1

Shaken, Not Stirred: The Transatlantic Economy in 2024

The transatlantic economy is proving to be remarkably robust in the face of global economic and strategic disruptions. It has been shaken, but its foundation has not stirred. Despite full-blown war in the heart of Europe, deadly conflict in the Middle East, lingering COVID-19 uncertainties, supply chain disruptions, climate changes, dramatic energy shifts, inflationary pressures, tight financial conditions, and tensions with China, key drivers of the transatlantic economy – trade, income, and energy flows – posted strong results again in 2023.

2023 was record-breaking on multiple fronts:

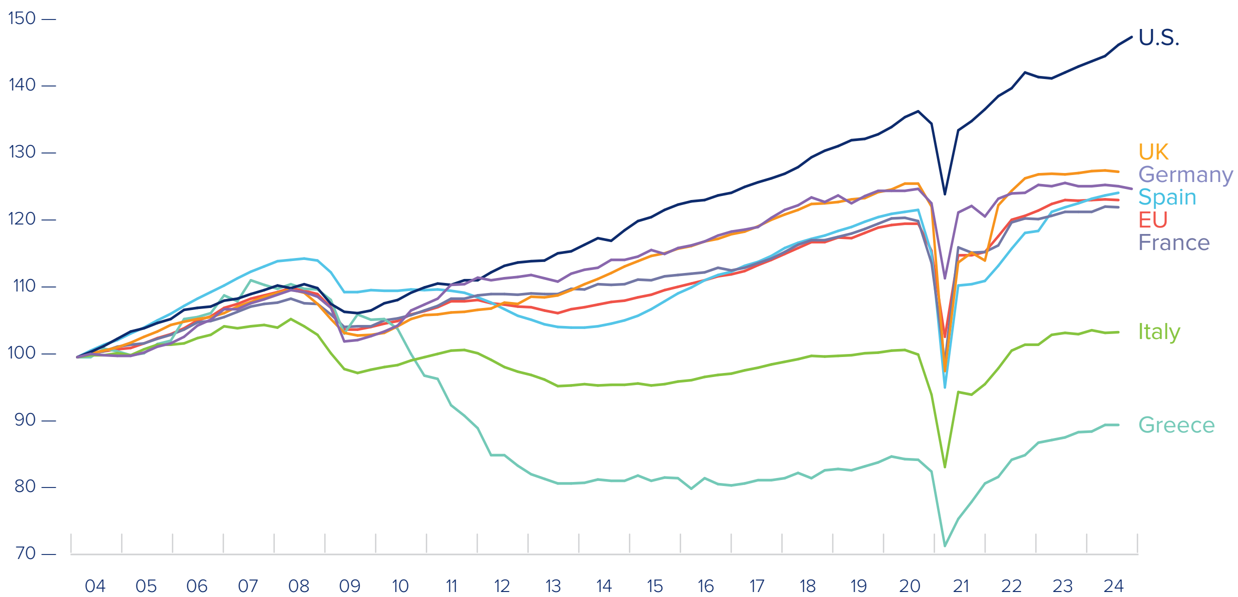
- Sales by European affiliates of U.S. companies reached a record high of $3.8 trillion; sales by U.S. affiliates of European firms hit a record high of $3.1 trillion.
- U.S.-Europe goods trade reached an all-time high of $1.22 trillion in 2023 – double U.S.-China goods trade of $575 billion.
- U.S.-EU goods trade hit a record of $946 billion, 39% higher than U.S-China goods trade of $575 billion and 16% higher than EU-China goods trade of $798 billion.
- U.S. goods exports to Europe reached a record high of $498 billion.
- U.S. company affiliates in Europe earned an estimated $350 billion, a record high; European affiliates in the U.S. earned an estimated $190 billion, a record high.
- The U.S. became Europe's most important supplier of liquefied natural gas (LNG) and of petroleum oil, accounting for 50% of EU LNG imports and 18% of EU petroleum oil imports.
- Europe became the top purchaser of U.S. crude oil and the U.S.'s most important LNG export market, accounting for more than 60% of U.S. LNG exports in 2023, double U.S. flows going to Asia.

As we near the half-way mark of this decade, and with the 21st century nearly one-quarter old, these figures are emblematic of the dense ties that bind North America to Europe and form the solid geoeconomic and geostrategic ground from which each side of the North Atlantic can address tremors still to come in 2024 and beyond. The $8.7 trillion transatlantic economy remains the largest and wealthiest market in the world, employing 16 million workers in mutually "onshored" jobs on both sides of the Atlantic. No two other regions of the world are as deeply integrated as the U.S. and Europe. Ties are particularly thick in foreign direct investment (FDI), portfolio investment, banking claims, trade and affiliate sales in goods and services, digital links, energy, mutual R&D investment, patent cooperation, technology flows, and sales of knowledge-intensive services.

Cyclical Challenges

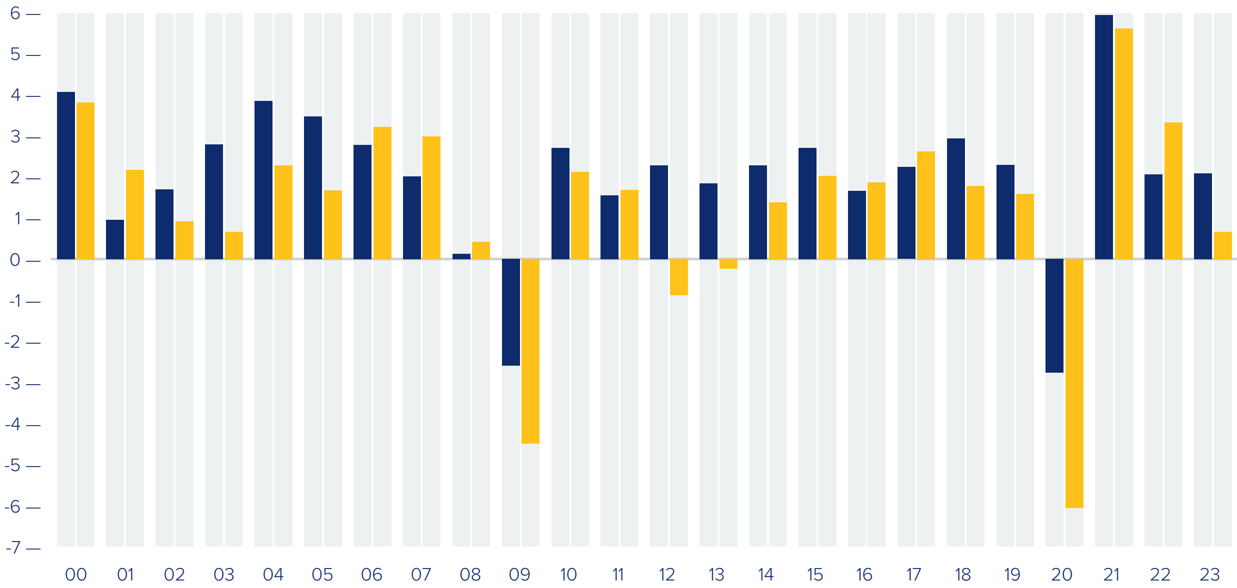
Real economic growth across Europe was better than feared in 2023, with the region successfully shifting its energy imports away from Russia and towards the United States and other suppliers. Consumer prices have declined steadily, while Europe's labor market remains taut. In the face of rising interest rates and insecure energy

