Testimony before the U.S.-China Economic and Security Review Commission
Hearing on "U.S.-China Relations in 2021: Emerging Risks"
Panel III: "Assessing Export Controls and Foreign Investment Review"

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Vice-Chairman Cleveland, Commissioner Glas, and other members of the Commission, thank you for the opportunity to appear before you again. Although I am now a partner in the international trade group of a law firm, the views I express today are my own. I am not advocating for or against any changes to legislation, regulations, or policies on behalf of another.

Rather, given my background and desire to help the Commission's efforts, I am testifying about, and provide recommendations regarding, (i) the strengths and weaknesses of U.S. unilateral controls and the role of multilateral controls; (ii) the challenges of identifying emerging and foundational technologies warranting export controls; and (iii) what needs to be done to address China-specific threats to U.S. national security and foreign policy interests that can be accomplished through export controls. I am also willing to answer any questions about export controls during the hearing or in written responses later for the benefit of the Commission.

As a compliance attorney, Special Compliance Officer, and an Assistant Secretary responsible for administering and updating export control policies, regulations, and licensing systems, I have been working in the area for nearly 30 years. This means that I started my career about when the current export control system essentially began and have seen first-hand the evolution of the current technologies, threats, arguments, concerns, unintended consequences, and issues on a near-daily basis. From the government and industry sides of the issue, I have probably heard every argument and response to an export control topic. Although I am not a China- or any other specific-country policy expert, I am an expert in explaining, administering, developing, and implementing the rules governing the export, reexport, and transfer of commodities, software, technologies, and services in order to achieve national security and foreign policy objectives without unintended or counterproductive consequences. As these career comments suggest, I am also a true believer that export controls are a vital tool in advancing our national security and foreign policy objectives. Thus, I am grateful that you are holding this hearing and considering the issues so seriously.

In light of this background, I can say with confidence that never before have the issues involving the role of export controls been as complex and serious as they have been in recent years—mostly as a result of changes in the commercial technology acquisition and use policies in China. The rapid increase in the speed of commercial technology evolution, which far outpaces the development of traditional defense-focused

technologies, and ever-expanding global development and production supply chains make the issues even more difficult to handle.

I can also say with equal confidence that the multilateral export control system—which is critical to the success of U.S. objectives—was not designed to, and does not now, address Chinese government policies pertaining to commercial technologies that do not have a direct link to weapons of mass destruction (WMD), conventional weapons and other military items, space- and launch-related items, or the dual-use commodities, software, and technologies necessary for their development, production, or use. With respect to such items, the U.S. and its allies already have robust controls and well-tested regular processes for updating the lists of such items. The global pandemic has limited such efforts in the last 18 months and, as with all systems, there are ways to make it work better. There is nonetheless a system with standards that has generally worked well for 30 years or so. Moreover, the U.S. has had for decades complete embargoes on exports to China of all commodities, software, and technologies bespoke for military-, launch-, or space-related applications, regardless of significance. Thus, my comments today are about all other items that are not within these existing controls.

To make my main point differently and in terms of the current public discussion in the United States about how export controls could be used in new ways to address China-specific policy issues, the multilateral export control regimes—and thus the domestic export control laws of our allies—do not have, with rare exceptions, the mandate or legal authority to address:

i. strategic or great-power competition issues;

ii. supply chain security;

iii. military-civil fusion policies involving widely available commercial technologies;

iv. intellectual property theft;

v. technology leadership objectives;

vi. efforts to promote democracy over authoritarianism; or

vii. the misuse of commercial technologies to commit human rights abuses.

These are all, of course, critical issues warranting U.S. policy responses. With rare and modest exceptions, however, only the United States has broad legal authority to use export controls to accomplish more than traditional non-proliferation objectives. This authority comes from the Export Control Reform Act of 2018 (ECRA), which was a perfect example of bipartisan efforts to develop good law to address contemporary issues.

There is therefore a tension for U.S. policymakers between the desire to use export controls to respond quickly to Chinese state policies contrary to our interests and the reality that, with rare exceptions, history has shown that unilateral (U.S.-only) controls are usually *eventually* counterproductive. (There are exceptions that I will mention later.) This is the case because when allied countries do not have the same controls, income and investment flow to the companies in those countries that develop and produce the technologies at issue, which then supports their R&D efforts to out-innovate competitors in the United States that cannot get that income—and the country of concern is not deprived of the items of concern. (Most of the technologies of concern evolve quickly, which means that massive amounts of R&D are needed to develop the next versions to stay competitive.) Thus, the U.S. industrial base is harmed, foreign competition benefits, and the countries of concern are not hurt.

To put it more simply, unilateral controls are quick and responsive, but are usually *eventually* counterproductive and ineffective. Multilateral controls under the current system are *eventually* effective, but are either slow in creation given the need for regime member consensus or impossible, if not based on traditional, destination-agnostic non-proliferation objectives. Congress was well aware of this fact when it wrote in ECRA's primary policy statement (in sections 4811(5) and (6)) that:

> Export controls should be coordinated with the multilateral export control regimes. Export controls that are multilateral are most effective, and 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.
>
> Export controls applied unilaterally to items widely available from foreign sources generally are less effective in preventing end-users from acquiring those items. Application of unilateral export controls should be limited for purposes of protecting specific United States national security and foreign policy interests.

