The Once and Future Multilateral Export Control Regimes: Innovate or Die

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Abstract

As part of their efforts to inhibit states and terrorist organizations from acquiring nuclear, chemical, biological, and advanced conventional weapons, the United States and other countries have taken steps to coordinate export controls that monitor and restrict the flow of dual-use equipment, materials, and technologies. They have established four informal multilateral export control regimes (MECR) that complement and support broader international nonproliferation objectives and treaties. These normative guidelines and technology control lists define public goods, including, for example, much of the practical content for United Nations Security Council resolutions such as 1540 and those targeting Iran and North Korea. Over the last two decades, the international environment has changed rather dramatically thereby posing significant challenges to the regimes. In this new environment, there is a need for the regimes or another multilateral institutions to set the standards of regulation in emerging technology sectors of security concern like nanotechnology, additive manufacturing, or unmanned systems. Yet, at this time, the arrangements are facing an inflection point for reasons of rapid technological change and geopolitical dynamics. The structure of the regimes is ill-suited to deal with these external developments. Therefore, alternative approaches to multilateral export control coordination are necessary to ensure the continued viability of the nonproliferation regime complex.

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Keywords

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Introduction

Efforts to prevent proliferation can be characterized in terms of whether they address the demand-side or the supply-side. Demand-side measures seek to reduce the motivations that lead states to seek Weapons of Mass Destruction (WMDs). As an example, states can offer security guarantees in an attempt to alleviate security concerns that might otherwise motivate a country to develop nuclear weapons. Supply-side measures, in contrast, seek to make it harder for weapons development efforts to succeed by restricting access to goods and technologies useful to weapons programs, including dual-use items that can be applied to either commercial or military purposes. One way to limit supply is through export controls.

As part of their efforts to inhibit states and terrorist organizations from acquiring nuclear, chemical, biological, and advanced conventional weapons, the United States and other countries have taken steps to coordinate export controls that monitor and restrict the flow of dual-use equipment, materials, and technologies. They have established four informal multilateral export control regimes (MECRs) that complement and support broader international nonproliferation objectives and treaties. These are the Missile Technology Control Regime, the Nuclear Suppliers Group, the Australia Group, and the Wassenaar Arrangement. To assist Member States to bolster and harmonize their respective national export control systems, the regimes typically develop broad guidelines about the circumstances when states should exercise restraint and lists of items to which controls should be applied. These normative guidelines and technology control lists provide public goods, including, for example, much of the practical content for United Nations Security Council resolutions such as 1540 and those targeting Iran and North Korea.

Over the last two decades, the international environment has changed rather dramatically thereby posing significant challenges to the regimes. First, there are many more suppliers of dual-use and military-significant technology beyond the regime members. These suppliers often seek to fill the supply-gap created by denials from regime members. Second, the rise of legitimate non-state actors (e.g., brokers and facilitators) as important players in connecting buyers and suppliers of controlled technologies across continents has put a premium on timely sharing of specific information among regime members. Third, the illegitimate non-state actors (e.g., terror and insurgent groups) have shown preference for obsolete and/or commercially unviable technologies to achieve their goals. Large portions of the regime control lists might therefore become irrelevant for controlling proliferation. Fourth, evolving strategic considerations have strengthened the demands for extending membership offers to countries that were earlier the targets of regime controls (e.g., China, India, Israel, Pakistan). Finally, the members of the regimes have become less like minded. Some members, like the United States and European Union countries, are now imposing sanctions on Russia and using national export controls to target Russia's efforts to acquire dual-use items despite Russia's participation in three of the four multilateral regimes. Simply put, the regime members have lost their way in achieving consensus regarding what to control, how to control it, and what actors to target.

In this new environment, there is a need for the regimes or another multilateral institution to set the standards of regulation in emerging technology sectors of security concern like nanotechnology, additive manufacturing, or unmanned systems. Yet, at this time, it is the authors' sense that the arrangements are facing an inflection point for reasons of rapid technological change and geopolitical dynamics. The structure of the regimes is ill suited to deal with these external developments.

After a review of the nature of the regimes in general, this article provides a brief background on the origins and operations of each individual export control regime.[2] Subsequent sections identify, from an evolutionary perspective, the failure of the regime model to adapt to rapidly changing political, economic, and technological environments, challenging the perception that persistence suggests robustness and sustainability. The penultimate section examines regime limitations through a case study of the Missile Technology Control Regime (MTCR). The article concludes by offering alternative approaches to multilateral export control coordination.