Table 1. **COVID-19 Economic Downturn in the U.S. and Eurozone Economies** (Real GDP level, Q1 2004 = 100)



Source: Haver Analytics.
Data through Q3 2023.

Table 2 U.S. vs. Euro Area (Real GDP, Annual % Change, 2000-2003)



Data as of January 2024.
Source: International Monetary Fund.

supplies, many thought Europe was bound for recession last year. In the end, rebounding southern European economies helped the region to eke out modest growth for 2023 as a whole, even though lackluster performances by Europe's largest economies in the second half of the year delayed a fuller recovery, as Germany shrank, France stalled, and the UK sputtered.

Even as Europe's big three economies surprised to the downside by decelerating in the last quarter of 2023, the U.S. surprised to the upside by accelerating during that same period, defying consensus expectations of a recession. The U.S. economy expanded by a stunning 4.9% annualized rate in the third quarter of 2023, followed by 3.3% annualized growth in the fourth quarter. Growth has slowed entering 2024, but the consensus expects the U.S. to avoid a recession, with growth supported by strong personal consumption, fiscal spending, and accelerating wage growth that continues to outpace inflation. The U.S. unemployment rate has been below 4% for two years – the longest stretch since the 1960s.

The Near-term Outlook Remains Uncertain

Transatlantic economic prospects for 2024 remain challenging, especially since the two sides of the North Atlantic find themselves in different cycles of recovery and growth. The U.S. economy is expected to expand by 2.5% this year, with inflation falling to just 2.2% in 2024 and 2% in 2025.

Yet questions loom over the U.S. economic outlook, including the staying power of the U.S. consumer, the lagged effects of higher interest rates, and geopolitical risks that could disrupt critical global supply chains. Uncertainty surrounding the U.S. presidential election could also emerge as a headwind to growth by curtailing capital investment and depressing consumer spending. Also being watched very carefully in the U.S. is the federal budget deficit (more than 6% of GDP in fiscal year 2023) and its effects on interest rates and future public sector spending.

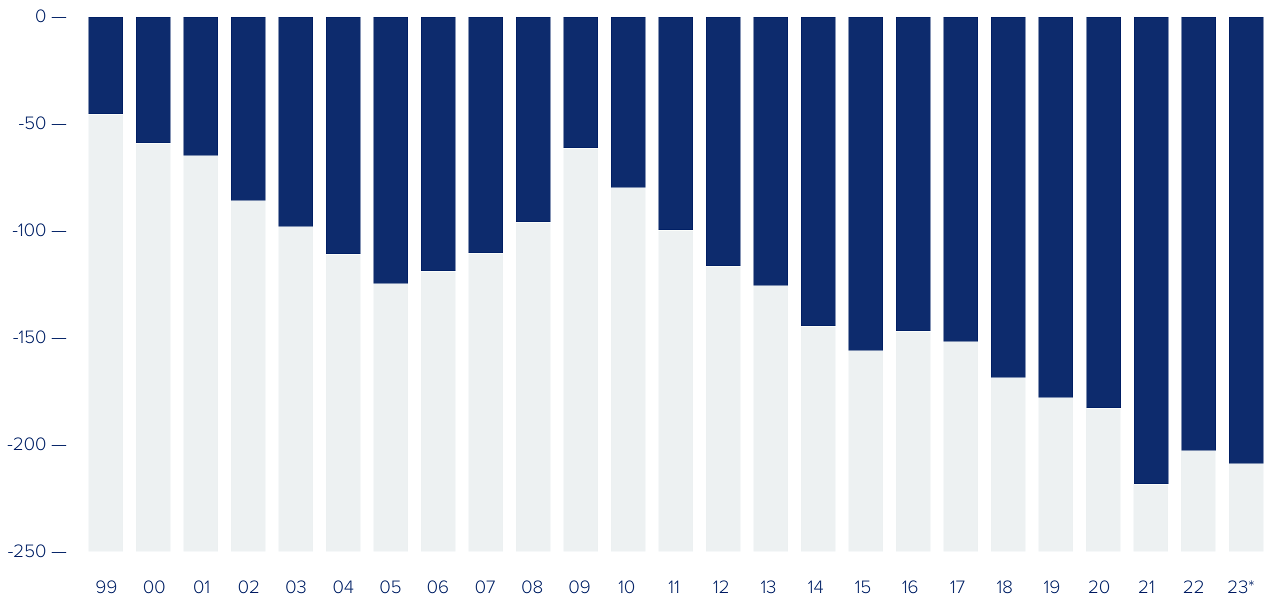
Budget constraints and a renewed focus on reducing deficits across Europe could also emerge as a drag on real growth across Europe this year. Tighter spending limits, greater debt-servicing outlays, and Germany's constitutional debt ceiling – all these factors could curb near-term fiscal spending and weigh on growth. Trade tensions with China and the volatility and uncertainty of Russia's war against Ukraine and conflict in the Middle East could do the same. On the other hand, some headwinds show signs of easing – inflation, monetary policies, energy shocks. The European Commission expects the GDP of the