Because unilateral approaches are eventually counterproductive and the traditional multilateral regime approach is neither quick nor responsive, the medium- and long-term solution to addressing the issues of this hearing must be aggressive, well-supported efforts to work with smaller groups of close allies in the producer nations of the technologies of concern to convince them to (i) expand the scope of their domestic export control laws and (ii) align their licensing and enforcement policies based on new, common understandings of the purpose of export controls. I suspect some form of these efforts is already underway, but I do not know the details. In any event, in my view, the highest export control policy priority of the Administration (and Congress in an oversight role) should be in the pursuit of this effort—i.e., doing the work necessary to convince the allies in producer nations to agree to a new paradigm and role for export controls to address, to the extent possible, the threats of common concern I listed earlier, as well as traditional proliferation-related threats.

The short- and medium-term solution with respect to regulatory changes is to provide financial and other support to the Administration's emerging and foundational technology identification and control process *consistent with the standards set out in ECRA*. Congress should be vigilant in its oversight and funding of such efforts, but patient in expecting immediate results from a new Administration because both will require months of daily effort by many people to succeed. I have read the USCC paper and other letters asking for quicker action. Clearly, Congress inserted the section into ECRA so that the Trump and future administrations would identify and control emerging and foundational technologies essential to national security that were not controlled by the traditional regime process. As to what was or was not done to satisfy this obligation in an August 2018 statute, I will have to defer to government officials to explain.

Since the purpose of this hearing is to consider recommendations, I have the following suggestions for how to do this.

1. **The Administration should develop (with bipartisan input from Congress), and a senior Administration official should announce, an actionable definition what "national security" means in the context of using export controls to address China-specific policies that are outside the scope of traditional non-proliferation objectives.**

2. **The Administration should advocate and support with evidence and appeals to common interests the adoption of that definition by a smaller group of close allies in countries that produce the core technologies of concern to convince them to (a) expand their legal authorities to impose controls for reasons not related to traditional non-proliferation objectives and (b) align their China- and other country-specific licensing policies and enforcement priorities for already-controlled items.**

3. **At the same time and with the same degree of intensity, Congress and the Administration must provide clear direction, robust funding, and political support to the export control agencies to implement the objectives of ECRA's emerging and foundational technologies provision based on the (a) the standards and process set out in ECRA and (b) agreed-upon definition of "national security" to address threats outside the context of traditional non-proliferation-related concerns.**

4. **Export controls should absolutely be used more to address human rights issues in China and elsewhere, but the Administration will need to include carefully crafted end use controls because the technologies at issue will generally be widely available commercial items that are not subject to any multilateral controls.**

5. **Without taking away from the seriousness of the China-specific issues, Congress and the Administration should remember to give adequate attention and resources to all other export control issues, such as (a) running an efficient licensing system, (b) controlling and enforcing the export of dual-use items that have proliferation-related uses elsewhere in the world, and (c) reducing unnecessary barriers on controlled trade with close allies.**

The following provides more detail and support for each recommendation.

1. **The Administration should develop (with bipartisan input from Congress), and a senior Administration official should announce, an actionable definition what "national security" means in the context of using export controls to address China-specific policies that are outside the scope of traditional non-proliferation objectives.**

This is a corollary to the first rule of regulatory and legislative drafting, which is to clearly define the problem to be solved in order to know what the regulation or legislation prohibits or requires. There are many threads of good ideas floating around within the Administration and on the Hill. The Administration, however, needs to take the lead at articulating and getting general bipartisan acceptance of a clear, common vision as to the purpose and scope of China-specific export controls and export control policies to address issues outside the traditional non-proliferation-related concerns.

No new legislation or Executive Orders are needed to accomplish this recommendation. The legal authority for the effort already exists in ECRA. A senior Administration official from, for example, the National Security Council or the Cabinet, should articulate the consensus Administration position on what "national security" means with respect to the need to control China items that do not have traditional proliferation-related applications. (The text could be, for example, a detailed Statement of Conclusions agreed to at a Principals Committee meeting or included in an interagency-cleared speech to a major organization.) The example I have in mind as an analogy to this suggestion is the speech Secretary of Defense Gates gave early in the Obama Administration that set out the vision for and the national security objectives of the Export Control Reform effort. It guided our efforts and mission for the next seven years. When in doubt as to whether the effort was on the right track or what "national security" meant in the context of Export Control Reform (which is very different than the current issue), we referred back to the principles in the speech and the follow-on instructions.

In other words, someone in the Administration needs to decide and then announce in a way that will guide for years the actions of the export control agencies whether and to what extent unilateral, plurilateral, or multilateral controls on the export, reexport, and transfer of *specific* commodities, software, technology, and services could—or could not—be *effective* in addressing (i) strategic or great-power competition issues, (ii) supply chain security, (iii) military-civil fusion policies involving items not directly related to proliferation-related items, (iv) intellectual property theft, (v) technology leadership

objectives, (vi) efforts to promote democracy over authoritarianism, and/or (vii) the misuse of commercial technologies to commit human rights abuses. If export controls could not be effective at addressing such issues, then they should decide and announce that they will be addressed through other regulatory or legislative vehicles.

Export controls do not exist for their own sake. They are a means to an end. Each of these seven topics could and should be the subject of its own hearing and position papers to analyze how or whether new export controls could be effective—i.e., to have the desired result for the issue without *unintended* adverse collateral consequences. I highlight here "unintended" because all export controls have economic consequences. That is their point—to block or regulate the flow and sale of items to achieve other objectives. To know whether such consequences are *intended*, however, one must first have a clear definition of the end to be achieved.

Without a clear, detailed vision, there cannot be clear, effective identification and implementation of new controls (or licensing policies for already-controlled items)—only the creation of uncertainty, which history has shown is harmful to beneficial trade and investment. Without such a definition, there also cannot be a clear or persuasive policy basis to use to convince the allies in producer nations of key technologies to think differently about their export control policies, laws, regulations, and enforcement priorities.

