Weaponized interdependence (WI) is defined as a condition under which an actor can exploit its position in an embedded network to gain a bargaining advantage over others in a contained system. In their 2019 *International Security* paper, Henry Farrell and Abraham Newman argue that WI challenges long-standing ways that international relations experts think about globalization. States with political authority over central economic nodes “can weaponize networks to gather information or choke off economic and information flows, discover and exploit vulnerabilities, compel policy change, and deter unwanted actions.” This formulation compels scholars and practitioners alike to think differently about foreign economic policy, national security, and grand strategy for the twenty-first century.

To understand the ways in which weaponized interdependence affects U.S. foreign policy, let’s start with TikTok.

TikTok is a mobile phone app that allows users to share short, mostly amusing videos to social media platforms. According to its website, TikTok’s mission “is to inspire creativity and bring joy.” Less than three years after its 2016 launch, it was one of the most down-
The Uses and Abuses of Weaponized Interdependence

loaded apps in the United States, achieving a faster adoption rate than Instagram.

TikTok also attracted the attention of CFIUS, the Committee on Foreign Investment in the United States. Why was CFIUS, an inter-agency body tasked with defending the national security interests of the United States in foreign acquisitions of U.S. firms, interested in a video app? One reason is that a Chinese social media company named ByteDance created it. In 2017, ByteDance acquired Musical.ly, a U.S. firm with millions of users for its music app. ByteDance rebranded the app as TikTok and used Musical.ly’s subscriber base to expand rapidly into the U.S. market. That takeover triggered CFIUS’s interest. Over the past five years, CFIUS has paid increasing attention to foreign purchases of tech and data firms. A prior CFIUS investigation forced Chinese owners to divest the purchase of app companies like Grindr.³

Why would CFIUS care about foreign ownership of Grindr or TikTok? While there were allegations that TikTok censored content critical of China, that was not CFIUS’s motivation.⁴ The committee was interested because social media firms affect national security through the trove of personal data that their subscribers provide to use the service. Policymakers are concerned about whether the Chinese government would ever compel ByteDance into sharing that data. A coauthor of the 2018 law expanding CFIUS’s powers explained, “It’s about the underlying distrust of the Chinese government and what, theoretically, they could do with this data.”⁵

TikTok’s owners and managers repeatedly denied that they would hand over any data to the Chinese government.⁶ This did not assuage the concerns of U.S. policymakers. In the fall of 2019, Senators Chuck Schumer and Tom Cotton jointly requested that U.S. intelligence officials investigate whether TikTok posed a national security threat, saying in a letter, “With over 110 million downloads in the U.S. alone, TikTok is a potential counterintelligence threat we cannot ignore.”⁷ By the summer of 2020, President Trump had announced his intention to ban TikTok unless ByteDance sold the firm to a U.S. corporation. That the Chinese government could exploit TikTok as a panopticon to harvest information about the United States proved to be a rare source of bipartisan concern.
The parable of TikTok is emblematic of mounting U.S. concerns that great power rivals such as China and Russia are weaponizing rising levels of economic interdependence. In the case of Russia, the concern comes from Moscow’s control over Eurasian energy infrastructure, particularly gas pipelines. As far back as the 1990s, the Russian Federation exploited its control over the pipelines to coerce other post-Soviet states into policy concessions. Russia continued to use gas cutoffs as a means of influencing its vulnerable neighbors into the 2000s. Gazprom, the Russian state natural gas company, has spent the past decade expanding its network, constructing the Nord Stream 2 and TurkStream pipelines to boost exports to Western and Southern Europe. As a result, U.S. officials have expressed concerns that energy dependence on Russia will increase Europe’s vulnerability to economic pressure.

Fears of China are even more outsized, with U.S. officials worrying that China’s Belt and Road Initiative (BRI) could create path-dependent financial and transit networks in which recipient countries are at the mercy of China’s largesse. The Center for Global Development dubbed this “debt-trap diplomacy.” A bipartisan 2018 letter from fifteen U.S. senators asserted, “The goal for BRI is the creation of an economic world order ultimately dominated by China.” That same year the secretary of the navy warned that China was “weaponizing capital” with BRI. The United States has also attempted to block Chinese telecom firms Huawei and ZTE from dominating the global network standard for 5G, the next generation of cellular network technology offering broadband access. The Trump administration has claimed that the Chinese government will exploit Huawei and ZTE’s role in any 5G network to gain covert access to confidential or sensitive data, compromising national security. Beginning in 2018, the federal government imposed a series of import controls and law enforcement measures designed to restrict these firms’ access to the U.S. market. The administration also threatened allies that the United States might halt cooperation on intelligence sharing unless they restrict the role of Chinese firms in crafting their 5G networks. Secretary of State Mike Pompeo warned in December 2019, “Thanks to the way 5G networks are built, it’s impossible to separate any one part of the
network from another. . . . It’s critical that [allies] not give control of their critical infrastructure to Chinese tech giants like Huawei, or ZTE.” 15 The success of these efforts has been mixed, however, in no small part because Huawei has already embedded itself so deeply in these networks. 16

