

The Evolving Landscape of U.S. Economic Security: The Confluence of Trade, Technology, and National Security

By Andrea Viski

Introduction

The notion of economic security has always intertwined with national security. The link between the two notions, however, has taken different forms, degrees, and contexts, characterized by geopolitical circumstances, national political climates, and technological and social development. Over the last two decades, the emergence of multiple revolution-enabling technologies – most of which have both civilian as well as defense-related end-uses – has impacted the degree to which economic security has come to the forefront of what countries consider to be their national security.

The United States, recognizing the threat to its economic security posed by numerous competitors in the race to advance emerging technologies with potential defense applications, has recently instrumentalized national security tools for the sake of economic security, and has gone as far as to equate the two notions.¹ In addition, the United States has repurposed trade tools and explored new tools to support economic security objectives. Following in the path of the United States, other countries have begun to reexamine their own conceptual basis for economic security and the tools to maximize it.

This paper examines the current evolution of economic security discourse to demonstrate the implications, challenges, and shortcomings of U.S. economic security tools, and the catalyzing impact of technology. While component economic security considerations are broad and encompass issues from natural disaster planning to cybersecurity, this article focuses specifically on the impact of trade and technology in the economic security context.²

The paper discusses the main influences and features of U.S. economic security policy as it relates to trade, technology, and the security of the supply chain. The following sections of the paper include evolving notions of the dual-use concept, the need to manage and respond to technology flows with more effective

Dr. Andrea Viski is Senior Fellow and Director of the Trade and Investment Security Program at the Stimson Center. She is also the Founder and Director of the Strategic Trade Research Institute (STRI), a board-governed non-profit organization dedicated to building networks of strategic trade research and practice. This paper was finalized in November 2023.

strategies, and new foreign policy efforts and tools to strengthen economic security. The paper focuses on the trends forging the path for the United States to define economic security so closely with national security, and in exploring these factors, delineates how the United States has implemented policies and adopted, reoriented, or created new policy tools designed to strengthen economic security. In particular, the paper will focus on the use of trade and investment tools, used in the context of national security – to strengthen economic security. The paper will also examine why the rapid evolution of emerging technologies has played such a defining role. Finally, the paper will examine the effectiveness of the U.S. approach to economic security and its challenges, and offer insights into how it can be strengthened in the future.

The Evolution of the Dual-Use Concept

The links between trade, technology flows, and security have come to dominate the latest era of U.S. national security policymaking. Enabling technologies – those that have driven radical shifts in capabilities and power – have historically also altered the balance of power in terms of security. The focus on competitiveness in enabling, emerging, foundational, transformative technologies – and any other number of monikers – has driven the United States to shift its focus on economic security as a fundamental, if not equal aspect of national security.

All of the technologies that the United States has defined as critical, emerging, and foundational are dual-use in nature. Examining the evolution and expansion of U.S. notions of the term dual-use reveals the progression and reasons for the increasing confluence of economic and national security. The U.S. Department of Commerce's Bureau of Industry and Security (BIS), which is responsible for licensing the exports of most U.S.-origin dual-use controlled goods in this sphere, defines dual-use as items with "commercial and military or proliferation applications."³ "Traditional" notions of the dual-use concept identify goods, software, and technology in relation to their potential military end-use and control their trade based on technical specifications linked to that end-use. For example, control list specifications of the multilateral Nuclear Suppliers Group (NSG) export control regime traditionally identify the materials, equipment, software, and technology that can contribute to a uranium enrichment facility, such as uranium isotope separation equipment and components, heavy water production plant related equipment, test and measurement equipment for the development of nuclear explosive devices, and others.⁴ The underlying premise of most controls since the creation of modern trade controls has been their ultimate end-use in a concrete, identifiable, conventional or Weapons of Mass Destruction (WMD)-related military end-use.