For example, when the goal is controlling that which is necessary to make a missile, experts research which bespoke and dual-use components, software, and technologies are necessary to develop, produce, and use missiles. That list of items then becomes what the allies agree to control for missile technology reasons. When the China-specific concern is an issue that is not a missile or another obvious proliferation-related end item, there must first be an equally clear definition of the goal in order to know the cut lines for specific technologies to control. With every technology area, there are thousands of variations and generally complicated international component supply chains. This means that the definition of the problem to be solved must be clear enough to allow for the detailed identification of items that are specific to that problem given the reality of modern, global production of most commercial items.

Although some will see this recommendation as simple (or even obvious), I nonetheless make it here because it (i) is critical to the success of all other efforts; (ii) was not done by Congress or the Trump Administration; (iii) has probably not yet been done by the Biden Administration; (iv) **is usually forgotten in public discussions about imposing new export controls**; and (v) will be massively hard to accomplish for any administration. Getting to an answer must be process- and fact-driven because no one person or agency has all the answers. For example, if a particular national security objective is to address an economic issue, such as a strategic competition issue, then unusually complex economic and global supply chain issues must be understood to know where the levers of controls are—and what the consequences would be of using controls to restrict trade in these items. Few in industry understand these levers and even fewer in the government do. This is why it will be critical for Administration officials

to work closely with academics, economists, trade and supply chain experts, and industry technology experts to gather information about, for example, what the "chokepoint technologies" are to achieve such objectives.

I recognize the dilemma in what I recommend. If the Administration is too explicit regarding what it plans to control over a long timeline, the industries affected will be inclined or instructed to leave the United States. They may also be inclined to invest in more development and production of such technologies outside the United States to not be caught behind the anticipated wall of expected new unilateral controls. This export control Heisenberg Effect is why I counsel congressional patience and understanding if Administration officials are sometimes publicly vague in their articulation of plans until they are completely ready to be announced.

I also recognize that developing this definition will be a far harder exercise than any traditional export control effort. The U.S.-China relationship is as complicated as it gets, and the technologies and supply chains at issue are even more complicated. Once an export control policy debate becomes unmoored from its traditional objectives regarding relatively identifiable WMD, military- and space-related applications, and the dual-use items necessary for their development, production, or use, then we are in uncharted waters. Notwithstanding the politics of the day and that this must be an Administration-led effort, I honestly believe that a bipartisan consensus on the definition is possible. The passage of ECRA and FIRRMA, and the likely passage of industrial policy legislation to address China-specific issues, are proof of this.

2. **The Administration should advocate, and support with evidence and appeals to common interests, the adoption of that definition by a smaller group of close allies in countries that produce the core technologies of concern to convince them to (a) expand their legal authorities to impose controls for reasons not related to traditional non-proliferation objectives and (b) align their China- and other country-specific licensing policies and enforcement priorities for already-controlled items.**

With rare, tailored exceptions that I will discuss later, for China-specific and other novel export controls not tied to traditional non-proliferation objectives to be effective, we need our allies to have the same controls. It is that simple and logical. When more countries control the movement of the same types of items for the same end uses and end users of concern, the controls are more effective. The export control systems of our allies, however, are essentially limited to regulating (i) weapons of mass destruction, (ii) conventional military items, and (iii) dual-use commodities, software, and technology that have some identifiable relationship to their development, production, or use. The lists of such items are determined by consensus in the four primary voluntary multilateral regimes, which are the Nuclear Suppliers Group (NSG), the Australia Group (AG) (for chemical and biological-related items), the Missile Technology Control Regime (MTCR), and the Wassenaar Arrangement (WA), which covers conventional arms and dual-use items to prevent "destablising accumulations" of such arms and their

acquisition by terrorists.

Moreover, the Wassenaar Arrangement has the following specific criteria for the types of dual-use items that should and should not be controlled:

> Dual-use goods and technologies to be controlled are those which are major or key elements for the indigenous development, production, use or enhancement of military capabilities. For selection purposes the dual-use items should also be evaluated against the following criteria:
>
> - Foreign availability outside Participating States.
> - The ability to control effectively the export of the goods.
> - The ability to make a clear and objective specification of the item.
> - Controlled by another regime.
>
> Those items from the Dual-use List which are key elements directly related to the indigenous development, production, use or enhancement of advanced conventional military capabilities whose proliferation would significantly undermine the objectives of the Wassenaar Arrangement.
>
> N.B. 1. General commercially applied materials or components should not be included.
>
> 2. As appropriate, the relevant threshold parameters should be developed on a case-by-case basis.
>
> Those items from the Sensitive List which are key elements essential for the indigenous development, production, use or enhancement of the most advanced conventional military capabilities whose proliferation would significantly undermine the objectives of the Wassenaar Arrangement.
>
> N.B. As appropriate, the relevant threshold parameters should be developed on a case-by-case basis.

The regime-listed items are destination-agnostic, meaning that they are created not with particular country issues in mind, but whether they have some inherent and identifiable relationship to a WMD or a conventional military item. Moreover, none of the regimes' mandates include the contemporary China-specific policy issues I mentioned earlier, where export controls are being considered as part of a solution.