It would seem U.S. policymakers are confronting weaponized interdependence for the first time. Setting the proper context reveals two important facts, however. First, the United States has been weaponizing interdependence since the dawn of this century. The structural power of the United States over financial and cyber networks has enabled successive administrations to enhance America’s coercive tools of statecraft. The centrality of the dollar to global capital markets has empowered the United States to ramp up its use of financial sanctions. Control over internet protocols facilitated the U.S. intelligence community’s surveillance capacities. As Emily Meierding discusses in her chapter, in 2017 the Trump administration announced an intention to shift from “energy independence” to “energy dominance.” The United States has exploited weaponized interdependence far more frequently than it has been targeted by it.

Second, just because U.S. officials claim that weaponized interdependence exists does not make it so. Russian efforts to exploit its transit network to extract concessions from neighboring states have yielded uneven efforts at best. The scope of China’s debt-trap diplomacy remains contested, as Thomas Cavanna notes in his chapter. Concerns during the COVID-19 pandemic that China would exploit its centrality in medical supply chains proved to be exaggerated. 17 Even in the rare instances in which China appears to have successfully exploited its leverage—as when it withheld rare-earth exports to coerce Japan in a 2010 dispute—the long-term effect was to weaken China’s coercive capabilities. 18

Weaponized interdependence is real, but how real remains a matter of serious debate. The purpose of this edited volume is to define the scope of that debate and understand the dynamics at play. Uses and Abuses of Weaponized Interdependence details two levels at which WI can be used and abused. The first level concerns statecraft. Great powers, smaller states, and non-state actors are increasingly interested in weaponizing key economic and social networks.
While these actors have been eager to exploit WI, they also seem quite prone to abusing it as well. The Trump’s administration’s efforts at weaponized interdependence threatened to bankrupt Russia’s Rusal aluminum company and China’s ZTE, outcomes the administration neither anticipated nor intended. The administration’s overall record on coercive statecraft suggests a paltry return while eviscerating U.S. soft power. Actors run the risk of abusing their role as central hubs, putting their network centrality at risk for the future.

The second level concerns scholarship, where WI offers an opportunity for scholars to bridge multiple gaps. Weaponized interdependence provides an opportunity for scholars to weigh in on policy. It straddles the intersection of security studies and international political economy. At the same time, the “abuses” portion also applies to analysts. There is a clear danger of conceptual stretching. If one were to judge WI based solely on public commentary, anything and everything has been weaponized. It is all too easy for analysts to deploy the term weaponized to describe situations that have little to do with WI, using the label to attract attention and inflate threats. As several of the chapters in this volume make clear, weaponized interdependence does not exist in every sphere of international relations.

This volume strives to establish the rough boundaries of the policy problem. What areas of the global political economy are most likely to be vulnerable to choke-point effects and panopticon effects? How sustainable is the continued use of weaponized interdependence? What are the possible responses from targeted actors? How sustainable is the open global economy if weaponized interdependence becomes a regular tool of statecraft?

These questions matter for policymakers as well as scholars. Either explicitly or implicitly, the U.S. government has been operating on the principle that weaponized interdependence is a pervasive fact of twenty-first century international relations. The Trump administration has exploited network centrality in finance to apply “maximum pressure” campaigns on a variety of U.S. adversaries. The administration’s strategy documents and policy actions imply that it views relations with China as a situation ripe with WI possibilities. Furthermore, as the examples above suggest, these moves have robust bipartisan support. If the United States is exaggerating the pervasiveness of
The Uses and Abuses of Weaponized Interdependence

weaponized interdependence, the risk of sabotaging Sino-American relations and permanently disrupting the liberal international order is high. A better appreciation of WI’s scope is an absolute necessity.

