian Dorn, Niklas Potrafke, and Marcel Schlepper, "NATO defense spending in 2023: Implications one year after Russia's invasion of Ukraine," EconPol policy brief, May 2023; McKinsey analysis

defense spending to meet the 2 percent target, largely on longer timelines, including for example 2028 in Italy, 2029 in Spain, and 2035 in Belgium.

At their summit in July 2023, NATO members renewed their commitment to the 2 percent threshold, and this time the pledge does not have a timeline.⁴ The new target is intended to be both immediate and enduring, “recognizing that more is needed urgently to sustainably meet our commitments as NATO allies.”⁵

At their summit in July 2023, NATO members renewed their commitment to the 2 percent threshold, and this time the pledge does not have a timeline.

⁴ Natalia Drozdiak, “NATO pledges to spend at least 2% of GDP on defense,” Bloomberg, July 7, 2023.

⁵ “Vilnius summit communiqué,” NATO, July 11, 2023.

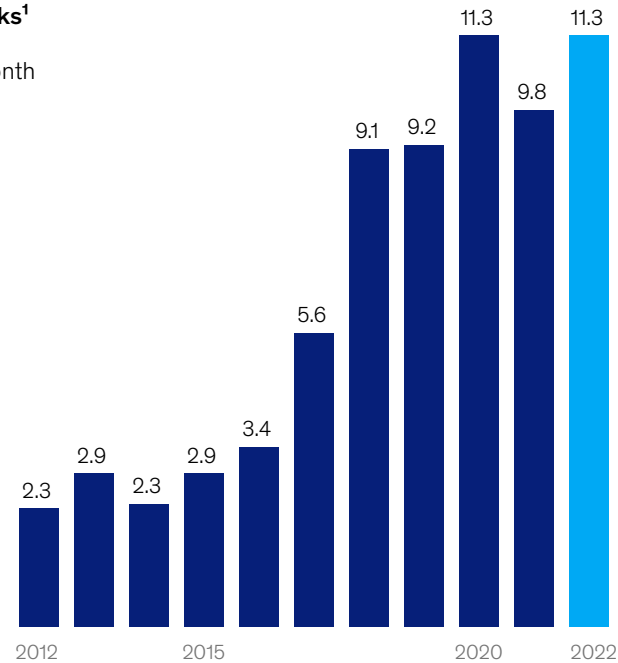
Cyber and conventional forces combine for joint attacks

Worldwide, major cyberattacks have not become more frequent since the invasion, or indeed since 2018, when the number first rose significantly. But attacks by Russian government-backed attackers have risen sharply. According to Google's Threat Analysis Group, Russian attacks on Ukraine users rose by 250 percent from 2020 to 2022, and attacks on NATO countries by more than 300 percent.⁶

The latest twist in cyber warfare was also a local development: Russia's coordination of cyberattacks and so-called kinetic attacks. Russian forces used broad-stroke but nonetheless tactical cyberattacks, such as wiper malware, to harass and disrupt targets—sometimes in specific areas where its ground forces sought to advance.⁷ Although not tremendously effective compared with what was feared, this kind of combination of cyber and conventional forces had not been seen previously at this scale, and it's likely to be a preview of the future of a combined-arms approach to warfare.⁸ Both the private and public sectors have roles to play in cyber defense.⁹

Cyberattacks continued in 2022 with no notable increase.

Significant cyberattacks¹
from 2012–22,
average number per month



¹Significant cyberattacks are defined as cyberattacks on government agencies, defense, and high-tech companies, or economic crimes with losses of more than \$1 million.

Source: Center for Strategic and International Studies

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⁶ Shane Huntley, "Fog of war: How the Ukraine conflict transformed the cyber threat landscape," Google Threat Analysis Group, February 16, 2023.

⁷ Emily Harding, "The hidden war in Ukraine," Center for Strategic & International Studies, June 15, 2022.

⁸ Jenna McLaughlin, "Russia bombards Ukraine with cyberattacks, but the impact appears limited," NPR, March 3, 2023; "Cyber conflict in the Russia-Ukraine war," Carnegie Endowment for International Peace, 2023.

⁹ "Russia bombards Ukraine with cyberattacks," March 3, 2023.

Corporate actors have pulled back from Russia

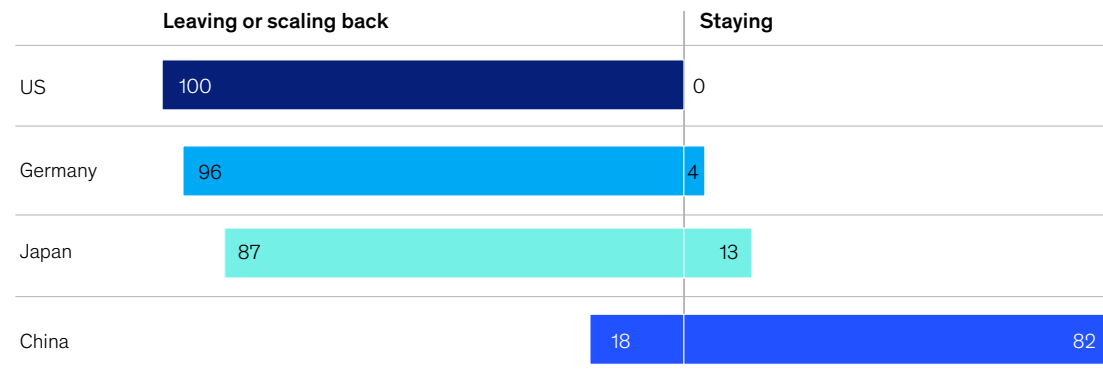
Most of the 216 companies in the Fortune Global 500 that had a presence in Russia in February 2022 have followed through on their original decisions on whether to pull back or remain.¹⁰

Companies in countries with the largest corporate presence in Russia have made some clear choices. Companies based in Germany, Japan, and the United States have mostly left or scaled back their presence in Russia. Companies based in China, on the other hand, have mostly stayed.

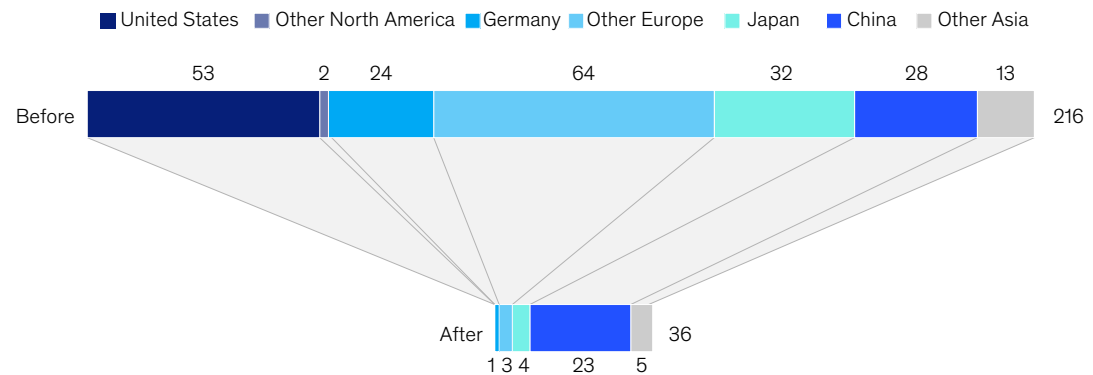
That's part of a broader pattern of disengagement by most Western and many Asian companies. The result is a drastically changed footprint of large foreign companies operating in Russia. The number of such large foreign firms has shrunk by a factor of six. While before the war, 80 percent of large companies were Western or from Japan, today 80 percent of those remaining are Chinese or from other Asian countries (excluding Japan).

Many companies have left or scaled back operations in Russia.

Fortune 500 company action, by country,¹ % of companies as of June 2023 (n = 137)



Fortune 500 companies fully active in Russia before and after the invasion, companies by country,² number (n = 216)



¹Includes countries with more than 20 Fortune 500 companies active in Russia at the time of the invasion (US = 53; Germany = 24; Japan = 32; China = 28). Yale Chief Executive Leadership Institute (CELI) list as of June 2023. There are 215 companies in the Fortune Global 500 that were not present in Russia, and therefore excluded from the analysis. "Staying in" includes countries in Yale School of Management's "Grade F" category: "Defying demands for exit or reduction of activities" and companies present in Russia with no announcements on their stand; "scaling back or leaving" includes countries in categories "Grade D: Holding off new investments/development," "Grade C: Reducing current operations," "Grade B: Keeping options open for return," and "Grade A: Clean break—surgical removal, resection."