The export control laws of our allies are largely based on and limited by the scope of the controls, and purposes for controls, in the multilateral export control regimes. This means that, after or while completing the definition of "national security" described in the previous recommendation, the United States needs to lead a robust and well-staffed diplomatic and technical effort to reach agreements among the export control communities and the relevant allied government authorities. We need to convince them

that the global, allied export control system is at an inflection point. We, the allies, need to collectively come to a new definition of common security interests and purposes for regulating the movement of commodities, software, technology, and services not directly connected to proliferation-related applications for specific destinations, end uses, and end users.[1]

I need to do more thinking and research before suggesting that the scope of the Wassenaar Arrangement could be expanded to deal with more than its traditional mandate. My sense is, however, that such efforts would fail given the need for consensus among the members—one of which is Russia—for change. I am also not suggesting the creation of a new multilateral regime to address the new export control issues being discussed. The groupings of the producer nations of each of the various technologies of concern require a complex Venn diagram to explain. The Bureau of Industry and Security (BIS) published in 2018 a list of emerging technology topics to be reviewed in response to the ECRA requirement to do so. It includes diverse areas such as biotechnology, artificial intelligence, advanced semiconductors, quantum computing, and additive manufacturing. There is no one international organization or group of countries with material development in all the technologies. Thus, the approach should be to work within existing international arrangements created for other reasons and to create *ad hoc* working groups of allied countries on a technology-by-technology basis, based on the priority of the issues and the technologies their companies produce. For example, one group of countries could be focused on semiconductor issues. Another group could focus on aerospace issues. A different circle of countries would focus on biotechnology issues. Such an approach is loosely referred to here as a "plurilateral" approach. (The exact method of doing this and which countries should be involved with which technologies will need to be subject of a separate paper.)

The United States led the efforts to move from the Cold War-era COCOM-based export control system to the multilateral regime-based system that we have now. It could lead a similarly large, transformational effort again. It will be hard, time-consuming, and require evidence, interagency cooperation, diplomacy, leadership, intelligence assessments, economic analyses, technical understanding of "chokepoint technologies," and thorough understandings of the allies' laws, policies, and politics. (As explained below, there are two different types of "chokepoint" technologies—those that are necessary to develop or produce proliferation-related items and those that are, or are necessary to develop or produce, the emerging and foundational technologies within the scope of ECRA section 1487.) Given our success in completing transformational efforts in the past, I believe that it is indeed possible—and, again, necessary—for new China-specific, plurilateral export control efforts to succeed. "Success" in this context means the existence in multiple countries of new controls to accomplish the agreed-upon national security goals described in the previous recommendation, once defined.

[1] The existing end use (e.g., the military end use rules) and end user (e.g., the Entity List) controls in U.S. law are complex. A full description of such controls, how they are different, and how effective they are will need to be addressed in a separate paper if requested.

In addition to focusing on the new standards for identifying and controlling additional types of commodities, software, and technologies, the allied government outreach should advocate their adoption of domestic "catch-all" laws enabling controls over exports of otherwise unlisted items to specific end uses and end users for reasons not tied to traditional WMD proliferation-related issues. For example, no other country has the authority the United States has to impose controls over the export of otherwise uncontrolled items if destined to a military end user in China, or for specific end users unrelated to WMD or terrorism (e.g., to many of those on the Entity List).

Convincing a small group of allies (and then later more) to agree to a paradigm shift in thinking about export controls to address China-specific issues will be particularly difficult because economic objectives have historically deliberately been excluded from multilateral export control policy discussions. Export controls were never originally intended to be used as a tool of trade protectionism or a tool to pick economic winners and losers. The focus of international export control policy discussions over the decades has been about whether a particular commodity, software, or technology had inherent proliferation-related applications agnostic of the economic or other policies of any particular country. Controls were not imposed because they would economically benefit or harm particular companies or sectors. Licensing decisions were not based on whether there would be a loss of profit for a sale that would have proliferation-related implications. Such views remain solid in the minds of export control policy officials in allied countries. As well described in the justifications for the industrial policy bills being considered in Congress, Chinese government policies to artificially subsidize key technology sectors in order to achieve strategic dominance over U.S. and allied competitors are forcing new thinking in the United States on such issues. Just as the United States once eschewed industrial policy, it needs to begin to factor in—and convince the allies to factor in—economic considerations of common interest when deciding what should be controlled and how.

Immediate Benefits from the Effort

What I am advocating will take years of diplomacy and advocacy to accomplish, even with sufficient resources devoted to the effort. Legislation and long-held policy views on complex issues in all countries change slowly. This does not mean that there cannot be immediate benefits from such outreach efforts. Under the existing multilateral export control process, each member country has significant (although not complete) national discretion to make its own licensing policies and set its enforcement priorities. Thus, there is a lot of room for the United States and relevant allies to work together to share information about particular exports of already-controlled items, end users, and end uses as part of efforts to align, formally or informally, licensing policies. This has always been part of BIS's mandate, so this is not a new suggestion. However, I am advocating increased Administration attention to, and congressional support for, such efforts. They will not only make controls pertaining to China and other countries more effective, they will also level the playing field for U.S. industry relative to their foreign competitors.

Another benefit of such informal and plurilateral efforts is that core Wassenaar member

countries can work together to get alignment on new types of items that should be multilaterally controlled. I realize that the Wassenaar Arrangement has significant formal limitations on what is within the scope of its mandate, but the definition of the key terms of this mandate is up to the members' discretion. If enough core members come together and work out in advance proposed new controls on particular technologies, it is possible that non-producer member countries will not be concerned with, oppose, or notice proposed new controls that push traditional Wassenaar control boundaries. This is, however, hard to predict in advance given the dynamics of an organization that has 43 diverse members, including Russia, where consensus is required to change the lists of controlled items. (This is both the virtue and vice of large multilateral organizations.)