A Brief Historiography of Interdependence

The concept of weaponized interdependence is new;\textsuperscript{22} the idea that interdependence affects international relations is not. As Farrell and Newman correctly observe, the liberal approach to international politics largely viewed the development of interdependence through a benign lens. This was for three reasons. First, economic interdependence was theorized as constraining the likelihood of violent conflict. Liberals have long argued that economic interdependence has a pacifying effect on world politics. From Kant’s \textit{Perpetual Peace} to Norman Angell’s \textit{Great Illusion} to Robert Keohane and Joseph Nye’s \textit{Power and Interdependence}, the causal logic was clear: economic interdependence raises the costs of disruption to that exchange. This incentivizes the relevant actors to continue to cooperate, reducing the likelihood of defection.

The second reason was that complex interdependence was viewed through the lens of globalization, which was presumed to have a leveling effect in world politics. The first generation of political science research on this topic painted networks as flattening hierarchies and fragmenting state power, an idea that seeped into public discourse. According to Thomas Friedman, for example, the internet was a “sudden revolution in connectivity [that] constituted a major flattening force.”\textsuperscript{23} This perception persisted into the current decade; until recently, entities like WikiLeaks were put forward as examples of how networked non-state actors could challenge the great powers.\textsuperscript{24} If interdependence empowered domestic actors within great powers and enriched rising powers and non-state actors on the global stage, the likelihood of deeper globalization increased. The ability of any one actor to exploit the vagaries of complex interdependence would be reduced.

The final reason was that, to the extent that interdependence disproportionately empowered any actor, the true beneficiary was the
Introduction

United States. Interdependence scholars were fully cognizant that asymmetric dependence and networked power were possible outcomes of greater globalization. During the late Cold War and post-Cold War eras in which the interdependence literature flourished, however, the United States was the unparalleled economic hegemon. International relations theory has often followed shifts in the distribution of power. To the extent that the United States was viewed as the beneficiary of asymmetries in interdependence, observers were largely sanguine about the outcome. Anne-Marie Slaughter argued that in a networked world, “The state with the most connections will be the central player, able to set the global agenda and unlock innovation and sustainable growth. Here, the United States has a clear and sustainable edge.” It is only as the United States has faced rising great powers that policymakers and analysts have recognized the possible downsides of weaponized interdependence.

While the benign view of economic interdependence was the dominant one, there were always dissenting voices. Realists have long argued that interdependence was more likely to breed conflict than cooperation, because the multiplicity of interactions would also increase the number of possible frictions in an anarchic world. Scholars working in the “capitalist peace” tradition argued that while mutual interdependence did reduce interstate conflict, asymmetric trade ties undermined the pacific effects of commerce. These criticisms are noteworthy but rely on different causal logics than weaponized interdependence. They primarily operate at the relational level between dyads rather than the systemic level.

Over the past decade, a few other scholars have argued that the networked structure of global economic flows has long facilitated WI. Economic historians noted that British policymakers were well aware of their financial network power in the run-up to the First World War. Thomas Wright warned in 2013 about the “potentially destabilizing vulnerabilities” that existed in a globalized economy, specifically referencing the dangers posed by Huawei and ZTE. In 2016 the World Economic Forum released a white paper warning that “all of the infrastructure of globalization risks being weaponized: the financial sector, supply chains, the energy sector and the
The Uses and Abuses of Weaponized Interdependence

global trading regime.”32 Mark Leonard, of the European Council on Foreign Relations, similarly warned that rising levels of connectivity meant that “interdependence, once heralded as a barrier to conflict, has turned into a currency of power.”33

Two other strands of research also laid the foundations for an appreciation of weaponized interdependence. Networked-based explanations for international relations took root over the past two decades.34 Global political economy scholars observed that financial flows in particular displayed a “hub-and-spoke” network, in which the United States became even more central to capital markets after the 2008 financial crisis.35 As Farrell and Newman note, there are significant spheres of the global economy in which a network analysis reveals winner-take-all dynamics. In contrast to the popular vision of networks as flat, decentralized systems, global economic networks reveal a hierarchy and the structural concentration of power.36

Finally, the literature on economic coercion began to observe the ways in which the United States exploited its network centrality in finance to impose punishing sanctions on allies and adversaries alike. This innovation in financial statecraft began with the anti-money laundering initiative of the late 1990s.37 Changes in post-9/11 domestic institutions accelerated the pace, as did the recognition by U.S. authorities that these kinds of sanctions imposed significantly greater costs on targeted states.38 The rising costs of military statecraft also made financial sanctions more attractive as a policy option. Sanctions scholars observed the myriad ways that sanctions exploiting U.S. centrality in financial networks were more difficult to evade and more likely to harm target economies.39

Farrell and Newman’s paper draws on much of this work while extending the WI argument in multiple ways. First, they clarify how this phenomenon is different from asymmetric dependence, a phenomenon that has been researched since the days of Albert Hirschman.40 Dyadic patterns of asymmetric dependence can be changed more easily than patterns of dependence that rely on networked structures. There are more exit options from dyads than system-wide networks, and the elasticity of relationships are likely to be greater as well. Second, consistent with their prior research, they note the necessary condition of developing domestic institutions capable of exploiting
network centrality. Third, in elaborating on the choke-point and panopticon effects, they clarify the causal mechanisms through which actors can exploit weaponized interdependence.

**What We Know about Weaponized Interdependence**

To use the argot of social science, the contributors to this volume are interested in weaponized interdependence as an independent and dependent variable. Farrell and Newman point out the role that domestic institutions play in the ability to exploit weaponized interdependence. Additional factors are likely to matter as well. What are the conditions under which a network is ripe for weaponized interdependence? Why would potentially vulnerable actors agree to join a network that exposed them to panopticon and/or choke-point effects? If weaponized interdependence is observed, how successful are efforts to exploit it? How are actors able to resist weaponized interdependence? Is there a coercive point after which actors are willing to absorb the costs necessary to disrupt an economic network?

A few themes run through the chapters in this volume. The first is that the network externalities of any structure powerfully affect the likelihood of weaponized interdependence being present and exploit-able. These externalities exist when the utility derived from using a network is a function of the number of other actors using the same network. With common pool resources, network externalities are negative—the greater the use, the less utility derived by each actor. When they are positive, however—as has been the case with networks as variegated as the Society for Worldwide Interbank Financial Telecommunications (SWIFT) and TikTok—they spread quickly and stick around. Some positive network externalities are more powerful than others. Social media, for example, generate greater network externalities than search engines. The rapidity of network diffusion makes the emergence of WI possible despite the wariness of actors operating in an anarchic world. The increasing utility of scale raise the barriers for any actor to exit from that network, facilitating the opportunities for successful surveillance and coercion.

Beyond network externality properties, there appear to be two other factors that facilitate the emergence of weaponized interde-
The first, paradoxically, is the failure of centrally located actors to comprehend the possibility of WI. A recurring theme in this volume is that embedded networks existed for some time before actors comprehended how to weaponize them. For instance, U.S. centrality in global capital markets existed long before the federal government embraced financial sanctions. Indeed, even as the first tentative steps toward sanctioning began, U.S. Treasury Department officials resisted such actions, believing them to be counterproductive. These same officials were surprised by the potency of U.S. financial statecraft over time. As Michael Mastanduno notes in his chapter, the opportunity and willingness to exploit WI are not always in sync.

A lack of awareness by possible sanctioners could be a necessary condition for WI to emerge, because the lack of strategic awareness puts potential targets at ease. Furthermore, the longer a central power does not exploit such a network, the more reassuring regardless of whether WI emerges or not. The logic of habit might be viewed by less powerful actors as sufficiently potent to permit further interdependence—which, ironically, increases the probability of future exploitation attempts.

A related driver for the emergence of WI is the prominence of non-state actors. For example, in capital markets and cyberspace, firms and nonprofits—many of which are not headquartered in the United States—have created and/or fostered key networks. Non-state actors are less likely to trigger wariness from smaller or weaker states than a state-owned enterprise (such as Gazprom) or a national government (like China) erecting similar structures. On the other hand, the low degree of successful WI in the energy and transportation sectors is noticeable. In those areas, the heavier hand of the state has made possible network entrants warier of joining. This, in turn, reduces the likelihood of weaponized interdependence ever emerging.

The hypotheses for the use and success of weaponized interdependence are more straightforward. As previously noted, both domestic institutions and the network externality properties of the sector itself play important roles. Beyond that, the kinds of technology that undergird the relevant network also play a role. The more vulnerable the sector in question is to disruptive innovation, the more fragile the
system that enables WI in the first place. This makes possible coercers more reluctant to risk exploiting WI. It also encourages targets to find work-arounds to avoid making concessions. Technologies that require massive fixed-cost investments are generally less vulnerable to disruption.

Comparing and contrasting weaponized interdependence with more conventional instances of economic sanctions also yields useful insights. The traditional playbook on sanctions is well known within the scholarly and policymaking communities. Sanctions are more likely to work when the demands are clear, when there is multilateral cooperation supporting the sanctions, when no “black knights” are willing to step in and economically support the target, and when expectations of future conflict between the target and sender are muted. Low conflict expectations also act as a barrier restraining sanctioners from threatening coercion in the first place. The paradox of economic coercion has long been that states are most eager to sanction targets that they will be the least likely to coerce.

