



Economic Dominance, Financial Technology, and the Future of U.S. Economic Coercion

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With David S. Cohen, Dr. Gary M. Shiffman,
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The Energy, Economics, and Security Program analyzes the changing global energy and economic landscape and its national security implications. From the shifting geopolitics of energy to tools of economic statecraft, such as trade policy and sanctions, to security concerns tied to a changing natural environment, the program develops strategies to help policymakers understand, anticipate, and respond. The program draws from the diverse expertise and backgrounds of its team and leverages other CNAS experts' strengths in regional knowledge, defense, and foreign policy to inform conversations in the nexus of energy markets, industry, and U.S. national security and economic policy.

ECONOMIC DOMINANCE, FINANCIAL TECHNOLOGY, AND THE FUTURE OF U.S. ECONOMIC COERCION

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EXECUTIVE SUMMARY

Key Takeaways

- Coercive economic measures, such as sanctions, investment restrictions, trade controls, and tariffs, have become an increasingly important tool of U.S. foreign policy in recent years.
- Recent years have witnessed a strengthening of U.S. coercive economic measures, which are likely to remain powerful in the near and medium term.
- Over the longer term, purely commercial factors are likely to support continued U.S. coercive economic power. However, choices by both U.S. policymakers and foreign governments will be the primary determinant of whether coercive economic measures remain powerful tools of U.S. foreign policy over the longer term.
- Shifts in the nature of U.S. coercive economic power could prompt some shifts in the balance and nature of the type of coercive economic measures the United States deploys.

Coercive economic measures have been a longstanding tool of American foreign policy, dating back to the early 19th century. But since the end of the Cold War, coercive economic measures have become an ever more important instrument of U.S. foreign policy. That trend is likely to continue as the Donald Trump administration and members of both parties in Congress, as well as successor U.S. policy leaders, continue to turn to sanctions, investment restrictions, tariffs, and trade controls to achieve foreign policy aims. At the same time, the expanding use of these measures has antagonized allies and spurred diplomatic backlash.

America's expanding use of coercive economic measures rests on the major role of the U.S. dollar, the size of the U.S. economy, and the role of U.S. companies abroad. The fundamental strength of the U.S. economy and its large global footprint have enabled the United States to leverage that strength and interconnectedness to use sanctions and other coercive economic measures in pursuit of foreign policy goals. This report examines

the factors that have allowed the expansive U.S. use of coercive economic measures in recent years, as well as how their use may change over the near term and the longer term. It also offers a set of recommendations for U.S. policymakers and other stakeholders to ensure the continued efficacy of coercive economic measures.

Over the last several decades economic, technological, and policy trends have enhanced the strength of U.S. coercive economic measures and made them an attractive option for national security policymakers. The global financial crisis, which heavily implicated U.S. banks and U.S. policymakers, actually supported U.S. economic leverage and bolstered the cogency of coercive economic tools. In the near term, U.S. coercive economic measures are highly likely to retain their strength, but in the longer term there are a number of trends that may weaken their effectiveness.

The United States' expansive use of these measures has sparked an increasing backlash both from allies in Europe and Asia and from adversaries seeking to circumvent the U.S.-dominated global financial system. European Union policymakers have increasingly discussed the possibility of increasing the role of the euro and are considering mechanisms or countermeasures in response to U.S. coercive economic measures that target European interests. China's rise will also threaten the strength of U.S. coercive economic measures, as China increasingly develops the capacity to offer an alternative to U.S. financial and economic dominance, and seeks to leverage its economic and financial strength in pursuit of its own foreign policy goals. Financial technology developments may help enable these trends as well, as blockchain-based payment systems and other technological advances may eventually support a move away from dollar-based clearing and payments, and also facilitate a greater flow of licit and illicit money outside of traditional financial channels.

Ultimately, government policy choices in both Washington and foreign capitals will be the strongest determinant of the continued strength of U.S. coercive economic measures. These measures are powerful tools now and the United States has inherent strengths that can support its coercive economic power in the future, but poor decisionmaking in Washington, combined with aggressive policy initiatives by foreign governments, could erode U.S. coercive economic measures in the future. Policymakers should take a number of steps to ensure their continued efficacy. The goal of this report is to help provide a roadmap for them to do so.

CHAPTER 1

Introduction

Coercive economic measures are now a central tool of U.S. foreign policy. In recent years, the United States has used coercive economic measures as key means to pressure adversaries including Russia, China, Iran, and North Korea, as well as to target non-state threats such as terrorism, cyberattacks, transnational organized crime, corruption, and human rights abuses.¹ In 2018, the United States markedly expanded its use of tariffs, trade controls, and investment restrictions against China as part of Washington's evolving strategy to check Beijing's increasingly aggressive foreign policy.²

The United States' growing use of coercive economic measures has had significant economic and financial effects. For example, American sanctions on Iran were instrumental in persuading Iran to agree to the Joint Comprehensive Plan of Action (JCPOA) nuclear deal, and President Trump's decision to withdraw from the JCPOA and reimpose sanctions has had pronounced impacts on the Iranian economy.³ This has occurred despite no major European or Asian government supporting Trump's policy or economic pressure campaign.⁴ In 2018, U.S. coercive economic measures had major effects on several large multinational companies, including Russia's RUSAL, the world's second largest aluminum company. The company's valuation and

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operations suffered, and global aluminum markets saw significant volatility and contract interruption.⁵ These actions built on sanctions that the Barack Obama administration had imposed on Russia in 2014, measures that had a noticeable impact on Russia's economic performance. In 2018, the Trump administration restricted U.S. exports to ZTE, one of China's largest telecommunications companies—an action that effectively forced ZTE to suspend commercial operations until it settled with U.S. authorities.⁶ The Trump administration's tariffs against approximately half of U.S. imports of Chinese



Russian oligarch Oleg Deripaska (left) was forced to relinquish his controlling interest in RUSAL, the world's second largest aluminum company, as part of a deal with the U.S. Treasury Department's Office of Foreign Assets Control. The sanctions on RUSAL caused major disruption in global aluminum markets and demonstrated the ability of the United States to target major global companies with coercive economic measures. (Pressphotos/Getty Images)

goods contributed to a marked slowdown in China's rate of economic growth.⁷ Additionally, Congress passed new laws strengthening both U.S. export controls and the Committee on Foreign Investment in the United States (CFIUS) process for reviewing foreign investment in the United States, bringing expansive new requirements to these commercial operations.

Now, broad, bipartisan support for U.S. use of coercive economic measures and eagerness to look to these tools to address policy concerns suggest that the United States is virtually certain to expand its use of the coercive economic toolkit in the years ahead.⁸

But America's expanding use of coercive measures has also begun to spur a global diplomatic and political backlash. Sanctions targets such as Russia and Iran have long called for the development of alternatives to the U.S.-dominated international financial system; in recent years they have taken more concrete steps to establish alternatives. Russia announced that it had developed a financial messaging service as an alternative to the Society for Worldwide Interbank Financial Telecommunication (SWIFT).⁹ China has continued its efforts to internationalize the renminbi and to bolster its own technological and innovative capacity in a bid to reduce its dependence on the U.S. dollar and American technology in the years ahead.¹⁰

In 2018 and 2019, even longtime allies of the United States began to join these calls to reduce U.S. coercive economic power. French President Emmanuel Macron, for example, issued a forceful call for greater European financial independence.¹¹ France and Germany led a European effort to launch a sanctions-resistant special purpose vehicle (SPV) to enable financial transactions with Iran without touching the U.S. financial system. The European Union announced plans to try to move toward pricing oil imports in euros.¹²

This report defines coercive economic measures as the range of sanctions, trade controls, investment restrictions, tariffs, and other negative economic measures imposed in pursuit of foreign policy and national security goals. America's more intensive use of these measures is also spurring a nascent U.S. debate about whether use of these measures, combined with technological changes, could undermine America's economic strength and leverage over the long term. Former U.S. Treasury Secretary Jacob J. Lew and former State Department official Richard Nephew, for example, argued in *Foreign Affairs* that "Washington is increasingly using its economic power in aggressive and counterproductive ways, undermining its global position and thus its ability to act effectively in the future."¹³ A number of other experts have also argued that the United States is using specific coercive economic tools, such as sanctions, too intensively.¹⁴ Yet others make the same observation about intensive use but praise the trend as a preferred substitute for the use of military force, which might otherwise be used to advance U.S. national security interests.¹⁵

This report provides an in-depth assessment of major trends that may affect U.S. use of coercive economic measures over the medium and long term. It seeks to inform policymakers about the impacts that these trends may have on America's coercive economic toolkit. The report begins by reviewing the sources of U.S. coercive economic leverage to assess why U.S. coercive economic tools are effective and why their impact appears to have increased in recent years. It then examines both economic and technological trends that will likely affect use of these tools over time. The report concludes with a series of recommendations for American policymakers on how to preserve the strength of the country's coercive economic toolkit over the next decade.

Under virtually any conceivable scenario, U.S. coercive economic measures will retain significant force over at least the next decade. However, economic and technological trends may drive a shift in the ways the United States deploys these tools and what it selects as targets. The prominence of the United States as a technology

innovator, as a backbone to many global supply chains, and as a standard setter for global laws and norms around financial practices and institutional operations could be challenged by competitors. The United States also faces a small, but non-zero, chance of more significant, rapid changes that could have more dramatic impacts on U.S. economic power, particularly the role of the U.S. dollar in the international financial system. The underlying drivers of the shift from the British pound to the U.S. dollar as the dominant global currency developed over decades, but the shift itself occurred quite rapidly, between 1940 and 1945, triggered by World War II.¹⁶ A rapid shift in the role of the dollar would similarly require a major and seemingly unlikely triggering event. Possibilities for such an event include a hypothetical U.S. federal debt crisis or major U.S. foreign policy blunder. Conceivably, a relatively rapid and nonlinear shift could also be triggered by dramatic efforts by another major economic power, such as the European Union or China, to improve its currency's position. However, to date both the European Union and China have appeared to take more gradual, incremental approaches to expanding the role of their currencies.

Ultimately, leaders engaged in the United States' national security policymaking hold tremendous power over the fate of U.S. coercive economic measures. U.S. monetary, trade, and fiscal policies will affect whether the country remains dominant over the long term. The United States will retain greater coercive leverage to the extent that its economy remains strong and interconnected with markets around the globe, and will lose power to the extent it disentangles and disengages its economy from those of the rest of the globe. Finally, the power of U.S. diplomacy and security policy will affect coercive economic power, either convincing foreign governments to seek to circumvent U.S. coercive economic power or reassuring U.S. allies that the United States will use its coercive economic power responsibly and that they should not pursue efforts to undercut its coercive economic leverage.

CHAPTER 2

The Foundations of U.S. Economic Coercion

Coercive economic measures are a longstanding tool of U.S. foreign policy. Congress passed the country's first coercive economic measure, a trade embargo in retaliation for British harassment of U.S. merchant ships, during the Napoleonic Wars, in 1807. In 1917, Congress passed one of the major economic sanctions statutes still in use today, the Trading With the Enemy Act, to embargo trade with the Central Powers as America entered the First World War. The United States deployed trade controls, sanctions, and other coercive economic measures as part of its strategy to contain communism during the Cold War, including establishing the first formal U.S. export-control program to limit trade with the Soviet Union and imposing an embargo on Cuba following the 1959 Cuban Revolution.

But since the end of the Cold War, coercive economic measures have evolved from an occasional tool into one of the key instruments of American foreign policy. One way this shift is apparent is in the way in which U.S. policy leaders have used sanctions to advance security and diplomatic goals. They have sharpened the policy focus of the measures by transitioning away from broad country-level embargoes to individual and company-specific sanctions. They have also reached for the tool much more often.

The Treasury Department's Office of Foreign Assets Control (OFAC), the primary agency charged with implementing U.S. economic sanctions, currently administers 30 different sanctions programs. That total represents a substantial increase from the 17 sanctions programs that OFAC administered in 2004, when the Treasury Department established its current administrative

structure for sanctions, terrorism finance, and financial intelligence.¹⁷ Moreover, there has been a significant upward trend in the number of people, companies, and entities placed on U.S. targeted sanctions lists since at least 2001.¹⁸ And over the past five years, the United States has added hundreds of individuals, companies, and government entities to U.S. sanctions lists annually, with approximately 600 total additions in 2014, 500 in 2015, 600 in 2016, nearly 900 in 2017, and almost 1,200 in 2018.¹⁹

Sanctions are not the only coercive economic tool that the United States has been using more frequently and intensively in recent years. Working in concert with the European Union, the United States has also recently deployed trade controls to restrict Russia's ability to procure the technology it needs to develop deepwater, arctic offshore, and shale-oil resources. This action builds on longstanding U.S. use of trade controls, including both the International Trafficking in Arms Regulations administered by the State Department and the export-control regulations of dual-use goods administered by the Department of Commerce, to restrict exports of products that would benefit adversaries' military capabilities. The United States has aggressively deployed these controls in the last five years against Russia and also Venezuela.

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The United States is increasingly using a range of coercive economic measures in its competition with China. Over the past several years the Committee on Foreign Investment in the United States (CFIUS) has heightened its scrutiny of investments from China. In August 2018, the U.S. Congress enacted broad new legislation expanding CFIUS jurisdiction over foreign investments in U.S. technology companies, a legislative change driven in large part by growing concern about Chinese investment in the U.S. technology sector to gain intelligence and to bolster China's competitive position in key areas of global technological development.²⁰ Congress also passed the Export Control Reform Act of 2018 (ECRA), which will limit the export of a number of emerging and foundational technologies developed in



The Treasury Department's Office of Foreign Assets Control now administers 30 different sanctions programs. Sanctions have become an increasingly key tool of foreign policy for the United States since the end of the Cold War. (Chip Somodevilla/Getty Images)

the United States to China and other U.S. competitors.²¹ Even prior to ECRA, both the Obama and Trump administrations had taken trade control actions to restrict China’s ability to purchase high-end computer chips and to limit the Chinese defense sector’s ability to purchase U.S. products.²² Over the course of 2018, the Trump administration imposed tariffs on approximately half of U.S. imports of Chinese goods, though these tariffs are intended to address unfair Chinese trade policies as well as U.S. concerns with Chinese activities that pose both economic and national security threats to the United States. (At the time that this report was finalized, the Trump administration and China were working to negotiate a trade deal that would potentially lift many of these tariffs in return for Chinese trade concessions.)

America’s ability to use coercive economic measures effectively depends on its economic and financial strength, and the economic and financial connections between it and foreign nations.