Congress can help with such efforts by supporting or requiring, in the appropriate legislative vehicles, the Executive Branch to reach out to the key allies to do the work necessary to convince them to expand the scope of their export control laws and to work together with respect to existing controls. Such efforts would be consistent with congressional calls during the creation of FIRRMA for the administration to reach out to the allies to convince them to adopt their own or expanded foreign direct investment rules. Specifically, it was the sense of Congress (in section 1702(b)(2)) that the "President should conduct a more robust international outreach effort to urge and help allies and partners of the United States to establish processes that are similar to the Committee on Foreign Investment in the United States to screen foreign investments for national security risks and to facilitate coordination." By most accounts, such efforts were and continue to be quite successful. In addition, Congress could fund an ongoing study to be conducted and regularly updated that describes, compares, and contrasts the details of the export control and foreign direct investment rules of our allies. Such information would be extremely helpful to the success of the effort because policymakers will know what already exists and what would need to be changed.

Finally, the Administration will need to be careful to speak with one voice when conducting such outreach with the allies. It is easy and natural, in any administration, for different agencies to vary in how they characterize a complex objective. This is why a clear articulation of the definition of "national security" in this context, as described above, is a prerequisite. By way of analogy, all allied outreach efforts to describe the Export Control Reform effort were, for the first several years, always conducted jointly by representatives from Defense, State, and Commerce. In this way, there was no risk that one agency was going in a different direction, which would harm the effort. Eventually, after hearing each other's presentations so many times, we got comfortable enough that all agencies were on the same page, had the same message, and were even telling the same jokes that we did not need to do joint presentations in the latter years of the effort. Such a China-focused outreach will, however, be more sensitive for some allies that may not want it immediately known that they are working with the United States on such efforts. So, I counsel patience with respect to requests for some allies to publicly commit to supporting the effort before it is completed.

3. At the same time and with the same degree of intensity, Congress and the Administration must provide clear direction, robust funding, and political support to the export control agencies to implement the objectives of ECRA's emerging and foundational technologies provision based on the (a) the standards and process set out in ECRA and (b) agreed-upon definition of "national security" to address threats outside the context of traditional non-proliferation-related concerns.

ECRA's Traditional Export Control Policy Provisions—Section 4811

ECRA Section 4811 sets out the traditional, and still critical, purposes of U.S. export controls. It is basically a codification of the export control policies of previous administrations and Congresses. Please take a moment to read it. It is what a bipartisan Congress and the Trump Administration agreed to as the purpose of U.S. export controls[2] just three years ago (to replace a 1979 statute that had lapsed for decades because of an inability of Congress and the Administrations to reach a consensus statement of U.S. export control policy in law). I and many others—Democrats, Republicans, hawks, doves, and owls—supported it. The core policy provisions are the following:

The following is the policy of the United States:

(1) To use export controls only after full consideration of the impact on the economy of the United States and only to the extent necessary—

(A) to restrict the export of items which would make a significant contribution to the military potential of any other country or combination of countries which would prove detrimental to the national security of the United States; and

(B) to restrict the export of items if necessary to further significantly the foreign policy of the United States or to fulfill its declared international obligations.

(2) The national security and foreign policy of the United States require that the export, reexport, and in-country transfer of items, and specific activities of United States persons, wherever located, be controlled for the following purposes:

(A) To control the release of items for use in—

[2] Given that there are comprehensive arms embargoes on China, I am not referring to or discussing here the Arms Export Control Act or the export control regulations administered by the State Department or other departments.

(i) the proliferation of weapons of mass destruction or of conventional weapons;
(ii) the acquisition of destabilizing numbers or types of conventional weapons;
(iii) acts of terrorism;
(iv) military programs that could pose a threat to the security of the United States or its allies; or
(v) activities undertaken specifically to cause significant interference with or disruption of critical infrastructure.

(B) To preserve the qualitative military superiority of the United States.

(C) To strengthen the United States defense industrial base.

(D) To carry out the foreign policy of the United States, including the protection of human rights and the promotion of democracy.

(E) To carry out obligations and commitments under international agreements and arrangements, including multilateral export control regimes.

(F) To facilitate military interoperability between the United States and its North Atlantic Treaty Organization (NATO) and other close allies.

(G) To ensure national security controls are 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.

(3) 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. The impact of the implementation of this subchapter on such leadership and competitiveness must be evaluated on an ongoing basis and applied in imposing controls under sections 4812 and 4813 of this title to avoid negatively affecting such leadership.

(4) The national security and foreign policy of the United States require that the United States participate in multilateral organizations and agreements regarding export controls on items that are consistent with the policy of the United States, and take all the necessary steps to secure the adoption and consistent enforcement, by the governments of such countries, of export controls on items that are consistent with such policy.

As described in paragraph 10 of ECRA section 4811, “export controls complement and

are a critical element of the national security policies underlying the laws and regulations governing foreign direct investment in the United States, including controlling the transfer of critical technologies to certain foreign persons." Based on the congressional testimony and statements that were part of the effort to create and pass ECRA and the Foreign Investment Risk Review & Modernization Act (FIRRMA), this, of course, was largely referring to Chinese state policies of concern and not limited to traditional non-proliferation-related objectives.

The last sentence of paragraph 10 is thus key to this hearing. It states that **"[t]hese efforts should be in addition to traditional efforts to modernize and update the lists of controlled items under the multilateral export control regimes."** Congress required that such technologies be identified not only for the sake of knowing what additional export controls should exist but also to create more mandatory filings with CFIUS for non-controlling investments where such technologies could be disclosed to foreign persons as a result. Thus, export controls and U.S. foreign direct investment controls are aligned in this regard.