2023: a record-breaking year

Transatlantic trade in goods
$1.22 trillion

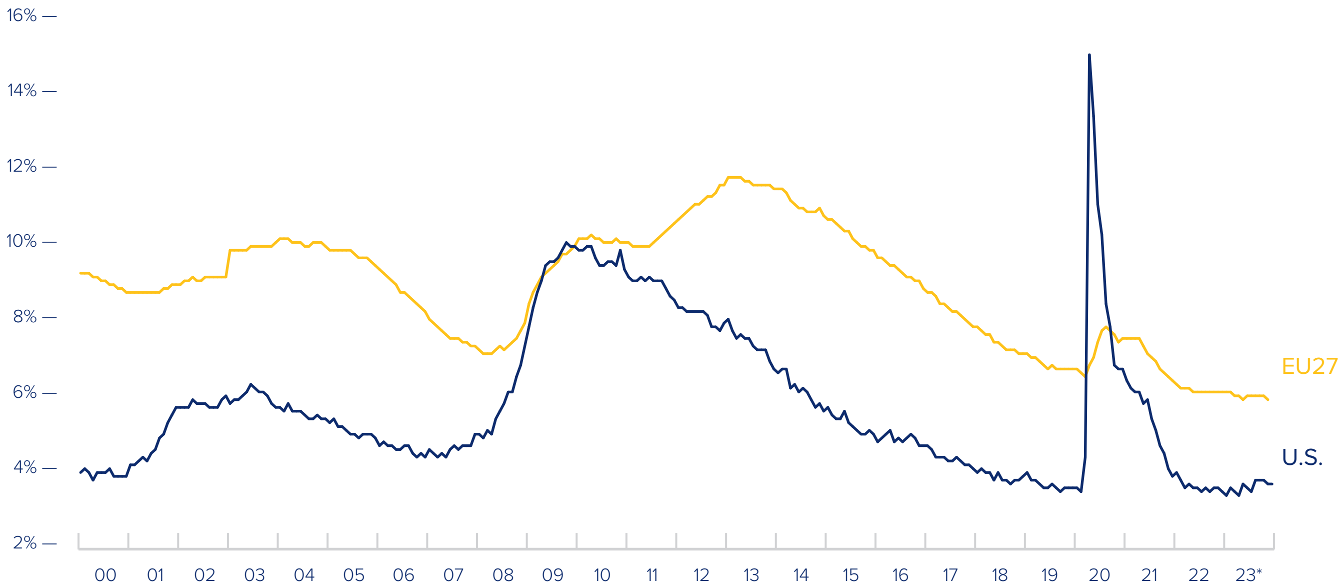
Foreign affiliate earnings
U.S. in Europe
$350 billion
Europe in the U.S.
$190 billion

Table 3. **U.S. Merchandise Trade Balance with the EU** ($Billions)



**2023 Estimate.*
Source: United States Census Bureau.

Table 4. **U.S. vs. EU Unemployment Rate** Harmonized Unemployment Rate (% of labor force, monthly)



**2023 EU data is average through November. 2023 U.S. data is average through December.*
Source: OECD.

The transatlantic economy remains the most interconnected, robust, and resilient commercial artery in the world.

EU to expand by 0.9% and that of the eurozone by 0.8%, with growth picking up in 2025 by 1.7% for the EU and 1.5% for the eurozone. Eurozone inflation is expected to fall by half to 2.7% this year, from 5.4% in 2023, and to be at 2.2% in 2025. Germany's anemic growth prospects of just 0.2% makes it the G7 laggard. And while the OECD expects UK growth to expand by 0.7% in 2024 and 1.2% in 2025, it also predicts the UK to struggle with the G7's highest inflation rate – 2.8% in 2024 and 2.4% in 2025.

Against this backdrop, we expect transatlantic trade and investment ties to grow modestly again in 2024, following the surprisingly strong advances generated by trade, income, and energy flows in 2023. One important additional driver, transatlantic FDI flows, declined markedly last year, reflecting several factors, like the higher cost of capital, depressed merger and acquisition (M&A) activity, and uncertain economic prospects. The push by both the U.S. and Europe to encourage firms to invest at home, including via massive public sector incentives, also contributed to the downturn in transatlantic FDI flows. In the first nine months of 2023, U.S. FDI flows to Europe declined by nearly one-third, while European inflows to the U.S. dropped nearly 30%. For the year as a whole, we estimate that U.S. FDI outflows to Europe totaled $145 billion, while inflows tallied an estimated $169 billion.

We would not be surprised if investment flows remained weak again in 2024, given uncertainties surrounding a spate of elections in the U.S., across Europe, and in many other countries around the world. All told, 2 billion people – a quarter of the world's population, representing 60% of global output – will go to the ballot box in 2024, and for the first time ever, the U.S., the UK and the EU will hold major elections in the same calendar year. The risk to investment flows is that firms take a "wait-and-see" attitude towards these elections and hold off spending until after the voters are heard. More encouraging, interest rates on both sides of the Atlantic are expected to fall this year, and are supportive of a new round of capital expenditures over the medium term. In the end, the downturn in investment is more cyclical than structural, with both the U.S. and Europe continuing to leverage each other's strengths to promote economic growth and prosperity.

Transatlantic FDI flows declined markedly last year, reflecting several factors, like the higher cost of capital, depressed merger and acquisition (M&A) activity, and uncertain economic prospects. The push by both the U.S. and Europe to encourage firms to invest at home, including via massive public sector incentives, also contributed to the downturn in transatlantic FDI flows.

Europe and America in a New Era of Globalization

In the face of a major war in Europe, a bloody conflict in the Middle East, elevated tensions with China, and snarled shipping lanes in key transit hubs, the transatlantic economy confronts multiple geopolitical hotspots in the year ahead. The ultimate effects have yet to play out, but the costs associated with unpredictable geopolitics run from rising global defense spending and widening budget deficits to higher prices and inflation due to supply chain vulnerabilities and increased global populism/nationalism fueled by rising levels of cross-border migrants dislocated by conflict. Over 180 conflicts are ongoing around the world, and annual global defense expenditures reached a record high of $2.2 trillion in 2023, according to the International Institute for Strategic Studies. NATO officials continue to underscore that Russia's war against Ukraine has created the most dangerous security situation in Europe in decades. We track Western support for Ukraine in Box 1, and Western sanctions against Russia in Box 2.