America’s ability to use coercive economic measures effectively depends on its economic and financial strength, and the economic and financial connections between it and foreign nations. The leverage of U.S. economic power comes from economic flows and interconnectedness—an aspect of what scholars have recently called “weaponized interdependence.”²³

Six Pillars of American Economic Leverage

The United States’ coercive economic leverage rests on six primary sources of economic and financial strength, including the strength of the U.S. dollar; the soundness of U.S. banks, the massive size of the U.S. market, the depth of U.S. companies in global supply chains, the massive breadth of foreign investment by U.S. firms, and transparency requirements in the U.S. financial system.

The first source of strength is the role of the dollar as the dominant global currency. Recent estimates suggest that the dollar accounts for approximately 60 percent of total global sovereign reserves and more than half of total global debt issuance, and that it is the currency of choice for payments related to approximately 40 percent of cross-border financial transactions.²⁴ Foreign companies want to be able to issue debt in dollars because dollar-denominated debt markets are deep and the companies

can readily spend the capital raised. Additionally, many foreign companies prefer dollar debt to match their liabilities and assets, many of which are dollar-denominated. Foreign central banks need access to the dollar to manage reserves and to handle international payments. Because most dollar-denominated payments and other cross-border financial transactions are ultimately cleared either in the United States or in offshore dollar-clearing centers that generally comply with U.S. sanctions (such as Hong Kong’s dollar-clearing mechanism), the United States is able to use restrictions on access to the dollar as a significant source of coercive economic leverage. Indeed, because of the dollar’s dominant global role in cross-border financial transactions, restricting a target country or company’s access to the dollar tends to disrupt the target’s ability to trade with third countries, not just the United States. North Korea, for example, continues to rely on elaborate schemes and front companies in order to keep engaging in dollar-denominated trade with China and countries elsewhere in Asia, rather than trying to switch entirely to China’s renminbi or another currency.²⁵ Moreover, trade in international commodities such as oil is typically priced in dollars, though both China and the European Union are trying to expand pricing in their own currencies.

A second, and closely related, source of coercive economic leverage is the leading role of U.S. financial institutions in the global financial system. Most non-U.S. banks rely on access both to the dollar as a currency and to their business relationships with U.S. banks, which clear the overwhelming majority of U.S. dollars globally and are central institutions to U.S. financial system activity, in order to facilitate a large share of their global business. For example, midsize European banks often work with the European subsidiaries of U.S. banks in Europe, even if the European banks do not do much direct business with the United States. As a result, these non-U.S. banks are typically unwilling to transact with entities and countries subject to U.S. sanctions so as not to jeopardize their relationships with U.S. banks, including their European subsidiaries. This is true even when the transactions would occur in currencies other than the dollar, such as the euro or Japanese yen, and the transactions would occur entirely outside the United States, such as between a European country and Iran. Banks simply do not want risk being penalized by U.S. authorities, which have been willing to impose massive fines as part of enforcement actions, or lose their access to the U.S. financial system entirely. European banks have proven unwilling to engage in even euro-denominated

Figure 1: The Six Pillars of American Economic Leverage

American coercive economic leverage rests on six pillars of economic and financial strength. Combined, these pillars provide the United States with substantial strength in implementing and enforcing sanctions, investment restrictions, trade controls, and other coercive economic measures.

1

THE GLOBAL DOMINANCE OF THE U.S. DOLLAR

2

THE LEADING ROLE OF U.S. FINANCIAL INSTITUTIONS

3

THE SIZE AND ATTRACTIVENESS OF THE U.S. MARKET

4

THE ROLE OF U.S. COMPANIES IN GLOBAL SUPPLY CHAINS

5

THE GLOBAL INVESTMENT FOOTPRINT OF U.S. INVESTMENT FUNDS AND COMPANIES

6

FINANCIAL TRANSPARENCY AND THE U.S. LEGAL REGIME

A third source of American coercive economic leverage comes from the ability to open and close the massive U.S. economy to select businesses and individuals. The United States is a large and attractive market, and it tends to be far more important than the small and midsize economies, such as Iran and Venezuela, that have historically been the targets of U.S. coercive economic measures. This difference in economic scale makes the threat of limiting access to the U.S. market an effective tool of American foreign policy: faced with a choice of being cut off from the United States or cutting themselves off from a country like Iran, most companies will choose to cut off Iran and keep doing business in the United States. This source of coercive economic leverage appears to be having a particular impact in convincing European companies to pull out of Iran following the Trump administration's May 2018 withdrawal from the

JCPOA.²⁶ Similarly, recent U.S. tariffs on Chinese-made goods, which disrupted that country's exports to its largest market, have succeeded in getting China to the negotiating table. However, the degree of U.S. coercive leverage deriving from its import capacity should not be overstated, especially over the long run, as other leading economies close the gap in GDP. The U.S. share of global imports, for example, is approximately 13 percent, not far above China's share at just under 9 percent, and below that of the European Union as a whole.²⁷

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A fourth source of American coercive economic leverage is the sophisticated role that the United States and U.S. companies play in global supply chains. This is different from the sheer size of the U.S. market, and it reflects U.S. company control of key global technologies. For example, foreign companies across a range of industries depend on access to U.S. technology, innovation, and expertise to develop and build their own products for global markets, regardless of whether they sell those products in the United States. The U.S. ability to restrict access to high-tech production within these supply chains provides a potent source of leverage. Recent U.S. export restrictions against Chinese telecommunications manufacturer ZTE illustrates this fact: In April 2018 the U.S. Commerce Department restricted sales of U.S.-made and U.S.-designed computer chips, software, and other products to ZTE after finding that ZTE had violated an earlier agreement settling U.S. sanctions violations. This action effectively forced ZTE to suspend operations because it depended on such technology to make its own products.²⁸ (ZTE ultimately agreed to pay an additional \$1 billion fine and to implement management and compliance program changes in exchange for the Commerce Department's lifting the ban). Similarly, since 2014, Russia has faced challenges developing certain complex energy resources after the United States and the European Union prohibited companies from selling expertise and goods to develop Russia's arctic offshore, deepwater, and shale-oil formations.

A fifth significant source of U.S. coercive economic leverage is the global footprint of many U.S. investment funds and multinational U.S. companies. U.S. investors, or U.S. authorities, can require that the recipients of U.S. investments adhere to global health, safety, environmental, anti-corruption, and labor standards, and that corporate governance and transparency accord with global best practices. In addition, U.S. authorities can require foreign subsidiaries of U.S. companies to comply with all U.S. sanctions and have done so in certain cases, such as U.S. sanctions on Iran. In addition, many U.S. companies require their foreign subsidiaries to adhere to all U.S. sanctions as a matter of policy in order to avoid inadvertent violations and out of concern over reputational issues, regardless of legal requirements. This global footprint offers U.S. officials significant leverage over corporate operations outside the United States.

A sixth significant source of U.S. coercive economic leverage is financial transparency and the legal requirements that the United States embraces in its own jurisdiction in this domain. Requirements for disclosure regarding corporations and their activities are a fundamental aspect of U.S. financial regulation. Given the attractiveness to foreign companies of conducting business in the United States or in some way that transits U.S. jurisdiction, many foreign firms implement financial transparency requirements in the United States and in their activities abroad. This is another source of U.S. leverage over foreign firms that seek a global footprint.

CHAPTER 3

Recent Trends Influencing America's Coercive Economic Leverage

As previously laid out, the United States has enjoyed a strong economic position and basis for economic coercion over a long stretch of modern history. America's coercive economic leverage has strengthened particularly since the end of the Cold War, and even more since the 2008–2009 financial crisis, driven by both economic trends and shifts in U.S. economic statecraft that have made these tools more effective. Technology trends have had a more ambiguous impact, with a few developments weakening U.S. economic leverage but many others pointing toward stronger U.S. coercive economic leverage.

Economic

The first economic trend that has strengthened America's coercive economic leverage since the end of the Cold War has been the globalization of the world economy. The modern era of global trade and investment integration began in the aftermath of the Second World War, when the United States and allied nations established many of the institutional foundations of the modern economic architecture, such as the General Agreement on Tariffs and Trade (GATT). However, during the Cold War, growing global trade and investment flows typically stayed within geopolitical blocks, and government development programs constituted a large share of total financial flows from the United States and other Western governments to the developing world. The end of the Cold War brought a dramatic shift in global trade and financial flows. First, the volumes rose dramatically. For example, the “trade openness index,” a measure of global trade flows as a percentage of GDP, rose from 36 percent in 1989 to 58 percent in 2014, while outward foreign direct investment flows grew from approximately \$205 billion in 1990 to \$1.4 trillion in 2017.²⁹ U.S. exports and imports as a percentage of GDP also rose substantially alongside this global increase, rising from just over 9 percent and 10.5 percent in 1990 to 11.9 percent and 14.7 percent in 2016, respectively.³⁰ U.S. control of the dollar and the dominance of the United States in the global financial system has combined with the growth of these flows to increase U.S. coercive economic leverage as the global economy has integrated.³¹ Indeed, in many respects America's growing coercive economic leverage in the post–Cold War era has been a direct corollary to the story of global economic integration.

Moreover, and somewhat counterintuitively, U.S. coercive economic leverage appears to have benefited from the 2008–2009 global financial crisis, despite the fact that U.S. financial imbalances were in many ways

responsible for the crisis and the United States suffered from it. During the initial credit crisis, in 2008–2009, and the debt crisis that affected Greece and several other European nations starting in 2010, investors sought out dollar assets such as U.S. Treasury bonds due to their perceived safety in relation to other assets, such as corporate debt and foreign country debt.³² The Federal Reserve also played a key role in preserving the role of the dollar, initiating dollar liquidity swap lines with other major central banks to ensure dollar liquidity in major markets outside the United States.³³ Thanks to the relatively strong U.S. policy response to the global financial crisis, U.S. banks have grown relative to their European peers since the financial crisis, and this growth has expanded use of the dollar and the reach of U.S. jurisdiction. The largest U.S. banks are now far more profitable than their European peers, and U.S. investment banks gained 6 percentage points of market share in global wholesale banking revenues, mostly at the expense of their European rivals.³⁴ While Chinese banks have grown even more dramatically than U.S. banks in terms of their assets, Chinese banks continue to maintain a relatively limited footprint outside of China.³⁵

America's growing coercive economic leverage in the post-Cold War era has been a direct corollary to the story of global economic integration.

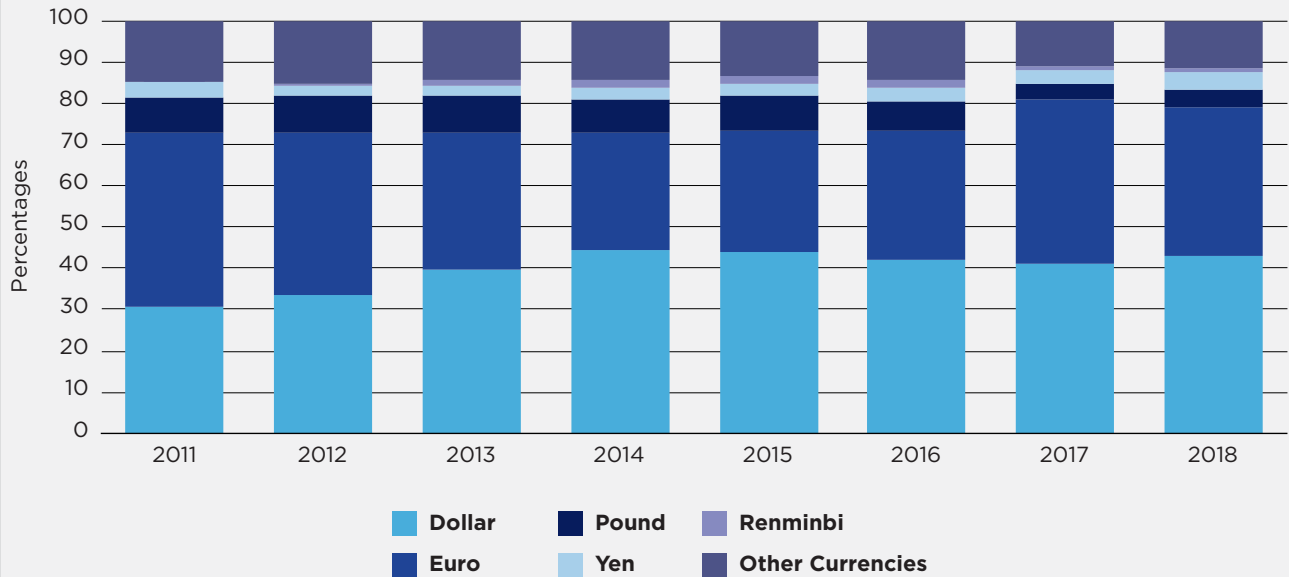
The relative stability of the dollar in the aftermath of the financial crisis and the historically low cost of borrowing in dollars actually encouraged an increase in foreign dollar-denominated debt issuance over the last decade by both foreign governments and foreign companies. This increase in dollar-denominated debt has been true even of Chinese debt issuance.³⁶ While issuers can in many cases shift their issuance back to other currencies—and some data suggest that in 2018 there was a shift away from the dollar by emerging market issuers concerned about the dollar's strength—doing so imposes short-term costs as companies and countries have to repay maturing dollar debt rather than simply rolling it over and increases overall costs.³⁷ The ability to issue in the dollar remains a generally attractive option for foreign governments and companies.