ECRA's Emerging and Foundational Technologies Provisions—Section 4817

To implement and bound such efforts "in additional to traditional" regime efforts, Congress created section 4817—the emerging and foundational technologies section. It requires the Administration to conduct a "regular, ongoing interagency process to identify emerging and foundational technologies that . . . **are essential to the national security of the United States" and not described in any of the existing export control regimes.** That's the entire standard. It is much shorter than section 4811, but potentially much broader in scope. Congress deliberately did not define what "national security" means in this context—i.e., to address China-specific issues outside the scope of the traditional regime controls. It left that up to the successive administrations to do, presumably because the concerns would shift over time. Also, defining national security in specific situations is a normal function of the Executive Branch. **Defining "national security" in this context outside traditional proliferation-related objectives is thus a key export control mission of the Biden Administration and future administrations—and the central regulatory issue with respect to the purpose of your hearing today.**

To identify such technologies, Congress required the administration to draw upon all available resources for such information, including the intelligence community, industry advisory committees, and information CFIUS received or developed as part of its review of cases. Congress made this point recognizing that the economic and technical issues associated with such technologies are unusually difficult to understand and that they evolve quickly. As good as government staff in the agencies are, they will not always have such information, particularly if it relates to novel technologies unrelated to those of proliferation concern. Thus, if BIS or any other export control agency does not have the staff or expertise to analyze or identify a particular technology, Congress has required the agency to reach out to others for help.

To use my missile control analogy, it is relatively easy to take apart a missile and determine which parts, components, technologies, and software are directly related to its development, production, and use. The need to control missiles is also obvious, regardless of foreign availability and the economic implications of denying exports. It is massively harder to "take apart" the emerging technology topics of the day, such as "artificial intelligence" and "quantum computing." They are not always just things. They are in large part global collections of know-how using widely available items being created and moved across boundaries on a daily basis.

Thus, identifying precisely those core chokepoint components, software, and technologies that meet the ECRA standards for such items is massively harder and requires more resources and creativity than anything that has ever been done in the export control system. **To repeat, until there is a clear, common, and understood definition of "national security" in this context, one cannot know what to look for to identify and control "emerging" and "foundational" technologies.** Just because a technology is emerging does not necessarily mean it warrants control. Just because a technology is basic does not necessarily mean that it does not warrant control. One must know the goal of the control first. And until one knows the definition of "national security" in this context, one cannot know if BIS is moving too slow, too fast, or just right with respect to the identification of "emerging" and "foundational" technologies.

In order to enable the Administration to move quicker than the multilateral system permits, but without creating counterproductive consequences, ECRA Section 4817 then requires the Administration to identify and impose unilateral controls over whatever the Administration defines as "emerging" or "foundational" technologies *so long as such efforts t*ake into account:

> (i) the development of emerging and foundational technologies in foreign countries;
>
> (ii) the effect export controls imposed pursuant to this section may have on the development of such technologies in the United States; and
>
> (iii) the effectiveness of export controls imposed pursuant to this section on limiting the proliferation of emerging and foundational technologies to foreign countries.

Thus, if a particular technology of concern is widely available outside the United States, then it is not a good candidate for unilateral controls under this section. This is logical because if a particular technology that does not have a clear proliferation-related use is widely available outside the United States, then imposing a control over it would not be effective. This conclusion is reflected in the second two elements of this limitation in section 4817(a)(2)(B), i.e., that if a unilateral control would harm domestic research in the technology or would not be effective, then it is also not a good candidate for a unilateral control. If the technology nonetheless warrants control based on the standards for control in ECRA, then the plurilateral or traditional multilateral approach

should be used.

As a double check on the process to ensure that there are not mistakes or unintended consequences, section 4817(a)(2)(C) requires any such unilateral controls to be published as proposed rules and subject to public notice and comment. The primary benefit of such efforts will be to gather information about whether there is material foreign availability for the technologies proposed for control. The government generally does not have a fraction of such information that is available to industry. Although industry is often limited in what it knows given that much of the information is proprietary to their competitors, it will generally still have more such information than the government. Thus, the need to collect, present, and understand foreign availability information in order to comply with this part of ECRA is particularly challenging and time consuming, but critical to the success of the effort.

Also, as someone who has written, cleared, negotiated, implemented, and interpreted hundreds of regulations, I speak with authority when I say that one must be humble when drafting and publishing export control regulations. Given their complexity, it is easy to make mistakes and create unintended consequences. Getting it right takes time. One must also have trust in the interagency and public notice and comment process, and the opportunity for others to double check your homework. Finally, tracking a process that I created in 2012 in the EAR to quickly and unilaterally control emerging and other technologies of concern, Congress gave the Administration (in section 4817(c)) three years to work with the regimes to get acceptance of the control by a multilateral regime or decide if a permanent unilateral control was consistent with national security interests.

For such new controls to have a possibility of becoming multilateral (and thus most effective), they will need to be written and presented in the specific types of control text of the relevant regime control lists. The Commerce Control List (CCL) of the Export Administration Regulations (EAR) is where in U.S. law the lists of agreed-upon multilateral regime lists are published. The CCL also identifies the commodities, software, and technologies that only the United States controls. Section 4817(c)(2) does not require the creation of a separate list of "emerging" and "foundational" technologies. Rather, it requires an "ongoing" process to add such items to the CCL (or U.S. Munitions List, if uniquely military). Indeed, to its credit, the Trump Administration implemented in the CCL more than 35 new controls on emerging technologies through the multilateral process, which are described in an October 2020 press release issued by Secretary Ross.