The Nature of the Multilateral Export Control Regimes

The multilateral export control system currently comprises four separate supplier-state regimes: the Australia Group (AG), the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG), and the Wassenaar Arrangement (WA). In terms of international organization typologies, the MECR constitute informal consultative mechanisms.[3] They are intended to supplement the provisions of binding, multilateral treaties primarily focused on the development and possession of weapons technologies, including the 1968 Nuclear Nonproliferation Treaty (NPT), the 1972 Biological Weapons Convention (BWC), and the 1993 Chemical Weapons Convention (CWC). While certain differences exist in the particulars of the regimes, their essential attributes share a great deal of similarity.

As regimes, all four MECRs are informal, non-binding political arrangements. However, the extant literature on international regimes primarily focuses on formal institutions

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2 This article does not include a comprehensive examination of national perspectives on the four multilateral arrangements. With 50 governments now participating in at least one of the arrangements and several more adhering to some of the multilateral guidelines, a thorough investigation of all relevant preferences and perceptions would demand a research effort well beyond any conducted in the field so far. For a repesentative example of national export control system analyses, see Michael D. Beck, Richard T. Cupitt, Seema Galhaut, and Scott A. Jones, *To Supply Or To Deny: Comparing Nonproliferation Export Controls in Five Key Countries* (Amsterdam: Kluwer Law International, 2006). See also Douglas M. Stinnett, Bryan R. Early, Cale Horne, and Johannes Karreth, "Complying by Denying: Explaining Why States Develop Nonproliferation Export Controls," *International Studies Perspectives*, Vol. 13, Issue 3 (August 2011), pp. 308-326.

3 Andrew Latham and Brian Bow, "Multilateral Export Control Regimes: Bridging the North-South Divide," *Canadian Institute of International Affairs International Journal*, Vol. 53, No. 3 (Summer 1998), pp. 465-486.

(e.g., environmental regimes), with almost no coverage of the MECRs.[4] In one of the few theoretical treatments of the export control regimes, Daniel Joyner categorized them as security communities.[5] While the security community categorization captures some aspects of the MECR, they do not truly fit the definition. States form a security community when they view the threat or use of force against other members of the community as unthinkable. With their diverse memberships (e.g, participant states having competing and varied conceptions of security), this is not necessarily the case within the MECRs. In a study of the WA, Michael Lipson emphasizes the impact of norms and identities, but does not address the question of how the regime's organization affects cooperation.[6]

The canonical definition of international regimes describes them as "principles, norms, rules, and decision-making structures" developed to guide the behavior of states in particular issue areas.[7] Regimes vary in terms of how formal or informal they are. In contrast to formally negotiated, treaty-based multilateral institutions, the export control regimes lack official institutions or bureaucracies. They operate instead through annual and semi-annual meetings. The most fundamental components of these regimes are their guidelines and control lists. While some regimes, such as the WA, have secretariats, the *de facto* regime-specific bodies are purely coordinative in function. Nevertheless, the tasks of creating and revising guidelines and control lists require a high degree of collaboration amongst members as decision making procedures are based exclusively on consensus. This informal structure need not be a barrier to effectiveness. Research has found that institutions with an informal character, such as ASEAN, for example, can be productive in other environments involving interest heterogeneity.[8] However, at the same time, regimes studies do not agree on the necessary and sufficient conditions contributing

4 As noted by Michael Byers, "Regime theorists have not written much about informal rules and procedures. Regime theorists have instead focused on multilateral treaties and international organizations, around or within which informal rules or procedures may develop, but, if they do develop, will fulfill only supplementary roles." See Michael Byers, *Custom, Power and the Power of Rules: International Relations and Customary International Law* (Cambridge: Cambridge University Press, 1999), p. 26. In addition, the last comprehesive review of the MECR is that of the authors and their cohort at The University of Georgia in the early 2000s.

5 Daniel H. Joyner, "Restructuring the Multilateral Export Control Regime System," Masters Thesis (Athens: University of Georgia, 2003) and Daniel H. Joyner, "Restructuring the Multilateral Export Control Regime System," *Journal of Conflict and Security Law*, Vol. 9, No. 2 (2004), pp. 181–211.

6 Michael Lipson, "The Reincarnation of COCOM: Explaining Post Cold-War Export Controls," *The Nonproliferation Review*, Vol. 6 No. 2 (Winter 1999).

7 Stephen D. Krasner, "Structural Causes and Regime Consequences: Regimes as Intervening Variables," in Stephen D. Krasner, ed., *International Regimes* (Ithaca: Cornell University Press, 1983), pp. 1-21.