Add in the lingering effects of the 2007-2009 Great Financial Crisis (GFC), more restrictions on trade and FDI, and the worldwide disruptions generated by the COVID-19 pandemic, and the result is a new narrative that the world has entered an era of de-globalization. A closer look, however, reveals that globalization is evolving, not retreating. Technological drivers are accelerating global flows, even as policy and commercial considerations are reshaping them. Global flows of people, capital, goods, and data confront higher barriers to entry today. However, four years after the pandemic shut down the world, cross-border travel, trade, investment, and data are above pre-pandemic levels and expected to expand further.[1]

Add in the lingering effects of the 2007-2009 Great Financial Crisis (GFC), more restrictions on trade and FDI, and the worldwide disruptions generated by the COVID-19 pandemic, and the result is a new narrative that the world has entered an era of de-globalization. A closer look, however, reveals that globalization is evolving, not retreating.

One key measure of globalization is international goods trade. During the post-Cold War period of "hyperglobalization," from the early 1990s until the GFC, global goods exports grew by about 10% a year, while global GDP rose by only 6% annually. Trade as a percentage of GDP rose to almost two-thirds; the share of exports in national economies grew from less than 20% to more than 30%. Goods trade slowed in the GFC's wake, however, as further trade liberalization faltered and many countries adopted protectionist measures. When the pandemic induced capitals to apply new trade restrictions in 2020, China's trade-to-GDP ratio tumbled to 35% from a high of 67%, while that for the U.S. fell from 27% to 23%. Since then, however, trade values have rebounded and are getting stronger, slightly exceeding global GDP growth and hitting a historical high of $24.9 trillion in 2022.[2]

Goods trade is also being reshaped. Since Russia invaded Ukraine in February 2022, trade among politically aligned countries has grown about 1.5% more than trade between countries that are not politically aligned, according to the IMF.[3] Trade is also being re-routed through third countries as companies caught in geopolitical struggles seek to evade tariffs and other restrictions by re-routing their supply chains via third countries. In short, goods trade remains a driver of globalization, but is now influenced more by geopolitical dynamics and is growing at a slower pace. One result has been a revitalization of transatlantic goods trade, which hit record levels in 2023.

Moreover, trade doesn't just consist of goods, it also includes services. Services trade also boomed during the period of hyperglobalization. After the GFC, trade in goods as a share of GDP plateaued, but global services trade as a share of world GDP continued to surge so that it now accounts for over a fifth of worldwide export earnings. Services are currently a more important driver of globalization than goods.[4] And services are a core strength of the U.S. and European economies, as we discuss in later chapters.

Data is the most dynamic flow binding societies and continents together. Flows of data have grown by more than 40% annually over the past ten years, according to McKinsey. Trade in technology and ideas has grown faster than trade in both goods and services. Flows of patents and ideas have been growing at about 6% a year since 2010, compared to trade in resources, which have averaged about 2%. Trade in R&D and information and communications technologies has not only outpaced trade in the rest of the services economy, it is fundamentally reshaping it.[5] Globally, the most intense and valuable cross-region data flows continue to run between North America and Europe. The United States and European economies are major hubs for international trade in products delivered through data flows. Digitally-deliverable services are a dynamic element of today's globalization, led by the U.S. and Europe, as we explain in Chapter 5.

Financial flows tell a similar story. Gross flows of portfolio finance and FDI surged from the early 1990s until the GFC. After the GFC, both forms of financial flows decelerated sharply: portfolio flows from a peak of 7% of global GDP to about 3.0–3.5%, and FDI flows by about 2 percentage points.[6] Following the pandemic, these flows have been volatile but on the rebound. According to UNCTAD, the stock of global FDI more than doubled between 2010 and 2021, to $44 trillion. FDI dipped in 2023 following further growth in 2022, but is higher than before the pandemic and the GFC. FDI has also become more concentrated among geopolitically aligned countries, anchored by dense investment links between the United States and Europe.

All told, the transatlantic partners are well-positioned to benefit from new patterns of global interconnections, and have ample opportunities to address the associated risks – if they can stick together. U.S. and European companies over many decades have woven a dense web of deep transatlantic connections that is proving to be a strength, not a burden, for both in a more competitive and disruptive age. The transatlantic economy remains the most interconnected, robust, and resilient commercial artery in the world, as we explain in the following chapters.

Box 1. Supporting Ukraine

Russia's ongoing aggression against Ukraine has not only devastated Ukraine and resulted in over half a million people dead or injured, it has amplified global financial instabilities and supply chain distortions, wreaked havoc on food and energy markets, and generated the largest refugee crisis in Europe since World War II. Ending the war, says U.S. Treasury Secretary Janet Yellen, "is the single best thing we can do for the global economy."

The transatlantic partners have spearheaded international efforts to support Ukraine. EU member states and EU institutions combined committed $153.8 billion between January 24, 2022 and January 15, 2024, according to the Kiel Institute for the World Economy. The United States has been the single largest country donor, with commitments of $74.2 billion. Other donor countries have committed an additional $43.4 billion. In addition, in March 2023 the IMF approved a $15.6 billion extended fund facility (EFF) program as part of a $115 billion support package. This includes structural reforms aimed at preparing the country for EU membership.

If contributions via EU channels are reapportioned to the individual EU states that provided them, then the U.S. remains the largest individual donor ($74.2 billion), followed by Germany ($44.28 billion) (Table 5). In terms of bilateral commitments in percent of donor country GDP, the top five donors are Estonia, Denmark, Lithuania, Norway, and Latvia (Table 6).

As of this writing, continued U.S. commitments to Ukraine are uncertain. The last U.S. assistance package in December 2023 exhausted available support. The Biden administration has asked Congress for $60 billion in new funds; the Senate has approved an aid package for Ukraine, but the House has not yet agreed to any additional appropriations.