A monumental shift in the focus and priorities of the dual-use notion and their convergence with the economic security discourse occurred in 2018 with the U.S. Congress passing the Export Control Reform Act (ECRA) and the Foreign Investment Risk Review Modernization Act (FIRMA). ECRA introduced the notion of competitiveness to the dual-use concept, stating, “The national security of the United States requires that the United States maintain its leadership in the science, technology, engineering, and manufacturing sectors, including foundational technology that is essential to innovation. Such leadership requires that United States persons are competitive in global markets,” and continued the emphasis on technology, noting that export controls “should be tailored to focus on those core technologies and other items that are capable of being used to pose a serious national security threat to the United States and its allies.” In addition to introducing the notion of competitiveness to the purpose of trade controls, ECRA further called on BIS to lead an inter-agency process to identify both emerging and foundational technologies, ultimately lumped together to be classified as “Section 1758 technologies,” to be controlled.⁵

Pursuant to ECRA, in 2018 BIS published an Advanced Notice of Proposed Rulemaking (ANPRM) seeking public comments on criteria for identifying emerging technologies, which was followed by a similar exercise on foundational technologies. The ANPRM delineated 14 broad emerging technology areas and their subsets where input was sought to identify controls:

1. Biotechnology
2. Artificial intelligence (AI) and machine learning technology
3. Position, Navigation, and Timing (PNT) technology
4. Microprocessor technology
5. Advanced computing technology
6. Data analytics technology
7. Quantum information and sensing technology
8. Logistics technology
9. Additive manufacturing.
10. Robotics
11. Brain-computer interfaces
12. Hypersonics
13. Advanced Materials
14. Advanced surveillance technologies

ECRA and the subsequent inclusion of other technologies are key to understanding the shift in how the U.S. defines economic security discourse, because the concrete and ultimate military end-use of these technologies is, in many cases, unknown, vague, or in flux. While new controls established under Section 1758 controls have been established in relation to concrete military end-uses, the criteria for their definition need not be distinctly tied to that. In particular, the criteria to define new controls are: 1) The development of emerging and foundational technologies in foreign countries; 2) The effect export controls may have on the development of such technologies in the United States; and 3) The effectiveness of export controls on limiting the proliferation of emerging and foundational technologies in foreign countries of concern.⁶ These criteria make it possible for controls to be imposed for reasons of competitiveness, supply chain, and defense-related end-use, rendering ultimate considerations of dual-use to necessarily expand beyond traditional definitions and purposes.

The shift towards expanding the dual-use concept reached a defining point in October 2022, when the U.S. implemented new export controls on advanced computing and semiconductor manufacturing items to the People's Republic of China.⁷ While such items have military applications, these new controls moored the dual-use notion further into the realm of competitiveness and strategic stability.⁸ These controls, in contrast to most previous export controls, were done outside of the multilateral export control regime structure, and imposed on one direct target, China, unilaterally by the United States. While couched in language referencing military end-uses of semiconductor technology, the new controls squarely expand the national security interest to encompass protecting U.S. economic and technological power – thus converging technology, trade, and national security.

The Challenge of Intangible Technology Flows to Economic Security

Managing, controlling, and protecting technology is challenging because flows are difficult to track, uncover, and enforce. Whereas tangible goods move from Point A to Point B – in the export context, if it is a controlled item, with an export license, customs and shipping documents, and more, technology can spread through both tangible and intangible ways. It can be stored and then sent through a USB stick, software, or blueprints can be shared; but it can also be transferred through teaching, training, discussions, on the job learning, and a myriad of other situations that are difficult to track. Policy-makers' toolbox to deal with intangible technology transfers is therefore somewhat different, and must evolve in a different way, than for tangible transfers – through export controls, surely, but also through visa vetting schemes, awareness-raising to control internal compliance culture, and, as will be discussed later in this paper, screening and controls on foreign direct investment.

In the 2017-2021 U.S. Department of Commerce's Strategic Plan, the first operative action is to enforce the nation's trade and security laws, drawing from the priority of ensuring security through the domestic production of technology and essential products.⁹ The nature of technology flows and the challenge of trying to establish control measures to protect domestic technology innovation, squarely places the need to manage intangible technology flows at the heart of U.S. economic security priorities.

But managing and controlling technology flows has always been at the forefront of security – has anything fundamentally shifted in the relationship between technology flows, trade, and national security? The answer is yes – insofar as it concerns the move towards unilateral protection measures over domestic technology production from a competitiveness angle.