The existence of weaponized interdependence alters the calculus of traditional economic statecraft by easing the necessary conditions for coercion. Multilateral cooperation is no longer necessary, since network centrality endows critical actors with sufficient leverage to coerce unilaterally. Similarly, concerns about black knights are also reduced. It is extremely difficult for rival powers to erect competing networks from scratch. In the case of the dollar, for example, Russian, Chinese, and European efforts to shift away from the current global reserve currency have been fitful at best and feeble at worst. Compared to its rivals, the dollar looks stronger now than it did a decade ago during the depths of the Great Recession. Finally, because weaponized interdependence imposes lower costs on the sanctioner, the threshold conditions for coercing allies is significantly reduced. Simply put, it is easy for actors to deploy weaponized interdependence on allies as well as adversaries.

Stepping back, three things become immediately apparent about the use of weaponized interdependence as a tool of coercion compared to more conventional sanctions. The first is that the use of WI is far likelier. All of the threshold conditions for weaponizing interdependence are lower than for trade sanctions. Less multilateral
support is needed, more targets can be considered, and WI sanctions are also likely to be more potent. Second, the factors governing sanctions success remain largely unchanged. The Trump administration’s financial sanctions against Iran or Venezuela have not led to concessions, although the secondary sanctions have worked against U.S. allies in Europe. These outcomes are consistent with prior research on economic coercion. Weaponized interdependence does not guarantee successful statecraft; it merely increases the probability of coercion being attempted.\(^4\) Third, even when WI is weak or nonexistent, the shadow it casts on world politics is long. As many of the subsequent chapters note, many WI attempts have failed because possible targets anticipate such threats and take actions to ward them off. Both the increase in coercion and the defense against such attempts, however, also affect the contours of the global political economy.

### The Rest of This Volume

The rest of this edited volume is broken into six sections. The first section considers the theory of weaponized interdependence. The next chapter is a reprinting of Farrell and Newman’s groundbreaking 2019 paper. Michael Mastanduno then considers the conditions under which the United States is likely to exploit WI, and Stacie Goddard discusses how revisionist actors may or may not exploit WI to advance their interests.

The next four sections examine different empirical domains to measure the relative potency of the WI phenomenon. Harold James and Thomas Oatley explore the ways in which weaponized interdependence exists in global financial networks. For cyberspace, Natasha Tusikov considers how the structure of the internet makes it fertile ground for WI; Adam Segal examines the battles between China and the United States over the development of 5G networks. On energy, Emily Meierding considers whether WI can aid the United States in its quest for “energy dominance.” Mikhail Krutikhin examines Russia’s ineffective use of Gazprom to foster WI in Europe. Florian Bodamer and Kaija Schildt examine state-run networks in the developed world for the creation of fighter aircraft. Thomas Cavanna looks at one
state-run network—China’s Belt and Road Initiative—to see if WI is present.

The final section of the book examines how actors are responding to the WI phenomenon. Bruce Jentleson considers the implications of weaponized interdependence on U.S. grand strategy. Sarah Bauerle Danzman explains why CFIUS is an imperfect tool for the United States to ward off WI. Charli Carpenter applies WI to the ideological network of human rights and notes the ways in which great powers in that domain are vulnerable to “reverse panopticon” effects. Amrita Narlikar looks at how the global south will cope with greater uses and abuses of weaponized interdependence. Finally, Farrell and Newman extend and refine their argument in response to the rest of the contributors.

Notes


2. Ibid., p. 45.


The Uses and Abuses of Weaponized Interdependence


22. The practice of WI is not new at all, as shown in Harold James, “Weaponized Interdependence and International Monetary Systems,” chapter 5 in this volume.
27. Relatedly, it is only as the Trump administration accelerated and broadened the use of weaponized interdependence that U.S. allies focused on the phenomenon.
The Uses and Abuses of Weaponized Interdependence


42. This mirrors the ways in which even private-sector actors fail to anticipate which innovations catch on. Amazon, for example, did not realize the revolution it ushered in when it introduced cloud computing. The company merely believed it had found a use for server space that was idle beyond holiday seasons. See Scott Malcolmson, “The Real Fight for the Future of 5G,” *Foreign Affairs*, November 14, 2019. Also akin to state actors, Amazon has learned to use its coercive capacities over time. See Daisuke Wakabayashi, “Prime Leverage: How Amazon Wields Power in the Technology World,” *New York Times*, December 15, 2019.


44. Zarate, *Treasury’s War*.


47. One possible exception is that the panopticon effect enables more focused efforts at statecraft.