²Before invasion = Jan 2022; after invasion = June 2023.

Source: Yale CELI list

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¹⁰"Yale CELI list of companies leaving and staying in Russia," Yale School of Management, updated July 20, 2023.

Resilience and recalibration

Some of the initial shocks from the invasion have leveled out. In particular, high prices in select sectors have reverted to prewar levels, while global value chains have filled production gaps.

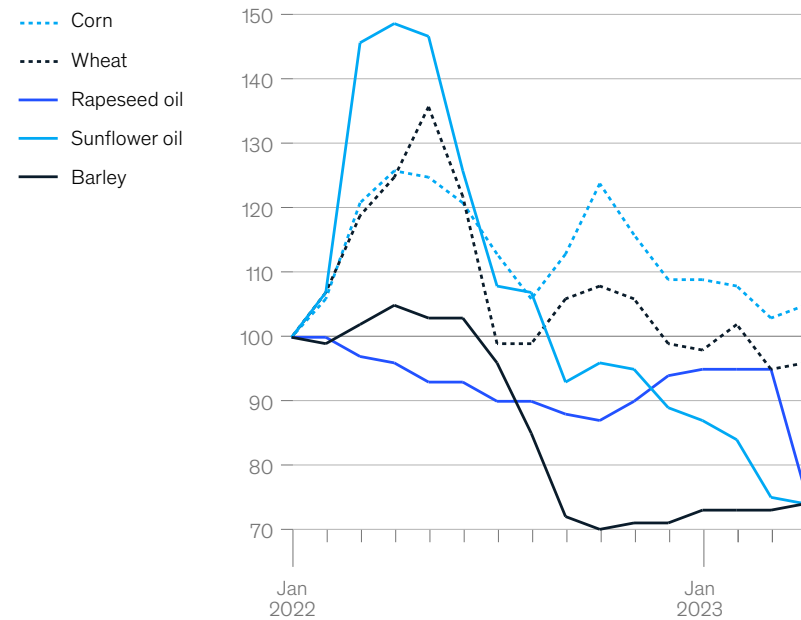
Spikes in agriculture prices eased and supply remained steady

Soon after the invasion, prices for several agricultural commodities rose by 20 to 50 percent. But now prices have largely returned to prewar levels. That said, food inflation is still about 5 percent annually for much of the global population and could continue to run hot. Rises in the costs of inputs, such as fertilizer and labor, as well as in transport, processes, and trade do not show many signs of slowing down.

Global production of staple crops also held up in 2022, defying the worst fears. Immediately following the invasion, the UN had estimated that 30 to 40 percent of the autumn 2022 harvest in Ukraine would be at risk if farmers were unable to plant. The good news on Ukraine and Russia production can be traced in part to the Black Sea Grain Initiative of July 2022, which allowed cargo ships to load grain at three ports in Ukraine and transit the Black Sea safely. The deal was renewed several times, but its future is in doubt: on July 17, Russia announced that it was ending its participation.

Nominal prices for wheat, corn, and sunflower oil soared, then settled.

Monthly price of selected agriculture commodities since the invasion of Ukraine, index (100 = Jan 2022)



Commodity pricing

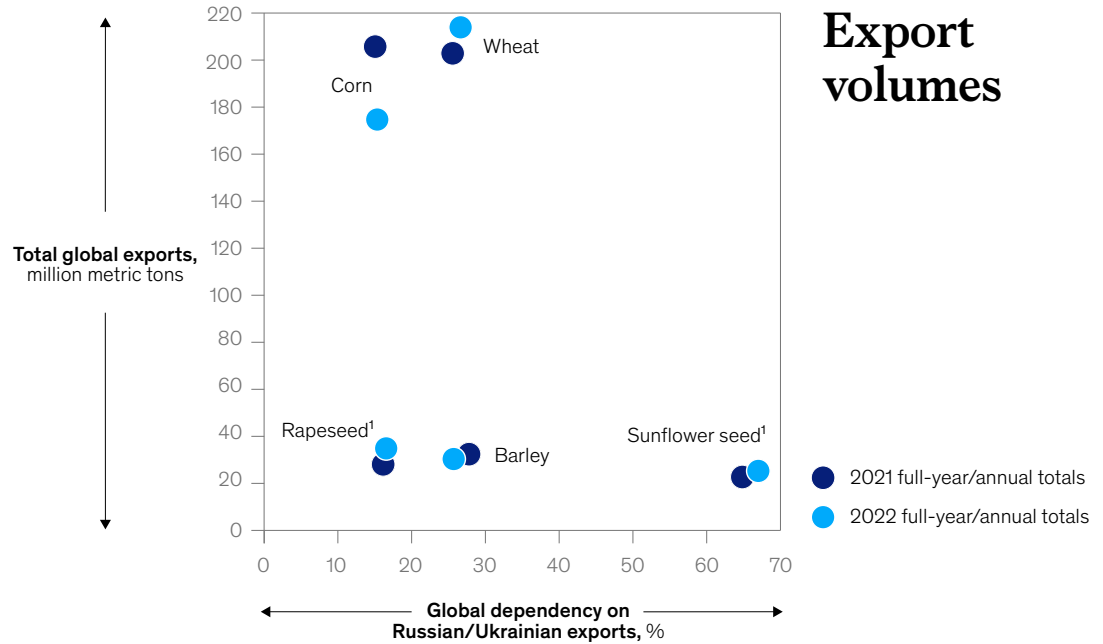
Source: International Monetary Fund

That could worsen the outlook for food trade, which has become more restricted since the war as some governments have reacted to higher prices for food commodities. Active restrictions on both imports and exports now affect about 7 percent of global calories, up from zero in 2019. And while the worst-case scenario has so far been avoided, food insecurity has increased over the past 15 months. The war played a role in price fluctuations, exacerbating long-standing challenges from weather and conflicts in other regions—challenges that have been borne out recently (for example, in early July 2023 as Earth recorded several of its hottest days ever).

Exhibit (continued)

Global export volumes of foodstuffs in which Russia and Ukraine specialize are little changed.

Global exports and Russian/Ukrainian export dependency for selected agriculture commodities



¹Sunflower seed and rapeseed products: oilseed, meal, and oil. Global dependency is calculated as a weighted average. Source: US Department of Agriculture

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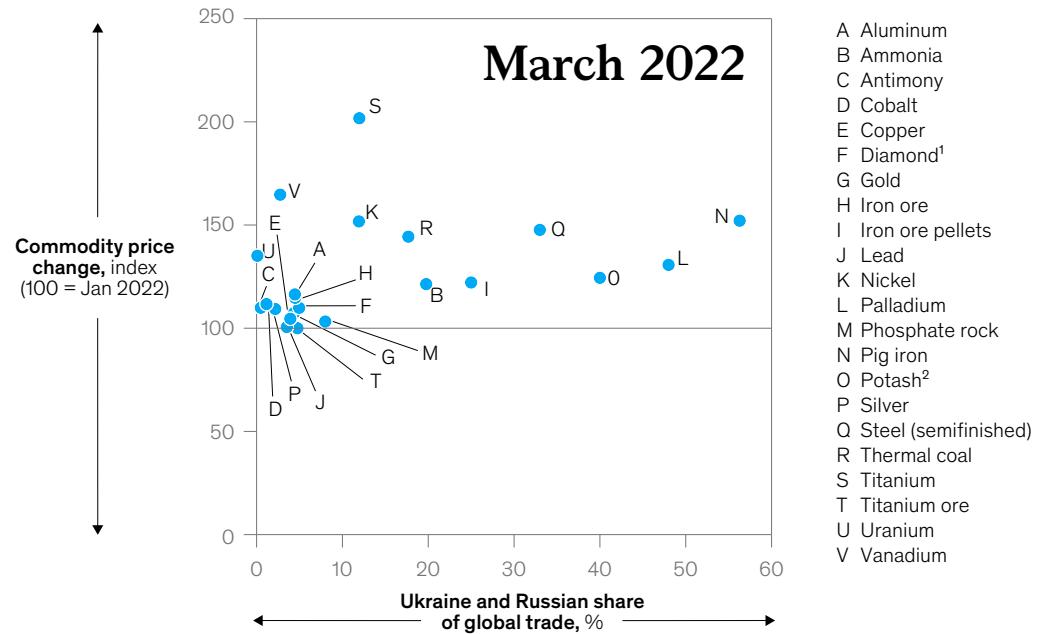
Prices for critical minerals and metals spiked, then returned to prewar levels

Both Ukraine and Russia are significant producers of multiple metals and mined commodities that are vital to industry and agriculture across the globe. After the invasion, the world watched with bated breath as prices for these materials spiked.