Around 2004, the United Nations Security Council passed Resolution 1540 (UNSCR 1540) mandating that all UN Member States “take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery,” in part as a response to both the September 11 terrorist attacks as well as the discovery of the A.Q Khan proliferation network, and the risk that terrorists could acquire and use WMD.¹⁰ Though this resolution appears far removed from current discourse over economic security, it set the stage for countries to be able to implement controls over materials, equipment, and technology that could be used for a WMD-related military end-use. While key technology holders had already been coordinating controls on certain technology exports through multilateral export control regimes, UNSCR 1540 broadened the responsibility globally, with all UN Member States having to implement controls over technology that could end up with a WMD-related end-use. The focus was squarely on a multilateral, global approach, and the threat: non-state actors.

With rifts between Security Council members spilling into the export control regimes and affecting consensus-based decision-making within them, the ability of these multilateral structures to keep pace with the new threats of emerging technologies and their potential security-related applications faltered.¹¹ And around 2018, with the passage of ECRA, though the official U.S. policy stated that any new controls on emerging technologies would be sought ideally, and first, within the multilateral regime structure, U.S. policy-makers did begin to publicly disclose that barring the ability to do so, the U.S. would proceed unilaterally if deemed in the national security interest.¹²

And therefore, two parallel developments were taking place: First, rapid developments in key emerging technology areas, potentially raising both security and competitiveness threats, and second, the increasing inability to manage these threats in an effective and swift manner at the multilateral level. Throw into the mix the difficulties innate in managing and/or controlling technology flows, and the U.S' policy answer has been to increasingly employ unilateral measures to protect national technology production – in the interest of ever-conflated economic and security.

This approach – and the justification of economic security as part and parcel, if not equated, with national security – was definitively revealed as a central guiding influence of U.S. policy with the unilateral 2022 export controls on semiconductor manufacturing equipment. As explained in the previous section, the new controls restrict the People's Republic of China's (PRC's) ability to purchase and manufacture certain high-end chips and were passed in order to “protect U.S. national security and foreign policy interests.”¹³ The U.S. approach was a direct response to the two developments noted above, applied in the specific case of efforts to thwart Chinese advances in semiconductor technology and manufacturing development. First, the U.S. was worried about China and semiconductors for a number of reasons, expanding beyond security and supply chain protection to economic and technology competitiveness. Second, the U.S. had no means of responding through typical multilateral channels, such as through export control regimes or United Nations bodies.

This approach, in conjunction with diplomatic efforts to harmonize policies with like-minded countries such as Taiwan, the Netherlands, and others, and the accompanying economic security discourse sauntering into media, public, and policy discussions almost simultaneously – signals a shift from previous national security focused trade and technology policy to one where economics and security are uniform and together serve as justification for new legislation, policy, and enforcement in the trade and technology arena. Because former structures are largely no longer fit-for-purpose for the distinct trade and technology challenges the U.S. faces, economic security priorities have led to new efforts, initiatives, and alliances to maximize the effectiveness of unilateral actions.

The Confluence of Investment Screening and Export Controls

Concerns over technology transfer risks have also led to adaptation of tools such as foreign direct investment screening to counter economic security risks in the United States. As previously discussed, the 2018 ECRA expanded the scope for export controls to counteract technology threats. Along with

ECRA, in 2018, the U.S. Congress passed the Foreign Investment Risk Review and Modernization Act (FIRMMA).¹⁴ The law was passed to strengthen and modernize the Committee on Foreign Investment in the United States (CFIUS) to address national security concerns more effectively.¹⁵ CFIUS is the interagency committee authorized to review certain transactions involving foreign investment in the United States, and FIRMMA expanded CFIUS's scope in terms of FDI screening. Importantly, FIRMMA and ECRA were passed both in 2018 and while they did not significantly alter the underlying structure of either CFIUS or the U.S. export control system, they tightened U.S. export control policies and the process for screening inbound foreign direct investment to counter threats to U.S. technological competitiveness and protect the U.S. supply chain in national security-relevant technologies.