Although ECRA does not require separate lists of emerging and foundational technologies, clearly that is the expectation of many who follow this issue and ask about it on a regular basis. A way to address such reasonable expectations to know what has been identified under the authority of section 4817, while staying consistent with the organizational structure of the CCL, would be for BIS to identify which items on the CCL were added under the authority of the emerging and foundational technology provision of ECRA. For example, BIS could add an "EFT" or a "50 USC 4817" code note in the

Export Control Classification Numbers (ECCNs) on the CCL for such items. It could also create a separate web page on www.bis.doc.gov describing in one place the items that have been controlled under the section 4817 standards and process.

As to the "foundational" technology identification effort, BIS wrote the following when it published a request for public comments on the issue on August 27, 2020, which was more than two years after the passage of ECRA:

> There may be additional items, classified on the CCL at the AT level or as EAR99 for which an export license is not required for countries subject to a U.S. arms embargo that also warrant review to determine if they are foundational technologies essential to the national security. For example, such controls may be reviewed if the items are being utilized or required for innovation in developing conventional weapons, enabling foreign intelligence collection activities, or weapons of mass destruction applications. BIS, through an interagency process, seeks to determine whether there are specific foundational technologies that warrant more restrictive controls, including technologies that have been the subject of illicit procurement attempts which may demonstrate some level of dependency on U.S. technologies to further foreign military or intelligence capabilities in countries of concern or development of weapons of mass destruction.

I will leave it to BIS to comment on the status of such efforts and why it took more than two years to even ask for public comment on the statutory requirement. I do not know the answer. I do, however, know that if an administration needs more resources to satisfy such statutory requirements, then it needs to ask Congress for them. Because the China-specific issues being discussed today are a strategic priority for Congress, then it should grant such requests. Little more than regular cost-of-living budget adjustments for BIS, and the other export control agencies are insufficient. Setting aside for the moment the congressional mandate to conduct this effort and the budget issues, I nonetheless counsel patience and vigilance because identifying the subset of such technologies, which are generally widely available, will be difficult given the standards in ECRA section 4817 to not impose unilateral controls on widely available technologies.

4. Export controls should absolutely be used more to address human rights issues in China and elsewhere, but the Administration will need to include carefully crafted end use controls because the technologies at issue will generally be widely available commercial items that are not subject to any multilateral controls.

ECRA section 4811(2)(D) states that one of the purposes for U.S. export controls is to "carry out the foreign policy of the United States, including the protection of human rights and the promotion of democracy." Unlike the national security topics described above, ECRA does not say much more on the issue, although the authority provided is

broad. Nonetheless, as you may know, there have been various bills introduced that would require BIS to consider creating new controls to address human rights issues, such as those related to censorship or social control, surveillance, interception, or restriction of communications, monitoring or restricting access to or use of the internet, identification of individuals through facial or voice recognition or biometric indicators, and DNA sequencing. I strongly support such objectives as important new additions to the role and use of export controls.

Some of the bills would slightly amend ECRA to provide clear authority for the imposition of end use controls when list-based or end user-based controls would not be effective. If these provisions become law, they will be important authorities for BIS because, with some exceptions to be listed out, the types of items commonly used to commit human rights abuses are widely available commercial items that will not usually be controllable as such. Controls on exports of unlisted items for specific *end uses* with such items that violate human rights will need to be a regularly used solution. Because end use controls are, however, inherently difficult for industry to understand and implement in compliance programs, the new controls will need to be carefully crafted with a significant amount of beta testing with compliance professionals and prosecutors to make sure they will be clear, effective, and enforceable.

There appears to be efforts within BIS to conduct such a review with or without new law. Moreover, BIS states on its webpage that it is "actively engaged in formulating, coordinating, and implementing various export controls to counter the use of items subject to the [EAR] that could enable human rights abuses or repression of democracy throughout the world. These controls are a mix of list-based, end-user, and end-use controls, as well as specific licensing policies that allow review of transactions for concerns about human rights abuses and repression of democracy." Also, to their credits, both the Trump and Biden administrations have used export control tools to address human rights issues. The primary tool has been to add to the Entity List those that have engaged, or believed to have engaged, in human rights abuses associated with the Chinese government's brutal repression of the Uyghurs and other ethnic minorities in the Xinjiang region. Also to the Trump Administration's credit, it amended the EAR so that human rights considerations are applied to the review of essentially all license applications, even when the items to be exported are not controlled for human rights-related (i.e., "Crime Control") reasons.

The issues and the export control levers to address human rights issues are somewhat different than the national security issues described above. For example, unilateral human rights controls are usually appropriate regardless of foreign availability given the moral imperatives involved and the need to signal U.S. resolve on the issues to the international community and allies. Also, unlike with respect to the non-proliferation-focused regimes, there are no multilateral organizations with authority to identify and list for common control among allies specific commodities, software, and technologies of concern for human rights reasons. That is, there is no Wassenaar-like arrangement to address human rights concerns, except for some issues pertaining to surveillance and cyber intrusion technologies. Thus, I would encourage Congress to require the

Executive Branch to lead an effort to get allied support for a new regime to control commodities, technologies, software, services, and end uses that warrant common control to achieve human rights objectives. Because such an effort will take several years and significant resources to complete, I would encourage Congress to provide the Executive Branch with the resources and mandate to do so soon.