The fears proved mostly unnecessary. Prices for almost all these materials have retreated to prewar levels and are only slightly higher for the others. Part of this is due to extended lockdowns in China that tempered demand and thereby moderated price increases. Also, global trade flows adjusted; other economies increased their production to make up for decreases in output from Russia and Ukraine, while some materials continued to flow from Russia to countries that had not put in place trade restrictions. It is too soon to determine the impact of more recent sanctions on the Russian metals and mining sector.

Nominal prices for most mining commodities rose after the invasion, then fell.

Commodity price evolution since the eve of the invasion of Ukraine



Note: Latest data refers to Apr 2023 except for palladium (Dec 2022), iron ore pellets (Feb 2023), and antimony (Mar 2023).

¹Diamond price refers to IDEX diamond index for gem-quality diamond.

²Potash price refers to Brazil prices.

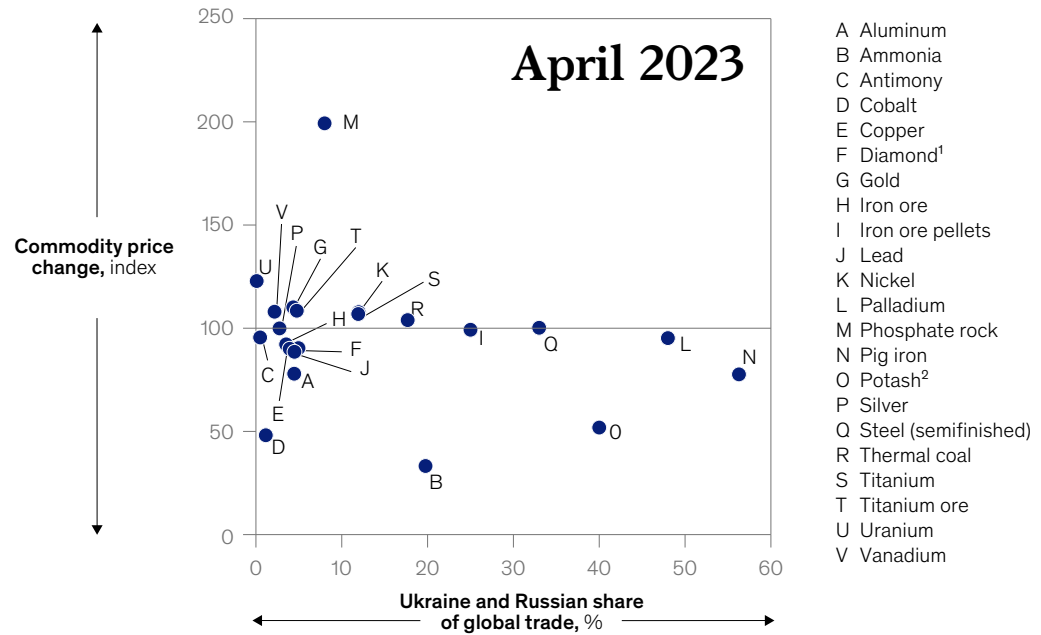
Source: Haver Analytics; Fastmarkets MB; Mysteel Global; SBB Steel; World Bank

The major exception is phosphate rock, the price of which doubled between the time of the invasion and April 2023.¹¹ However, its price has been rising since 2020, driven by a combination of rising demand and supply disruptions (including pandemic lockdowns and adverse weather in producing regions) to which the war in Ukraine likely contributed.

Exhibit (continued)

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Source: Haver Analytics; Fastmarkets MB; Mysteel Global; SBB Steel; World Bank

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¹¹ Will J. Brownlie et al., "Phosphorus price spikes: A wake-up call for phosphorus resilience," *Frontiers in Sustainable Food Systems*, March 1, 2023.

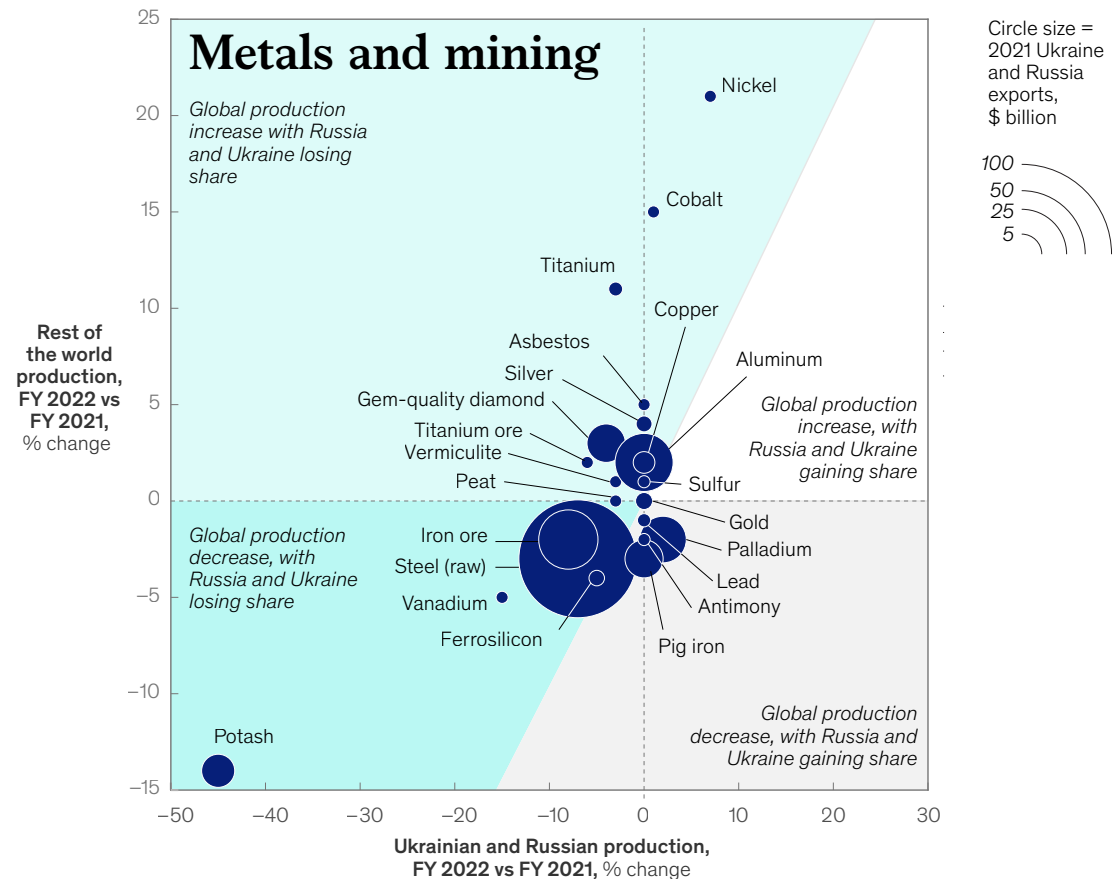
Global value chains filled in production gaps across commodities

Despite all the disruptions, commodity production systems held up. But the balance of production shifted. In most commodities, Ukraine and Russia have lost share of total world production. This holds for 24 of the 32 commodities we looked at, for all of which Ukraine or Russia is a major producer. More specifically:

- In five commodities, Ukrainian and Russian production dropped, but the rest of the world compensated, and overall global output increased. We see this pattern in mined commodities such as silver, asbestos, and titanium, as well as gem-quality diamonds.
- In six commodities, the rest of the world could not close a production gap left by Ukraine and Russia. This is the category where disruptions were most keenly felt. Potash and natural gas are prime examples, as are steel and some minerals involved primarily in steelmaking (iron ore, ferrosilicon, vanadium).
- In 13 commodities, Ukrainian and Russian production increased but by less than the gain in overall world production. Among agricultural products, sunflower oil and seed meal, barley, and oats are examples. Crude oil, coal, and aluminum as well as cobalt and nickel are other examples. In such cases, Russia found buyers in new locations and largely managed to boost production in line with global increases.