When it comes to sheer economic growth, the United States has an impressive story to tell about resiliency and power. Over the past decade the U.S. economy has

The Dominant Role of the U.S. Dollar

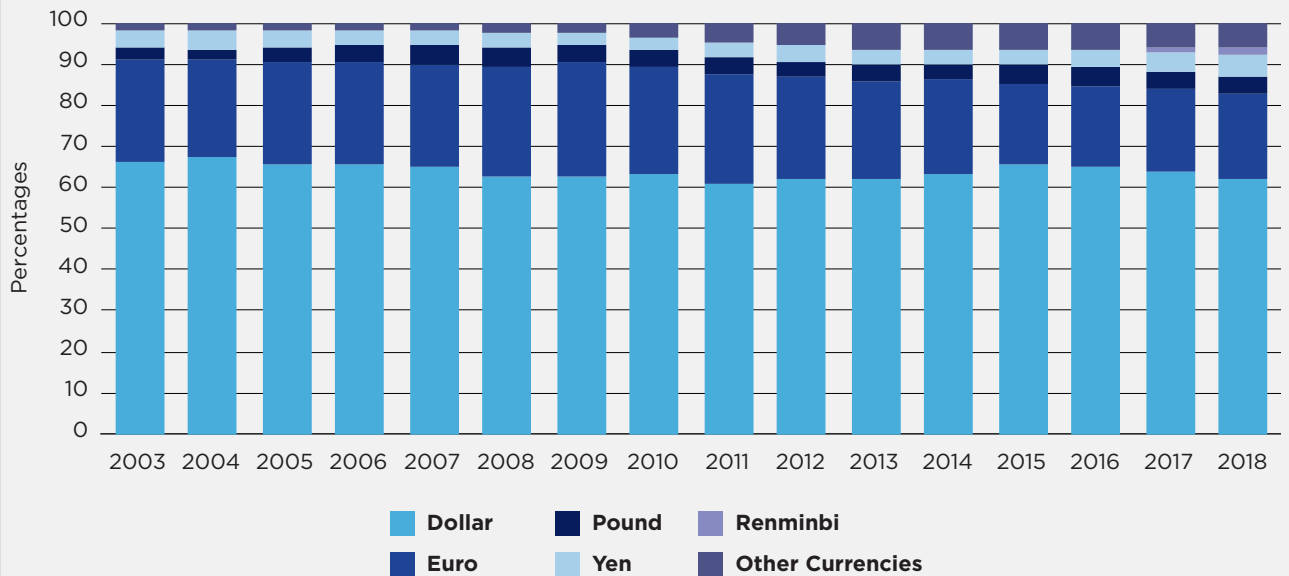
The dominant global role of the dollar in international payments, as a reserve currency, and in debt issuance, provides the United States with significant coercive economic leverage. Even in the aftermath of the global financial crisis, the dollar has maintained a powerful global role that is unlikely to weaken substantially in the near or medium term.

Currency Shares of International Payments¹¹⁶



Note: Shares of international payments are based off of SWIFT data from the latest month available in each year.

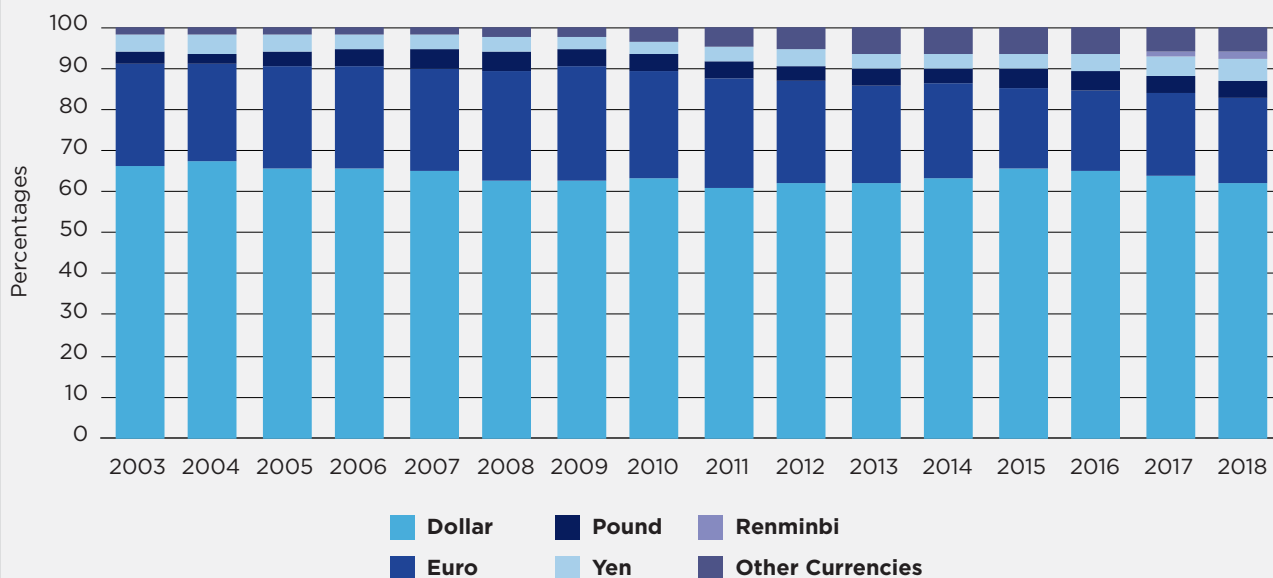
Currency Shares of Global Foreign Exchange Reserves



Source: "Currency Composition of Official Foreign Exchange Reserves (COFER)," International Monetary Fund, <http://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4>.

Note: Data includes shares of allocated reserves through the third quarter of 2018. Around 6% of reserves are unallocated, meaning that their currency composition was not reported to the IMF.

Currency Shares of Outstanding International Debt Securities



Source: European Central Bank, "The International Role of the Euro" (June 2018), 33, <https://www.ecb.europa.eu/pub/pdf/ire/ecb.ire201806.en.pdf>.

Note: Data as of the fourth quarter of 2017. Debt securities include bonds, notes, and money market instruments measured according to the narrow measure, which excludes home currency issuance.

outpaced many competitors, even if U.S. economic performance since the financial crisis has been weak compared with past periods of U.S. growth. For example, U.S. GDP grew more strongly than that of any major European economy between 2009 and 2016.³⁸ While China’s GDP growth has remained significantly stronger than that of the United States, over the past several years its rate of growth has slowed—and it appears poised to fall further in 2019, though it is very likely to remain above 5 percent. A number of emerging markets are likely to perform well in 2019; India, for example, is expecting 7 percent growth—but its growth comes off a far lower base.³⁹ Thanks to these growth figures, major multinational companies see the United States as an attractive market and destination for investment. This is evident in the nearly 20 percent increase in the value of the U.S. dollar relative to the euro, and the just over 13 percent increase in the value of the U.S. dollar relative to sterling since 2009.⁴⁰ This picture suggests sustained, even increasing, coercive economic leverage at least in the short term, absent aggressive measures by foreign governments to counteract the market forces that have increased U.S. economic strength and leverage.

Technology

Technological developments have also played an important role in strengthening U.S. coercive economic leverage. New analytic computer technologies have increased the capacity of both U.S. government agencies and private-sector companies to detect and stop suspected sanctions evasion. Surveillance technologies have also improved in recent years, providing government agencies, reporters, and activists with new tools to track evasion. For example, the recent deployment of sophisticated, low-cost global imaging satellites has improved the tracking of North Korean and Iranian ships involved in sanctions evasion.⁴¹ The importance of, and—at least to date and in the short term—the relative lack of alternatives for U.S. technologies, particularly for telecommunications or computing, in global supply chains has also increased U.S. coercive economic leverage, as the ZTE case illustrates.

Other technological developments, however, have had an adverse, if limited, impact on U.S. coercive economic measures. A prominent development has been the rise of cryptocurrencies, such as Bitcoin, which many have used to skirt sanctions. North Korea, for example, has used multiple avenues to obtain cryptocurrencies, including cryptocurrency mining, using ransomware

attacks and demanding payment in cryptocurrency, and stealing cryptocurrency by hacking into cryptocurrency exchanges.⁴² Iranian groups have also relied on cryptocurrencies as a way of facilitating illicit activities. This prompted the U.S. Treasury Department in November 2018 for the first time to publicly issue identifying information for specific digital currency addresses (unique strings of alphanumeric digits identified/associated with specific digital currency wallets) in an effort to freeze Iranian cryptocurrency accounts subject to U.S. jurisdiction and to persuade foreign cryptocurrency exchanges to cease dealing with Iran.⁴³ In October 2018, the U.S. Treasury's Financial Crimes Enforcement Network (FinCEN) also warned about potential Iranian use of cryptocurrencies in an advisory highlighting a range of illicit Iranian financial activities and sanctions evasion tactics.⁴⁴ To date, however, the adverse impact of these technological developments on U.S. coercive economic measures has been comparatively small. Furthermore, it has generally been on par with those of other types of criminal activity by sanctions evaders, rather than representing a major new threat. For example, North Korea's cryptocurrency efforts appear to be significantly smaller in value than many other North Korean revenue-raising activities conducted in violation of sanctions, including selling labor overseas and traditional criminal smuggling. The value of Iranian cryptocurrency schemes is estimated to be in the millions, not billions, of dollars.⁴⁵ Cryptocurrencies are not widely enough accepted by companies around the world for sanctioned actors to use to them to engage in significant commercial trade, such as selling oil or other commodities on global markets, or to make large-scale purchases of key economic inputs. In addition, U.S. authorities have already demonstrated that they can restrict sanctioned actors' ability to use cryptocurrencies. Following the November 2018 U.S. Treasury action identifying Iran-linked digital currency addresses, several major cryptocurrency exchanges, including non-U.S. exchanges such as Binance, appear to have decided to withdraw from offering services in Iran.⁴⁶

Technological developments may have the potential to enable meaningful impacts on U.S. coercive economic measures over the longer term, however. Financial technology developments—new digital ways to demarcate, raise, store, and move monetary value—as a factor in the continuing utility of U.S. coercive economic measures will be discussed later in this paper.

WHAT IS FINANCIAL TECHNOLOGY?

Financial technology is a broad term that is used to describe an array of technologies applied in the financial arena. It can encompass several decades of digital payment technology evolution, from credit cards to early-version mobile phone payment applications, to more contemporary peer-to-peer, or bank-to-bank, payment platforms, exchanges, and settlement mechanisms. In cross-border payments, for example, financial technology developers include longstanding incumbents such as SWIFT as well as new companies exploring blockchain-based settlement mechanisms, such as Ripple, and new transmitters, such as TransferWise.⁴⁷

Financial technology also describes decades of digital developments designed to increase efficiency and versatility, and decrease costs, in investing, trading, insurance, and regulatory compliance, among other activities. More recently, there has been a major, speculative explosion in digital currencies based on distributed ledger technology. Despite the initial bubble's bursting in 2018, digital currencies still had an overall market cap of over \$120 billion as of mid-February 2019, demonstrating that they are likely to remain a part of the financial landscape.⁴⁸

While distributed ledger technology is the basis for digital currencies, it is also an important emerging technology of its own. It underlies many new financial technology applications, and it is being tested in supply chain management and contracts that are relevant to tracking illicit actors, including sanctions evaders. It can offer a community of users an immutable, decentralized, auditable record of interactions, including interactions exchanging units of value.

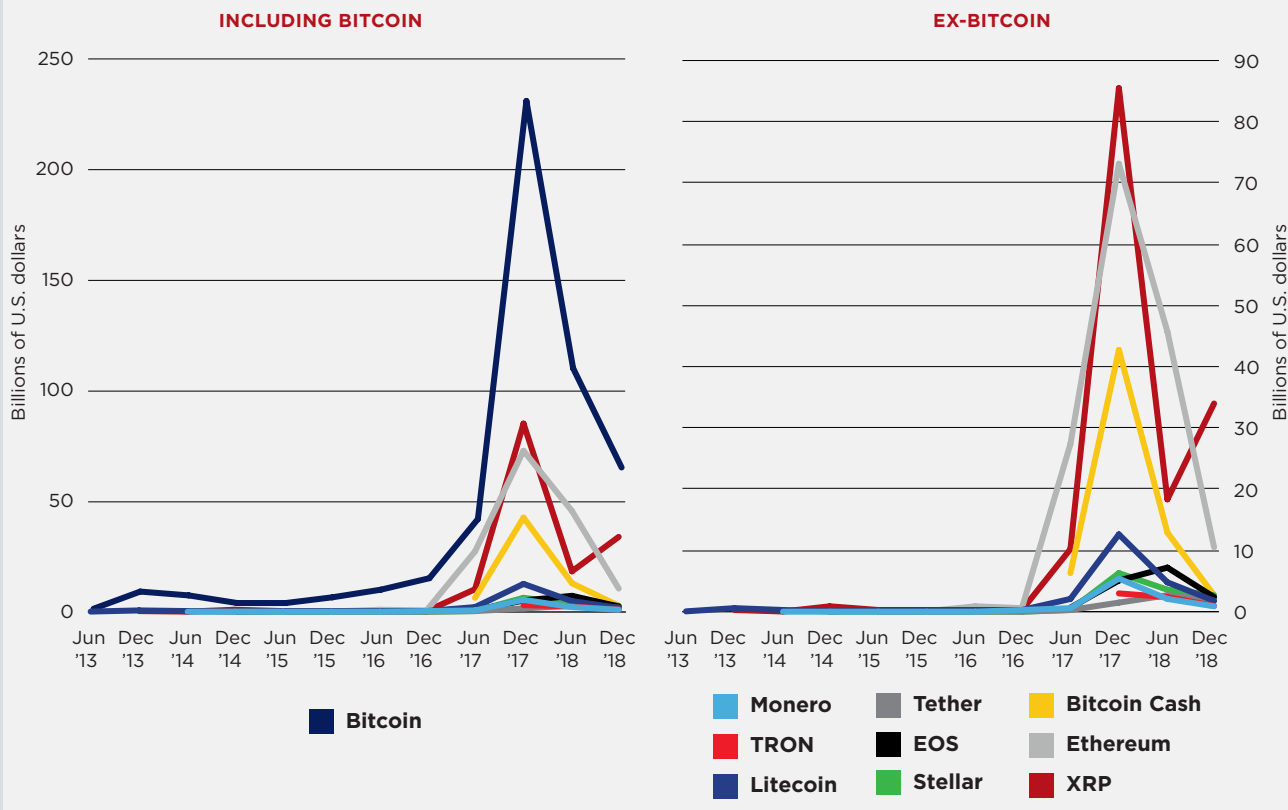
There are other emerging technologies not designed specifically for financial applications that may be used to deliver financial services or otherwise have relevance for financial activity, including the implementation and effectiveness of sanctions. These include artificial intelligence (AI) and machine learning (ML) to find patterns or differentiation in large amounts of data. Such technologies can be resources for banks and government officials seeking sanctions evaders and tracking their evolving methods for illicit activity. Conversely, cryptography for the provision of anonymity, including for digital currencies, is another relevant technology that could facilitate money movements outside the view of U.S. officials, including sanctions implementers and enforcers.

WHO DEVELOPS AND USES FINANCIAL TECHNOLOGY?

Technologists in the United States have historically been leaders in the development of financial technologies, along with counterpart technology development

Market Capitalization of 10 Major Cryptocurrencies

Despite the digital currency bubble's bursting over the course of 2018, digital currencies have maintained substantial market capitalization and are likely to remain a significant financial asset class.



Source: "Top 10 Cryptocurrencies by Market Capitalization," Coinmarketcap.com, January 4, 2019, <https://coinmarketcap.com/>.