European assistance continues. On February 1, the EU approved a Ukraine economic support package of up to $54 billion, to be allocated between 2024 and 2027 to support Ukrainian resilience and reconstruction, budgetary and financial assistance, and EU accession support. While generous, the package amounts to $13.6 billion in annual support – not enough to meet the $36.8 billion Ukraine estimates it will need in external contributions this year alone. In addition, the Kiel Institute points to a major lag between EU commitments and allocations. The EU and its member states have allocated only $82.2 billion of the $153.8 billion they have committed.

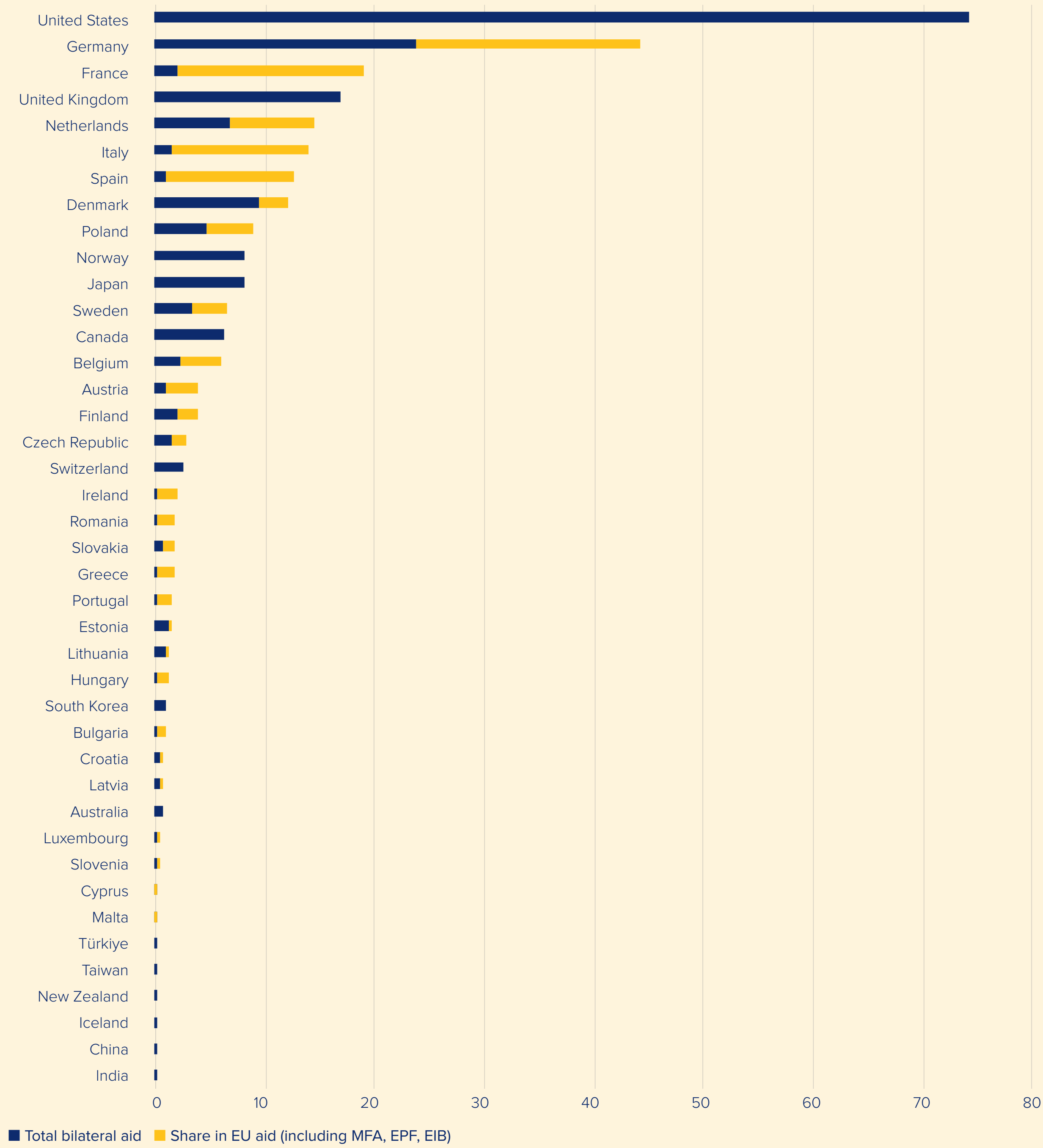
Moreover, if U.S. military assistance is not forthcoming, the EU and its member states would need to double their military aid to compensate. That seems difficult. The EU's "Ukraine Facility" economic assistance package did not resolve ongoing intra-EU squabbles over how or whether to allocate more than $22 billion to a common fund, the "European Peace Facility," that would reimburse member states for bilateral military support they would provide to Ukraine over the next four years. The Kiel Institute also notes big gaps between the military aid Europeans have already promised and the actual delivery of hardware.

Since the war started, more than 10 million Ukrainians have fled their homes, 6.4 million of whom left the country. Six million are hosted in countries across Europe, and another 400,000 outside of Europe, primarily in Canada and the United States. As of November 2023, the main EU countries hosting beneficiaries of temporary protection from Ukraine were Germany (1.236 million people), Poland (955,000) and Czechia (369,000).

When the Kiel Institute adds estimated refugee costs to bilateral support levels, the United States remains in first place ($77.23 billion), followed by Germany ($46.46 billion, including $22.90 billion in refugee costs) and then Poland, the UK, and Denmark.