With several exceptions, Russia and Ukraine lost market share in key commodities.

Selected commodities of which Russia or Ukraine is a major producer,¹%



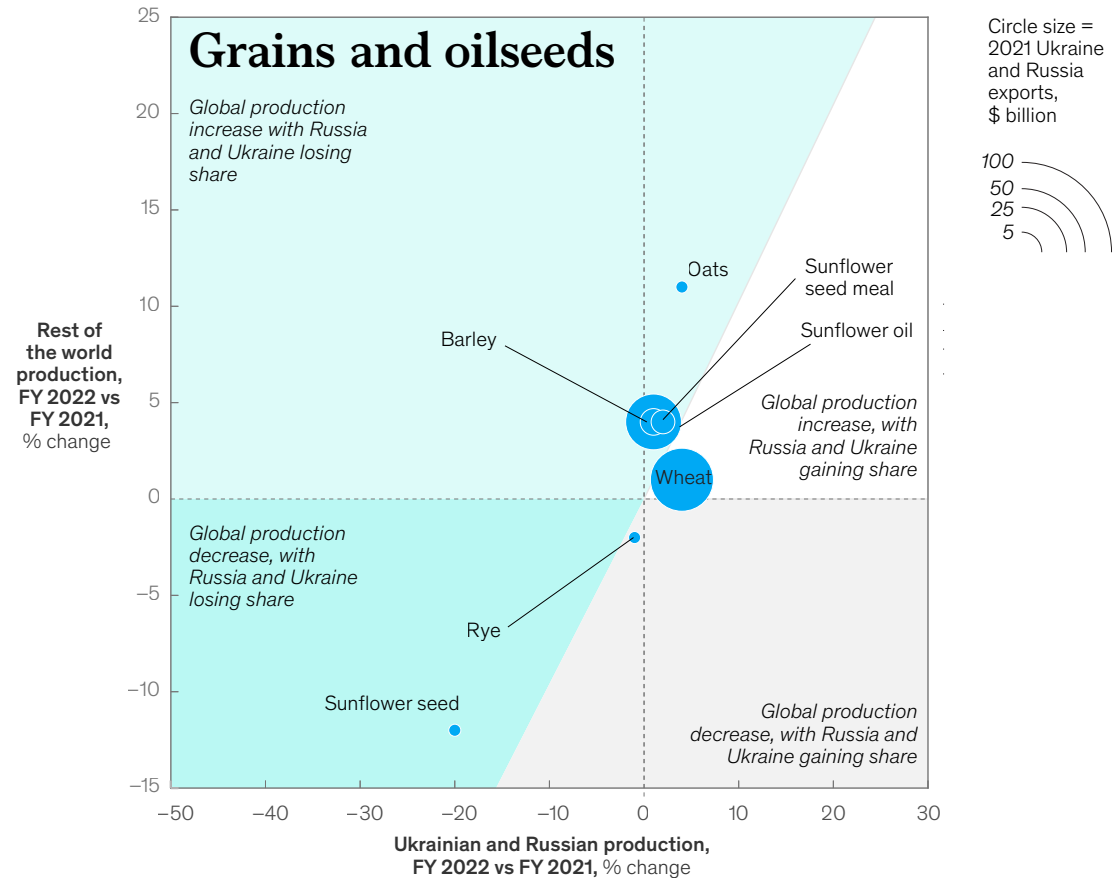
¹More than 10% of production in 2021. Includes agriculture, mining, and energy commodities for which production data was available for 2022 and trade figures were available in 2021.
Source: UN Comtrade; US Department of Agriculture; *Mineral commodity summaries 2023*, US Geological Survey, Jan 31, 2023; McKinsey Global Institute analysis

By contrast, Ukraine and Russia actually gained share of global production in eight of the 32 commodities we looked at. Most notably, their production of wheat, pig iron, and palladium increased, even while world production decreased or stayed near constant.

Exhibit (continued)

With several exceptions, Russia and Ukraine lost market share in key commodities.

Selected commodities of which Russia or Ukraine is a major producer,¹%

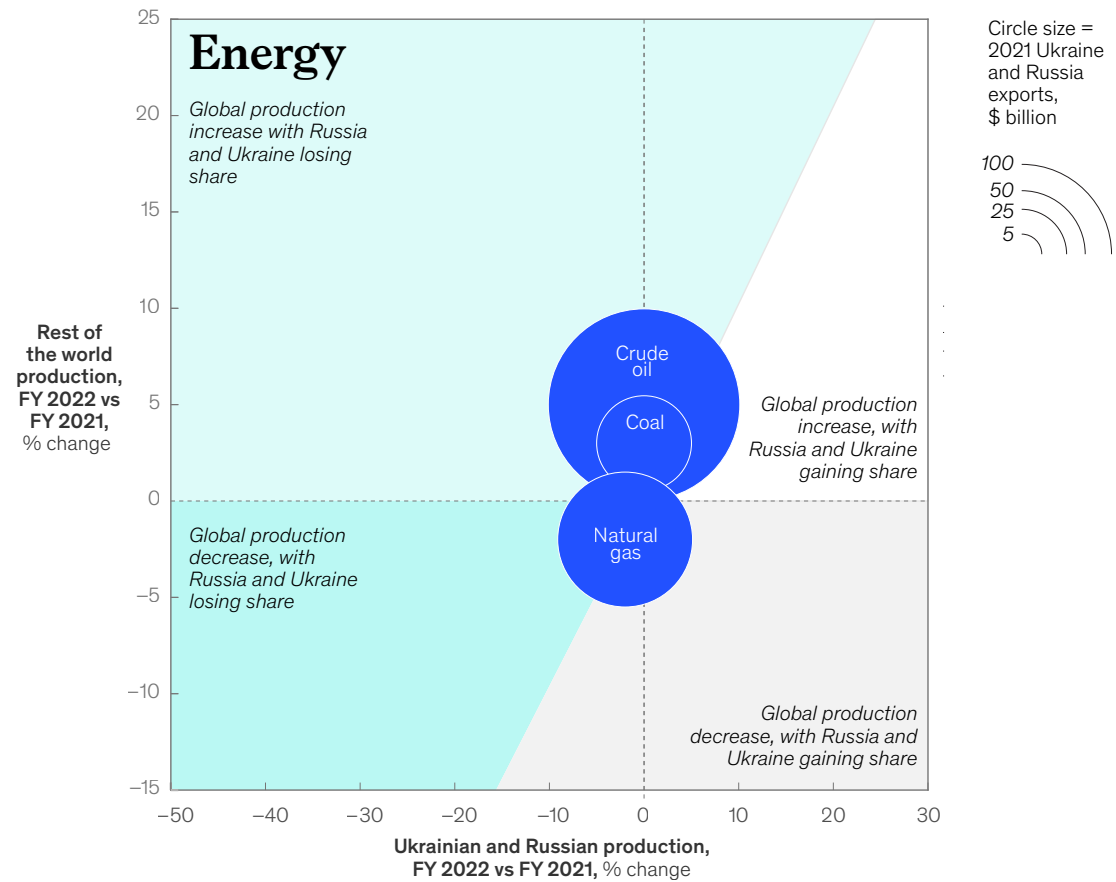


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Compounding complexities

In May 2022, we thought that the war in Ukraine might directly and unambiguously influence these areas. It hasn't. Instead, the ongoing conflict is one of several forces that are complicating important aspects of global affairs.