Note: Market capitalization data as of the last day of each month. With the exception of Monero, all of the digital currencies above were in the top 10 in market capitalization as of January 4, 2019. Monero was 13th.

communities in Canada, Singapore, South Korea, and the United Kingdom. In the first half of 2018, of the \$57.9 billion invested in financial technology companies, U.S. companies received \$14.2 billion, almost a quarter of global investments.⁴⁹ However, in recent years some new entrants, including Chinese entrepreneurs, have made a very strong push to lead development in the field. In the first half of 2018, the \$14 billion investment in Ant Financial, a spin-off company of Alibaba, was the largest global financial technology deal.⁵⁰ The widespread adoption of mobile payments, as well as a regulatory environment that discriminates against foreign companies, has allowed Chinese financial technology companies to scale up at a speed unseen in other regulatory environments. As of August 2018, Alibaba had filed the largest number of blockchain-related patents globally, followed by IBM, Mastercard, Bank of America, and the People's Bank of China.⁵¹

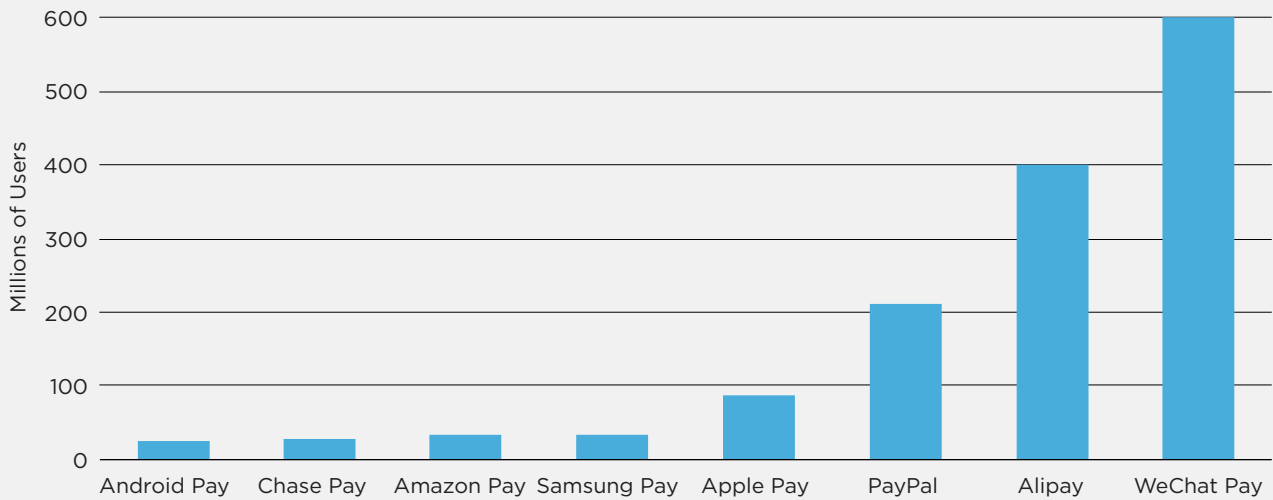
With regard to digital currencies, and specifically to Bitcoin, a majority of mining activity now occurs in

China, and China has recently subjected cryptocurrency activities to significant regulatory oversight.⁵² Other countries, such as Russia and Venezuela, are working on developing national digital currencies. Russia is still in the early phases of potential development of its CryptoRuble, and Venezuela launched the Petro, its oil-backed, national cryptocurrency in February 2018.⁵³ Both national cryptocurrencies have yet to succeed, and they will be constrained by the same monetary problems that befall their fiat currencies. Other central banks, such as the Central Bank of Iran, are also considering issuing a digital token alongside fiat currencies.⁵⁴

Tencent, the company that owns WeChat, recently reached a deal with Kenya's mobile-phone-based money transfer and financing system M-Pesa, allowing users to send money on WeChat's platform.⁵⁵ Chinese firms' dominance in mobile payments could provide a mechanism for creating an alternative payment ecosystem and also support the internationalization of the renminbi.

Number of Users of Leading Mobile Payment Platforms

Rapid adoption of mobile payments has been a major part of financial technology development in China. Chinese mobile payment platforms now dominate globally in terms of their number of users.



Data Source: "Number of users of leading mobile payment platforms worldwide as of August 2017," Juniper Research; Fung Global Retail & Technology; Statista.com, <https://www.statista.com/statistics/744944/mobile-payment-platforms-users/>.

Note: Users measured as of the end of August 2017.

Separately, the People’s Bank of China is also pursuing digital currency technology aggressively. It launched a Digital Currency Research Lab in June of 2017, and—though patent applications are an imperfect measure of technological prowess—filed more than 40 patents related to a digital currency system in its first year of operation.⁵⁶ It is seeking to develop its own digital currency that could combine the features of a digital currency with the backing and scale of the traditional financial system. A central-bank-backed digital currency issued by a country with an economy the size of China’s would have potentially huge impacts on financial stability by affecting credit allocation, could ultimately eliminate the use of cash, and could provide a platform for more easily transacting in renminbi globally.

Criminals, including terrorists and proliferators dodging detection and sanctions, and anti-establishment iconoclasts, were relatively early experimenters with the emerging digital currency and payment mechanisms.⁵⁷ Even in the recent past, North Korean agents have used digital currency exchanges to launder Bitcoin into Monero, a type of digital currency known as a privacy coin, which uses cryptographic protocols to obscure user identities and transactions from external parties.⁵⁸ (This is in contrast with better-known cryptocurrencies such as Bitcoin, where the transactions are generally publicly viewable, even if the identities of the people behind the transactions are not). Services known as mixers or tumblers allow users to disguise transactions even when using Bitcoin or other digital currencies that

are only pseudonymous. Even without those methods, criminals and others are often able to move digital currency through exchanges that have weak anti-money-laundering (AML) and know-your-customer controls, if any.

Although individual customers often value the anonymity and privacy of cryptocurrency, over the past year a number of the major industry players have begun to argue that the industry as a whole needs more transparency, stability, and careful stewardship.⁵⁹ In interviews with the authors of this report, some companies involved in digital currency markets stressed that the market was maturing but needed more involvement from regulators and bigger institutional actors.⁶⁰ There have also been signs that the U.S. is able to maintain at least some leverage over foreign cryptocurrency exchanges and can use that leverage to reduce the ability of illicit actors to use cryptocurrency. This has been the case with Binance, a digital currency exchange that was founded in 2017 and by early 2018 became the largest in the world.⁶¹ Binance moved its headquarters four times in 2018 to avoid regulators, but it began to implement serious AML controls in October 2018 after a report from the New York State Attorney General’s Office recognized it as one of the exchanges lacking transparency around its security, compliance, and listing procedures.⁶² Binance also suspended services in Iran after OFAC identified Iranian-linked cryptocurrency activities in November 2018.⁶³

Statecraft

Several sets of U.S. policy decisions have played an important role in strengthening U.S. coercive economic leverage. Most importantly, the United States has adopted and long advocated for a set of international economic and trade policies that have promoted the role of the U.S. dollar, an open U.S. economy, a robust role in global supply chains, and the role of U.S. companies globally. The primary sources of U.S. coercive economic leverage described earlier in this report are fundamentally connected to the open nature of the U.S. economy. The United States is an attractive market for foreign companies, U.S. banks and the U.S. dollar play key roles in global finance, and U.S. companies play key roles in global supply chains. This is in large part because the United States has, across many presidential administrations, sought to attract foreign investment, has promoted a stable dollar as an attractive reserve currency and medium of exchange, has supported the U.S. financial system, and has developed and promoted liberal trading regimes and open markets for exports, imports, and capital flows. It has done these things both through its own policies and by encouraging market-oriented economic reforms across the world through its leadership role at the IMF, World Bank, and other multilateral financial institutions. The success of U.S. companies expanding overseas and of foreign companies expanding into the U.S. market and relying on the U.S. financial system as a source of funding, is precisely what makes the threat of limiting access to the United States such a potent source of coercive economic leverage.

Take the relationship between U.S. trade policy and U.S. export controls as an example. The United States historically kept its export-control program narrowly focused on military technologies such as weapons systems and a small set of high-end dual-use goods. Meanwhile, the focus of U.S. trade policy has been to promote open markets abroad for U.S. products and a relatively liberal regime for U.S. imports of foreign products. These policies have encouraged foreign companies to rely heavily on U.S. technology, giving the United States significant leverage in cases where it chooses to curtail access to that technology, as it did in 2018 with China's ZTE.

The long-term reduction in U.S. tariff rates—U.S. average tariff rates on imports of goods subject to tariffs fell from approximately 14 percent in the years immediately after World War II to approximately 5 percent in 2017⁶⁴—has made the United States an attractive market for many foreign-produced goods, making the threat of

limiting access to that market or reimposing tariffs an important coercive economic tool.

Another example is the promotion of U.S. financial institutions globally. The United States has long pushed for U.S. financial companies to be able to enter into foreign markets, and for a relatively free flow of global financial transactions through the U.S. financial system. This policy has been important in supporting the global dominance of the U.S. financial system and thus the power of U.S. sanctions.

A third example is the shale energy revolution in the United States, made possible by decades of federal support for unconventional extraction techniques, such as hydraulic fracturing and horizontal drilling. American oil production has increased about 75 percent compared with 2007 levels, allowing the United States to surpass both Saudi Arabia and Russia as the world's largest crude-oil producer.⁶⁵ Boosting U.S. energy production has two related geopolitical consequences: it diminishes the geopolitical leverage wielded by other energy suppliers, and it grants the United States newfound leverage to sanction energy producers across the world, such as Venezuela, Russia, and Iran—with much less negative effect to the U.S. economy.

Lastly, as global debt burdens swell due to aging populations and sluggish growth, the U.S. capacity to exert leverage through sovereign debt restructurings and marshaling foreign assistance has grown in tandem. Ukraine's economic crisis of 2014–2015 is a recent example. Amid the intensifying conflict with Russia, the government of Petro Poroshenko became desperate to restructure its obligations to foreign bondholders, mostly to free resources for domestic spending priorities but also to create space for much-needed reforms. The largest bondholders were in the United States, and through moral suasion by the United States and prodding by the IMF, a debt-relief agreement was reached—subject to conditions that Ukraine's government was bound to honor. Debt restructuring in a post-Nicolás Maduro Venezuela would likely follow this template.

There are also several sets of sanctions-specific policies that have strengthened U.S. sanctions as a leading coercive economic tool. The first of these is the aggressive enforcement of U.S. primary sanctions (sanctions that regulate U.S. people, companies, and business involving the United States, such as transacting through the U.S. financial system) starting in the late 2000s. In brief, as the sanctions hammer has become heavier and heavier, banks and companies have stayed farther and farther away from sanctioned entities, a cause of and testament to the growing power of U.S. economic coercion.

Prior to the late 2000s, U.S. fines and penalties for primary sanctions violations often ranged from several tens of thousands of dollars to several hundred thousand dollars. For example, total annual OFAC fines and settlements for primary sanctions violations averaged approximately \$5 million per year in 2007 and 2008. Between 2010 and 2017, OFAC and other U.S. sanctions-enforcement entities, including the Department of Justice, announced total sanctions-related fines and penalties of more than \$15 billion against banks alone, according to a private-sector analysis of the penalties.⁶⁶ Over the past several years, enforcement officials have also begun to more aggressively pursue sanctions violations by companies besides banks. In 2015, for example, oil-field services company Schlumberger paid more than \$230 million in penalties for violating U.S. sanctions on Iran and Sudan.⁶⁷

As the sanctions hammer has become heavier and heavier, banks and companies have stayed farther and farther away from sanctioned entities.

This vastly more aggressive U.S. enforcement posture has strengthened U.S. coercive economic leverage in several respects. First, as part of settlement agreements with U.S. authorities, multiple non-U.S. global financial institutions, including HSBC, BNP Paribas, Commerzbank, Japan's BTMU, and Credit Suisse, among others, agreed to significant reforms to their global compliance programs, with many essentially ceasing business with companies and countries subject to U.S. sanctions even if the banks' own national domestic law did not prohibit such business.⁶⁸ Second, the scale of the fines has had a strong deterrent effect, with many other global banks and companies choosing to dramatically strengthen compliance programs and to refrain from business that poses even a modest risk of violating U.S. sanctions in order to avoid similar penalties.⁶⁹

A second major sanctions policy trend that has expanded U.S. coercive economic leverage is the increased willingness of the United States to deploy secondary sanctions. This involves the U.S. application of financial measures against third-country companies that engage in ordinary commercial trade with entities subject to U.S. sanctions, such as companies that trade in Iranian oil or that buy coal from North Korea, even

when the business has no direct connection to the United States or U.S. persons.

The United States primarily refrained from aggressively imposing secondary sanctions until about a decade ago, when it did so in the 2010 Comprehensive Iran Sanctions and Divestment Act (CISADA). CISADA established secondary sanctions on non-U.S. companies that engaged in a variety of business and financial transactions with Iran, and U.S. officials declared their intention to enforce the sanctions. Over the past several years, the United States appears to be shifting even more aggressively toward use of secondary sanctions. The Trump administration has emphasized secondary sanctions on Iran to deter multinational companies from continuing business in the country despite scant global support for a policy to isolate Iran, which appears to be complying with the terms of the JCPOA nuclear deal. A strict U.S. enforcement posture has built U.S. credibility around secondary sanctions, and to date the increasingly aggressive use of U.S. secondary sanctions is yielding the intended results. Indeed, with respect to Iran the impact of these measures has proven more effective than most sanctions experts anticipated.⁷⁰

CHAPTER 4

The Outlook for U.S. Coercive Economic Measures

The outlook for U.S. coercive economic measures appears robust over the near term, with their strength likely to remain at current levels or even continue recent growth over the next several years. Into the longer term, however, several emerging factors may substantially alter the availability and impact of U.S. coercive economic measures. While the United States is likely to retain significant coercive economic power under virtually any scenario over the next decade, over the mid and long term there are real concerns that foreign governments’ efforts to reduce U.S. leverage could begin to erode the efficacy of those measures.