8 In their study of the Association of Southeast Asian Nations (ASEAN), Amitav and Johnston note that "Institutions can still help attain their original goals and induce preference change with informal rules and deliberative mandate….. More informal groups such as ASEAN have had a discernible impact in changing the preferences and norms of their members." See, Amitav Acharya and Alastair Iain Johnston, "Conclusion: Institutional Features, Cooperation Effects and the Agenda for Further Research on Comparative Regionalism," in Amitav Acharya and Alastair Iain Johnston, eds., *Crafting Cooperation: Regional International Institutions in Comparative Perspective* (Cambridge: Cambridge University Press, 2007), p. 269.

to institutional viability.[9]

The informal, consultative nature of the export control arrangements, this suggests, does not necessarily circumscribe the degree and type of cooperation amongst members. Even modest, less formal mediums of cooperation or coordination can produce significant results in international affairs.[10] After a brief historical review of each regime, the article will examine the patterns of cooperation within the MTCR in greater detail. Because the four regimes are similar, patterns observed in the MTCR should be typical of those in the other MECRs.

The Evolution of Supply-Side Controls

Following World War II and the commencement of the Cold War, the United States and a number of its allies formed the Coordinating Committee on Multilateral Export Controls (COCOM) with the intention of ensuring that trade with the Soviet Union and its allies did not enable the Soviet bloc to gain access to militarily-relevant technology.[11] In many respects, COCOM served as the model for the subsequent dual-use supplier regimes. The *Coordinating* Committee (emphasis added) sought to coordinate the export control policies of the member countries with respect to specific goods identified on COCOM lists, to resolve differences of interpretation, and to provide for exceptions to the controls.[12] COCOM decisions were made on the basis of unanimity. Because COCOM had no official treaty status, member countries were left to enact legislation consistent with the COCOM's goals at their discretion and provide for its enforcement unilaterally. Although a voluntary, informal organization, COCOM did have a way to make collective decisions regarding specific strategic exports to Communist bloc countries, a function absent from the current multilateral export control regimes. Through the COCOM Secretariat based in Paris, COCOM members could veto proposed exports of any member country.

U.S. leadership played a decisive role in the establishment and continued cohesion of COCOM.[13] Tensions sometimes arose between Western European countries and the United States, for

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9 As noted by Poteete and Ostrom, "Despite considerable progress in identifying factors that affect the prospects for collective action, no consensus exists about the role played by heterogeneity and size of group." See AR Poteete and E Ostrom, "Heterogeneity, Group Size and Collective Action: The Role of Institutions in Forest Management," *Development and Change*, Vol. 35, Issue 3 (June 2004), pp. 435-461.

10 Kenneth W. Abbott and Duncan Snidal, "Why States Act through Formal International Organizations," *Journal of Conflict Resolution*, Vol. 42, No. 1 (February 1998), pp. 3-32, p. 11.

11 For a good history and evaluation of COCOM's impact, see Gary K. Bertsch, *East-West Strategic Trade, COCOM and the Atlantic Alliance* (Paris: Atlantic Institute for International Affairs, 1983).

12 For details, see Richard T. Cupitt, "The Future of CoCom," in Gary K Bertsch and Steven Elliott-Gower, eds., *Export Controls in Transition: Perspectives, Problems and Prospects* (Durham, N.C.: Duke University Press, 1992), p. 235.

13 To persuade its allies to participate in COCOM, the United States and specifically the U.S. Congress established sanctions in the Cannon Amendment to the Supplemental Appropriations Act of 1951 and, more importantly, in the Mutual Defense Assistance Control Act of 1951, more commonly known as the Battle Act. See Gary K. Bertsch, "U.S. Export Controls," in Gary K. Bertsch and John R. McIntyre, eds., *National Security and Technology Transfer* (Boulder, CO: Westview Press, 1983), p. 127.

example regarding the political benefits to be expected from expanded trade with Eastern Europe, but COCOM members were able to adapt the organization so it kept functioning. These periodic tensions and COCOM's singular focus on the Soviet bloc explain in part why the United States pushed for the creation of new WMD-focused MECRs separate from COCOM.[14]

The predominant nonproliferation approach of the 1960s involved arms control initiatives, the overarching achievement of which was the Nuclear Nonproliferation Treaty of 1968. The NPT contained provisions intended to address both the supply and demand sides of proliferation. The challenges of dealing with the supply dimensions of proliferation, however, were only starting to become clear in the late 1960s/early 1970s. When India detonated a so-called peaceful nuclear detonation in 1974, using plutonium obtained from a Canadian-supplied nuclear reactor, the shock shifted global nonproliferation attention to the problem of supply.