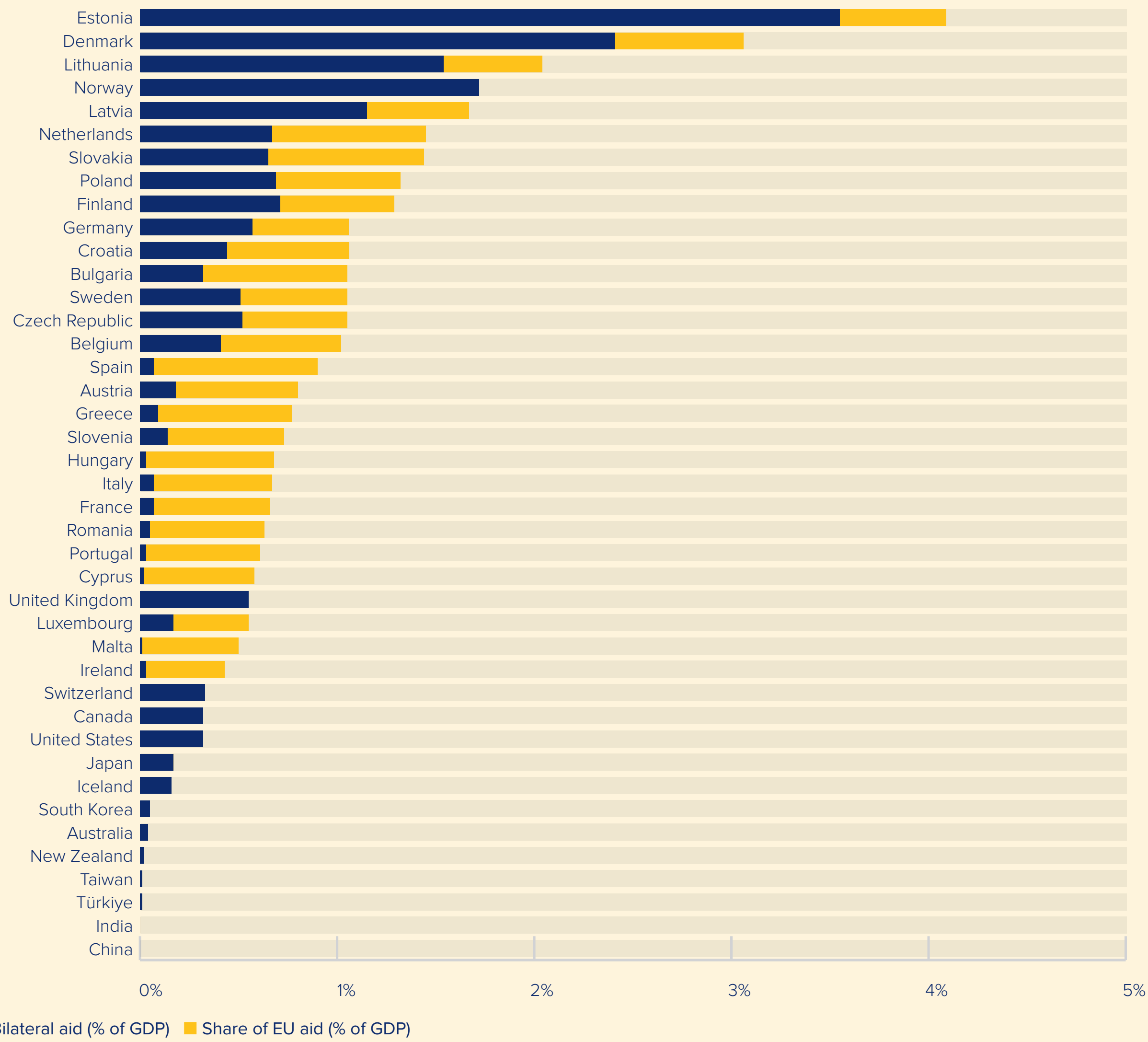
Ukraine's GDP shrank by a staggering 29% in 2022, then grew nearly 5% in 2023. The IMF predicts 3.2% growth for 2024.

Table 5. Top 25 Donors to Ukraine, January 2022-January 2024: Total Bilateral Commitments plus Refugee Costs ($Billions)



Commitments Jan. 24, 2022 to Jan. 15, 2024. Exchange rate: EUR 1 = USD 1.08.
Source: The Ukraine Support Tracker, Kiel Institute for the World Economy, https://www.ifw-kiel.de/topics/war-against-ukraine/ukraine-support-tracker/.

Table 6. Donors to Ukraine By Share of GDP, January 2022 to January 2024 ($Billions)



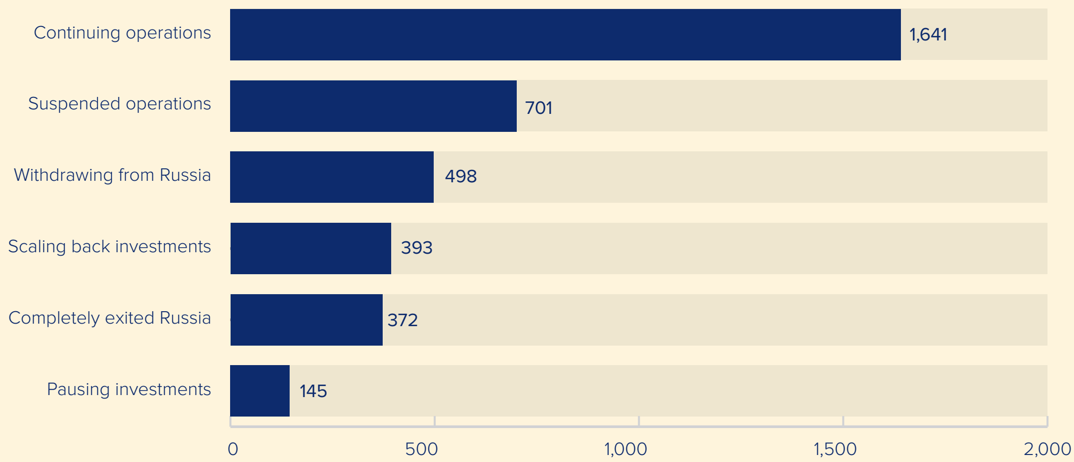
Commitments Jan. 24, 2022 to Jan. 15, 2024.
Source: The Ukraine Support Tracker, Kiel Institute for the World Economy, https://www.ifw-kiel.de/topics/war-against-ukraine/ukraine-support-tracker/.

Box 2. Sanctioning Russia: "A Slow Puncture"

North America and Europe continue to sharpen and expand the sanctions they have imposed on Russia because of Moscow's aggression against Ukraine. The sanctions, unprecedented in scope and scale, encompass over 15,300 designations against individuals, entities, and assets.[7] They are intended to impose severe consequences on Moscow for its actions and to hamper its ability to sustain its war. More than $300 billion of Russian central bank assets and $22 billion of Russian oligarchs' money have been frozen; the G7 is considering whether to seize those funds to use as a backstop to issue debt for Ukraine. Much of the Russian financial sector has been disconnected from the SWIFT payments network. Exports of high-tech components and other materials critical to the Russian economy have been blocked, as have flights, shipping, maintenance, and insurance services. The G7 has banned imports of Russian non-industrial diamonds, another important source of revenue. In February 2024, the EU approved its 13th package of sanctions; the U.S. sanctioned an additional 500 individuals and entities and added 90 companies to the Entity List; and the UK added an additional 50 sanctions. In December 2023, the U.S. issued a new executive order targeting any institutions determined to be conducting or facilitating any significant activities related to Russia's military industrial base. The EU is considering a ban on imports of Russian aluminum. Foreign investment has dried up. Broadcasting activities and licenses of several Kremlin-backed disinformation outlets have been banned in many countries. Additional sanctions have been imposed on Belarus, for its involvement in Russia's invasion, and on Iran over the supply of drones to Russia. Notably, the sanctions do not block the export of and transactions related to food and agricultural products.

Following the February 2022 invasion, more than 1,000 foreign companies announced plans to leave Russia. Data from the Kyiv School of Economics reveals a more complicated picture. As of February 2024, 870 companies have withdrawn or exited Russia completely. 846 have paused or suspended operations, while 393 have scaled back. 2,179 companies are continuing their activities. Many familiar brands have left the country; most that are left are smaller companies. Those seeking to withdraw are finding it difficult. Moscow is demanding that they pay donations to the state and sell their holdings in rubles and at deep discounts.[8]

Table 7. How Foreign Companies Are Changing Their Relationships with Russia (Number of Companies)



As of February 2024.
Source: "Stop Doing Business with Russia," Kyiv School of Economics Institute, March 2, 2024, https://leave-russia.org/leaving-companies.

In the critical energy field, the U.S. banned all imports of Russian oil, liquefied natural gas and coal. The EU banned imports of Russian coal and other solid fossil fuels, crude oil, and refined petroleum products, with limited exceptions. In December 2022, the G7 determined that any buyers of Russian oil would have to pay less than $60 per barrel if they wanted to use G7-registered ships, trading or insurance services. The allies reasoned that the price cap was just high enough to keep Russian oil on the market, avoiding further energy disruptions, while low enough to limit the Kremlin's ability to finance its war in Ukraine.[9]

Despite these efforts, Western countries continue to import Russian enriched uranium to fuel their nuclear reactors. The United States is the largest global purchaser, accounting for 42% of all Russian enriched uranium exports in 2022. Russia, in turn, is the United States' number one supplier of enriched uranium supplies, sending almost a quarter of the nuclear fuel (valued at around $1 billion) used in the U.S. commercial reactor fleet. Most of the rest is imported from Europe, led by a British-Dutch-German consortium operating in the United States called Urenco.[10] European enriched uranium dependencies are similar. Nearly a third of EU enriched uranium came from Russia in 2022, even though several EU countries have significant enrichment capacity. France (18.6%), the Netherlands (2.7%), and Germany (2%) collectively imported 23% of Russian enriched uranium and associated products.[11]

Impact on Russia

The short-term impact of these measures on Russia has been mixed. The pain points are numerous. Russian living standards have eroded. The Russian economy is 5% smaller than predicted prior to the war. The Russian central bank estimates that a record $253 billion in private capital left the country in the 16 months following the invasion, four times the previous level of outflows. Western restrictions have cost Russia $100 billion in oil revenues since February 2022, according to the Kyiv School of Economics. Russian companies have been cut off from Western markets and have been forced to reorient their supply chains. The values of some state-owned enterprises have slumped 75% since the invasion, and many private-sector assets have halved in value. Inflation is running at 7.5%. Serious labor shortages are afflicting both the civilian economy and the military-industrial sector. Moscow's weapons production capacity has been degraded, and it has been forced to turn to Iran for drones and drone parts, and to North Korea for artillery shells and rockets. Moscow has allocated 39% of its 2024 budget to defense; military spending will exceed social spending.[12]

In other respects, however, the Russian economy has weathered the situation better than expected. Russia's central bank avoided a catastrophic financial crisis by imposing capital controls and hiking interest rates. The IMF estimates that the Russian economy grew 2.2% in 2023, fueled by a fiscal stimulus that was greater than the Kremlin's efforts to keep the Russian economy afloat during the COVID-19 pandemic. The IMF expects the Russian economy in 2024 to grow 2.6%, fueled by massive military spending. Many Russian banks, including Gazprombank, still have access to SWIFT, enabling Russia to conduct cross-border payments and transactions for imports and exports.

China has stepped in to become an important source of finance for Russian firms. Many critical raw materials still flow from Russia to the EU. Businesses have found ways to work around the sanctions. Despite the EU's determination to wean itself from Russian gas, Russian LNG exports to Europe have increased, and more than a fifth of those flows are transshipped through European ports to other parts of the world, boosting Russian revenues.[13] According to the Kyiv School of Economics, Russia obtained at least one-third of its foreign-sourced priority battlefield components, valued at $7.3 billion, from U.S. and allied companies in 2023. Russia imported more than $1 billion in U.S. and European advanced chips last year. Russian entities are able to obtain dual-use technology from Western companies through resellers and manufacturers in countries that are not part of the sanctions coalition. The largest share of these goods — worth around $1.9 billion – was produced in China.[14]

Russia is also circumventing the oil price cap. Russia is selling crude oil above the G7 price cap of $60 per barrel and is moving 71% of its oil to Indian, Chinese, Turkish and other buyers through a "shadow fleet" of tankers that operate without Western insurance or other services.[15]

India increased its purchases 140% in 2023 to become the world's leading importer of Russian crude oil, according to Kpler. India is buying discounted Russian crude oil, then refining that oil and selling the refined products in Europe and elsewhere. EU imports of refined oil products from India soared 115% in 2023 to a record 231,800 barrels per day. Due to these types of circuitous mechanisms, the EU remains the largest importer of fossil fuel energy from Russia despite Western restrictions.[16]

As time wears on, Russian prospects look much bleaker. EU sanctions lead David O'Sullivan describes Western efforts as a "slow puncture" of the Russian economy. Russian Central Bank Elvira Nabiullina has acknowledged that the economy "might go fast, but not for long."[17] Bloomberg Economics estimates that Russia's economy is on track to lose $190 billion in GDP by 2026, relative to its prewar path. Heavy government spending on the war is bleeding the Kremlin's reserves. The ruble's seeming stability relies on unsustainably strict currency controls. Moscow is still selling oil to countries like India and China, but mostly at steep discounts. Moreover, its land-based energy infrastructure points west; it cannot easily switch out China and India for Europe. And it will be unable to maintain, let alone expand, its energy production without Western technology. The International Energy Agency forecasts that Russia's oil and gas exports could fall by at least 40-50% by 2030 if Western restrictions on Russia's energy industry are maintained.[18] Russian planes are flying only because those on the ground have been cannibalized for parts. Hundreds of thousands of talented and educated Russian professionals are leaving the country. In the end, this vast brain drain may prove to be the most crippling for Russia's economy and society.[19]

Notes

1 Arvind Subramanian, Martin Kessler and Emanuele Properzi, "Trade hyperglobalization is dead. Long live...?" Peterson Institute for International Economics, November 2023, https://www.piie.com/sites/default/files/2023-11/wp23-11.pdf; Pinelopi K. Goldberg and Tristan Reed, "Is the Global Economy Deglobalizing? And if so, why? And what is next?" National Bureau of Economic Research, April 2023; Laura Alfaro, "Discussion of geoeconomic fragmentation and the future of multilateralism," in Shekhar Aiyar, Andrea F. Presbitero and Michele Ruta, eds., *Geoeconomic Fragmentation: The Economic Risks from a Fractured World Economy* (London: Centre for European Policy Research, 2023).

2 WTO; Michael G. Plummer, "Estimating the costs of geoeconomic fragmentation to the global economy," in Aiyar, Presbitero and Ruta, eds.; Laura Alfaro and Davin Chor, "Global Supply Chains: The Looming "Great Reallocation," NBER Working Paper No. 31661 September 2023.

3 Gita Gopinath, "Europe in a Fragmented World," IMF, November 2023, https://www.imf.org/en/News/Articles/2023/11/30/sp-fdmd-remarks-bernhard-harms-prize.

4 Richard Baldwin, Rebecca Freeman, Angelos Theodorakopoulos, "Deconstructing Deglobalization: The Future of Trade is in Intermediate Services," *Asian Economic Policy Review*, October 10, 2023.

5 Olivia White, "How our interconnected world is changing," McKinsey, February 9, 2023, https://www.mckinsey.com/mgi/our-research/how-our-interconnected-world-is-changing.

6 Subramanian, Kessler, and Properzi.

7 Authors' own calculations drawn from Atlantic Council, "Russia Sanctions Database," https://www.atlanticcouncil.org/blogs/econographics/russia-sanctions-database/ and additional sanctions announced in February 2024.

8 Huileng Tan, "The Kremlin says more foreign companies are failing than delivering on their promises to leave Russia. Here's what the data shows," Business Insider, December 5, 2024; "Stop Doing Business with Russia," Kyiv School of Economics Institute, March 2, 2024, https://leave-russia.org/leaving-companies.

9 Tom Wilson and Chris Cook, "The west's Russia oil ban, one year on," *Financial Times*, December 8, 2023; Andrew Duehren, Laurence Norman and Joe Wallace, "G-7 Expands Sanctions on Russian Oil Industry," *Wall Street Journal*, February 3, 2023.

10 U.S. Energy Information Administration, "Uranium Marketing Annual Report," June 2023, https://www.eia.gov/uranium/marketing/; Rowen Price, Ryan Norman and Alan Anh, "Western Reliance on Russian Fuel: A Dangerous Game," Third Way, September 20, 2023, https://www.thirdway.org/memo/western-reliance-on-russian-fuel-a-dangerous-game; Charles Digges, "US struggles to free itself from Russian enriched uranium supplies," Bellona, January 8, 2024, https://bellona.org/news/nuclear-issues/2024-01-us-struggles-to-free-itself-from-russian-enriched-uranium-supplies.

11 Darya Dolzikova, "Catch-235: Western Dependence on Russian Nuclear Supplies is Hard to Shake," Royal United Services Institute, April 12, 2023, http://rusi.org/explore-our-research/publications/commentary/catch-235-western-dependence-russian-nuclear-supplies-hard-shake; Euratom Supply Agency, "Market Observatory," http://euratom-supply.ec.europa.eu/activities/market-observatory_en; Price, et al. op. cit.

12 "Putin's surprising win on the economy," Readly, January 5, 2024, https://gb.readly.com/magazines/moneyweek/2024-01-05/65972abf8ab1d9ab92eba447; Rachel Lyngaas, "Sanctions and Russia's War: Limiting Putin's Capabilities," U.S. Department of the Treasury, December 14, 2023, https://home.treasury.gov/news/featured-stories/sanctions-and-russias-war-limiting-putins-capabilities; "Remarks by Deputy Treasury Secretary Wally Ademo on International Sanctions Against Russia," U.S. Treasury Department, February 21, 2023; Vladimir Milov, "The Sanctions on Russia Are Working," *Foreign Affairs*, January 18, 2023; *Politico* Weekly Trade, January 30, 2023.

13 Ana Maria Jaller-Makarewicz, "EU turns a blind eye to 21% of Russian LNG flowing through its terminals," Institute for Energy Economics and Financial Analysis," November 29, 2023, https://ieefa.org/resources/eu-turns-blind-eye-21-russian-lng-flowing-through-its-terminals; Alice Hancock, "EU ports help sell on over 20% of LNG imports from Russia," *Financial Times*, November 28, 2023.

14 Albert Nardelli, "Most of Russia's War Chips Are Made by US and European Companies", Bloomberg, January 25, 2024; Atlantic Council.

15 Wilson and Cook.

16 Sweta Sharma, "Europe buying Russian oil via India at record rates in 2023 despite Ukraine war," *The Independent*, January 12, 2024.

17 Cited in Christopher Gavin, "The West Sanctioned Russia to the Hilt. So How Is Its Economy Booming?" The Messenger, February 1, 2024.

18 Wilson and Cook.

19 Ademo; Milov; Guardia and Cooper; Mulder; Kantchev and Hannon.