Factors Likely to Strengthen

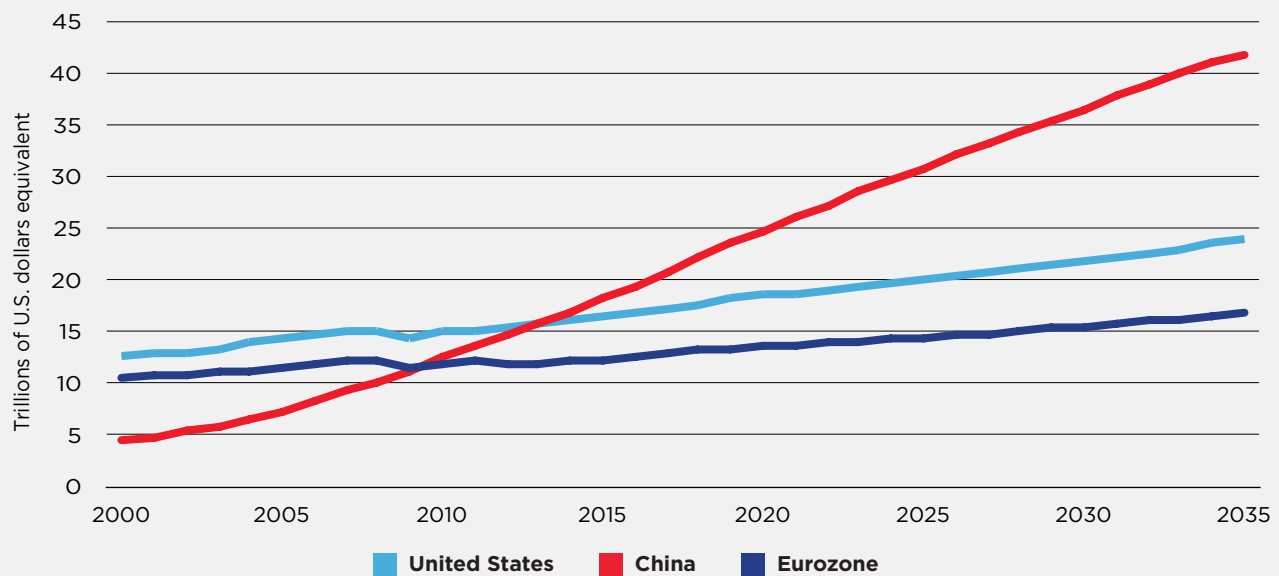
Factors that are likely to further strengthen U.S. coercive economic measures in the near term include the impact of continued aggressive U.S. sanctions and trade-controls enforcement, new U.S. trade controls and investment restrictions laws, and likely near-term economic and technological trends.

Continued aggressive enforcement of U.S. sanctions and trade-controls measures will push multinational

companies to more carefully comply with sanctions and other U.S. coercive economic measures, further increasing their impact.⁷¹ According to press reports, the tough enforcement posture even appears to have persuaded China’s Kunlun Bank, which the United States sanctioned in 2012 for engaging in prohibited financial transactions with Iran, to curb its Iran business in 2018.⁷² New legal tools enacted by Congress in 2018, which the Trump administration is currently implementing, are also likely to strengthen U.S. coercive economic leverage in the near term. In 2018 Congress enacted the Foreign Investment Risk Review Modernization Act (FIRRMA), which significantly expands the scope of foreign acquisitions of U.S. companies subject to scrutiny by CFIUS, which reviews foreign investments in the United States for national security considerations.⁷³ That year Congress also enacted ECRA, which directs the Commerce Department to establish new export controls over new and foundational technologies, such as advanced robotics and high-end information technologies, that have the potential to transform both the military and civilian economies.⁷⁴

Projected GDP of the United States, China, and the Eurozone

In the near and medium term, the U.S. economy is poised to outperform those of other developed economies, such as the eurozone. The United States will also maintain significant leverage as a global economic and financial power, even as its economy is eclipsed by the Chinese economy.



Source: “OECD Economic Outlook: Statistics and Projections: Long-term baseline projections, No. 103,” OECD, 2019, <https://data.oecd.org/gdp/real-gdp-long-term-forecast.htm#indicator-chart>.

Note: Real GDP forecasts are based on OECD projections. The projections are measured in U.S. dollars at constant prices and purchasing power parities of 2010.

If implemented effectively, FIRREA and ECRA have the potential to expand U.S. coercive economic leverage over the next several years. They provide policymakers with a set of targeted tools that can be used to pressure foreign companies and entities seeking to invest in the United States and to purchase U.S. technology to agree to certain U.S. standards, such as protecting intellectual property and refraining from using the technology for purposes contrary to U.S. interests. ECRA in particular may give U.S. policymakers significant leverage over the global uses of key emerging technologies in which the United States maintains a significant technological edge, such as robotics and artificial intelligence.

Finally, near-term economic trends appear poised to favor continued strong U.S. coercive economic leverage in the near future. The U.S. economy posted a growth rate of 3 percent or above in 2018, and most predictions are that U.S. GDP will grow near 2 percent in 2019—figures that appear likely to outperform those of most other developed economies,⁷⁵ though the impacts of the prolonged U.S. government shutdown in early 2019 and other impediments to growth could result in a slowdown of the U.S. economy. China's economic growth has been slowing in recent years—and as in the United States, there are some signs that a bigger slowdown might occur—although official estimates are that China still posted growth of above 6 percent in 2018 and will likely post growth of at least 5 percent in 2019.⁷⁶ While the sheer scale of the U.S. economy and U.S. dominance of the global financial system would guarantee the impact of U.S. coercive economic measures under virtually any near-term economic scenario, U.S. economic growth that outperforms that of many peer economies, even if the headline numbers are not historically impressive, will continue to encourage global companies to continue doing business in the United States, increasing relative U.S. coercive economic leverage over such companies over at least the next several years.

Factors With Potential to Weaken

Over the longer term, however, several factors have the potential to create significant challenges to, or at least dilute the impact of, U.S. coercive economic measures. The most important of these are (a) foreign government policy decisions, particularly by U.S. allies and major economies such as China, that could ultimately develop alternative financial nodes and economic and technological factors that undermine U.S. coercive economic leverage; (b) U.S. government policy decisions that could weaken U.S. coercive economic leverage; and (c) developments in financial technology that could be enabling

factors for foreign government efforts to undercut U.S. financial dominance.

The first of these factors will be the success or failure of foreign government policies to develop alternatives to the existing U.S.-dominated global financial system. The U.S. dollar and the U.S.-dominated international financial system have strong network effects. That is, their widespread use encourages continued widespread use, because international financial transactions are easiest and cheapest when they operate across a unified system and dominant currency. As a result, there has been limited commercial incentive for banks and companies to develop alternatives, which would require significant upfront investments and transition costs.

Over the longer term, several factors have the potential to create significant challenges to U.S. coercive economic measures.

Sanctioned governments and companies clearly have incentives to develop alternatives to the U.S.-dominated international financial system; however, to date there has not been sufficient interest in participating in such systems by legitimate companies and non-sanctioned actors to make such schemes meaningful threats to U.S. coercive economic measures. This situation does not seem likely to change in the near term. For most businesses, there simply isn't a strong commercial reason to invest significantly in establishing alternatives to the U.S. financial system, and even if companies did develop an alternative, they would still face pressure from other sources of U.S. coercive economic leverage.

Over the past several years, and intensifying in 2018, however, a number of large foreign governments announced plans to work toward developing alternatives to the U.S.-dominated international financial system. Russia, for example, has developed a financial messaging system that Russian authorities say could be used in lieu of the SWIFT financial messaging network, which transmits on average over 15 million payment messages per day as of 2018.⁷⁷ Russia claims that more than 400 Russian companies, including large state-owned companies, are now connected to the system, and that it is in discussions with non-Russian banks and other companies about joining the network.⁷⁸ China launched a new national cross-border payment system, the Cross-Border Interbank Payment System (CIPS), in 2015.⁷⁹



German Foreign Minister Heiko Maas speaks at the Munich Security Conference on February 15, 2019. Maas and other European officials have called for greater European financial independence from the dollar and a greater international role for the euro. (Alexandra Beier/Getty Images)

Perhaps most strikingly, in response to President Trump's May 2018 withdrawal from the JCPOA, major European countries announced plans to develop an SPV, formally known as the Instrument in Support of Trade Exchanges (INSTEX), that European officials hope will enable financial transactions with Iran despite reimposed U.S. sanctions, and has said that the SPV will potentially be open to participation by China, Russia, and other countries as well as European companies.⁸⁰ In addition, prominent European leaders, including French President Emmanuel Macron and German Foreign Minister Heiko Maas, have called for Europe to develop mechanisms to make European financial transactions less dependent on U.S.-dominated financial infrastructure.⁸¹ European Commissioner for Economic and Financial Affairs Pierre Moscovici also called for strengthening the international role of the euro, including efforts to increasingly price oil and negotiate energy contracts in euros, and the European Union has launched a government process to try to shift toward euro pricing for European energy imports.⁸²

These efforts to develop alternatives to the U.S.-dominated international financial system face significant challenges in reaching a scale that poses a serious threat to U.S. coercive economic power. Author interviews with experts suggest that developing a new financial messaging infrastructure is not technically challenging, in the sense that a number of companies could develop the requisite technology to transfer financial messages.⁸³ Deploying an alternative system at a wide enough scale that banks and companies would see it as a commercially viable alternative, however, is a significant challenge

given the strong network effects of the existing system.⁸⁴ SWIFT, the dominant financial payment messaging service, already serves more than 11,000 banks, helping direct over \$6 trillion in payments daily as of 2012, and convincing any substantial share of those banks to move to an alternative is not an easy task.⁸⁵

Efforts to develop a true challenger to the dollar as a reserve currency, not merely a currency for cross-border payments or remittances, will face potentially even greater challenges. The role of the U.S. dollar as a reserve currency benefits not only from widespread dollar use in international trade but also, perhaps even more importantly, from a series of key U.S. financial and investment policy decisions that promote dollar assets as stable, widespread, and liquid. Geopolitical and economic uncertainty in Europe, including Brexit and the potential for renewed debt-driven crises in the eurozone, as well as tight fiscal rules limiting the provision of a eurozone safe asset, are likely to keep the euro from emerging as a true rival to the dollar as a reserve currency for at least the medium term.⁸⁶ China, meanwhile, would have to take major steps to liberalize its capital controls, to upgrade its domestic institutions and rule of law, and to promote renminbi-denominated assets as valuable international holdings in order for the renminbi to dramatically increase its currently limited role as a reserve currency.

Deploying an alternative payments system at a wide enough scale that banks and companies would see it as a commercially viable alternative is a significant challenge given the strong network effects of the existing system.

The difficulties in developing a widespread, viable alternative to the U.S. dollar and the U.S.-dominated international financial system are apparent from the challenges that have impaired the uptake of the alternatives announced to date. Major European companies such as Total, Shell, ENI, and Renault have all announced plans to curtail business with Iran that violates U.S. sanctions despite Europe's launch of its SPV for Iran-related financial transactions. Indeed, European officials have publicly conceded that, at least initially, Europe will focus the SPV on humanitarian trade and other trade that is not actually prohibited by U.S. sanctions in order to

mitigate sanctions risks for the companies and governments that participate in it.⁸⁷

Similarly, while Russia's payment network is now in use for domestic transactions within Russia and has connected hundreds of Russian companies, international uptake of the system by other major countries is insignificant.⁸⁸ China has sought to promote adoption of its CIPS payment system in part by partnering with existing major institutions, including SWIFT, to expand use—which also, at least in the near term, reduces CIPS' insulation from U.S. pressure.⁸⁹

That said, there are at least some indications that the dollar will not necessarily maintain its present level of overwhelming dominance. Over the past several years, for example, there has been a modest but noticeable reduction in the share of global reserves denominated in dollars.⁹⁰ Russia, fearing additional U.S. sanctions, led this shift, cutting the share of its reserves held in dollars by roughly half in 2018. And several countries have seen extremely rapid shifts in the nature of their domestic payment systems: India, for example, launched a new Unified Payments Interface (UPI) in 2016, and after less than three years, the network now processes more than 500 million transactions a month.⁹¹ China became the world leader in mobile payments, by a massive margin, in a period of just five years.⁹² As the number of Chinese mobile payments users increases in Chinese diaspora communities and among global customers of China, including those in the countries receiving China's Belt and Road Initiative infrastructure investments, China's global financial footprint will likely expand at the expense of other major financial systems and currencies.

Moreover, although transitioning cross-border payment systems is a substantially more challenging task than modernizing domestic payment infrastructures, emerging financial technologies, such as block-chain-based clearing mechanisms, could potentially play a key role in simplifying one of the most challenging parts of developing a cross-border payment network: converting between currencies. As economist Barry Eichengreen has argued, financial technologies will probably reduce the contemporary barriers to a world where there are multiple international currencies, rather than one dominant one, and could enable a return to the type of multicurrency world that existed prior to the 20th century.⁹³ The dollar could remain the largest currency block in such a multicurrency world, but alternatives could nonetheless reach a scale sufficient to enable targets of U.S. sanctions, such as Iran or North Korea, to continue economically significant quantities of trade

with Asian countries while avoiding financial institutions that touch the U.S. financial system.

The second longer-term challenge comes from potential U.S. decisions on financial, trade, and investment policy that could either deliberately or inadvertently undermine America's coercive economic leverage. As long as the United States remains among the world's most attractive markets for goods, services, capital, and technology, U.S. policymakers will be able to use the strong economic connections between the United States and foreign countries as sources of coercive economic leverage. However, if the United States makes a concerted effort to reduce its economic, financial, and trading connections with key foreign economies—for example, by dramatically curtailing trade and investment ties between the U.S. and other major economies—over time U.S. coercive economic leverage over those economies will diminish.

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Perhaps the most important set of concerns regarding U.S. trade and investment policies is the potential for a long-term diminution of U.S. economic leverage with respect to China. Recent U.S. actions against China, including tariffs on approximately half of U.S. imports of Chinese goods and targeted actions against ZTE and other Chinese companies, have demonstrated that the United States presently has significant leverage over China and large Chinese companies. Both the Chinese government and large Chinese companies targeted by U.S. coercive economic measures have demonstrated a willingness to make concessions to comply with U.S. coercive economic measures. Over time, however, a substantial reduction in U.S.-Chinese economic ties would likely reduce this leverage. For example, should large Chinese companies such as ZTE, Huawei, or Alibaba be able to innovate a greater share of their own technologies, break their dependence on U.S. suppliers, and determine that they simply will not be able to do business with the United States, they will have little enduring

incentive to comply with U.S. coercive economic measures. Similarly, measures that curtail financial ties and some trade ties between the U.S. and China, while having strong impacts on China in the near term, will, over the longer term, likely speed China's efforts to reduce its exposure to the U.S. financial system, diversify alternative trading partners, and promote indigenous investment and technology alternatives.