Technology as a vector for geopolitical tension

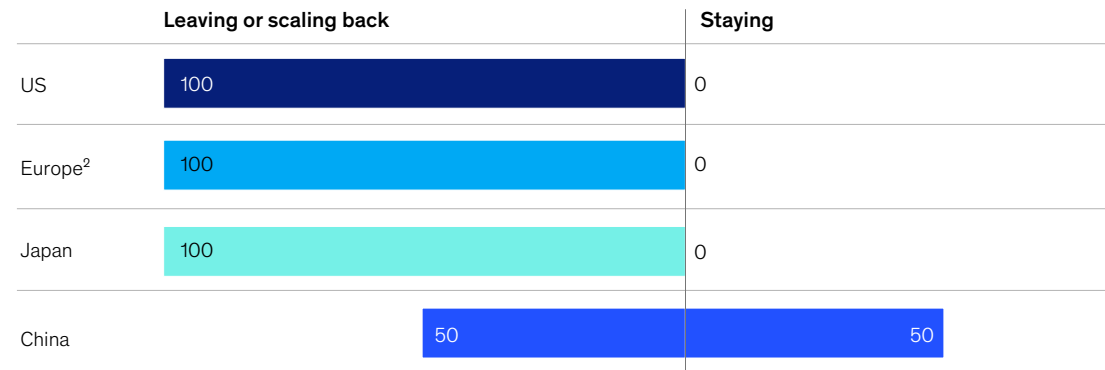
The war in Ukraine has evidenced the role technology can play in the geopolitical arena. As we saw earlier, most Western and Japanese Fortune 500 companies withdrew from Russia following the invasion and have stuck with their decision. Zooming in on the tech sector, the picture is similar but an even greater fraction of firms have withdrawn. As of June 2023, all European, Japanese, and US tech companies in the Fortune Global 500 have left or scaled back their operations in Russia. Half of the six such Chinese large tech firms have withdrawn.

Some of these exits will make a bigger difference to Russia than others. Russia had already been promoting the idea of its own sovereign internet since 2014 and had worked to replace international social media and entertainment platforms with homegrown versions.¹²

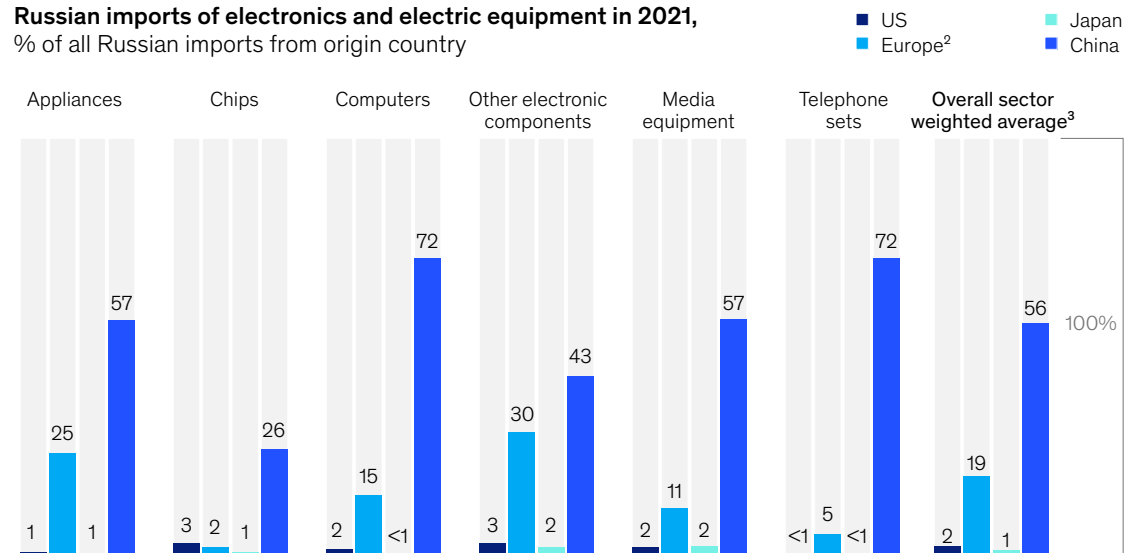
Maintaining a broader self-contained tech ecosystem beyond media and entertainment may be more of a challenge. Russia is highly dependent on China (and, to a lesser extent, Europe) for imports of many types of high-tech goods (though in some cutting-edge technologies Russia looks more to Europe and the United States).¹³ Ultimately this may be a test of Russia's ability to maintain its own stand-alone tech ecosystem, but also of whether it can plug into a portion of an increasingly splintered global internet, set of technology standards, and hardware suppliers.

Western tech companies are leaving Russia but some Chinese companies are staying; Russia depends on China for much of its tech.

Fortune 500 telecom, media, and tech company action, by country,¹
% of companies as of June 2023 (n = 31)



Russian imports of electronics and electric equipment in 2021,
% of all Russian imports from origin country



Note: "Staying in" includes companies in Yale School of Management's "Grade F" category: "Defying demands for exit or reduction of activities" and companies present in Russia with no announcements on their stand; "scaling back or leaving" includes companies in categories "Grade D: Holding off new investments/development," "Grade C: Reducing current operations," "Grade B: Keeping options open for return," and "Grade A: Clean break—surgical removal, resection."

¹US = 14 companies; Europe = 6; Japan = 5; China = 6.

²Europe refers to EU-27, Norway, Switzerland, and UK.

³Includes all subsectors displayed on the exhibit plus "power generation and transmission" and "others" categories.

Source: UN Comtrade; Yale Chief Executive Leadership Institute list

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¹² Masha Borak, "How Russia killed its tech industry," *MIT Technology Review*, April 4, 2023.

¹³ Monika Grzegorzczak, J. Scott Marcus, Niclas Poitiers, and Pauline Weil, "The decoupling of Russia: High-tech goods and components," Bruegel, March 28, 2022.

The financial system continues to cope with evolving risks

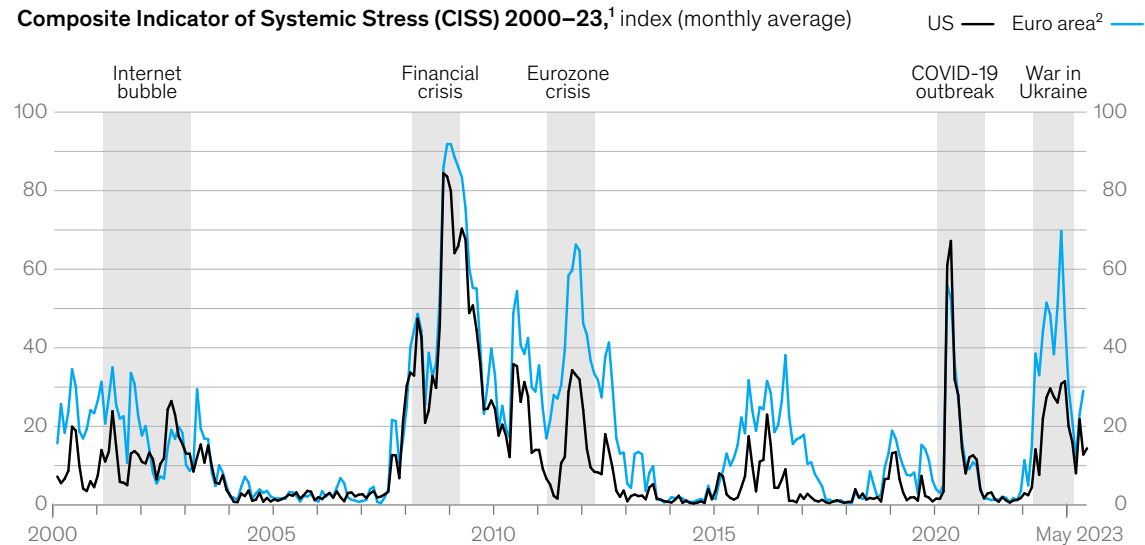
Global markets registered concern immediately following the invasion. We see the picture clearly in the European Central Bank's measure of systemic stress, which soared immediately following February 24, 2022, particularly in Europe.

The index has since fallen but remains higher than historical levels, now largely affected by forces that go well beyond the direct impacts of the war. Most important are high inflation and counteracting rising interest rates put in place by central banks. Rising rates created balance sheet stresses that caught out some banks. Four large banks failed in March 2023, three in the United States and one in Europe. As customers moved deposits, these banks were caught in a liquidity crisis. Share prices for many financial institutions were caught in the downdraft. For now, these stresses appear contained.

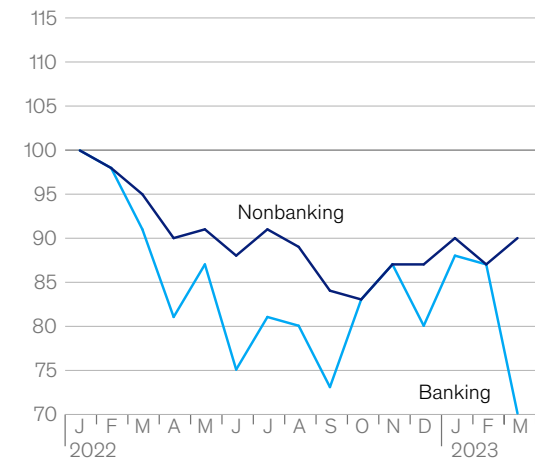
Risks will remain, at least as long as the war continues. A European energy crisis, major change in sanctions regime, debt shock, or trade crisis are examples of “edge cases” with potentially high impact. Another is an expansion of the theaters of war or of participants in the conflict.