Importantly, ECRA and FIRMMA established for the first time a direct link between export controls and inbound foreign direct investment controls. FIRMMA and its implementing regulations establish mandatory CFIUS filings for certain foreign investments. One category where such filings are now mandatory include certain transactions involving a foreign investment in a U.S. business that produces, designs, tests, manufactures, fabricates or develops a U.S. critical technology, which is defined as certain items controlled for export under various U.S. authorities including the following:

- U.S. Department of State International Traffic in Arms Regulations (ITAR);
- U.S. Department of Commerce Export Administration Regulations (EAR);
- U.S. Department of Energy regulations regarding the export and import of nuclear equipment and material, as well as assistance to foreign atomic energy activities;
- U.S. Department of Agriculture regulations on the possession, use and transfer of select agent and toxins; and/or
- Emerging and foundational technologies designated under ECRA.

By defining critical technology this way, FIRMMA clearly links the responsibilities of CFIUS with those CFIUS member agencies that administer U.S. export control laws, especially the U.S. Department of Commerce. The expanded dedicated screening mechanism over inbound FDI adds to the U.S. economic security toolbox by precluding predatory investment practices - those that would counter U.S. interests - underscoring the confluence of economic and

national security. Additionally, the United States has begun to implement a new program for control over outbound FDI to entities involved in semiconductors and microelectronics, quantum information technologies, and artificial intelligence in China, Hong Kong, and Macau. While the details of the new program are yet to be published, it is clear from the use of both inbound and outbound investment FDI programs that the United States is increasingly asserting FDI-related policies to protect sensitive technology from being exploited and used against U.S. interests.¹⁶

The U.S. Economic Security Toolbox

To keep up with the complexities of protecting national competitiveness in dual-use technologies and ensure control over its critical supply chains, the United States has taken an assertive posture by reorienting and adapting existing policy tools as well as developing new ones. New tools, for example, include foreign policy diplomatic efforts and new frameworks as well as the creation of new guidance, policies, and authorities within the government and resources directed to support them. Other tools include linking export and investment controls and taking a multi-prong approach to new trade and technology threats. This section will explore some of the most important tools in the U.S economic security toolbox.

Economic Security as a Basis for New International Frameworks

In a world where existing multilateral structures are increasingly no longer fit for purpose with pressing and fluid challenges to security and competitiveness, new solutions must be found. The U.S., in the context of securing its supply chain and protecting its foreign policy interests, has rallied like-minded partners to espouse shared emphasis on economic security and align policies to that effect.

Starting with the presidential administration of Joe Biden, the U.S. initiated a number of new trade and economic initiatives with global partners to cement economic security priorities. At the 2022 United States-European Union (EU) Summit, the U.S., the European Commission, and the European Council announced the formation of the U.S.-EU Trade and Technology Council (TTC), whose objective is to “promote U.S. and EU competitiveness and prosperity and the spread of democratic, market-oriented values by increasing transatlantic trade and investment in products and services of emerging technology, strengthening our technological and industrial leadership, boosting innovation, and protecting and promoting critical and emerging technologies and infrastructure.”¹⁷ The Council has served as a conduit for discussing and

promoting alignment of economic security objectives, and pushing the economic security “agenda” insofar as it concerns the EU ensuring its own attention, interests, and emphasis in this area in harmony with U.S. measures. The Council runs working groups which focus on issues like export controls, investment screening, global trade challenges, and more. The working groups are aiming to develop concrete outcomes; some examples to date include joint technical specifications for key critical and emerging technologies, joint early warning mechanism for semiconductor supply chain disruptions, and more.

In addition to working with European Union partners, the U.S. launched the Indo-Pacific Economic Framework for Prosperity with Australia, Brunei Darussalam, Fiji India, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, and Vietnam. This framework aims to “advance resilience, sustainability, inclusiveness, economic growth, fairness, and competitiveness,” and structures negotiations in several pillars, including supply chain security and trade.¹⁸ In 2023, through negotiations within the framework, a supply chain agreement was proposed, whose goal from the U.S. side sits squarely within its economic security priorities: “to ensure that American workers, consumers, and businesses benefit from resilient, reliable, and efficient supply chains.” Under the proposed agreement, framework partners coordinate to identify potential supply chain challenges in order to avoid disruptions and also collaborate to increase “the resilience, efficiency, productivity, sustainability, transparency, diversification, security, fairness, and inclusivity of our supply chains.” The proposed agreement further will create a Supply Chain Council as well as a Supply Chain Crisis Response Network.¹⁹

Beyond these structured new frameworks and initiatives, the U.S. has sought alignment with like-minded countries to increase the effectiveness and power of its semiconductor export controls on China. This strategy represents a shift from working within multilateral export controls regimes first to align policy with regime members, as surely it would have been impossible to do so given the regimes’ membership, consensus-based decision-making, and other procedural and administrative boundary conditions. Following the new U.S. controls in October 2022, the Biden Administration officials launched an energetic diplomatic efforts for key semiconductor suppliers and technology holder countries to align their policies and also adopt controls on China.

In March 2023, the Netherlands’ trade minister outlined the new measures for semiconductor-related export controls. Based on the new controls, Dutch companies will have to apply for licenses to export certain technologies and products outside of the EU. The proposed restrictions target advanced systems which make some of the most powerful chips, including lithography tools made by Dutch

company ASML. From July 2023, Japan imposed controls on 23 types of equipment, ranging from machines that deposit films on silicon wafers to devices that etch out the microscopic circuits of chips that could have military uses.²⁰ And almost immediately following the U.S. export controls in October 2022, Taiwan pledged to align its export controls policy on the items the U.S. now controls to China.²¹

While the effectiveness of the controls themselves, even thus aligned, remains to be seen in whether China can manage to advance its semiconductor technology capabilities notwithstanding the new export curbs, these U.S. diplomatic and policy efforts signal a key new feature of its economic security policy. The semiconductor area is the first example of a technology where the U.S. has clearly decided that ad hoc policy alignments with like-minded countries and outside of existing multilateral structures is the most effective way to protect its economic security interests. This strategy can be expected to proceed and apply to other technologies in the future and will form an integral part of U.S. economic security foreign policy for years to come.

New Federal & State Authorities and Mandates

The U.S. has established a flurry of new agencies, committees, and task forces, together allowing for a comprehensive inter-agency process for pursuing U.S. economic security objectives. At the Executive Level, a new inter-agency Fast Track Action Subcommittee on Critical and Emerging Technologies was established by the National Science and Technology Council in 2020 to “identify critical and emerging technologies to inform national security-related activities.” In 2022, the subcommittee, the Council, and the Office of Science and Technology Policy updated the list of Critical and Emerging Technologies in line with the 2021 Interim National Security Strategic Guidance which prioritized democratic values, protecting economic prosperity and opportunity, and protecting security.²²

In January 2023, the Department of State established the new Office of the Special Envoy for Critical and Emerging Technology. This new office was created because, per the official press release, the “constellation of critical and emerging technologies reshaping the world is now an integral part of the conduct of U.S. foreign policy and diplomacy.”²³ In February 2023, the Justice and Commerce Departments announced the creation of the Disruptive Technology Strike Force, that pools expertise from different federal and state agencies, including the FBI, Homeland Security Investigations (HSI), and U.S. Attorneys’ Offices, to target illicit actors, strengthen supply chains, and protect critical technological assets from being acquired or used by nation-state adversaries.²⁴ These new agencies come as an addition to other existing supply

chain and technology focused committees and offices, such as the Department of Commerce's Emerging Technology Technical Advisory Committee, set up subsequent to the 2018 ECRA, and others in the Department of Defense, Department of Homeland Security, and others.

Conclusion: The U.S. Economic Security Vision and the Future

In light of increasing threats to technology competitiveness and supply chain security from global adversaries, the U.S. has shifted towards an alignment of economic and national security objectives. Through increased resources, vigorous diplomatic efforts, and new policy and enforcement tools, the U.S. has slowly crafted a comprehensive economic security approach. While the effectiveness of specific policies and efforts will only come to light once it is clear whether their stated objectives and impact are reached, there are a few areas to look out for, especially as other countries and regions consider forging their own unique economic security policies.

One such area concerns the risks versus benefits of trying to manage and control the spread of technology, for example, as the U.S. has tried to cut off China's access to advanced computer and semiconductor manufacturing equipment through targeted export controls. Beyond considering if the controls, even with buy-in and alignment from international partners, will succeed in ultimately slowing down or stopping China's access to advanced semiconductor technology and manufacturing capability, it is worth further evaluating other potential effects of the policy. These effects include the position U.S. policies place other countries in vis-à-vis their own considerations of whether they wish to follow the U.S. outside of traditional multilateral frameworks, whether the policy causes China to double down on its efforts to acquire technologies it seeks, and reactive measures China may take in this regard. These considerations are important because, as previous sections of this paper have noted, the semiconductor controls are indicative what may be to come in terms of the U.S. approach to further technology and supply chain threats.

In addition, because of the importance of coordination and alignment of policies between the United States and other critical suppliers, it is essential for U.S. economic security efforts to consider the nuances and complexities of these countries' relationship with China. Like the United States, most allies have strong existing economic ties with China, and it is unrealistic to expect countries to "choose" or to cut off ties to China completely. Instead, the United States must focus on those chokepoint technologies where an impact of aligned economic security policies can be achieved.

Additionally, the further ultimate objectives are from traditional security concerns – and in particular WMD or conventional end-uses for particular technologies, in combination with existing multilateral obligations within UN or other frameworks – the harder it may be to get buy in from other countries on U.S. unilateral or plurilateral controls. For example, the United States, through capacity-building programs such as the State Department's Export Control and Related Border Security Program (EXBS) has worked with dozens of countries for decades to build and strengthen export control programs. Much of the justification and incentive for projects in this area stem specifically from helping countries meet their obligations under UN Security Council resolutions, such as UNSCR 1540 (2004). Without multilateral frameworks to rest on, diplomatic or capacity-building initiatives outside of the United States must identify new and effective incentives to receive alignment and buy-in for U.S. economic security objectives.

Further, it is not only in trade and investment where cutting ties with China can impact the effectiveness of policy objectives. Many countries – and the United States is perhaps the most significant example – benefit from the contribution of Chinese scientists and researchers in their companies and universities. Cutting ties through visa vetting and other programs – rightly for reasons of research security risks - has the potential effect of compromising the positive contributions brought about by that diversity. Decreasing trade and investment-related links and ties means that the United States must also think of policies to counteract, mitigate, or offset these potential consequences.

In navigating this new global landscape where economic security has come to the forefront of national priorities and international relations, the United States must focus on stakeholder engagement and communication on multiple levels in order for its policies to be successful. That means continued and strengthened transparency and collaboration with the private sector, in order to calibrate policies to balance security and competitiveness, as well as effective outreach and enforcement to maximize compliance. On the global level, the United States should continue to work with like-minded partners to find alignment on specific economic security areas where such alignment is necessary for effectiveness. The United States and the international community at large must consider the restructuring or reimagining of former multilateral structures to ensure that they are fit for purpose. How challenges posed by the confluence of technology, trade, and economic security are handled now are certain to define the future for generations to come.

Endnotes

- ¹ “Strengthen U.S. Economic and National Security,” United States Department of Commerce, <https://2017-2021.commerce.gov/about/strategic-plan/strengthen-us-economic-and-national-security.html>.
- ² For example, see: “An EU approach to enhance economic security,” European Commission, June 20, 2023, https://ec.europa.eu/commission/presscorner/detail/en/IP_23_3358; the EU’s press release on enhancing economic security concentrates most heavily on risk management to deal with economic flows and technological shifts.
- ³ “Dual-Use Export Licenses,” United States Department of Commerce, Bureau of Industry and Security, <https://www.bis.doc.gov/index.php/all-articles/2-uncategorized/91-dual-use-export-licenses>.
- ⁴ Nuclear Suppliers Group, Guidelines, <https://www.nuclearsuppliersgroup.org/en/guidelines>.
- ⁵ Title XVII, subtitle B (also known as the Export Control Reform Act of 2018), Section 1751 of the 115th Congress Public Law 232, John S. McCain National Defense Authorization Act for Fiscal Year 2019, www.congress.gov/bill/115th-congress/house-bill/5515/text.
- ⁶ “BIS Update Conference on Export Controls and Policy,” United States Department of Commerce, June 29-July 1, 2022, <https://www.bis.doc.gov/index.php/documents/2022-update-conference/3073-rev3-emerging-tech-update-2022-section-1758-controls-tongele/file>.
- ⁷ “Commerce Implements New Export Controls on Advanced Computing and Semiconductor Manufacturing Items to the People’s Republic of China (PRC),” October 7, 2022, United States Department of Commerce, <https://www.bis.doc.gov/index.php/documents/about-bis/newsroom/press-releases/3158-2022-10-07-bis-press-release-advanced-computing-and-semiconductor-manufacturing-controls-final/file>
- ⁸ See, for example: Mike Beck and Nick Stachowiak, “The Devolution of Export Controls: Rethinking Their Use in Technological Competition,” *Strategic Trade Review*, Vol. 9, Issue 10 (Winter/Spring 2023): 5-24; see also: Ian Stewart, “Export Controls in an Era of Strategic Competition: Implications for the Multilateral Landscape and the Need for a New Multilateral Trade Review Regime,” *Ibid*: 37-60.
- ⁹ “Strengthen U.S. Economic and National Security.”
- ¹⁰ “Resolution 1540 (2004),” United Nations Security Council, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N04/328/43/PDF/N0432843.pdf?OpenElement>.
- ¹¹ Beck and Stachowiak, “The Devolution of Export Controls: Rethinking Their Use in Technological Competition”; Stewart, “Export Controls in an Era of Strategic Competition: Implications for the Multilateral Landscape and the Need for a New Multilateral Trade Review Regime.”
- ¹² This came up in the context of ECRA, as well as, for example, in discussions of possible new controls on UAV technology regarding thresholds of control for items and technology within the Missile Technology Control Regime (MTCR).