It is not just the substance of U.S. trade and investment policy that risks reducing U.S. coercive economic power. The diplomacy and politics of the policies matter as well. For example, U.S. steel and aluminum tariffs against major allies in the European Union and Canada are not likely to have a significant impact on the volume of trade and investment between the United States and such allies, given the large overall volume of such trade. However, the imposition of the tariffs against allies, and particularly the U.S. government's use of national security authorities to impose the tariffs, has drawn a sharp diplomatic and political response from allied capitals. Continued aggressive use of such tariffs against allies will likely further encourage allies to expand their efforts to reduce U.S. coercive economic leverage as a diplomatic and political matter, even if the economic impact of the tariffs is comparatively muted.

Developments in financial technology also have the potential to affect the availability and strength of coercive economic measures over the longer term. The movement to develop blockchain-based, decentralized payments platforms and new digital currencies or

tokenized assets that feature anonymity can undermine the strength of coercive economic measures. However, financial technology developments, such as the development of artificial intelligence/machine learning (AI/ML) compliance technologies, also present potential means to better detect and stop evaders and avoiders of U.S. economic coercion throughout global chains of financial interconnectivity.

Financial technologies are not themselves the drivers of potential future changes to the sources of coercive economic leverage. However, they may enable foreign governments to develop better tools to insulate transactions from U.S. jurisdiction. And, regardless of the actions of foreign governments as they spread commercially, they may help evaders duck U.S. coercive economic power in limited but meaningful ways. Conversely, new AI/ML or other technologies may help U.S. policymakers implementing economic coercion to better do their job.

Financial technology can be a facilitator of rapid transformation in the financial services sector. Importantly, financial technology developments will not happen just in the United States; a number of other countries, from China to Singapore to Switzerland, are promoting themselves as financial technology leaders. There is no guarantee that financial technology innovators and investors will be centered in the United States in the future—which represents a vulnerability to U.S. economic prominence.

Maintaining U.S. Leverage

The extent to which the United States will maintain coercive economic leverage in a world where financial technology disrupts aspects of the traditional financial architecture will depend to a significant degree on the extent to which U.S. firms, and large global firms, continue to play a dominant role in the development of the technology. To put it bluntly, a blockchain-based clearing mechanism that enables trade between foreign countries without financial transactions touching the dollar would likely undermine U.S. leverage if the technology were developed and operated by a foreign company that had no need to adhere to U.S. law. The United States would maintain at least some leverage if the technology were developed or operated by a U.S. company obliged to adhere to U.S. sanctions, technology-export restrictions, and other relevant laws, or a foreign company with significant U.S. exposure.

There are some signs that large U.S. and global firms will play a larger role in financial technology developments over the next several years as such technology moves even more mainstream. This is good news for U.S.



A shipping container is offloaded from the Hong Kong-based China Shipping Container Lines East China Sea container ship at the Port of Oakland in Oakland, California. U.S. tariffs on China have demonstrated the strength of U.S. economic leverage over China, but a reduction of economic ties may reduce U.S. leverage over time. (Justin Sullivan/Getty Images)



Yi Gang, governor of the People's Bank of China, gives a speech during the 2018 Annual Conference of Financial Street Forum in Beijing, China. The bank has invested heavily in developing blockchain technology and is exploring a central bank digital currency. (VCG/Getty Images)

economic prominence and the strength of U.S. coercive economic measures. The biggest conventional banks, exchanges, and investment houses, as well as central banks, have all begun making major commitments to this new class of technology. The Depository Trust & Clearing Corporation, a U.S. company that operates one of the main entities for clearing and settlement of securities transactions, is testing a new platform for credit derivatives based on distributed ledger technology.⁹⁴ Large financial institutions are also getting involved with digital currencies. Goldman Sachs decided in May 2018 to open a trading desk for Bitcoin and has already been clearing Bitcoin futures on the Chicago Mercantile Exchange for clients.⁹⁵ But other trends may bode less well for the future of U.S. coercive economic leverage. Central banks in Sweden, Canada, and China are all studying the possibility of issuing central-bank-backed digital currency, and Uruguay's central bank started a pilot program for digital currency. The People's Bank of China is particularly interested in developing its digital currency with "controllable anonymity."⁹⁶

The approach that U.S. regulators take toward fostering financial technology developments will be an important determinative to the issue of U.S. dominance of financial technology. In interviews, many financial technology company executives and investors cited a lack of clarity and understanding from U.S. regulators as a substantial barrier to innovation and adoption of financial technology. A particular sticking point in interviews was the unwillingness of the Securities and Exchange Commission (SEC) to provide greater clarity

and more rapid decisions on whether it considers new digital currencies to be securities. However, U.S. regulators are trying to lay out new approaches to incentivize development of financial technology, with the Treasury Department releasing a report in July 2018 spelling out a variety of ways the United States could improve its regulatory environment for financial technology.⁹⁷

THE CHINA CHALLENGE

China poses one of the most significant long-term challenges to the efficacy of U.S. coercive economic measures. China already has the world's second-largest economy, and many economic models expect its GDP to overtake the United States' in the next 10 to 15 years.⁹⁸ China and the United States have recently traded back and forth the title of being the world's highest-volume-trading nation, and China is the largest trading partner of dozens of countries globally, including longtime U.S. allies such as South Korea, Japan, and Germany.⁹⁹ In principle, China's growing economic capacity should enable it to increasingly offer alternative economic options to countries, companies, and entities targeted by U.S. coercive economic measures. Its aggressive effort to expand its global trade and investment footprint through the Belt and Road Initiative has the potential to play a major role in strengthening its ability to offer such alternatives.

Yet despite frequent, sharp Chinese criticism of U.S. coercive economic measures, to date China has taken few aggressive steps to challenge America's use of such measures against third countries that the United States targets. For example, both during the 2012–2015 period of intense U.S. sanctions on Iran and in the months since President Trump announced the U.S. withdrawal from the JCPOA in May 2018, China reduced its imports of Iranian crude oil and took other steps to reduce business that violates U.S. sanctions.¹⁰⁰ Similarly, it has generally maintained economic pressure on North Korea over the past two years.¹⁰¹ This is not to suggest that China fully complies with U.S. coercive economic measures against third countries: Chinese public statements overwhelmingly oppose U.S. unilateral sanctions and other coercive economic measures, and China has continued to engage in trade with both Iran and North Korea despite U.S. sanctions. But China has generally tried to avoid engaging in provocative, highly visible business that contravenes U.S. coercive economic measures or that could affirmatively rescue countries targeted by U.S. coercive economic measures.

The unexpectedly strong impact of the current U.S. trade war on Chinese markets and the Chinese economy has, at least for the time being, probably further reduced Beijing's interest in engaging in business that would further escalate tensions with Washington, even



China has invested heavily in projects such as the Colombo deep-sea port in Sri Lanka as part of the Belt and Road Initiative to increase its global economic footprint and its economic leverage. (Paula Bronstein/Getty Images)

though the impacts have also likely hardened China's resolve to foster economic alternatives to the United States over the long term. For example, China has sought to negotiate a trade agreement with the Trump administration to end the U.S. tariffs imposed on China starting in 2018, and at the time that this report was finalized, both Beijing and Washington were signaling that the two countries could reach an agreement. China has also sought to downplay specific initiatives that have been sources of friction with Washington, for example, by reducing public references to its "Made in China 2025" industrial strategy.¹⁰²

China's reluctance to aggressively challenge U.S. coercive economic measures against third countries likely reflects several factors. The first is that despite growing geopolitical tension between Washington and Beijing, to date China has generally prioritized seeking stability in its relationship with the United States. This is illustrated both by China's interest in negotiating a resolution to the U.S.-China trade war and by its reluctance to aggressively challenge U.S. policy toward third-country targets of coercive economic measures, such as Iran, North Korea, and Venezuela. Iran, for example, is essentially a second-tier issue for China, and China has not wanted to engage in business with Iran that would significantly complicate Beijing's already tense relationship with Washington. North Korea, by contrast, is a first-tier issue, but to date China has generally wanted to encourage a reduction in U.S.-North Korean tensions and has assessed that putting a degree of economic pressure on Pyongyang advances that goal.

The second factor is that despite China's growing economic size, the country has yet to develop the capacity to provide widespread global alternatives to the financial networks and technologies that give strength to many U.S. coercive economic measures. While China is certainly capable of providing subsidies

to small countries like North Korea if it wants to, its capacity to provide global alternatives to the U.S.-dominated international financial system that could offer options to countries and companies targeted by U.S. coercive economic measures has to date remained limited. For example, a decade of Chinese efforts to internationalize the renminbi has yielded only limited results so far. China's currency remains used in just over 1 percent of international payments, a share that has fallen since a 2015 peak.¹⁰³ The renminbi continues to take a share of less than 2 percent of global sovereign reserves.¹⁰⁴ China itself has used the dollar as a major currency to denominate the loans and trading flows that are part of its signature Belt and Road Initiative.¹⁰⁵ And despite China's professed commitment to internationalizing its currency and opening its economy, in practice the country has proven wary of enacting large-scale policy reforms, such as relaxing its capital controls, that would be necessary for the renminbi to seriously challenge the dominance of the dollar as a global currency.

Similarly, although China has made significant technological progress in recent years, it continues to need access to cutting-edge U.S. technologies to underpin many of its economic and strategic goals. For example, the U.S. ban on exporting U.S. chips and technologies to ZTE in 2018 had major adverse impacts on the company and highlighted China's ongoing dependence on key U.S. technologies—a dependence that China cannot end overnight. A similar ban on exporting U.S. technologies to Fujian Jinhua Integrated Circuit Co., a Chinese memory chip maker accused of stealing U.S. intellectual property, appears to have had a significant enough impact that China would like to include an end to the U.S. measures in any U.S.-China trade deal.¹⁰⁶

Over the longer term, however, China's capacity and drive to develop mechanisms that serve as alternatives to the U.S.-dominated global financial system and to U.S. influence in supply chains are highly likely to increase. A number of analysts expect that the renminbi's share of global sovereign reserves will increase over the next five years due to rebalancing by central banks, and the expected inclusion of Chinese debt in global index funds is likely to spur significant global inflows into renminbi-denominated assets.¹⁰⁷ China has aggressively signed currency swap agreements with countries over the past several years, quietly building an architecture for greater international use of the renminbi. China has also begun pushing to price at least some of its oil imports in renminbi, and, as the world's largest commodities importer, is likely to continue pushing to price at least a share of its commodity imports in its own currency.

The U.S. trade measures against ZTE and Fujian Jinhua, meanwhile, appear to have prompted China to seek ways to increase its reliance on indigenous

technologies rather than U.S. components,¹⁰⁸ and the increased U.S. pressure on Huawei, another large Chinese telecommunications company, in late 2018 and 2019, including the arrest in Canada of a senior Huawei official, has added impetus to Chinese efforts to reduce dependency on U.S. technology. While the United States has a clear lead in many key technologies, America's edge is not necessarily insurmountable: China has already developed significant capabilities in AI, for example,¹⁰⁹ and is making significant investments in its indigenous microchip development and fabrication capacity. While China still lags behind U.S. and European companies in key aspects of these technologies, with sufficient incentives over time it can probably reduce its reliance on U.S. technology and increase its technological independence¹¹⁰—which would erode U.S. coercive economic leverage over the longer term.

Finally, China is investing heavily in financial technologies that could enable transactions that are less dependent on the U.S. financial system and has become a leader both in the scale of investment and in the number of patents filed.¹¹¹ Although the Chinese central bank has expressed concern that some Chinese investments in blockchain technologies appear bubble-like, China's experience with rolling out mobile payments—where Chinese usage went from less than \$100 billion in 2012 to more than \$13 trillion in 2017—highlights the potential for Chinese technology to rapidly alter financial payment infrastructure.¹¹²

U.S. policymakers considering responses China's medium- and long-term strategic challenges to the United States will have to confront a degree of potential tension between their desire to limit certain economic ties between the United States and China (such as restricting Chinese investment in U.S. high-tech companies as a mechanism for protecting U.S. intellectual property and maintaining U.S. technological dominance) and the fact that the United States will retain relatively greater coercive economic leverage over China to the extent that key economic ties remain deep. For example, restricting the ability of large Chinese companies such as ZTE or Alibaba to operate large-scale platforms in the United States could serve U.S. policy goals vis-à-vis China by limiting their ability to gather information on Americans, but completely barring the companies from any ties to the United States could ultimately mean the companies would become less susceptible to U.S. coercive economic pressure in the future, because they would already be cut off from the United States. U.S. policymakers should consider whether and how to maintain U.S. coercive economic leverage over China in current U.S. trade negotiations with Beijing and should take into account the extent to which a significant decoupling of the U.S. and Chinese economies would erode U.S. leverage over the long term.

CHAPTER 5

Selected Implications for Coercive Economic Measures

These economic and financial technology trends over the longer term will have a number of impacts for U.S. use of coercive economic measures. Should Congress and the executive branch continue to draw heavily on coercive economic tools into the next decade and beyond, and particularly should the United States deploy these tools in ways that drive traditional U.S. allies to retaliate, these developments will force more aggressive and attenuated uses of the tools to preserve their impact. In that event, there will likely be a greater reliance on non-sanctions coercive economic measures, an increased dependence on secondary sanctions, shifts in the focus of coercive economic measures to entities several degrees removed from the underlying targets, and a need to adapt to important technological shifts. As the U.S. use of coercive economic measures evolves, the risk of its alienating its allies may grow, and it may find the diplomatic and political costs of such measures rising, even if the measures remain economically effective.

Potential Expanded Use of Non-Sanctions Measures

U.S. policymakers may increase their use of coercive economic measures other than sanctions, especially trade controls and investment restrictions, in the years ahead, particularly if growing alternatives to the U.S.-dominated global financial system partly blunt the impact of U.S. financial sanctions. As the U.S. experience with ZTE in 2018 illustrated, these measures can have significant impacts, and as discussed earlier, both FIRRMA and ECRA are expanding the legal toolkit available for using investment restrictions and export controls as coercive economic tools. These tools are likely to work as long as the United States maintains control of key technologies and remains an attractive and key market for investment, even if foreign companies become less dependent on the U.S. dollar over time.

Greater Reliance on Secondary Sanctions

In the 2000s and 2010s, limiting adversaries' access to the dollar and to the U.S.-dominated international financial system has been a major focus of U.S. coercive economic measures. However, as foreign governments increase their efforts to develop alternatives to the U.S.-dominated international financial system for payments,

and as financial technology developments offer more alternatives for cross-border financial transactions that are not directly dependent on the dollar or U.S. institutions, the United States may have to make increasing use of secondary sanctions to maintain pressure on targets.

In many respects, this trend has already begun. As described above, during the first period of maximum international sanctions on Iran, between 2010 and 2016, the United States began to use the threat of secondary sanctions as a backdrop to deter global companies from doing business with Iran. With the reimposition of sanctions on Iran following the May 2018 U.S. withdrawal from the JCPOA, given the lack of multilateral government support for U.S. policy, the U.S. government has aggressively threatened secondary sanctions on energy companies, industrial conglomerates, and other foreign companies that had business in Iran. This threat has been an important part of many European companies' decision to withdraw from Iran, despite European efforts to enable continued financial transactions with Iran, such as through the planned SPV. Similarly, the United States has considered—though not yet imposed—secondary sanctions on the European companies involved in the Nord Stream 2 gas-export pipeline from Russia.¹¹³ As long as the United States remains a globally dominant economy and market, and as long as it continues to play an important role in global supply chains, secondary sanctions will continue to provide it with significant coercive economic leverage, particularly over larger multinational companies, even if the targets of U.S. coercive economic measures find new payment systems and technological shifts enable financial transactions that avoid U.S. jurisdiction. However, greater reliance on aggressive and unpopular secondary sanctions also risks increasing the diplomatic cost of these measures if the United States is not able to develop multilateral support for its policy objectives.

Shifts in the Focus of Sanctions Implementation and Enforcement

A related potential impact is that U.S. coercive economic measures may have to increasingly focus on banks and companies that are three or even four degrees removed from the targets of those measures, in addition to companies and entities that are directly subject to the measures.

U.S. policymakers may have to increase their use of coercive economic measures other than sanctions, especially trade controls and investment restrictions, in the years ahead.

For example, even in a world where efforts to develop alternatives to the U.S.-dominated global financial system succeed in the medium term, there will still be connectivity to the United States—it is simply that the connections will be further removed. Instead of a sanctioned entity trying to have a financial transaction cleared through the United States, the sanctioned entity may be able to pay a supplier directly. But the supplier, or the supplier’s supplier, will eventually have some U.S. connectivity that the United States can use as coercive economic leverage. Even the majority of most cryptocurrency transactions will eventually reconnect to a bank in some way as a company wants to convert cryptocurrency into fiat currency.

Greater reliance on aggressive and unpopular secondary sanctions is likely to increase the diplomatic cost of sanctions measures if the United States is not able to develop multilateral support for its policy objectives.

For policymakers enforcing sanctions, this will likely mean that targeting may be focused on new and different entities. Some sanctions targets of the future, particularly those that are digital natives, will be a longer stretch for the United States, but not entirely out of reach. In addition, the focus of enforcement may shift more heavily toward entities other than banks, such as commodities traders, technology companies, and industrial companies, as financial channels that are relatively insulated from direct U.S. pressure get established. This is likely to raise both the diplomatic and the enforcement costs of sanctions measures, as U.S. policymakers will need greater diplomatic engagement and enforcement resources to ensure sanctions measures are effectively coordinated and targeted. It is also likely to raise the macroeconomic impacts of sanctions measures, as alternative systems farther from U.S. jurisdiction will likely mean that the United States will need harsher sanctions measures or targeting of entities further from directly sanctioned entities to apply effective pressure, resulting in greater macroeconomic spillovers and disruption.

Coercive Economic Measures Against Large Economies

Coercive economic measures against large, globally important economies, such as China’s or the European

Union’s, have the potential to drive much more important systemic changes that would undermine U.S. coercive economic leverage even more than frequently applied coercive economic measures against smaller economies. Smaller economies subject to U.S. coercive economic measures are unlikely on their own to be able to resist coercive economic pressure, because they lack the economic heft to develop networks to conduct business outside of the reach of U.S. pressure or to attract any significant number of foreign companies into their proposed networks: It simply does not make sense for any large, global companies to keep doing business with a country such as Iran or Venezuela if the cost is losing access to the United States.

But the situation is potentially quite different with respect to coercive economic measures against large countries and jurisdictions. Large countries, such as China, and large jurisdictions, such as the European Union, have far more potential capacity to develop networks that are insulated from U.S. pressure and to develop retaliatory tools that might deter U.S. actions. And they would likely find companies willing to do business with them; given a choice between doing business with the United States or with China or Germany, a number of foreign companies would decide to forsake the United States. While the United States is right to use coercive economic measures against large economies in response to top-tier national security threats, U.S. policymakers should be aware that such measures are significantly more likely to contribute to the development of alternatives to the existing U.S.-dominated international financial system than coercive economic measures against economically smaller targets.

Artificial Intelligence and Sanctions

Although AI/ML solutions present much promise for the more sophisticated targeting of sanctions compliance, the technologies will likely only ever be a valuable complement to human analysis and judgment. In interviews with the authors of this report, officials at several large financial institutions said that they had seen limited success in applying AI/ML products to aid in compliance so far and suggested that large compliance staffs would still be necessary even with improved capabilities. The biggest challenge for AI/ML in the sanctions compliance world may be cultural, however; regulators will need to be comfortable with the capability and explainability of AI solutions. Many of those interviewed for this research project reported that these constituencies are uncomfortable with change and often unwilling to trust algorithms over humans even if those algorithms

produce improved results when it comes to identifying sanctions evasion. A recent announcement by FinCEN, along with a range of other federal financial regulators and supervisors, encouraging the adoption of AI technologies by financial institutions and promising supervisory restraint is a slow step in the direction of greater use of AI/ML.¹¹⁴

Nevertheless, AI/ML ultimately is a promising new aid in the cogency and effectiveness of U.S. sanctions given the possibility of providing additional tools for both financial institutions and governments to monitor and detect sanctions evasion and other criminal financial activity.¹¹⁵ These technologies will assist in aggregating data sets or detecting transaction patterns. To eventually achieve AI/ML's promise, however, regulators and standard-setting bodies must undertake a massive effort to make data more compatible and uniform, including not just financial data, but also data on shipping, trade, and other commercial activity that may be used to raise and move money in violation of U.S. law and sanctions. Without improved data it will be difficult for AI/ML technologies to improve the effectiveness of sanctions. Overcoming these various challenges, and achieving widespread cultural adoption, will require a major effort that may take a generation (or more).

CHAPTER 6

Policy Recommendations

The United States has public policy choices to make that will have an impact on the availability and effectiveness of coercive economic measures for the next five years and beyond. In the long term, many of the most important U.S. decisions will have to do with making sound macroeconomic and financial policy choices that will keep the United States an attractive place to invest and to do business, and ensure that U.S. companies continue to lead key industries globally. Ultimately, how effective the United States is at stewarding its economy, and continuing to oversee a stable, liquid market and highly convertible currency, as well as serving as a financial technology innovation hub, will have a large impact on how useful its economic policy instruments will be in the future. Judicious and coordinated use of coercive economic instruments will also be critical if the United States is to assure other nations and foreign companies that it is safe to continue relying on the U.S. financial system, the U.S. dollar, and the United States as a destination for investment.

U.S. policymakers can and should take a number of discrete, specific steps to maintain the strength of U.S. coercive economic measures over time. Adopting these recommendations will help the United States preserve its economic leverage, maintain leadership in the development of financial technology, and achieve its foreign policy aims.

Gather More Information

Commission studies on economic coercion. The U.S. Congress and administration should commission a range of studies on these issues to sort out the trends that will affect U.S. economic leverage and clarify the policy decisions necessary to maintain the strength of U.S. coercive economic tools. To support this effort, Congress should create an independent commission to study trends that bear on U.S. economic power and competitiveness, including the country's ability to use coercive economic statecraft. The commission should produce a public report outlining:

- the sources of the United States' strengths in wielding economic statecraft to achieve foreign policy ends;
- current policy trends that may positively or negatively affect the ability of the United States to use economic measures, including sanctions, to advance security and foreign policy aims;
- the strategies being pursued by foreign governments to resist U.S. economic influence and to exert economic leverage over the U.S. in return; and

- recommendations on how the United States can retain its economic leverage in the future.

Evaluate long-run scenarios for U.S. economic leverage. Congress should direct the Treasury Department to produce a report on the future of U.S. economic power. This report should include an evaluation of how foreign governments will respond to continued aggressive use of sanctions and other coercive economic measures. It should also explore the longer-run impacts on U.S. economic leverage of different scenarios of U.S. economic leadership and financial technology development. The Treasury Department should publish its releasable conclusions as an unclassified report and brief U.S. policymakers on key findings.

Study foreign government responses. Congress should direct the National Intelligence Council (NIC) to produce a National Intelligence Estimate on the range of ways foreign governments will be, or already are, grappling with U.S. sanctions and other coercive economic measures, as well as how they are seeking to use their own economic leverage in return. The NIC should publish its releasable conclusions and brief U.S. policymakers on key findings.

Study trends affecting U.S. financial primacy. The National Security Council (NSC) and National Economic Council (NEC), in assessing the impact of sanctions and

Congress has a major role to play in preserving the strength of U.S. coercive economic measures through appropriating resources to ensure the effective enforcement of those measures, directing the executive branch to study how a range of trends will alter U.S. economic leverage, and ensuring effective oversight of the use of coercive economic measures. (Mark Wilson/Getty Images)



countering illicit finance strategies, should initiate an ongoing process to study the factors that are likely to accelerate the trend of diminishing dollar and U.S. financial system primacy. The NSC and NEC should explore appropriate classified and unclassified published assessments to guide policymakers, Congress, and the public.

Examine the U.S.-China economic relationship. Congress should adapt the matters for discussion in the U.S.-China Economic and Security Review Commission's annual report to Congress to include a section on the national security implications of the bilateral trade and economic relationship between the United States and the People's Republic of China, specifically to study financial technology investment and development in China. This should include evaluation of China's large distributed ledger technology research investments, the implications of China's releasing a central bank digital currency, the possibility of China's using control of Bitcoin mining pools to manipulate the Bitcoin ledger, and the possible economic and security implications for the United States.

Craft a Durable Coercive Economic Statecraft Framework

Develop an economic statecraft doctrine. At the beginning of each presidential administration, the NSC and NEC, leading an interagency process and soliciting outside, expert input, should craft a set of core principles, or doctrine, to guide the conduct of U.S. economic statecraft. These principles should help to define proportionality and a doctrine of acceptable escalation. Substantively, they should be focused on the following core principles:

- The U.S. government should engage in diplomatic outreach and coordination, which is vital before (and after) coercive economic measures are imposed, to (a) build as broad a coalition around policy interests as possible, (b) ensure as many commitments as possible at least not to "backfill," for exiting businesses and banks, and (c) help key countries that opt out of the coalition altogether understand what the goals and principles are as the United States prepares to apply and enforce coercive measures.
- U.S. policy leaders should reserve secondary or extraterritorial measures for only exigent cases and only where closest U.S. allies do not share U.S. policy perspectives.
- In the exercise of coercive economic measures, U.S. policy officials should avoid directly targeting allies, seeking to leverage their collaboration to target

competitors and adversaries of the United States. This method will expand U.S. effectiveness and limit the incentive structure it erects for close allies targeted by coercive measures to undermine U.S. interests and efforts.

Conduct congressional oversight and self-scrutiny.

Congress, through hearings, briefings, and communications with the administration and the public, should exercise oversight over how the administration employs sanctions and myriad other tools of economic statecraft. Congress must also assess its own role in accelerating certain trends in the creation and execution of sanctions policy, and should request independent public and private testimony on this topic to guide its approach.

Proceed cautiously with investment restrictions. The White House and economic leaders in Congress should embrace and regularly articulate a statement of policy that foreign investment makes the United States safer and stronger. National security limitations or exceptions to this policy must be studied and rigorous, as opposed to becoming a backdoor into industrial policy for economic nationalists.

Appropriate Adequate Resources

Devote greater funding for implementation and analysis. Congress should appropriate additional funding for offices at the Treasury, Commerce, and State Departments charged with implementing U.S. coercive economic measures, to make sure that the tools can be implemented and deployed effectively. Congress should additionally authorize and appropriate funds for a statistical analytical body, to be housed in the Treasury Department's Office of Intelligence and Analysis, charged with rigorous evaluation of U.S. coercive economic measures, including their impacts and medium- and long-term trends that threaten their effectiveness. This agency should collaborate with economists within Treasury to produce public and classified data that will be of direct, immediate use to the U.S. policymakers charged with coordinating U.S. economic statecraft and defending U.S. national security interests.

Maintain Leverage Through Trade and Investment Policy

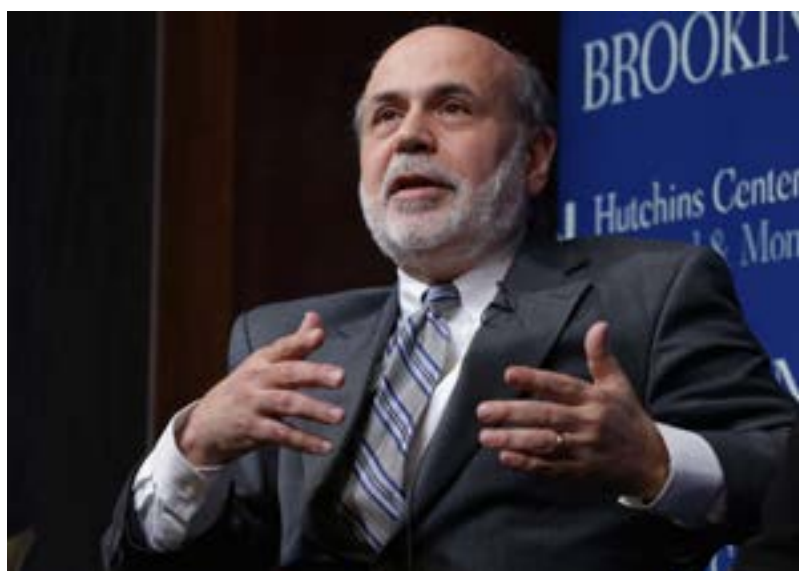
Factor trade and investment policy into economic leverage. U.S. trade and investment policy serves a broad range of U.S. objectives, notably job creation and economic growth in the United States, as well as development goals. In a time when the United States is considering

and implementing significant shifts in longstanding U.S. trade and investment policies, such as the aggressive use of tariffs against imports of such products as steel and aluminum, and against a significant share of U.S. imports of Chinese products, U.S. policymakers must factor impacts on U.S. coercive economic leverage into trade and investment policy decisions and trade negotiations. For example, the United States gains not only economic but also important strategic advantages when U.S. companies play a major role in global finance and in key global supply chains, and the United States has a strategic interest in U.S. companies' ability to play that role. Policy decisions that close off the ability of U.S. companies to operate internationally, and reduce the ability of foreign companies to operate in the United States, can ultimately reduce America's coercive economic leverage. While recognizing the broad range of interests that U.S. trade and investment policy serve, U.S. policymakers should work to promote the role of U.S. financial companies, technology companies, and other key industries globally as a way of maintaining America's strength. This may be particularly important with respect to promoting the global role of U.S. financial institutions, investors, and technology companies, given the key role they play in providing the country with coercive economic leverage globally.