5. **Without taking away from the seriousness of the China-specific issues, Congress and the Administration should remember to give adequate attention and resources to all other export control issues, such as (a) running an efficient licensing system, (b) controlling and enforcing the export of dual-use items that have proliferation-related uses elsewhere in the world, and (c) reducing unnecessary barriers on controlled trade with close allies.**

This part of the USCC hearing is about export controls and, naturally, China. Most of the think tank, public, political, and press commentary about export controls pertains to China as well. This is natural given the seriousness and difficulty of the issues. The focus is not wrong. Nonetheless, I want to use this platform to respectfully ask those who are thinking about export control policies to do what can be done to support BIS and the other agencies in just running a normal, transparent, and timely export control licensing system, regardless of the policies on any particular item or country. There is literally a whole planet full of other issues.

Without a regular, reliable, timely, and predictable licensing system, U.S. exporters cannot be reliable, timely, and predictable partners with respect to items that should be approved for export based on the applicable policies. Daily industry compliance issues also involve far more than just individual licensing decisions. (Applying for licenses to export controlled items to specific countries or proscribed persons is a core regulatory *compliance* effort.) There is a regular need for outreach, training, guidance, interpretations, classification determinations, responses to disclosures, and jurisdictional determinations. Indeed, being the interface between national security equities and industry is a core reason why BIS—the Bureau of Industry AND Security—exists.

BIS and the other export control agencies are full of excellent, dedicated, and smart career civil servants. The focus on the day-to-day running of the system can, however, easily get lost in the bright lights of discussions about what the China-specific policies should be. These are not just my views as a compliance attorney and a former assistant secretary in charge of export administration. The final three core policy objectives in ECRA section 4811 for U.S. export controls are the following:

> (7) The effective administration of export controls requires a clear understanding both inside and outside the United States Government of which items are controlled and an efficient process should be created to regularly update the controls, such as by adding or removing such items.
>
> (8) The export control system must ensure that it is transparent,

predictable, and timely, has the flexibility to be adapted to address new threats in the future, and allows seamless access to and sharing of export control information among all relevant United States national security and foreign policy agencies.

(9) Implementation and enforcement of United States export controls require robust capabilities in monitoring, intelligence, and investigation, appropriate penalties for violations, and the ability to swiftly interdict unapproved transfers.

Also, ECRA section 4816 requires BIS to provide exporters, particularly small- and medium-size enterprises, with assistance in complying with the regulations. ECRA section 4825(b)(2) states that the export control agencies "should regularly work to reduce complexity in the system, including complexity caused merely by the existence of structural, definitional, and other non-policy-based differences between and among different export control and sanctions systems." ECRA section 4814(c) states that the licensing process "should be consistent with the procedures relating to export license applications described in Executive Order 12981." This Executive Order requires, and is the legal authority (as amended) for, the interagency review and appeal process, and the timelines for such efforts, that are set out in the EAR. Merely setting *and achieving* a simple goal for BIS and its fellow export control agencies to have the resources and processes in place to meet the license review and other deadlines in the EAR would be an amazing and good government accomplishment. Getting to a predictable licensing schedule would also do wonders for our economic security objectives—regardless of any particular license policies (e.g., approval or denial) toward any country.

For these and other reasons, Congress and the Administration should also devote substantially more resources and personnel to the export control agencies, namely BIS, the Defense Technology Security Administration (DTSA), the Bureau of International Security and Nonproliferation (ISN), the Directorate of Defense Trade Controls (DDTC), and the National Nuclear Security Administration (NNSA). (Eventually, the export control agencies should be combined into a single licensing agency and the rules should be combined into a single set of export control regulations with one list of controlled items, but that is a subject for another day.)

Setting the China-specific issues aside for the moment, the issues and technologies are more complex than ever and the need for multilateral cooperation, which is time-intensive, continues to be extremely important to the controls' effectiveness. Remember that the EAR regulates thousands of dual-use commodities, software, and technologies that are necessary for the development, production, or use of missiles, chemical and biological weapons, nuclear items, and conventional weapons. The need to control such items aggressively and effectively is more important than ever. Similarly, the EAR, as a result of the Export Control Reform effort, is the vehicle for implementing many of the national security objectives of the Obama Administration—which the Trump Administration maintained—with respect to trade in less sensitive defense items and commercial space-related items with NATO and other close allies.

These controls need regular updating and care for them to continue to be effective.

My personal view, that I can describe in more detail separately, is that each agency is understaffed when compared to its mission. Among other things, this leads to increased burdens and delays for industry, reduced time available for internal training of the agencies' employees, and the inability to keep the regulations current. Failure to keep the regulations current to novel threats does not advance our national security interests and harms our economic security. A renewed attention to supporting these organizations should also include efforts to educate the next generation of export control professionals and to motivate them to join the federal government. Decades of wisdom and collective memory will walk out the door when current senior career staff retire or otherwise leave the government. As evidence of my commitment to the area, I have a standing offer to any college student, law student, veteran, or anyone else seeking a career change to discuss ideas for how to make international trade regulatory compliance a worthwhile career choice in industry or in government. The demand and need for dedicated, trained trade compliance professionals are only going to grow.

Similarly, I would encourage more resources be devoted to export control-focused enforcement, particularly by the subject matter experts and special agents at BIS's Office of Export Enforcement (OEE). This will not only advance the national security and foreign policy objectives of the controls, but also help keep the playing field level for those companies that do the hard work necessary to comply with the regulations. Part of this funding should also be focused on capacity building for the enforcement agencies of our allies and better coordination with countries that have diversion hubs. In addition, there should be more resources dedicated to enhanced DDTC/BIS compliance coordination. This would help with investigations involving items subject to both the International Traffic in Arms Regulations and the EAR.

Conclusion

Thank you again for asking me to testify today. I am happy to answer now or later any questions you have on export control issues. I am serious when I say that I have a 3-minute, 30-minute, 3-hour, and 3-day version of each such answer.