- ¹³ “Commerce Implements New Export Controls on Advanced Computing and Semiconductor Manufacturing Items to the People’s Republic of China (PRC).”
- ¹⁴ “Summary of the Foreign Investment Risk Review Modernization Act of 2018,” U.S. Department of the Treasury, <https://home.treasury.gov/system/files/206/Summary-of-FIRRMA.pdf>.
- ¹⁵ “The Committee on Foreign Investment in the United States (CFIUS),” U.S. Department of the Treasury, <https://home.treasury.gov/policy-issues/international/the-committee-on-foreign-investment-in-the-united-states-cfius>.
- ¹⁶ “Executive Order on Addressing United States Investments in Certain National Security Technologies and Products in Countries of Concern,” The White House, August 9, 2023, <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/08/09/executive-order-on-addressing-united-states-investments-in-certain-national-security-technologies-and-products-in-countries-of-concern/>.
- ¹⁷ “U.S.-EU Trade and Technology Council,” Office of the United States Trade Representative, <https://ustr.gov/useuttc>.
- ¹⁸ “Indo-Pacific Economic Framework,” U.S. Department of Commerce, <https://www.commerce.gov/ipef>.
- ¹⁹ “Substantial Conclusion of Negotiations on Landmark IPEF Supply Chain Agreement,” U.S. Department of Commerce, May 27, 2023, <https://www.commerce.gov/news/press-releases/2023/05/substantial-conclusion-negotiations-landmark-ipef-supply-chain>.
- ²⁰ Riho Nagao, “Japan’s new chip equipment export rules take effect Sunday,” Nikkei Asia, July 23, 2023, <https://asia.nikkei.com/Business/Tech/Semiconductors/Japan-s-new-chip-equipment-export-rules-take-effect-Sunday>.
- ²¹ Jeanne Whalen, “Taiwan, a major producer of semiconductors, says it will abide by U.S. rules,” The Washington Post, October 21, 2022, <https://www.washingtonpost.com/politics/2022/10/21/taiwan-major-producer-semiconductors-says-it-will-abide-by-us-rules/>.
- ²² “Interim National Security Strategic Guidance,” The White House, March 2021, <https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf>.
- ²³ “Establishing the Office of the Special Envoy for Critical and Emerging Technology,” U.S. Indo-Pacific Command, January 23, 2023, <https://www.pacom.mil/Media/News/News-Article-View/Article/3257674/establishing-the-office-of-the-special-envoy-for-critical-and-emerging-technolo/>.
- ²⁴ “Justice and Commerce Departments Announce Creation of Disruptive Technology Strike Force,” February 16, 2023, U.S. Department of Justice, Office of Public Affairs, <https://www.justice.gov/opa/pr/justice-and-commerce-departments-announce-creation-disruptive-technology-strike-force>