Prior to the Indian test, in 1971, a group of seven NPT nuclear supplier nations formed the Nuclear Exporters Committee, known as the Zangger Committee (after its first chair), to flesh out how to implement certain rules for nuclear trade contained in Article III of the NPT.[15] The objective of the Committee was to reach a common interpretation of the obligations stemming from Article III in terms of what can legally be exported to countries that are not parties to the treaty. In 1974, the Zangger Committee compiled the first ever "trigger list" of nuclear export items that could be potentially useful for military applications of nuclear technology.[16]

India's 1974 test, along with efforts among other non-nuclear weapon states such as Argentina and Brazil to develop a complete nuclear fuel cycle, led to heightened concern among supplier states regarding nuclear proliferation. In 1975, a group of nuclear supplier states (Canada, France, Japan, West Germany, the Soviet Union, the United Kingdom, and the United States) met in London with the purpose of supplementing the Zangger Committee's work in the field of nuclear export controls. Over successive meetings, this group became known unofficially as the "London Club," and, in 1978, officially as the Nuclear Suppliers Group. While the Zangger list initially included only nuclear materials and components used directly in weapons development, the NSG adopted more restrictive export control guidelines that included some dual-use items.[17] The guidelines also required the provision of physical security for

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14 Frank M. Cevasco, "Survey and Assessment: Alternative Multilateral Export Control Structures," Working Paper No. 3, Study Group on Enhancing Multilateral Export Controls for U.S. National Security (Washington, DC: The Henry L. Stimson Center/CSIS, 2001).

15 Article III, section 2, of the NPT states that "Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this Article." The Zangger Committee was formed to figure out how to implement the provisions of Article III. See <http://www.zanggercommittee.org/Zangger/default.htm>.

16 The nuclear suppliers agreed that the transfer of items on the list would "trigger" a requirement for International Atomic Energy Agency (IAEA) safeguards on those items to ensure that they would not be used to make nuclear explosives. The Zangger list included reactors, reactor components, and certain nuclear materials such as heavy water.

17 In particular, because uranium enrichment and spent fuel reprocessing to extract plutonium can be used to make both nuclear fuel for reactors and nuclear materials for a bomb, the NSG guidelines called for suppliers to exercise restraint regarding transfers of enrichment and reprocessing technology.

transferred nuclear facilities and materials, acceptance of safeguards on replicated facilities, and prohibitions against retransfer of nuclear exports to third parties.[18] Importantly, in contrast to the Zangger Committee, the NSG guidelines would apply to potential exports to members of the NPT and not only to non-parties. The NSG guidelines on nuclear exports were first published only in 1978.

From its inception, the NSG sought to emphasize its informal, non-binding nature. While clearly a result of perceived imperfections in the nonproliferation regime to date, the NSG was at pains to minimize the appearance of excessive controls on nuclear technology that could undermine the right to develop peaceful uses of nuclear energy established in Article IV of the NPT or reduce the prospects for economic development and free trade.[19] After formulating the guidelines on nuclear transfers, the members of the NSG did not openly institutionalize cooperation among themselves and did not convene as a group until 1991, when they met in response to the exposure of Iraq's clandestine efforts to acquire WMD. Because Iraq had built much of its nuclear program through imports of dual-use items not covered on existing trigger lists, the NSG in 1992 adopted a new, second set of *Guidelines for Transfers of Nuclear-Related Dual-Use Equipment, Material and Related Technology*.[20]

During the NSG's interregnum, two more supplier regimes emerged: the Australia Group (AG) and the Missile Technology Control Regime (MTCR). Largely in response to the documented use of chemical weapons during the Iran-Iraq War, the AG was established in 1985 to prevent any contribution to chemical and biological weapons programs through the inadvertent supply of chemical precursors, biological agents, and related dual-use equipment.[21] The participating governments in this regime agree to common guidelines for chemical and biological export licensing. Although the AG is concerned with regulating trade in chemical and biological

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18 Because the discussions in the NSG were not directly associated with the text of the NPT, participating states were able to take a more flexible and extensive approach to developing a list of items subject to agreed guidelines. Furthermore, in contrast to the Zangger Committee controls, the NSG Guidelines apply to transfers to all non-nuclear weapon states, not just those outside the NPT. See, D. Fischer, "The London Club and the Zangger Committee: How Effective?," in K. Bailey and R. Rudney, eds., *Proliferation and Export Controls* (Lanham, Md.: University Press of America, 1993), pp. 39–48.

19 Critics have charged that preventing development and economic competition is actually the goal of the export control regmies. Indian scholar Brahma Chellaney, for example, has argued that "The non-proliferation policies of Western powers are founded on a strategy of preventing Third World development of technologies that might impinge on the Western powers' military and economic interests." See Brahma Chellaney, "An Indian Critique of U.S. Export Controls," *Orbis*, