



## Chapter 3

# **Confronting New Global Challenges with Strong International Economic Partnerships**

In 2022, the global economy continued to face challenges as the economic shocks associated with the COVID-19 pandemic persisted into their third year. In addition, Russia's unprovoked invasion of Ukraine disrupted global commodity markets and caused businesses and governments to reevaluate key trade and investment linkages. Nevertheless, in the United States, persistently strong global economic ties contributed to the continuing recovery of manufacturing output, strong consumption, deepening business investment ([BEA 2023a](#)), and resilience to shocks. They also provided strategic room to counter geopolitical aggression.

The global economic shocks of the past three years have highlighted the need for policies that balance the benefits of these economic ties with the risks to economic and national security that they can entail. The policy response to external challenges, along with the pursuit of greener and more inclusive economic growth at home, will transform the international economic linkages that manifest through global markets for goods, services, and data. Strong partnerships between governments are essential to effectively address these challenges.

This chapter begins by describing how the global economic events of 2022 were reflected in the United States' robust international trade and investment flows. It then examines how ongoing COVID-19 disruptions, more recent geopolitical tensions, and the expansion of the digital economy have affected global economic policymaking priorities. It closes by underscoring

the critical role of international partnerships between the United States and its allies and partners in ensuring the effectiveness of their collective response to these shared challenges.

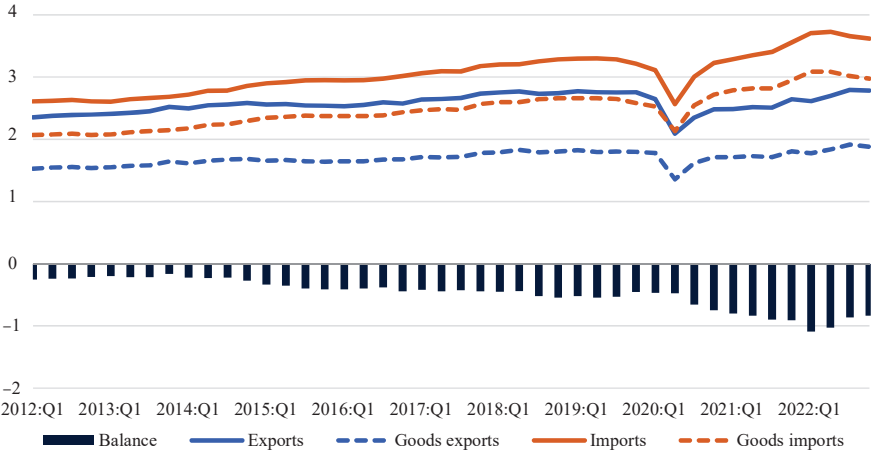
## The United States’ International Trade and Investment in 2022

As the headline-grabbing supply chain challenges associated with the persistence of COVID-19 retreated, and despite Russia’s invasion of Ukraine, U.S. international trade and investment reached record highs in 2022. Trade in goods and services (exports plus imports) increased by 8 percent compared with 2021 in real, inflation-adjusted terms, surpassing the record set in 2019 (figure 3-1) and reflecting robust imports and exports of goods, despite headwinds from slowing global growth and the strong U.S. dollar (BEA 2023a).

Record imports were driven by a surge in the first quarter of 2022, which retreated in the second half of the year. Although they declined from their first-quarter high, they remained strong in historical terms. In contrast, exports increased relatively steadily to the third quarter, with a shallow fourth-quarter decline. These distinct paths are reflected in the sharp increase and subsequent narrowing of the trade deficit (exports minus imports) in 2022 (figure 3-2). The trade deficit shot to 4.5 percent of gross domestic product (GDP) in the first quarter of 2022—the largest since the

**Figure 3-1. Real U.S. Trade in Goods and Services, 2012–22**

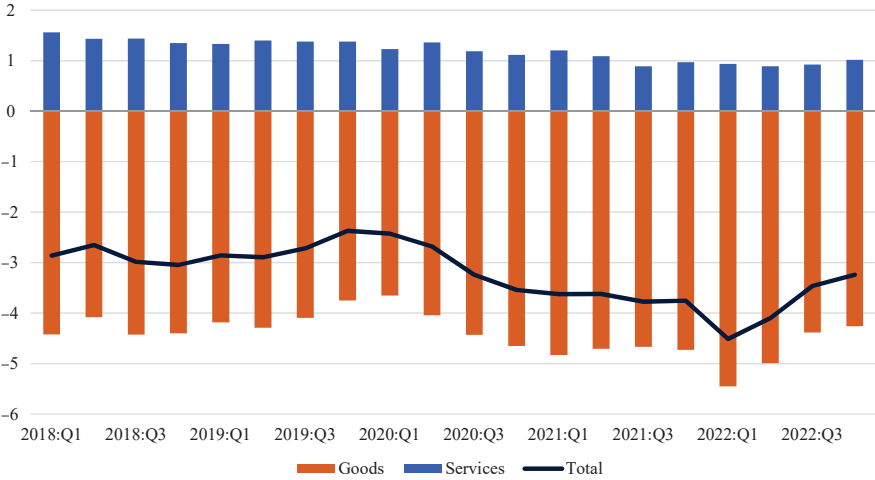
*Trillions of chained 2021 dollars, quarterly, seasonally adjusted at annual rates*



Sources: Bureau of Economic Analysis; CEA calculations.

**Figure 3-2. U.S. Trade Balance, 2018–22**

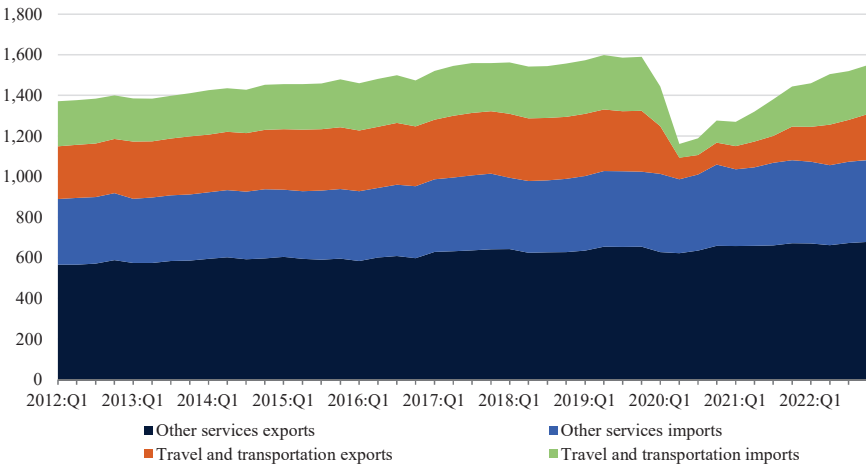
*Percentage of GDP, quarterly*



Source: Bureau of Economic Analysis.

**Figure 3-3. Real U.S. Services Trade, 2012–22**

*Billions of chained 2021 dollars, quarterly, seasonally adjusted at annual rates*



Sources: Bureau of Economic Analysis; CEA calculations.

third quarter of 2008. The deficit then declined as imports fell from their peak, reaching 3.2 percent of GDP in the fourth quarter.

Over the past 20 years, the U.S. goods trade deficit has been partially offset by a surplus in services trade. That is, U.S. exports of services have consistently exceeded imports of services. However, services surpluses have been depressed since the abrupt halt in international movements at the onset of the COVID-19 pandemic as exports of travel and transportation services

have recovered more slowly than imports.<sup>1</sup> In 2022, real travel and transportation services exports had only reached 67 percent of their 2019 level, whereas imports were at 89 percent (figure 3-3).

In 2022, stronger growth in travel services imports (spending by U.S. travelers abroad) compared with exports (spending by foreign visitors to the United States) was likely driven in part by the dollar's strength (box 3-1). For transportation services, the differences in recovery paths were compositional: U.S. transportation services exports are typically dominated by passenger air services, so fewer foreign visitors due to COVID-19 suppressed these exports. While the plurality of U.S. transportation imports are also typically passenger air services, a large share are maritime freight services. Since most shipping companies are foreign-owned, record goods imports pushed these services imports higher ([BEA 2023b](#)).

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<sup>1</sup> In official U.S. data on services trade, this category is named "transport" rather than "transportation."

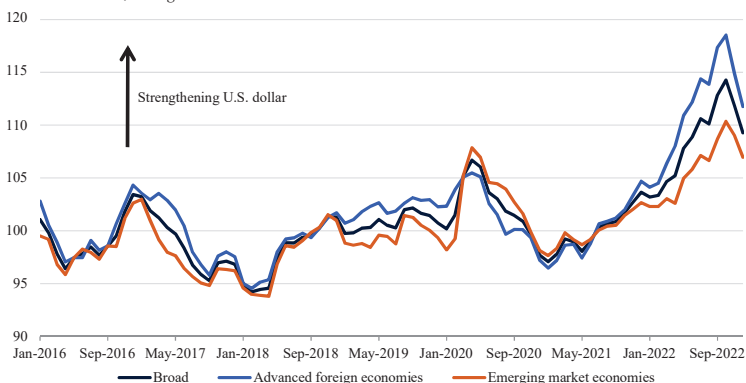
### **Box 3-1. Effects of the Strengthening U.S. Dollar on the U.S. Economy**

In 2022, the U.S. dollar strengthened against the currencies of its main trading partners, particularly other advanced economies. The Federal Reserve's broad, real exchange rate index increased by 10.7 percent between January 2022 and its peak in October 2022, falling back at the end of 2022 to realize a 5.4 percent year-over-year increase in December 2022 (figure 3-i). The dollar's rise was driven by strong U.S. growth and rising interest rate differentials, as well as by the appeal of U.S. assets as safe haven investments as Russia's invasion of Ukraine stoked global uncertainty. The weakening of the dollar at the end of the year reflects the Federal Reserve's signal that the pace of rate hikes would slow and signs of relatively strong economic conditions in other advanced economies.

Dollar exchange rates have an important influence on trade patterns because they determine the price of U.S. goods and services in the national currencies of the Nation's trading partners. When the dollar is strong, it takes more foreign currency to purchase dollar-denominated goods and services. At the same time, it reduces the dollar cost that U.S. buyers pay for imported goods and services denominated in foreign currency, effectively making them cheaper. All else being equal, these changes in relative prices encourage U.S. buyers to substitute away from goods and services produced in the United States and toward foreign-produced goods and services (i.e., imports), deepening the U.S. trade deficit.

**Figure 3-i. Federal Reserve Board's Real Broad Dollar Index, 2016–22**

*Index: 2021 = 100, through December 2022*



Sources: Federal Reserve Board; CEA calculations.

Note: Advanced foreign economies include Australia, Brazil, Chile, China, Colombia, Hong Kong, India, Indonesia, Israel, South Korea, Malaysia, Mexico, the Philippines, Russia, Saudi Arabia, Singapore, Taiwan, Thailand, and Vietnam.

In 2022, the dollar's strength was only one of many strong currents shaping trade patterns. As such, it is difficult to distinguish its effects from other forces. However, as an example, it is likely that the strength of the dollar contributed to the comparatively stronger rebound in imports relative to exports of travel services, as depicted in figure 3-3. This is because when the dollar is strong, as explained above, it has more value in foreign currency terms, making travel budgets go further and thus incentivizing increased spending on hotels, restaurants, and other goods and services by Americans abroad. The opposite effect makes travel in the United States more expensive for foreign visitors.

The strong dollar also likely dampened U.S. exports of agricultural commodities like soybeans, cotton, and corn in 2022 (Jiang et al. 2022). Indeed, exports in the Bureau of Economic Analysis' (BEA's) broad end-use category of food, feed, and beverages, which includes these agricultural products, fell to its lowest level in real terms since 2015, another period of the dollar's strengthening. (The BEA classifies traded goods in six broad end-use categories: consumer goods; foods, feed, and beverages; industrial supplies and materials; capital goods; automotive vehicles, etc.; and other goods.)

Because agricultural commodities tend to have relatively few intrinsic differences across countries of origin, it is particularly attractive for buyers to substitute away from U.S. varieties when a strong dollar increases their relative prices. Indeed, research suggests that exchange rates are a particularly relevant factor for buyers of less-differentiated commodities, and U.S. agricultural exports tend to decline in periods of real dollar strength (Cooke et al. 2016; Mattoo et al. 2017).

The strong real exports of manufactured goods in 2022 seemingly conflict with the deterioration of U.S. currency competitiveness. (These exports are defined as goods exports under the North American Industry Classification System, chapters 31–33; U.S. Census Bureau 2023b; BLS 2023.) However, this may be explained in part by two offsetting forces. First, the dollar’s strength lowers the dollar costs of imported inputs and capital equipment priced in foreign currencies, thus increasing the cost-competitiveness of U.S. manufacturers that rely on these imports (Goldberg and Crockett 1998). Second, in 2022 U.S. manufacturers’ loss of currency competitiveness was likely offset by a deterioration of cost-competitiveness in other countries that were more exposed to rising input costs from energy price hikes.

A strong dollar can also lower the dollar price of imported consumer goods, dampening inflationary pressures. In practice, however, the dollar’s impact on movements in U.S. consumer price inflation has historically been limited, due to the relatively low pass-through of exchange rate movements to U.S. import prices (Gopinath and Itskhoki 2021; Gopinath, Itskhoki, and Rigobon 2010). Moreover, imported goods constitute a relatively small share of the basket of goods used to calculate common measures of inflation—representing only 12.6 percent of the Consumer Price Index by one estimate (Borusyak and Jaravel 2021)—so declines in prices of imported goods are unlikely to have a substantial impact on measured inflation in a given period.

### ***Pandemic-Related and Macroeconomic Trends Have Shaped Record Goods Imports***

Strong demand growth and the unwinding of the pandemic-era supply chain pressures that mounted throughout 2021 underpinned the dramatic increase in goods imports in the first quarter of 2022 (for the top U.S. import partners, see box 3-2). Along with the strengthening dollar, these forces sustained elevated imports through the rest of the year. To illustrate how this pattern unfolded in record imports in the broad end-use category of consumer goods, figure 3-4 splits this category in two. The household goods series depicts trends in real imports of goods most closely associated with household consumption, such as apparel and footwear, cellphones, furniture and household appliances. The other consumption goods series reflects trends in real imports of goods like pharmaceuticals, artwork, and gem diamonds that are less associated with everyday household expenditures.<sup>2</sup>

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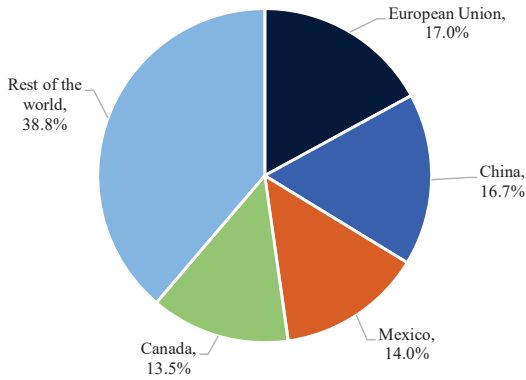
<sup>2</sup> The CEA is grateful to the International Trade Programs team in the Economic Indicators Division of the U.S. Census Bureau for suggesting this division.

### Box 3-2. The United States' Top Goods Trading Partners

Although research suggests that the product composition of goods trade has shifted in recent years, the United States' top trading partners have largely remained the same (Bown 2022a). The top U.S. export destinations and import sources are still China and the European Union—the two largest economies outside the United States—as well as the United States' North American neighbors, Mexico and Canada. Together, these four economies are responsible for over half of U.S. trade (figures 3-ii and 3-iii).

**Figure 3-ii. Top Sources of U.S. Goods Imports, 2022**

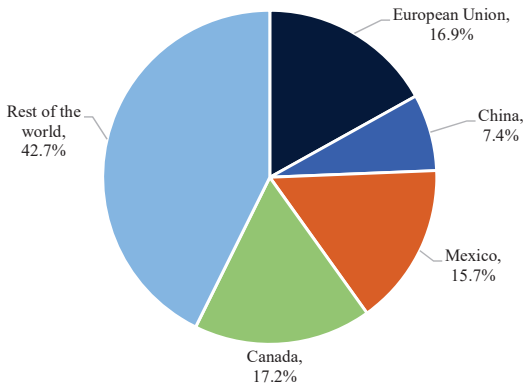
*Share of nominal imports*



Source: U.S. Census Bureau.

**Figure 3-iii. Top U.S. Goods Export Destinations, 2022**

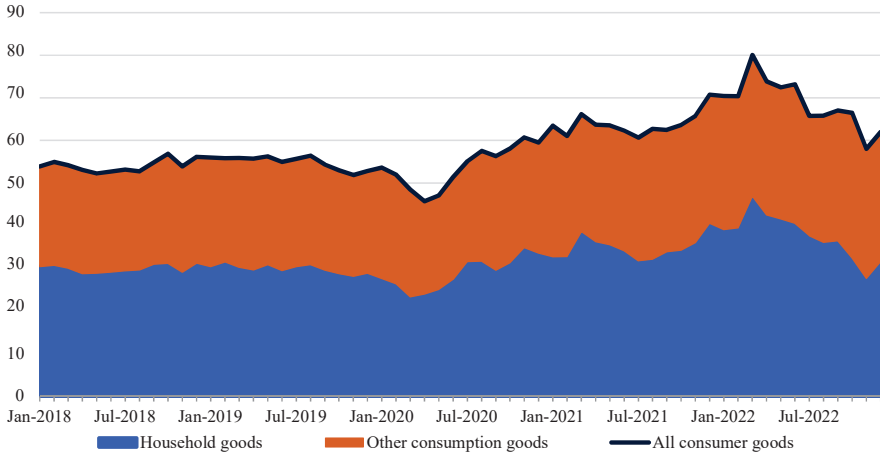
*Share of nominal exports*



Source: U.S. Census Bureau.

**Figure 3-4. Real Imports of Consumer Goods, 2018-22**

Billions of 2021 dollars



Sources: Bureau of Economic Analysis; Bureau of Labor Statistics; CEA calculations.

Note: Consumer goods exclude automobiles and parts. Household goods include apparel, footwear, and other household goods; furniture and other household goods; household appliances; cell phones and other household goods; and toys, games, and sporting goods. Real series have been adjusted with the Bureau of Labor Statistics' import price indices.

Figure 3-4 reveals that the first-quarter import surge was largely driven by household goods, reflecting the pandemic-induced shift in consumption expenditures to goods and away from services (see chapter 2 of this *Report*). This shift disproportionately increased import demand throughout this period, in part simply because goods are more import-intensive than services. Compounding this, the persistence of remote work and diminished leisure spending outside the home increased demand for goods like computers and home improvement products that are particularly import-intensive in the United States (Chetty et al. 2022; Higgins and Klitgaard 2021; IMF 2022a).

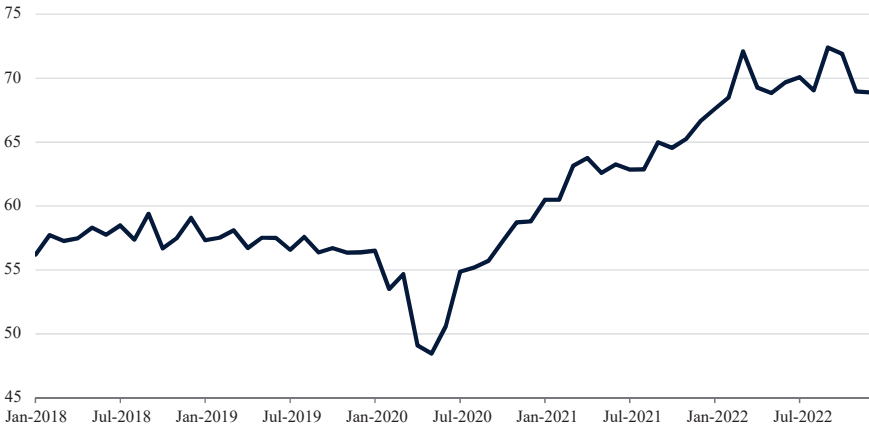
In the first quarter, easing of port congestion—in addition to high inventory investment by businesses responding to global market uncertainty after months of COVID-19-related supply chain snarls and the impending threat of Russia's invasion of Ukraine—further boosted imports. Imports of household goods decreased from their first-quarter peak as consumption expenditures began to shift back to services, supply chain backlogs were cleared, and inventory rebuilding continued (see chapter 2). However, they remained well-above prepandemic levels throughout the first half of the year. In the second half of the year, household goods imports declined even more significantly as rising interest rates began to dampen consumer demand.

Real imports of capital goods also set a record in 2022, exceeding the previous record set in 2021 by 10 percent. Together with robust imports of industrial supplies and materials—fuels, metals, and other key industrial



**Figure 3-5. Real Imports of Capital Goods (Excluding Automobiles), 2018–22**

*Billions of chained 2021 dollars*



Sources: Census Bureau; CEA calculations.

inputs—these imports supported a strong rebound in domestic output in 2022 (see chapter 2). Like household goods, capital goods imports surged in the first quarter with relief from pandemic-era port congestion (figure 3-5). Unlike household goods, capital goods imports remained substantially above prepandemic levels as imports of various types of electrical equipment, industrial machinery, transportation equipment, and information and communications technology equipment—including semiconductors—benefited from a combination of easing supply constraints and strong business demand.

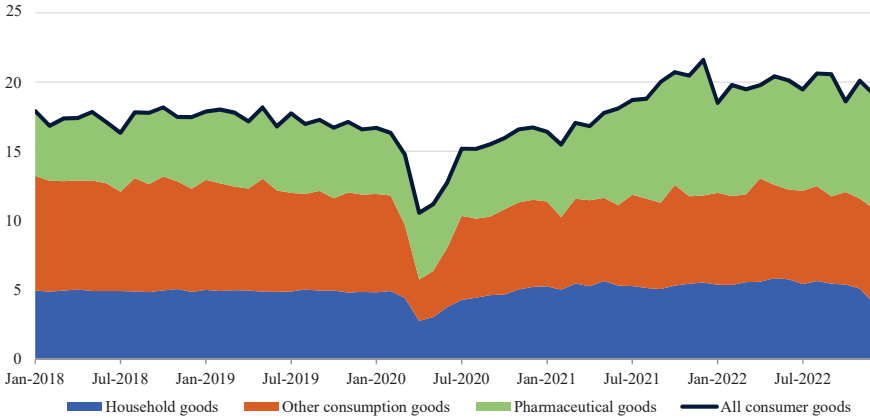
### ***Geopolitical Shocks and Global Demand Have Shaped Record Goods Exports***

Real exports of goods surpassed their prepandemic heights of 2019 by 2.6 percent in 2022 (see box 3-2 for the top U.S. export partners). Increased demand for U.S. energy exports was a key driver, as many countries—particularly in Europe—looked to replace Russia as a source of crude oil and natural gas supplies. U.S. exports in the broad end-use category of industrial supplies and materials—which includes energy goods—hit a record high in 2022, as did exports of consumer goods. In contrast to consumer goods imports depicted in figure 3-4, the increase in real consumer goods exports was driven by pharmaceutical goods (figure 3-6).

Shocks from Russia’s invasion of Ukraine had a significant impact on global commodity markets in 2022 that echoed in U.S. exports. In contrast to other traded goods, commodities like oil—as well as many metals, minerals, and agricultural products are relatively standardized across source countries,

**Figure 3-6. Real Exports of Consumer Goods, 2018–22**

Billions of 2021 dollars



Sources: Bureau of Economic Analysis; Bureau of Labor Statistics; CEA calculations.

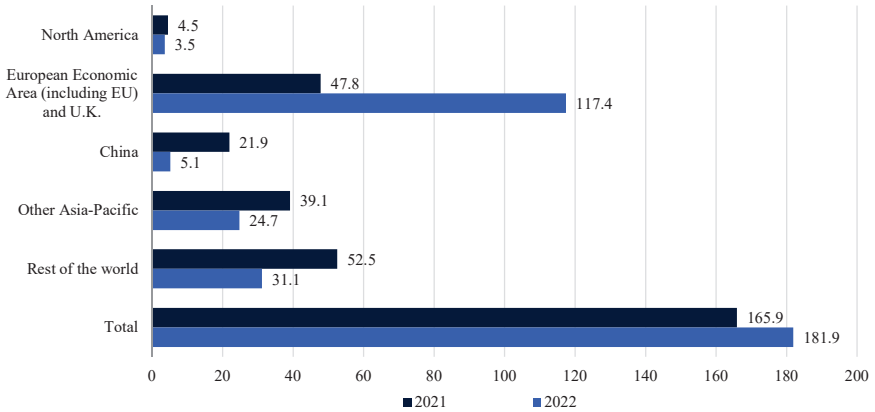
Note: Consumer goods exclude automobiles and parts. Household goods include apparel, footwear, and household goods; furniture and household goods; household appliances; cell phones and other household goods; and toys, games, and sporting goods. Real series adjusted with BLS import price indices.

allowing buyers to substitute across source countries fairly easily. Because of this, their price in any given country is largely determined by global market movements. As such, although Russia and Ukraine are relatively small trading partners for the United States—representing only 0.5 percent of U.S. exports and 1.1 percent of U.S. imports in 2021—because they are major producers and exporters of key commodities, disruptions of their exports influence the prices U.S. consumers must pay for food and fuel, and also overall inflation (see chapter 2). In addition, since the United States is an exporter of some commodities also exported by Russia and Ukraine, notably energy and agricultural products, disruptions to supplies or changes in the pattern of exports from these countries can affect U.S. exports as well (IEA 2022a).

Initially, Russia’s invasion largely cut off Ukraine—a major exporter of food commodities, especially wheat, corn, and vegetable oil—from global markets, threatening global food security. The loss of Ukraine’s export supply, along with the reluctance of global buyers to engage with Russian exporters on the exports of grains and oil seeds and Russia’s own export restrictions on fertilizer and other agricultural products, resulted in contractions along key supply lines for food staples and agricultural inputs like fuel and fertilizer, sending prices soaring in the immediate aftermath of the invasion (Glauber and Laborde 2022). Prices retreated as allied nations successfully collaborated to mitigate disruptions. Nevertheless, the uncertainty associated with Russia’s domestic actions and aggression toward Ukraine—including the destruction of infrastructure used to store and export food commodities, and the naval blockade of Ukraine’s Black Sea

**Figure 3-7. U.S. Exports of Liquefied Natural Gas, 2021 and 2022**

Millions of cubic meters



Sources: U.S. Census Bureau, accessed with Trade Data Monitor; CEA calculations.

Note: Liquefied natural gas is covered by HS271111. Other Asia-Pacific includes Australia, Japan, South Korea, New Zealand, and all 10 nations that belong to the Association of Southeast Asian Nations: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

trade route—continued to exacerbate elevated prices. This led U.S. exports of food, feed, and beverages to exceed their 2021 record by 10 percent in nominal terms, even as they fell to their lowest level since 2015 in real terms (Foggo and Mainardi 2022; U.S. Census Bureau 2023b; Yale School of Public Health 2022). Real exports of these products were ultimately depressed by the strong dollar, weakening global demand and other product-specific factors, including adverse weather conditions.

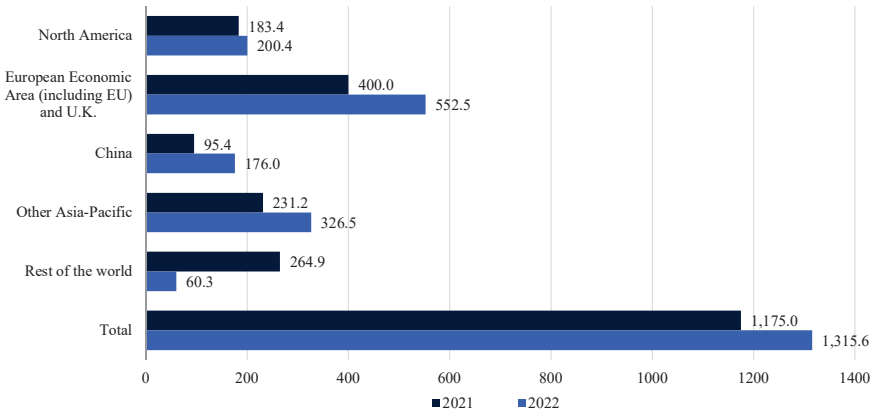
Disruptions from Russia’s invasion of Ukraine had a more significant real impact on U.S. exports of energy goods, notably liquefied natural gas (LNG) and crude oil. The quantity of U.S. exports of LNG and crude oil rose substantially over 2021’s already-high levels. For LNG, U.S. exports also shifted dramatically to European countries as Russia restricted its once-dominant supply of natural gas via pipeline (figure 3-7). Crude oil exports expanded more broadly across destinations, with the notable exception of a decrease in exports to China (figure 3-8). Although this figure only captures a single year rather than a trend, research suggests that reductions in China’s energy imports from the United States in 2022 likely represented a shift to imports from other sources, including Russia, along with a drop in demand due to slower Chinese economic growth (Bown 2022b).

### ***International Trade in Services and Digital Trade Have Been Resilient***

Through the end of 2022, U.S. trade in services other than travel and transportation was remarkably stable and resilient amid the continued disruption of the COVID-19 pandemic and rising geopolitical tensions (see figure 3-3). In part, this is because digital technology enables adaptations that allow

**Figure 3-8. U.S. Exports of Crude Oil, 2021 and 2022**

Millions of barrels



Sources: U.S. Census Bureau, accessed with Trade Data Monitor; CEA calculations.

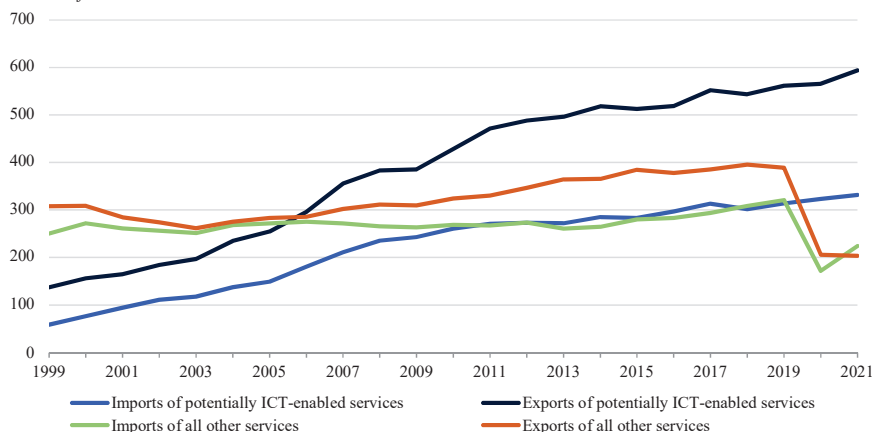
Note: Liquefied natural gas is covered by HS271111. Other Asia-Pacific includes Australia, Japan, South Korea, New Zealand, and all 10 nations that belong to the Association of Southeast Asian Nations: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

many traded services to be remotely provided. Further, many countries have made efforts to reduce obstacles to digital trade, including by promoting access to and efficiency of electronic payments (Klapper and Miller 2021). Just as remote work minimized pandemic-related disruptions in many domestic industries that specialize in information, digital technologies allowed movements of service providers to be converted into movements of data and thus minimized interruptions of international trade in these industries (Brynjolfsson et al. 2020; Dingel and Neiman 2020; Espitia et al. 2021; Pei, de Vries, and Zhang 2021). Furthermore, limitations on mobility increased demand for other traded digital services as more household consumption as well as work moved online.

In fact, the pandemic likely accelerated the trend of rising digital trade flows. Though there is no standardized definition of digital trade, it can be conceptualized as including three general types of transactions. The first is traditional e-commerce, whereby the Internet facilitates a purchase that is delivered offline. The second is digitally provided services, which are provided and consumed online. This category includes a wide array of services that are increasingly part of everyday life, including digital media like streaming music and videos; digital platforms that connect individuals to make transactions; the services embedded in the Internet of Things, like “smart” household appliances and connected medical devices; and the cloud computing services relied on for business operations. The third category includes data, which are a basic element of many cross-border transactions but can also be deployed by companies as part of their operations or sold to other businesses to target advertisements, improve manufacturing

**Figure 3-9. U.S. Trade in Potentially ICT-Enabled Services, 1999–2021**

Billions of 2021 dollars



Sources: Bureau of Economic Analysis; CEA calculations.

Note: ICT = information and communications technology. Price indices for exports and imports of potentially ICT-enabled services are calculated as the average of price indices for their components (insurance services; financial services; charges for the use of intellectual property; telecommunications, computer, and information services; other business services; and personal, cultural, and recreational services), weighted by the category's nominal share. The nominal series is then converted with this price index.

operations, and power machine learning for artificial intelligence (AI) tools, among many other uses (Meltzer 2019; OECD 2023a; Staiger 2021a; Wharton 2019).

Although digital trade cannot be precisely measured using current data sources, the evidence suggests that there have been dramatic increases during the last two decades. Cross-border data flows that underpin digital trade transactions are estimated to have increased by a compound annual growth rate of 45 percent between 2010 and 2019 and by about 40 percent between 2019 and 2021 (Birshan et al. 2022). In comparison, flows of goods and services grew at a compound annual growth rate of about 3 and 4 percent, respectively, between 2010 and 2019 (BEA 2023c). Estimates suggest that e-commerce transactions grew at an average annual rate of 14.5 percent between 2010 and 2019 and by 30.3 percent between 2019 and 2021. E-commerce transactions made up an average of 14.5 percent of retail sales by value in 2022, up from 4.5 percent in 2010 and 10.5 percent in 2019 (U.S. Census Bureau 2022).

Likewise, the subset of traded services that the BEA defines as “potentially ICT-enabled” (i.e., information and communications technology-enabled) has grown dramatically over time (figure 3-9).<sup>3</sup> Real exports

<sup>3</sup> Potentially ICT-enabled services trade includes the categories of services trade for which digital technologies are thought to play the most prominent role. These include ICT services themselves, as well as insurance services, financial services, and charges for the use of intellectual property, including royalties and licenses.

and imports of potentially ICT-enabled services grew at an average annual rate of 7.0 and 8.5 percent, respectively, between 1999 and 2021. This was much faster than real exports and imports of all other services, which grew at average annual rates of 0.5 and -1.1 percent, respectively, during the same period.

Unlike traditional trade in goods and services, for many digital trade transactions, there is no physical movement of a good or a person across a border. Rather, the transaction is fully realized by data flows. In great contrast to physical exchanges, the direct, marginal cost to move data across borders is nearly zero. Moreover, the cost difference in procuring an identical digitally delivered service from nearby versus from far away is also close to zero (Goldfarb and Tucker 2019). Absent a sharp increase in regulatory hurdles, digital trade is thus poised for further dramatic increases as digital technology continues to improve, as the Internet of Things continues to spread, and as robotics and artificial information technologies are further developed (Baldwin 2022).

At present, U.S. trade in potentially ICT-enabled services is concentrated among advanced economies (BEA 2022). However, as digital technology develops, and as the infrastructure that enables Internet use improves, there will be more opportunities to draw on workers and consumers from around the world to provide and demand a wide range of digital services. This is likely to propel substantial increases in digital trade with emerging markets (Baldwin 2022) and provide benefits to U.S. consumers, workers, and businesses. However, increased competition from service providers abroad will also likely have negative effects on some American businesses and workers (box 3-3).

### *Continued Growth for Foreign Direct Investment Despite Elevated Uncertainty*

Global foreign direct investment (FDI) flows exhibited strong growth during the first three quarters of 2022; total real global FDI flows grew by 9 percent during the first three quarters of 2022 compared with the same period in 2021; global FDI flows in the first quarter of 2022 reached their second highest level in the past five years, increasing by more than 15 percent year-over-year and by over 40 percent compared with the prior quarter (BEA 2023d; OECD 2023b).<sup>4</sup> Global FDI as a share of world GDP reached about 2 percent of GDP in the first half of 2022, a continued recovery from the sharp contraction in international investment during the onset of the COVID-19 pandemic. Though FDI can sometimes pose risks (e.g., to national security in limited cases), research has found that inward and outward FDI can be

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<sup>4</sup> Real FDI flows are calculated as the average of global FDI inflows and outflows in dollars, deflated by the U.S. Personal Consumption Expenditures Price Index (chain type).

### Box 3-3. Rising Digital Trade and U.S. Labor Markets

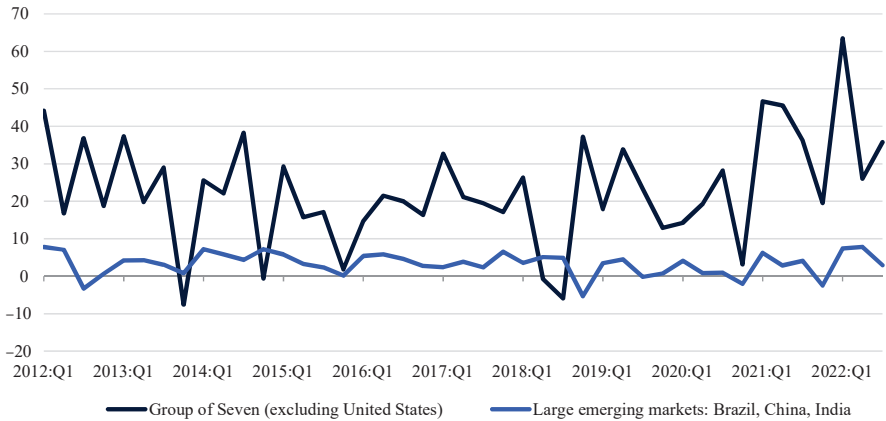
Advances in digital technology that facilitate the remote production and provision of goods and services will create significant opportunities and challenges for U.S. workers (Amiti and Wei 2006; Eppinger 2019; Grossman and Rossi-Hansberg 2008). U.S. workers have a comparative advantage in many tradable services and some sophisticated goods industries due to skill level and education. Access to a larger global market will allow these industries to expand, increasing demand for these skills, which may lift wages and provide opportunities for employment for a portion of the workforce. However, other workers in services industries that compete directly with digitally enabled imports (e.g., a worker for a traditional big box retailer competing with a foreign e-commerce company) may face lower wages and job loss. Importantly, research suggests that these losses may disproportionately affect individuals who are more economically vulnerable, exacerbating economic inequality within the United States (Oldenski 2011). In particular, Baldwin (2022) argues that an expansion of digital services trade may have particularly negative effects on U.S. workers providing intermediate services (e.g., administrative assistants, graphic designers, travel agents, and information technology help staff), who will face rising competition from low-wage counterparts in developing countries.

Labor provisions are a core feature of the Biden-Harris Administration's work with U.S. partners on digital trade and featured in the United States' discussions with the EU in the U.S.-EU Trade and Labor Dialogue under the U.S.-EU Trade and Technology Council (DOL 2022), as well as in Pillar 1 of the Indo-Pacific Economic Framework for Prosperity (USTR 2022b). These provisions aim to ensure that trade policy supports fair competition for U.S. workers in the digital economy, raising the standard for workers abroad rather than facilitating competition on the basis of low labor standards.

Research on previous labor market shocks—notably the so-called China Shock, whereby increased import competition in certain manufacturing sectors led to concentrated and persistent job losses in some communities—has revealed that the costs for many workers to adjust after a change in the demand for their labor can be very high (Autor, Dorn, and Hanson 2013, 2016, 2021; Eriksson et al. 2021). This suggests that there is an essential role for complementary domestic policies to equip U.S. workers who are exposed to increased competition through digital trade with the resources to adapt (CEA 2022, chap. 3; Clausing 2019).

**Figure 3-10. Real U.S. Outward Foreign Direct Investment, by Destination, 2012–22**

*Billions of 2021 dollars, quarterly*



Sources: Bureau of Economic Analysis; CEA calculations.

Note: Data are net financial transactions (without current cost adjustment) on a directional basis, in this case those that relate to outward investment (U.S. direct investment abroad). Nominal series converted to 2021 dollars using U.S. Personal Consumption Expenditures Price Index. Data through 2022:Q3.

the source of significant contributions to economic growth and increased resilience to shocks (Alfaro 2016; OECD 2020a).

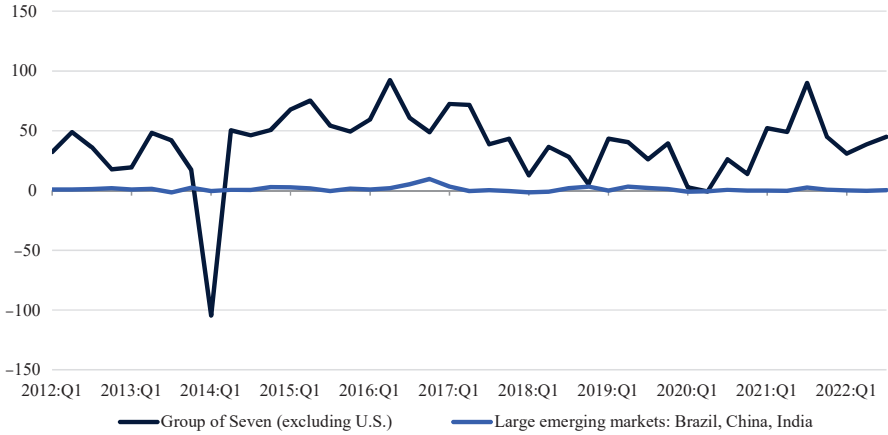
Although FDI flows are not directly subject to the same types of physical disruptions as international trade (i.e., the ability to carry out financial transactions is not affected by issues like port closures or physical distance), they are similarly responsive to changes in global economic conditions. Elevated uncertainty about global economic conditions and changes in the economic policy environment can reduce or reverse investment flows (Choi, Furceri, and Yoon 2020; Gulen and Ion 2016; Julio and Yook 2016). Businesses may decide to delay or suspend investment decisions when uncertainty is high and when investors find it difficult to determine when conditions are likely to normalize. Following the strong flows in the first quarter of 2022, elevated global inflation and tightening global financial conditions, as well as the compounding effects of Russia’s invasion of Ukraine, resulted in individuals, companies, and governments moderating global FDI flows in the second and third quarters of 2022 (although they still grew 5 percent compared with the second- and third-quarter flows in 2021) (OECD 2023b).

Focusing on the United States, in the first half of 2022, the country was both the largest recipient and largest source of FDI globally (OECD 2022a). FDI flows into and out of the United States are largely flowing from or to advanced economies (e.g., the Group of Seven), especially in comparison



**Figure 3-11. Real U.S. Inward Foreign Direct Investment, by Source, 2012–22**

*Billions of 2021 dollars, quarterly*



Sources: Bureau of Economic Analysis; CEA calculations.

Note: Data are net financial transactions (without current cost adjustment) on a directional basis, in this case those that relate to inward investment (foreign direct investment in the U.S.). Nominal series converted to 2021 dollars using U.S. Personal Consumption Expenditures Price Index. Data through 2022:Q3.

with FDI to and from large emerging market countries (figures 3-10 and 3-11).

Along these lines, the United States, its allies, and its partners are taking measures to deepen investments in the critical industries in one another’s economies as a way of reducing dependencies on other countries that have had an outsized role in these industries, notably China. For instance, the United States, its allies, and its partners are coordinating to increase their collective capacity to produce semiconductors (Shivakumar, Wessner, and Howell 2022). As part of the United States’ CHIPS and Science Act, the State Department will manage the International Technology Security and Innovation Fund, which will promote the development of complementary, secure supply chain investments in key partners to strengthen and support the U.S. semiconductor industry (U.S. Department of State 2022a). Similarly, coordinated efforts to catalyze infrastructure investment in emerging and developing countries through the Partnership for Global Infrastructure and Investment—particularly to support the digital economy and the green energy transition—will help reduce uncertainty, strengthen secure supply chains, create new opportunities for businesses and workers, and boost overall economic growth (White House 2022a). The increased policy clarity resulting from these types of commitments and the shared experience of supply constraints during the pandemic may further catalyze mutual investment, thereby deepening the United States’ investment relationship with its key allies and partners.

## Global Economic Relations Are at a Turning Point

Since World War II, a central focus of the international economic policies of the United States, its allies, and its partners has been reducing barriers to trade and investment in pursuit of greater economic prosperity (Irwin 2022a; CRS 2023). These policies have led to an expanded and strengthened web of integrated economic relationships in the form of global supply chains, and they have supported flows of goods and services across borders that have substantially increased national incomes around the world (CEA 2022, chap. 6; Irwin 2022b; World Bank 2020). However, disruptions of these flows during the global COVID-19 pandemic hit critical nodes of supply chains and hindered production worldwide, amplifying constraints on the supply of certain essential goods to businesses and households (Espitia, Rocha, and Ruta 2022). In addition, Russia’s invasion of Ukraine made it imperative for the United States, its allies, and its partners to sever economic relations with Russia that could facilitate its military aggression. The resulting economic sanctions, the reluctance of some international businesses to maintain even permitted economic relationships with Russia, and Russia’s retaliatory export restrictions made the risk of undiversified supply chains even more apparent. They also underscored the power of economic integration as a tool of foreign policy (Yellen 2022a; Lagarde 2022).

Alongside these shocks, increased competition from imports over time has also hurt the employment and earnings outcomes for some groups of workers (box 3-3). Long-standing concerns about the associated role of international trade in rising income inequality within the United States (Autor et al. 2014; Chetverikov, Larsen, and Palmer 2016)—along with concerns about the climate crisis, through the greenhouse gas emissions embedded in the consumption of tradable goods and services within the United States—have led to calls to reassess and update the approach to trade policy in the United States and elsewhere (CEA 2022, chap. 3; Tai 2021a, 2021b; WTO 2022).

Although market incentives and current trade rules do not always align production and trade flows with broader social, political, environmental, or national security objectives, international trade and investment can be powerful sources of economic gains. Empirical research has demonstrated that in addition to supporting lower costs for businesses and consumers (de Loecker et al. 2016; Jaravel and Sager 2019), and jobs and higher wages for workers in export industries (Feenstra et al. 2019; National Security Council 2022; Riker 2015; U.S. Department of Commerce 2021), trade and investment facilitate the flow of knowledge across borders, spurring productivity gains and innovation (Goldberg et al. 2010; Keller and Yeaple 2009). Beyond the United States’ borders, trade and investment with the United States provides opportunities for many developing countries to fight

potentially destabilizing poverty ([Irwin 2022b](#)) and can be a foundation for closer relationships with the United States in other domains ([Chivvis and Kapstein 2022](#)).

Moreover, as leaders have emphasized, global economic integration is also part of a strategy to promote economic resilience and security ([Georgieva, Gopinath, and Pazarbasioglu 2022](#); [Lagarde 2022](#); [Yellen 2022a](#)). Extensive research has found that under a broad set of conditions, businesses are more resilient during supply disruptions when they are able to draw on a geographically diverse set of sources rather than a concentrated source of supply for inputs. Put simply, geographically distributed supplies can act as a “pressure valve” for supply challenges during periods of idiosyncratic supply disruptions ([Bonadio et al. 2021](#); [Eppinger et al. 2021](#); [Caselli et al. 2020](#); [D’Aguanno et al. 2021](#); [Espitia, Rocha, and Ruta 2022](#); [Grossman et al. 2021](#)). Although the opportunity to trade does not automatically deliver geographic diversity in sourcing, it does enable it. Similarly, global markets can serve as a backstop for demand, providing alternative markets for businesses when domestic demand is low ([Caselli et al. 2020](#); [Lagarde 2022](#)). As such, it is in the interest of the United States to pursue approaches to lower trade costs within greener, fairer, and more secure trade and investment partnerships.

The United States, its allies, and its partners have thus reached a turning point in international economic policy, whereby it is necessary to reckon with a broad mandate: On one hand, it is desirable to maintain the benefits associated with international trade and investment and to facilitate the growth of these benefits in the digital sphere. On the other hand, the focus of trade policy needs to expand beyond reducing barriers. Decisionmakers need to ensure that policy supports increased resilience to global supply shocks; limits the ability of adversarial powers to weaponize economic integration to the United States’ detriment; preserves fair competition in the presence of large, nonmarket economies; and minimizes exposure to cybersecurity and regulatory risks, while facilitating digital trade flows. Trade policy can also advance other objectives that interact with international markets, such as fighting climate change, promoting workers’ rights and labor standards both at home and abroad, and expanding the benefits of trade to underserved communities ([Meltzer and Kerry 2019](#); [USTR 2022e](#)). The mandate to balance these priorities exists both at the level of individual policy measures and for aggregate U.S. policy, making coordination across agencies within the U.S. government and between U.S. partners increasingly important. The approach the United States takes to international economic policy in this challenging environment sends a signal to businesses, consumers, and governments around the world about U.S. priorities. As such, it forms a key element of U.S. foreign policy.

## *Imperatives of Economic Partnerships in the Changing Global Environment*

Confronting systemic vulnerabilities that have become more prominent over the past two years while preserving the benefits of international economic integration to the maximum extent will require close collaboration between the United States, its allies, and its partners. This subsection explores three critical policy objectives where cross-border trade and investment play an essential role in promoting economic well-being and for which there is a need to calibrate trade policy to meet current challenges: (1) building more resilient supply chains, (2) responding to adversarial or unfavorable political and economic policies abroad, and (3) safely advancing digital trade. Although the scope of this chapter is limited to these three areas, the United States and its allies and partners also face a broader mandate to update and strengthen the rules, norms, and institutions that underpin international business and economic relations in the twenty-first century environment. This includes facing sociopolitical challenges and combating climate change (CEA 2022, chap. 3). Existing institutions and frameworks for global dialogue and collaboration remain important as incubators for solutions to complex and evolving challenges (Staiger 2021b). Today’s challenges also provide a critical opportunity for the United States to play a global leadership role, working with its allies and partners to chart a modern course for a greener, more inclusive, more resilient, and more secure global economy (box 3-4).

### **Box 3-4. The United States’ New Approach to Economic Partnerships**

The Biden-Harris Administration is pursuing deeper commercial ties through economic partnerships that address vulnerabilities to external shocks while making international trade and investment greener and fairer. The Indo-Pacific Economic Framework for Prosperity, a flagship effort, consists of four pillars. The trade pillar seeks to craft high-standard, inclusive, free, fair, and open trade commitments. The supply chain pillar seeks to establish commitments for supply chain transparency, diversity, and coordination. The clean economy pillar seeks cooperation on clean energy, decarbonization, and infrastructure. And the fair economy pillar seeks economic frameworks to enforce tax, antibribery, and anticorruption systems. Commitments within each of the four pillars will be designed to enhance the benefits for workers in the United States and around the world (White House 2022b).

## *Resilience during Global Supply Shocks*

In the early days of the COVID-19 pandemic, disruptions in the supply of manufacturing inputs like semiconductors, consumer products like bicycles, and medical supplies and equipment made Americans acutely aware of the importance of “supply chain resilience”—that is, the ability of businesses and public services to continue to provide goods and services when a source of supply or distribution is suddenly unavailable. The past three years have demonstrated how shortfalls of inputs or equipment in one industry can disrupt production and distribution in linked industries, slowing overall economic output (Cerdeiro and Komaromi 2020). Furthermore, Americans have witnessed how supply disruptions can even put public health and safety at risk. This experience has motivated both firms and governments to take steps to build resilience.

Falling barriers to trade—induced by both policy and technological change—have enabled businesses to reach around the world to source the inputs and equipment that ultimately come together to produce the goods purchased by consumers and public service providers at lower cost, greater variety, and higher quality (Baldwin and Freeman 2022; de Loecker et al. 2016; Fan, Li, and Yeaple 2015; Krugman 1980). However, the inputs and equipment themselves are often also an amalgam of raw materials extracted in one country, processed in another, and combined with more materials in a third country. As a consequence of this global production process, firms and governments often have only a limited visibility of the critical nodes of supply chains, which limits their ability to evaluate or reduce their exposure to rising geopolitical tensions, climate-related disasters, and other risks. As such, researchers have emphasized that government support for initiatives to increase the visibility of supply chains, or to enhance supply chain transparency, can reduce the information costs of broader steps to increase resilience (CEA 2022, chap. 6; National Academies 2022).

Because stages of production take place globally, engaging with partner governments to collect and share information can make efforts to map and monitor supply chains more complete. Such collaboration can alert governments to potentially fruitful avenues to mitigate destabilizing supply dependencies and, because sharing information highlights cross-country interlinkages, it can catalyze coordinated responses during crises. Indeed, experts have argued that a sustained commitment by countries to share information and coordinate policies affecting the supply of critical health-related goods and services will be essential in preparing for future public health crises (Bown 2022c; National Academies 2022). Partnerships to increase supply chain transparency can also reduce the costs of gathering information to satisfy climate and other policies, such as those that aim to eliminate trade in products made with forced labor, like the Uyghur Forced Labor

Prevention Act in the United States (Baldwin and Freeman 2022). More generally, greater supply chain transparency gives both firms and consumers the information they need to “vote with their wallets” by choosing to buy from producers and vendors whose practices are consistent with their own values (Mollenkopf, Peinkofer, and Chu 2022). In this way, transparency can leverage market forces to reward and advance greener, more inclusive, and more secure business practices.

The Biden-Harris Administration has initiated several ongoing dialogues on supply chains that focus on sharing information, designing early warning systems for supply chain disruptions, developing technical standards, and facilitating private investment. These discussions have been held through the U.S.-EU Trade and Technology Council, the Quad Critical and Emerging Technologies Working Group, the Minerals Security Partnership, and the Indo-Pacific Economic Framework for Prosperity. The United States also conducts regular bilateral dialogues on supply chains with a number of countries, including Canada, Mexico, the United Kingdom, Japan, and South Korea.

These and other partnerships can further contribute to maximizing the benefits of government incentives to increase productive capacity for critical goods and materials—that is, traded goods that are essential building blocks for economically and intrinsically important goods and services, such as medical and energy supplies and core technologies (Baldwin and Freeman 2022; Miroudot 2021; IMF 2022a; OECD 2020b; White House 2021a). Cross-country coordination can reduce the risk that competing government subsidies lead to unproductive excess capacity or an oversupply that blunts incentives for further innovation. Likewise, since support from foreign governments can impose economic distortions on domestic competitors, frameworks for allies and partners to resolve differences can help to limit those distortions and avoid costly retaliatory measures (Bown and Hillman 2019; Staiger 2021b; Sykes 2015).

Finally, partnerships to encourage cooperation and communication about industry standards for traded goods and services can enhance the ability for trade to contribute to supply chain resilience. Though there are legitimate reasons for countries to have differing approaches to regulations and standards affecting product design and distribution, fragmentation of entire supply chains because of regulatory differences can decrease resilience. For example, divergent industry standards may make digital systems less interoperable or standard manufacturing inputs less substitutable across production systems, making it more costly to find alternative sources in the event of a supply disruption. As such, forums to develop internationally recognized product standards as well as those that facilitate information sharing on domestic regulatory measures play a critical role in facilitating the ability of trade and investment to promote resilience.

### Box 3-5. Coordination Has Been Critical for the Success of the Sanctions Policy toward Russia

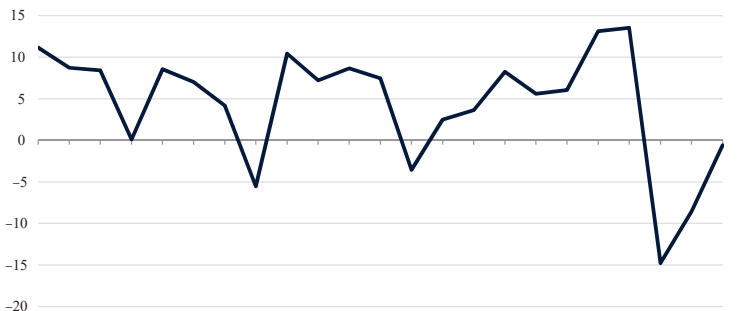
Russia's invasion of Ukraine on February 24, 2022 started the largest land conflict in Europe since at least the conflicts in the Balkans in the 1990s. The scale and brutality of this conflict marked an abrupt departure from the post–World War II—and in particular the post–Cold War—rules-based global political and economic order (National Security Council 2022). The coordinated response by the coalition of the United States and more than 30 allied and partner nations to impose costs on Russia and address the associated threats to the global economy highlights how pooling resources and acting in coordination to achieve a policy goal is often more effective than a unilateral approach (Aslund and Snegovaya 2021; Berner, Cecchetti, and Schoenholtz 2022).

To date, the coalition's sanctions against Russia have targeted key aspects of the Russian economy. Extensive financial sanctions have restricted capital flows into Russia, depriving it of revenues necessary to continue funding its war. For example, the United States has prohibited U.S. persons from making new investments in Russia, and the United States and its allies and partners have sanctioned major Russian financial institutions and taken action to remove major Russian banks from the SWIFT financial messaging system (CRS 2022a). Beginning in early 2022 and continuing through the year, foreign direct investment into Russia fell sharply (figure 3-iv), highlighting the scope and strength of coordinated financial sanctions and the private sector's responses to Russian aggression (OECD 2022b).

The coalition's member countries have also imposed extensive export controls and have revoked Russia's normal trade relations status,

**Figure 3-iv. Real Russian Foreign Direct Investment Net Inflows, 2017–22**

*Billions of 2021 dollars, quarterly*



Sources: Bureau of Economic Analysis; Organization for Economic Cooperation and Development.  
Note: Nominal series converted to 2021 dollars using U.S. Personal Consumption Expenditures Price Index. Data through 2022:Q3.



thereby increasing tariffs on imports from Russia and thus the cost of doing business with Russia (U.S. Department of Commerce 2022; Tai 2022). The United States' coordination with its allies and partners on export controls has hampered Russia's ability to backfill its imports of military or dual-use items (U.S. Department of State 2022b). Sanctions and export controls contributed to a sharp overall drop in Russia's imports and a shift in Russia's energy exports away from Europe, both of which researchers have characterized as key factors harming the Russian economy (Demertzis et al. 2022).

The International Monetary Fund estimates that the Russian economy contracted by 3.4 percent in 2022 (IMF 2022b). In addition, some analysts estimate that Russia's economy will continue to suffer significantly in the medium to long runs. For example, some predictions suggest that the Russian economy will not return to its prewar level of real GDP for five years or more (Economist Intelligence Unit 2022).

Importantly, recognizing the potential for negative spillovers to the global economy from financial and trade sanctions, the United States and its allies and partners have coordinated to relieve global market stress, including by ensuring trade channels remained open in selected commodities exported by Russia and Ukraine (IMF 2022b; OECD 2022c). This meant going after Russian energy in a measured way, by coordinating with partners and allies to allow energy transactions to continue while also designing price caps on seaborne Russian oil and petroleum products to limit Russia's revenue and ensure a stable global supply of energy (U.S. Department of the Treasury 2022a, 2022b). (The price cap on seaborne oil entered into force in December 2022. The price cap on petroleum products entered into force in February 2023.)

In addition, the United States has carved out agricultural commodities, fertilizer, and medical supplies from sanctions and issued extensive public guidance to ensure these authorizations are well understood (U.S. Department of the Treasury 2022c). The United States has also worked with the United Nations to find a pathway for Ukrainian wheat to reenter global markets: through the Black Sea Grain Initiative, more than 11.1 million metric tons of grains and other foodstuffs left Ukrainian ports between July 22, 2022, when the program took effect, and November 17, 2022 (United Nations 2022).

The global market's spillovers from Russia's war against Ukraine illustrate the broader themes of this chapter: the past year has been marked by profound new and lingering disruptions of global commerce. Nevertheless, global markets remain relatively robust, and economic coordination—a key element of the post–World War II era—between the United States and its allies and its partner countries has been critical. Without coordination in 2022, there was a nontrivial risk that divergent sanctions policies could have increased confusion and uncertainty in



markets to the detriment of the global economy, notably global price stability. A lack of coordination also could have lessened the impact on the Russian economy of these sanctions. In coming years, continued coordination between the United States and its allies and partners will remain important for crafting effective policies to respond to these kinds of disruptions and to mitigate the economic and political uncertainty that may arise as a result of rising geopolitical tensions (Georgieva, Gopinath, and Pazarbasioglu 2022).

### *Responding to Geopolitical Challenges*

In today's environment of rising geopolitical tensions and geostrategic competition, the United States' economic strength is one of its most profound sources of global power and influence. This strength is greatly enhanced by the collective economic strength that it can wield, along with its allies and partners that share its support for a free, open, prosperous, and secure world (National Security Council 2022). Coordination between the United States and its allies and partners can enhance the ability of aligned countries to provide shared security against and resilience in facing adversarial actions by, for example, enabling a network of alternative sourcing and market opportunities.

In a recent example, the United States and its allies and partners have been able to impose significant economic costs on Russia in response to its invasion of Ukraine in February 2022 (box 3-5). By coordinating their actions, U.S. allies and partners have been able to limit Russia's access to goods and services necessary to pursue its illegal war. Indeed, research has shown more broadly how coordinated economic actions more effectively limit a targeted country's ability to evade economic consequences than do unilateral measures (Bapat and Morgan 2009; Drury 1998; Peksen 2019).

Equally, economic partnerships can mitigate the economic consequences of adversarial actions targeted at the United States, its allies, and its partners. Just as concentrated dependencies on foreign adversaries can create vulnerabilities, diversified linkages with allies and partners can lessen them. Strong, diverse, and reliable economic linkages between trusted partners give businesses alternative markets to which they can shift their sourcing and sales if necessary, mitigating the impact of adversarial actions (Harrell, Rosenberg, and Saravalle 2018). For example, Russia has sought to weaponize Europe's dependence on its supply of natural gas in an attempt to weaken Europe's resolve to support Ukraine and to continue imposing costs on Russia in retaliation for its aggression. However, trade partnerships with the United States and other allies and partners have ensured that Europe has

### **Box 3-6. The U.S.-EU Energy Partnership Diminishes Russia's Leverage**

One of Russia's biggest sources of economic leverage has been its dominance as a supplier of energy via its natural gas pipelines to Europe. Historically, Russia supplied Europe with roughly one-third of its gas (Corbeau 2022). Since the start of its invasion of Ukraine, Russia has cut pipeline deliveries of natural gas to Europe by more than half, and it may stop flows entirely in 2023 (IEA 2022b).

However, the EU was able to replace some Russian gas with imported liquefied natural gas, including from the United States, thus weakening Russia's ability to impose economic damage by restricting supplies of this critical source of energy for European households and industry. Economists estimate that natural gas shortages in Europe could have caused a contraction in some European economies of up to 6 percent if the global LNG market had been unable to respond (Flanagan et al. 2022). The ability of the United States to contribute to easing natural gas shortfalls has thus been critical.

Since Russia's invasion of Ukraine, the United States and the European Union have strengthened their cooperation on energy security. Through the Joint Task Force on Energy Security, the United States has made commitments to supply LNG to Europe through 2023 (White House 2022c). Through this partnership, the United States and the EU have agreed to address short-term energy supply issues with LNG while minimizing greenhouse gas emissions from LNG through measures to increase energy efficiency, reduce demand for gas, and regulate methane emissions. The task force has also led to additional commitments to advance renewable energy by expediting renewable energy projects and accelerating the deployment of clean energy technologies (White House 2022d).

The United States is also strengthening its bilateral partnerships with European countries to increase energy security, empower global decarbonization efforts, and achieve net-zero economies in hard-to-abate energy sectors through clean nuclear energy technology. In 2022, the United States announced its support for the Front-End Engineering Design study to provide the basis for the deployment of a small modular reactor power plant in Romania (U.S. Department of State 2022c); support for a pilot of commercial-scale production of clean fuels from small modular reactors in Ukraine (U.S. Department of State 2022d); and technical assistance for the inaugural civil nuclear project in Poland (U.S. Department of Energy 2022). These investments will help reduce dependence on Russian energy in Eastern Europe in both the medium and long term.

had the ability to shift to alternative energy sources, limiting the damage of Russia’s coercive behavior on households, businesses, and workers (box 3-6).

### *Promoting Opportunity and Managing Risks in Digital Trade*

As discussed earlier in this chapter, digital trade is poised to expand dramatically as work and consumption increasingly take place online; as the Internet of Things digitally connects more everyday objects; and as frontier technologies, for which masses of data are a fundamental input, such as AI, continue to develop. Digital trade may also provide solutions for some of the core challenges to global trade and investment discussed above. For example, with technologies like 3-D printing or other forms of so-called additive manufacturing, digital information flows can potentially facilitate the substitution of entire stages of manufacturing supply chains that currently involve the physical movement of goods, improving resilience in the presence of supply disruptions (Freund, Mulabdic, and Ruta 2022). Likewise, products in the growing “TradeTech” industry use advanced technologies, including AI, to enable supply chain transparency and traceability. These products could reduce the cost of ensuring that supply chains meet security, social, and environmental criteria that make trade safer, greener, and more equitable (Capri and Lehmacher 2021). However, digital trade also creates vulnerabilities that must be managed, especially given rising geopolitical tensions.

Digital trade has two fundamental requirements. The first is the infrastructure and equipment that transmit, store, and process data flows, including the network of underwater fiber-optic cables that carry more than 95 percent of international data (Comini, Foster, and Srinivasan 2021; Morcos and Wall 2021; World Economic Forum 2020). The second is a regulatory environment that permits the flow of data across borders with appropriate safeguards. Absent guardrails, digital trade can introduce potentially critical risks to economic well-being and national security through both of these gateways (Meltzer 2020).

The risks involved are manifest and nontrivial. Among the most salient are cybersecurity risks: The constant flow of large volumes of digital information creates an appealing target for the theft of data. This can allow competitors to capture intellectual property, including trade secrets, that threaten American businesses. It can result in unauthorized access to Americans’ sensitive personal information, violating their privacy and potentially enabling financial or other crimes. Digital technology can allow goods and services traders to falsify information, potentially facilitating the evasion of national laws, regulations, and standards. Digital systems can also be manipulated or disabled remotely, potentially compromising national

defense and critical infrastructure (Meltzer 2020). Estimates suggest that the economic cost of security breaches of information and technology assets during 2020 were as high as 6 percent of global GDP (or about \$6 trillion). Other studies suggest that the costs are disproportionately high for critical industries like health care, transportation, energy, and financial services (IBM 2022; UNCDF 2022).

The expansion of the digital economy modifies existing markets and creates new ones, bringing new challenges to protecting consumers and workers and promoting competition. For example, the difficulties of verifying identity and quality online can compromise consumer protection laws and labor market protections (Goldfarb and Tucker 2019). Likewise, the importance of large userbases and quantities of data, and the ability of digitally enabled companies to attract suppliers of products and consumers from all over the world creates new market concentration dynamics and poses new challenges to regulators focused on competition policy (see chapter 8).

Governments employ a variety of measures to address these challenges by regulating the movement, storage, and processing of data. Regulations affecting digital trade generally fall into a few categories. First, data flow restrictions—for example, limits on access to digital media—may be used to protect intellectual property rights or enhance security, among other objectives. Second, so-called data localization policies—government regulations that determine where and how data related to their citizens, government, and businesses are stored—may be used to enhance consumer privacy and facilitate regulation (Casalini and González 2019; CFR 2022). Such policies may also reflect domestic economic priorities to try to protect industry from international competition.

These regulatory measures can mitigate some risks associated with digital trade, but they can also blunt the very benefits they are put in place to protect (Meltzer 2020). For example, data flow restrictions can hamper innovation, which benefits from sharing information and knowledge across borders (Valero 2016; White House 2022e). These restrictions can be particularly detrimental for the development and use of AI technologies, which rely on the availability of large data sets and are increasingly prominent in business and important for national security. The ability to aggregate, store, process, and transmit data across borders is similarly critical for the financial services sector and its development (Carr, French, and Lowery 2020). Similarly, data localization requirements can increase vulnerability to cyberthreats by concentrating data, thus making systems easier to target (Bauer et al. 2014). These requirements can also make integrated risk management, including monitoring and detecting fraud and cybersecurity risks, more difficult for global firms and institutions to conduct—particularly those in the financial services sector. Mismatches in equipment standards

and regulations can limit system interoperability and thus the resilience of digital systems.

International cooperation to define the vulnerabilities associated with data flows and digital supply chains and the regulatory measures that diminish them can reduce the risks and enhance the economic benefits of digital trade (Ahmed 2019; Casalini et al. 2019; Huang, Madnick, and Johnson 2019; OECD 2015, 2022d). Efforts to enhance workers' rights and increase consumer protections from cybercrime and fraud that crosses borders are integral to these efforts. Indeed, scholars, policymakers, and business leaders have all emphasized the importance of creating an international digital architecture that promotes trust in data flows (CFR 2022). To do so, governments must grapple with how to provide a regulatory system that is safe and secure without unnecessarily restricting the benefits of trade. Best practices in international trade suggest that regulations should be transparent, should be nondiscriminatory for like products and services, and should not be more

### **Box 3-7. U.S. Digital Trade Initiatives**

Digital trade is an increasingly prominent element of various international working groups and agreements, reflecting its importance for inclusive economic growth and security and the challenges policymakers around the world face in developing appropriate and consistent regulatory approaches. Attesting to the focus that the Biden-Harris Administration has placed on ensuring that digital trade benefits people as workers and consumers, the United States has led efforts to foster trust in the digital economy, support innovation and competition, promote a resilient and secure digital infrastructure, ensure consumer protection and privacy, and address discrimination. It is pursuing these efforts by cooperating in regional partnerships that include the Indo-Pacific Economic Framework for Prosperity, the World Trade Organization's (WTO's) Joint Statement Initiative on Electronic Commerce, the Americas Partnership for Economic Prosperity, and the U.S.-Central Asia Trade and Investment Framework Agreement, as well as bilateral engagements with the United Kingdom, Kenya, Taiwan, and other countries (CRS 2022b; USTR 2021, 2022a, 2022b, 2022c, 2022d, 2022e; White House 2022f). The United States has also actively participated in multilateral forums to exchange information on best practices and promote standards and frameworks for tackling the risks associated with digital trade. These include the WTO, the Asia-Pacific Economic Cooperation forum, the Organization for Economic Cooperation and Development, and the Group of Twenty and Group of Seven, which together cover a broad set of countries around the world (USTR 2022e).

burdensome or restrictive than is necessary to achieve their goals, including enhanced security and economic resilience (Casalini and González 2019).

In this regard, the Biden-Harris Administration is engaging with various forums to build this trusted system (box 3-7). These include working with partners and allies to promote an environment that fosters development of the global economy and facilitates robust cross-border data flows that are consistent with both privacy and security needs. However, given the rapid pace at which the digital economy is evolving and the variety of domestic regulatory objectives, negotiating every aspect of the digital regulation may not always be desirable or possible. In this context, frameworks to establish common principles and provide for regulatory transparency have tremendous value (Staiger 2021a).

## Conclusion

The record-setting flows of trade and investment in 2022 demonstrate that the United States remains deeply connected with the global economy. However, disruptions such as those experienced during the COVID-19 pandemic and rising geopolitical tensions pose fundamental challenges to globally connected production systems. Though the shock from Russia's invasion of Ukraine reverberated primarily in global commodity markets, it also increased the level of geopolitical uncertainty, which was already elevated after two years of pandemic-induced stress. The unprovoked invasion of Ukraine has exposed and intensified geopolitical rifts that, along with the experience of the pandemic-induced supply shock, have increased the perceived risk and uncertainty associated with global goods trade and some types of cross-border investments. These uncertainty effects may have longer-term effects on trade as governments adjust their international economic policies and businesses change their global sourcing patterns. Certainly, the economic links between Russia and the rest of the world, and global markets for the commodities in which Russia is a key player, will be transformed. Preserving the benefits from international trade and investment, while protecting national security, addressing the effects of climate change (Tai 2021a; USTR 2022e; White House 2021b), and promoting resilience and equity in a revitalized domestic economy demands new policy approaches to respond to both existing and emerging risks.

Given the global nature of the challenges discussed in this chapter, the policy decisions that the United States, its allies, and its partners make now will reverberate in international trade and investment for some time. The importance of partnerships in the modern global economy cannot be overstated. Enhanced partnerships that feature commitments to share information and coordinate actions are essential to sustaining the economic dynamism and productivity delivered through global economic integration

in uncertain times ([Yellen 2022b](#)). Institutional arrangements must evolve to ease tensions between openness on one hand, and security and domestic imperatives on the other hand ([Staiger 2021b](#)). Effective coordination both across and within governments can help to ensure that the individual policies that sum to the aggregate of international economic policy reflect a deliberate, coordinated policy direction that responds to today's challenges.