Russia's war in Ukraine has produced systemic stress in Europe similar to other recent events.

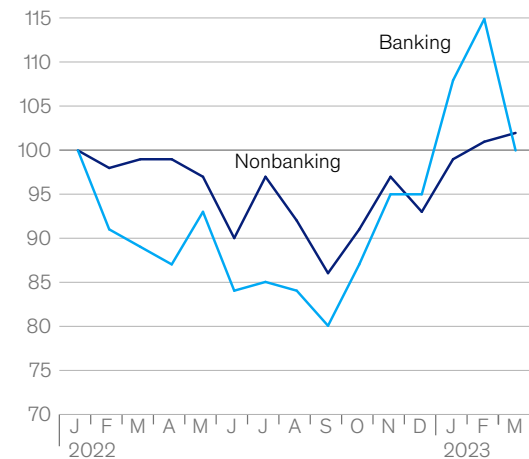
Composite Indicator of Systemic Stress (CISS) 2000–23,¹ index (monthly average)



United States – bank and nonbank equities,³ index (Jan 2022 = 100)



Europe – bank and nonbank equities,⁴ index (Jan 2022 = 100)



¹CISS includes 15 raw, mainly market-based financial-stress measures that are split equally into 5 categories, namely the financial-intermediaries sector, money markets, equity markets, bond markets, and foreign-exchange markets. European Central Bank calculates 1 CISS index for the euro area and another for the US.

²CISS is computed for the euro area as a whole.

³Dow Jones U.S. Banks Index for banks and BoFA Merrill Lynch US Corp excluding Banking Index for nonbanks.

⁴STOXX Europe 600 Banks Index for banks and STOXX Europe 600 excluding Financials for nonbanks.

Source: European Central Bank; Corporate Performance Analytics by McKinsey

Poorer people have suffered more

We close as we began, looking at the human impacts of the war and the multifaceted events beyond. Poorer people have been hardest hit.

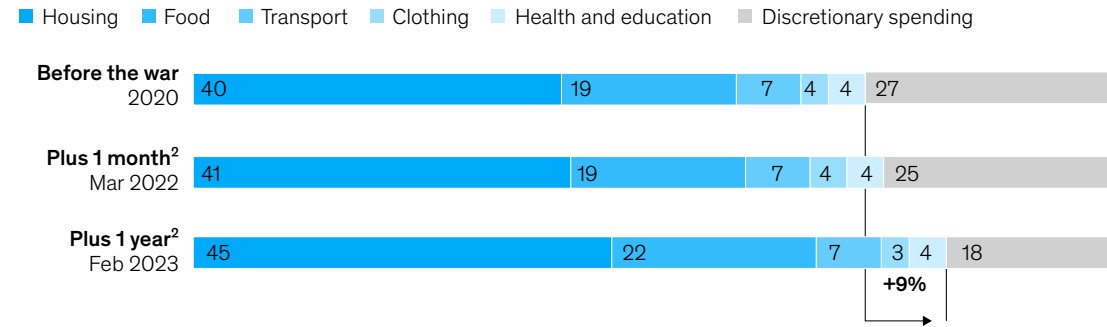
In Europe, low-income Europeans are most affected by inflation. The war created shocks in energy and agricultural commodities, among others. Inflation has continued to rise, inflamed further by the pandemic's disruptions to demand patterns, supply chains, and labor markets. Rising prices have increased spending on basic necessities, which before the war already consumed 73 percent of the income of Europe's lowest quintile of earners. We estimate that outlays on housing, food, transport, clothing, health, and education have increased by 9 percent since the invasion, due mainly to the rising cost of housing.

For workers in sectors with slower wage growth, this has hurt. For example, manufacturing wages in Europe have increased by only 4 percent,¹⁴ less than half the rate of inflation. Of course, in other sectors wages have increased faster and workers in these areas may have preserved their purchasing power. For example, in accommodation and food services, wages have increased by 8 percent on aggregate.

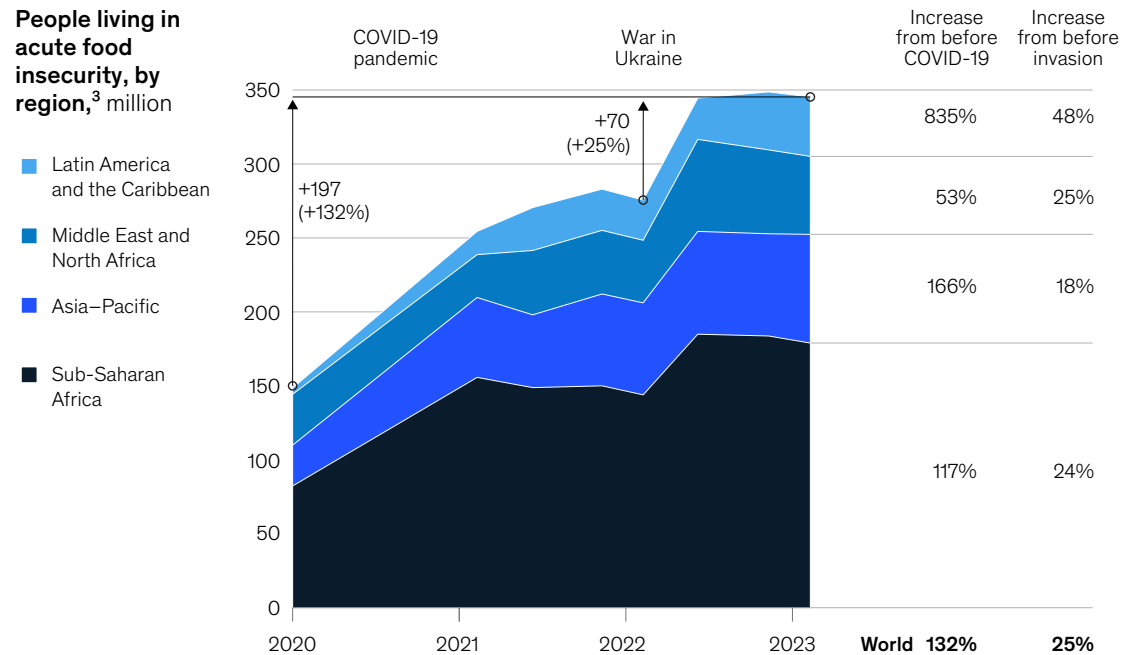
Poorer people in lower income countries have felt the most extreme effects. Food insecurity spiked after Russia's invasion—on top of already large rises following the onset of COVID-19—

Europe's poorest populations have spent more on necessities; elsewhere, millions have slipped into acute food insecurity.

Expenditures of poorest 20% of European households,¹ % of total annual nominal expenditures



People living in acute food insecurity, by region,³ million



Note: Figures may not sum to 100%, because of rounding.

¹Europe refers to EU-27; analysis does not factor in wage inflation (+5% in Q4 2022 vs Q4 2021) or the price elasticity of households. Poorest 20% of European households, based on most recent available annual income data from Eurostat (2020).

²Based on the EU-27 Harmonized Index of Consumer Prices.

³Acute food insecurity is when a person's inability to consume adequate food puts their lives or livelihoods in immediate danger. It draws on internationally accepted measures of extreme hunger, such as the Integrated Food Security Phase Classification (IPC) and the Cadre Harmonisé frameworks.

Source: Eurostat; World Food Programme; McKinsey Global Institute analysis

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¹⁴ "Fourth quarter of 2022: Annual increase in labour costs at 5.7% in euro area," Eurostat, March 17, 2023.

due to a confluence of factors, including the role Ukraine and Russia play in the food and fertilizer trades, more general inflationary trends, as well as adverse weather in many parts of the world. The World Food Program estimates that 350 million people globally are living in acute food insecurity, an increase of 70 million since the onset of the war, and 267 million since the start of the pandemic.