Maintain reliable economic stewardship. Apart from calibrating specific policies on trade and investment to the goals of economic statecraft, U.S. policy officials must also take care to maintain the United States' reputation as a reliable and predictable actor on broad matters of economic policy. Fiscal and monetary policies should continue to underpin deep and liquid U.S. capital markets and stable growth. Key economic institutions such as the Federal Reserve and regulatory bodies should remain free from the appearance of political influence. U.S. leadership as a trusted steward of the global economy must remain prominent at international financial institutions. Otherwise, decades of progress on the free flow of capital, trade, and ideas would be put at risk, with negative consequences for U.S. coercive leverage and the global economy as a whole.

Cultivate a Competitive Edge in Financial Technology

Develop a financial technology security strategy. The NSC and NEC should lead an interagency process to craft a national financial technology security strategy that will identify the basket of financial technology innovations that are likely to see widespread adoption in the next



Former Fed Chairman Ben S. Bernanke participates in a meeting of the Board of Governors at the Federal Reserve in Washington, DC, on October 24, 2013. The Federal Reserve's independence and its stewardship of the U.S. economy were key to managing the global financial crisis and will be major determinants of the continued strength of U.S. coercive economic measures. (Mark Wilson/Getty Images)

five to 10 years as well as ways the United States can take the lead in such developments. The process should also emphasize a regulatory sandbox approach that can specifically help the United States to be at the forefront of these developments. Furthermore, the process should study how financial innovation and financial technology can undermine sanctions enforcement and financial transparency, as well as means for the United States to counter this problem in the years ahead, including collaboration with select leading venture capitalists, technology entrepreneurs, and academics.

Collaborate with the private sector to promote innovation.

The U.S. government, in concert with private-sector actors where appropriate, should take all necessary steps to position the country as a leader in the financial technology space. This will serve to make and keep the United States competitive in what will be a strategically important area of economic activity. This policy posture should include a focus on research and development spending and public-private partnerships to allow for timely information sharing on the applicability of financial technology solutions to regulatory and financial crimes compliance and a broad, coordinated embrace of a regulatory sandbox.

Lead in developing blockchain applications. Congress, in concert with the Treasury Department and other financial regulatory agencies, should provide research and development funding and other incentives, to the extent necessary, and regulatory guidance to encourage U.S.-based developers to build the open-source blockchain software that companies around the world use to develop applications. If U.S. developers and U.S. companies lead in developing blockchain technology, applications, and products, the U.S. government will be better positioned to understand and leverage technological applications built on this base.

Invest in financial technology startups. Government-backed bodies, such as In-Q-Tel, Defense Advanced Research Projects Agency (DARPA), Intelligence Advanced Research Projects Activity (IARPA), and other research and development offices involved in technology innovation and investment, should explore investments in startup companies developing blockchain applications and financial technology that may have implications for national security. In-Q-Tel and other, similar bodies are well positioned to help fund and acquire new technologies involving blockchain or AI/ML that may be useful for financial intelligence gathering and analysis.

Support research and development. Congress should appropriate additional funding to the National Science Foundation (NSF), through its Industrial Innovation and Partnerships Small Business and Innovation Research program, to support additional investment in companies developing distributed ledger technologies and other financial technology products and services. Congress should also appropriate additional funding to the NSF to support continued research into digital currencies, distributed ledger technologies, and AI/ML.

Support government acquisition of financial technology applications. Congress should appropriate additional funding to federal offices such as the Treasury Department's Office of Financial Innovation and Transformation and the General Services Administration to provide a higher level of government investment in the acquisition of distributed ledger technologies, AI/ML technologies, and other financial technology applications. This will help with both substantive adoption and operationalization of these new financial technology applications, as well as the cultural adaptation necessary for mainstreaming these technologies throughout the broad community of public and private stakeholders.

Improve Intragovernmental and International Cooperation on Financial Technology

Improve regulatory coordination. Another key to maintaining the U.S. position as a leader in financial technology, and indeed in the global economy more generally, will be an enabling regulatory environment. Both federal and state regulators will need to do more to coordinate their activities and ensure that regulators at all levels are sharing information and best practices to provide a more standardized set of financial technology regulations.

Designate a leading financial technology agency. The administration should designate an agency or office to coordinate its approach to regulatory sandboxes. Currently, both the Consumer Financial Protection Bureau (CFPB), through its Office of Innovation, and the Commodity Futures Trading Commission (CFTC), through its LabCFTC, are operating regulatory sandboxes for financial technology—a situation that leads to confusion and fragmentation. Federal and state regulators should also cooperate, considering a unified regulatory approach to centralize and coordinate oversight of new financial technology applications. While this process will no doubt be difficult, it is likely necessary to overcome the pervasive impediments to financial technology development at home and can be the rapid accelerator of turning trials in a regulatory sandbox into good regulatory policy.

Facilitate interagency cooperation. Building off its report on financial technology from July 2018, the Treasury Department should continue to facilitate interagency cooperation to determine best practices and areas for regulatory change for the financial technology industry. Additionally, it should aim to incorporate more state regulators in its efforts to coordinate and harmonize regulation. The department's July report included input only from one state regulator and the Conference of State Bank Supervisors. Increasing participation from state regulators, who play an important role in regulating money transmitters, will be key in increasing regulatory cooperation.

Promote adoption of AI/ML. FinCEN, along with other federal and state banking supervisory authorities, should promote increased adoption of AI/ML technologies by financial institutions for the purpose of regulatory and sanctions compliance. Regulators can accomplish this through information sharing with financial institutions and by exercising restraint in enforcement action if AI/ML technologies uncover existing compliance gaps. The

recent announcement in December 2018 by a group of federal financial regulatory and enforcement agencies encouraging experimentation with AI/ML technologies and promising restraint in supervisory action is a good step in this direction.

Provide greater regulatory guidance. The SEC should offer further regulatory guidance and signaling on the treatment of digital currencies to sustain and build financial technology in the United States. The SEC should create a rapid response team to produce no-action letters to provide greater regulatory clarity—for example, on which digital currencies will be considered securities and which will be considered commodities.

Coordinate with allies and partners. The Treasury Department, and other federal agencies, should lead in coordinating with U.S. partners and allies on a joint approach to managing the national security implications of future financial technology change. Financial technology investment and development is a global and increasingly cross-border phenomenon, which will require U.S. collaboration with allies and international bodies to ensure responsible innovation and strong international standards.

Build international cooperation in the Indo-Pacific. In pursuit of a wider strategy for a free and open Indo-Pacific, the United States should build international cooperation with high-tech champions in East Asia to share information on the national security implications of new financial technology. This should include such U.S. government agencies as the SEC, the CFTC, and the CFPB signing agreements similar to the Cooperation Arrangement on Financial Technology Innovation, which was signed in May 2018 between the CFTC and the U.K. Financial Conduct Authority. The cooperation should focus on building consensus on a general regulatory approach to treating financial technology, as well as forums to pool research and development spending. These cooperation efforts should focus on Singapore, Japan, South Korea, and others in the region that have the best-developed technology-focused private sectors, enabled by supportive government policymaking.

Lead in global regulatory standard-setting. The U.S. administration, through the CFPB, should continue to lead in helping launch the Global Financial Innovation Network (GFIN) to ensure global cooperation among financial technology regulators. It should also push to ensure expanded membership in the GFIN, including

international standard-setting bodies such as the Financial Action Task Force.

Limit Harm to Security Partners

Avoid the promotion of economic and political fragmentation in alliance relationships. The U.S. should use caution in deploying coercive economic measures, such as sanctions and tariffs, against U.S. allies. While there may be unusual circumstances that merit deployment of coercive economic measures against close U.S. allies, doing so raises significant collateral diplomatic and political costs. An aggressive posture toward deploying coercive economic measures against allies risks facilitating a longer-term rise of alternatives to the U.S.-dominated international financial system. To date, most U.S. allies have generally accepted a degree of compliance with U.S. coercive economic measures as a worthwhile cost of close relationships with the United States, following intensive U.S. diplomatic efforts to gain consensus with allies around security threats and build coalitions of like-minded countries. Allies of America have therefore not generally had strong incentives to promote alternative financial infrastructures or trading arrangements as a way of insulating their commerce with countries subject to U.S. coercive economic measures. But the United States has recently used coercive economic measures against allied states, often without serious diplomatic outreach to build consensus around shared security threats. Examples include both the threat of U.S. secondary sanctions against European companies involved in Iran and the tariffs against steel and aluminum imports from close allies; such actions encourage allies to take steps to develop alternative arrangements.

As discussed earlier in this report, developing and scaling alternative financial and trading arrangements that challenge U.S. coercive economic measures is challenging. However, if America's coercive economic measures encourage its allies to work with its adversaries in developing such arrangements, their odds of success rise dramatically. In particular, aggressive U.S. use of coercive economic measures risks driving allies toward working cooperatively with such countries as China and Russia to develop cross-border financial and trading networks, which would be relatively insulated from U.S. pressure. U.S. policymakers should be judicious in deploying coercive economic measures against allies in order to minimize allies' incentives to develop such alternatives.

Maintain Coercive Economic Leverage Over China

Develop an economic coercion strategy toward China.

One of the biggest challenges for U.S. policymakers over the long term will be maintaining coercive economic leverage over China. As discussed in this report, the United States currently possesses significant coercive economic leverage over both China as a whole and specific Chinese companies, such as ZTE, given China's reliance on the U.S. market, U.S. suppliers, and the U.S. financial system. This leverage is in many ways a direct result of U.S. leadership as the standard-setter and careful steward of the international financial system, which China (like most countries) has sought to join. The White House and the State, Treasury, and Commerce Departments should develop an internal U.S. strategy to maintain coercive economic leverage over China.

Calibrate carefully to maintain leverage. Over the past several years, U.S. policymakers from across the political spectrum have begun to assess that the United States must take a tougher line against China across a range of economic issues, including restricting Chinese investment in the United States, cracking down on Chinese economic espionage, and aggressively challenging Chinese abuses of international trade rules. Many of the policies America has deployed over the past several years to increase pressure on China, including expanded investment restrictions, trade controls, and tariffs, are necessary to meet the growing challenges

that China poses to the United States. But over the longer term, policies that aggressively “decouple” the U.S. and Chinese economies will gradually reduce U.S. leverage over Chinese firms and over Beijing. U.S. policymakers need to think carefully about ways to maintain U.S. leverage over China and over Chinese companies, including using financial flows and the primacy of the dollar. As U.S. policymakers develop and implement a comprehensive strategy on China over the long term, they need to include a strategy to maintain coercive economic leverage, factoring such leverage into U.S.-China trade decisions. They also must prioritize the demands of China and carefully calibrate threats vis-à-vis China, because Beijing will respond to intensive economic coercion with quick and decisive efforts to decouple that could undermine the basis for U.S. economic coercion in the first place. Beyond this, U.S. policymakers also need to understand the potential coercive economic leverage that China has over the United States and to take steps to mitigate potential harm.



U.S. President Donald Trump takes part in a welcoming ceremony with China's President Xi Jinping on November 9, 2017, in Beijing. Developing a strategy to maintain economic leverage over China should be a key priority for U.S. policymakers managing U.S.-China relations. (Thomas Peter-Pool/Getty Images)

CHAPTER 7

Conclusion

The United States' ability to deploy coercive economic measures with substantial impact over the past decade has been the result of growth in its coercive economic leverage and the evolution in American officials' understanding of how to effectively deploy coercive economic tools. American policymakers have benefited from a number of trends that have strengthened the country's coercive economic toolkit in recent years—the enduring role of the U.S. dollar and the U.S. financial system; the relative strength of the U.S. economy; perceptions of the U.S. system as stable, predictable, and relatively clean; and technological changes that have better enabled government officials, companies, and banks to detect and stop suspicious business, among other trends.

The economic and technological trends that have strengthened America's coercive economic toolkit are likely to continue in the near term, at least as long as the U.S. economy continues to outperform its major peers and U.S. government officials and global multinational companies are able to deploy new surveillance and analytic tools to track illicit behavior. But over the longer term, the outlook for the U.S. coercive economic measures is less clear. Coordinated efforts by foreign governments, now including allied governments, to develop alternatives to U.S.-dominated financial and economic networks may begin to diminish the measures' impact, and technological developments may hasten the timeline of these developments. This is not to say that U.S. coercive economic power will disappear; under virtually all plausible scenarios, U.S. coercive economic measures will retain force over the next decade. But growing alternative economic and financial channels could diminish the impact of U.S. coercive economic measures and allow countries, companies, and entities targeted by U.S. coercive economic measures to partly blunt the measures' impact.

Ultimately, whether and how extensively these trends affect U.S. coercive economic measures will depend as much on the choices of U.S. policymakers as on the underlying trends themselves. Foreign countries are unlikely to develop large-scale alternatives to the U.S. absent concerted, sustained investments by major governments. U.S. diplomatic skill and foreign policy choices will play a major role in foreign government decisions about whether to make those investments. U.S. leverage over individual foreign companies and entities will be shaped by the extent to which the United States is seen as a safe, predictable, and attractive place for those companies and entities to do business.

For U.S. policymakers, perhaps the biggest risk is that change, if and when it does occur, could occur rapidly. Growth of alternative payment systems may not happen gradually or in a linear fashion, but instead could be marked by a rapid shift over a relatively short period of time. American policymakers need to invest more time and energy in understanding potential trends and in identifying triggers of potentially rapid shifts.

The American policymakers charged with developing and implementing coercive economic measures are understandably focused on the crises of the day and deploying their tools to combat immediate threats. The workload of managing coercive economic programs on a day-to-day basis has only grown larger in recent years. But if policymakers want to be able to continue deploying coercive economic tools effectively in the future, they must start investing more time in assessing the future trajectory of their toolkit and in developing policy responses to get ahead of trends that could, if left unchecked, weaken some of the most important tools of U.S. foreign policy.

Endnotes

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