Well beyond the desperately hungry, rising prices for food, energy, and other tradable goods—such as basic household products, electronics, and motor vehicles—have strained the pocketbooks of all but the wealthiest. High levels of public debt in many lower (and lower–middle) income countries mean that governments have needed to make choices on where and how they can provide support.¹⁵

The World Food Program estimates that 350 million people globally are living in acute food insecurity, an increase of 70 million since the onset of the war, and 267 million since the start of the pandemic.

¹⁵ *IMF Blog*, “Africa’s inflation among region’s most urgent challenges,” blog entry by Marijn Bolhuis and Peter Kovacs, October 20, 2022.

Volatility, volatility, volatility

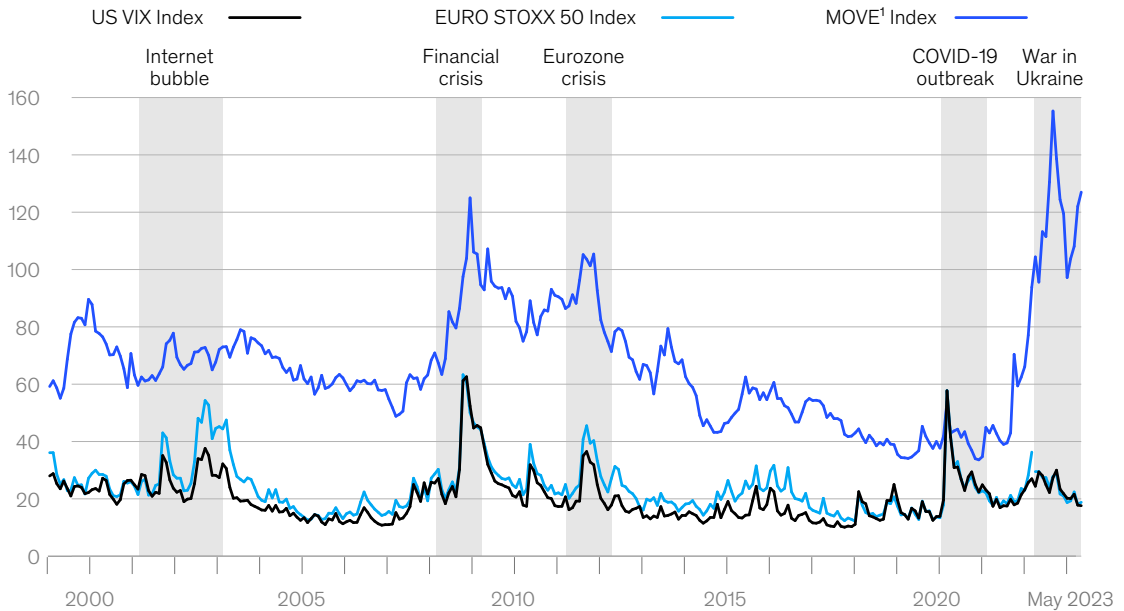
The Greek philosopher Heraclitus taught that all things are in continual flux, and change is the only constant. That certainly seems true today.

Uncertainty abounds

The war in Ukraine is one of many forces that has buffeted the operating environment in recent years. Stock price volatility rose after the invasion, though not as sharply as in prior crises. In the year since the invasion, economic signals have been profoundly mixed, no doubt contributing to higher volatility. For example, consumer sentiment and CEO expectations reached all-time highs in mid-2021, then fell precipitously at the beginning of 2022 and have since bounced around.

Volatility has retreated somewhat from 2022 highs but remains elevated.

Historical volatility 1999–2023, index (monthly average)



¹Merrill Lynch Option Volatility Estimate.

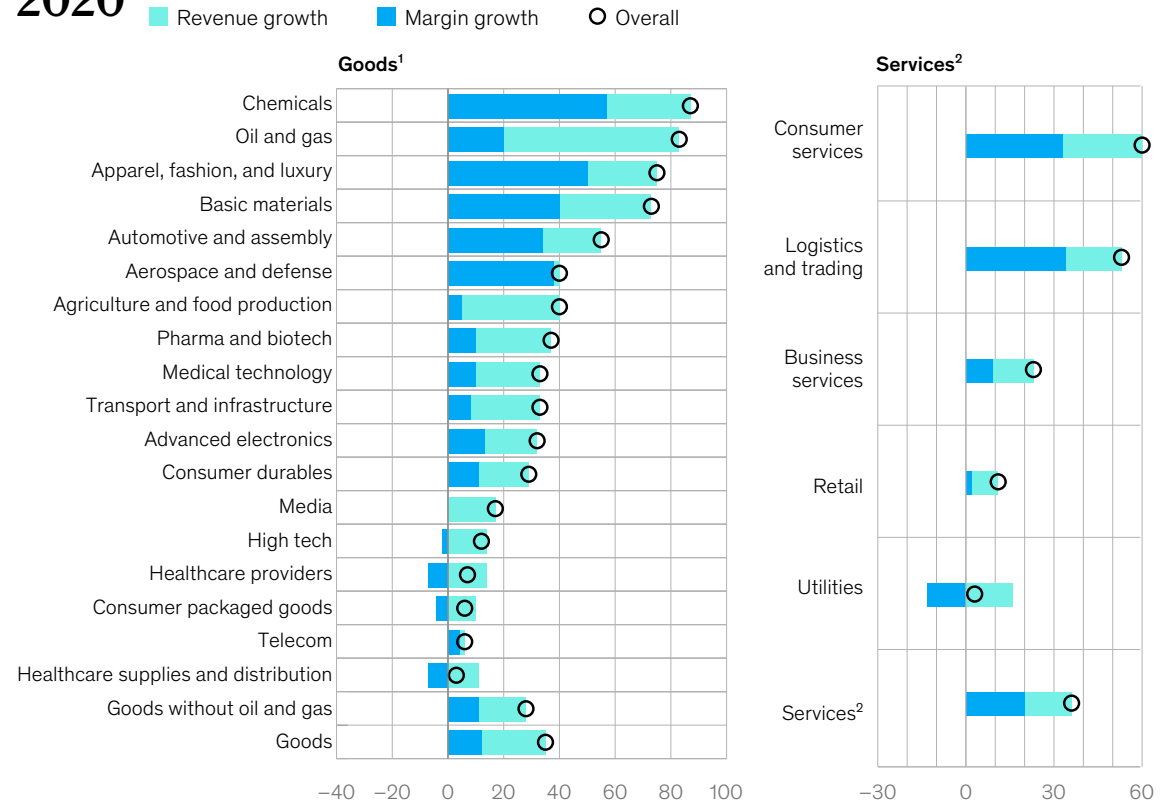
Source: Haver Analytics; S&P Global; "Measure of CEO Confidence," The Conference Board, Feb 2023; Corporate Performance Analytics by McKinsey

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Volatility in economic outlook and performance is hitting companies hard, particularly through margin compression and slower growth. Analysts and companies have consistently revised down 2023 forecasts for 2023 earnings and revenues.

In the pandemic year, growth varied widely among sectors.

2020 Breakdown of EBITDA versus prior year, % change



¹Sample includes goods companies among the 2,000 most valuable US companies with Q4 2022 EBITDA and revenue data available. Excludes the 5 Big Tech companies (n = 885). Years are aligned with calendar years for companies with fiscal years that do not end in December.

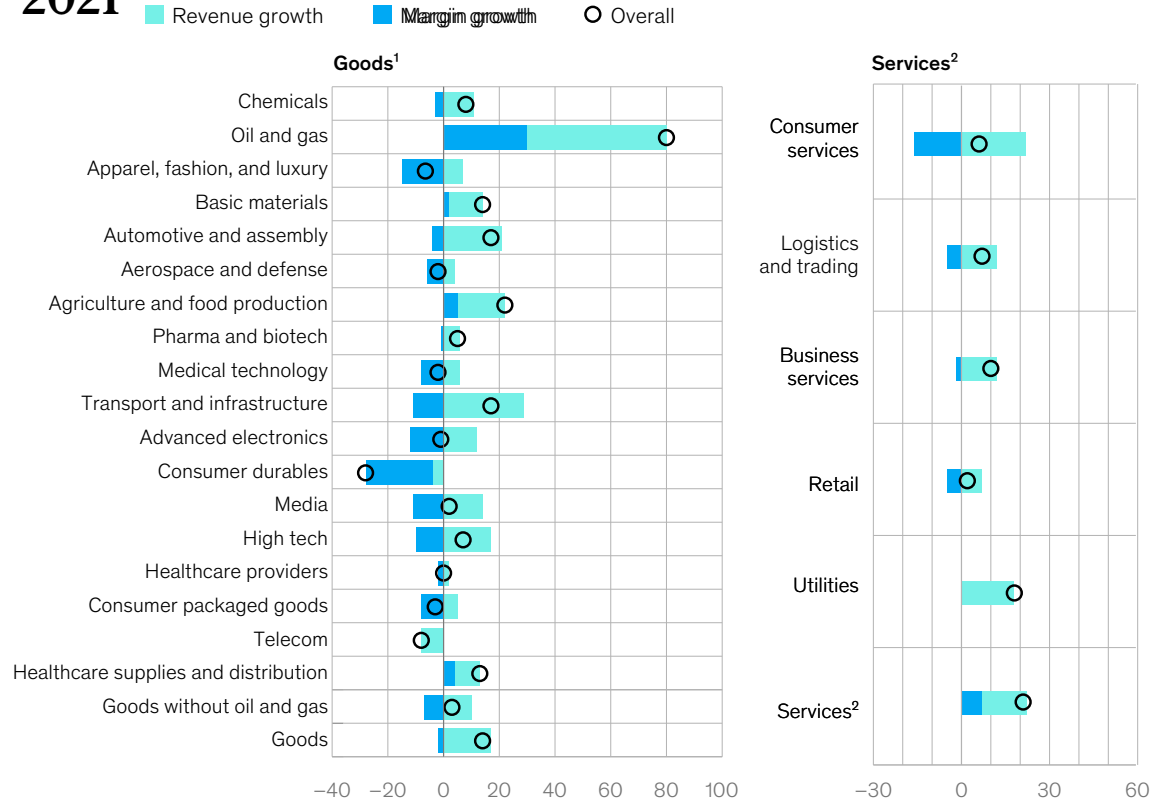
²Sample includes services companies among the 2,000 most valuable US companies with Q4 2022 EBITDA and revenue data available (n = 227). Years aligned with calendar years for companies with fiscal years that do not end in December. Excludes air and travel.

Source: S&P Global Market Intelligence; Corporate Performance Analytics by McKinsey

Exhibit (continued)

As the economy rebounded, EBITDA growth was buoyed by both revenue growth and margin expansion.

2021 Breakdown of EBITDA versus prior year, % change



¹Sample includes goods companies among the 2,000 most valuable US companies with Q4 2022 EBITDA and revenue data available. Excludes the 5 Big Tech companies (n = 885). Years are aligned with calendar years for companies with fiscal years that do not end in December.

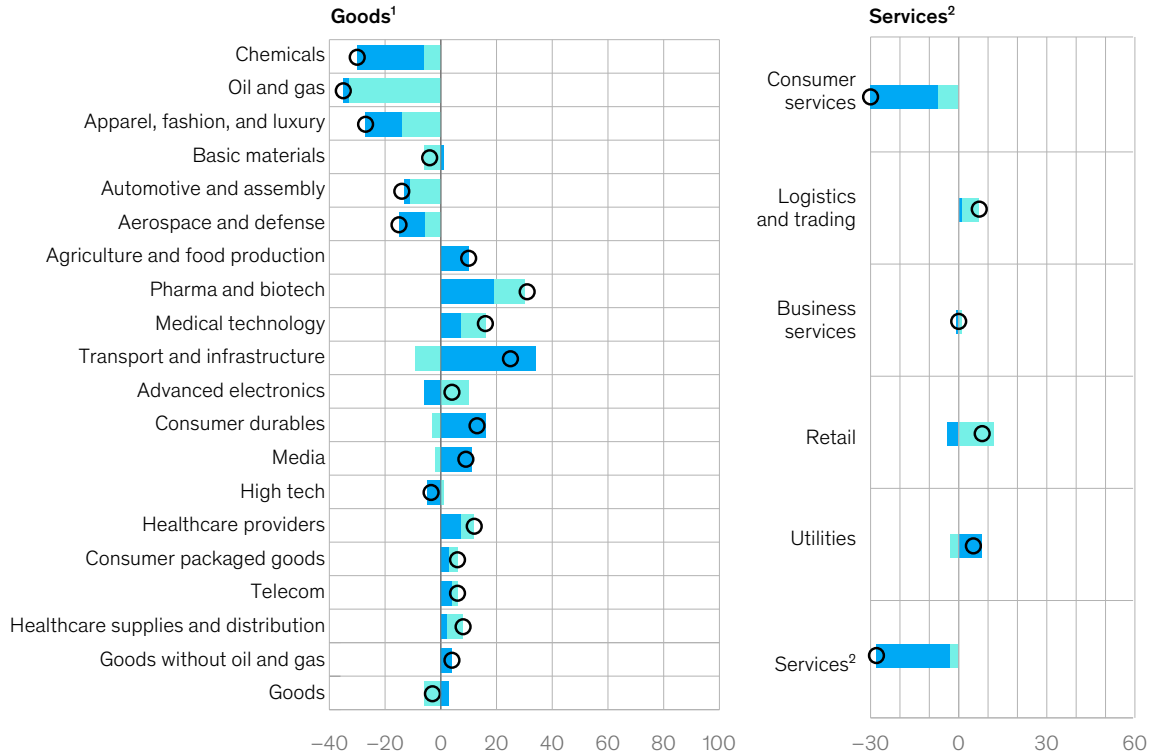
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Source: S&P Global Market Intelligence; Corporate Performance Analytics by McKinsey

Exhibit (continued)

Margins contracted in many sectors.

2022 Breakdown of EBITDA versus prior year, % change
■ Revenue growth ■ Overall ○



¹Sample includes goods companies among the 2,000 most valuable US companies with Q4 2022 EBITDA and revenue data available. Excludes the 5 Big Tech companies (n = 885). Years are aligned with calendar years for companies with fiscal years that do not end in December.

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Source: S&P Global Market Intelligence; Corporate Performance Analytics by McKinsey

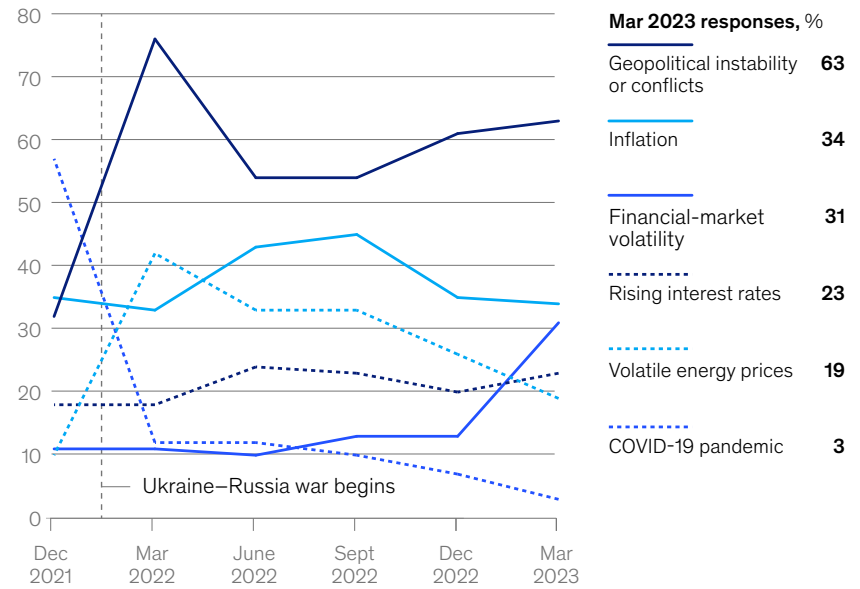
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Geopolitical instability shot to the top of leaders' risk radar after the invasion and remains there, though other macro factors (that is, inflation and interest rates) also command attention.

As we noted in May 2022, these disruptions are already affecting people's lives and livelihoods with potent force and should be part of every company's scenario planning. The past 16 months have shown that the trends set in motion by the war are far from dispositive regarding the global economy. Each will bear watching over coming months.

Leaders say geopolitics is the top concern for the global economy.

Potential risks to growth in the global economy in the next 12 months,
% of global respondents (multiple responses)



Source: For survey methodology, see "Economic conditions outlook during turbulent times, March 2023," McKinsey, Apr 28, 2023

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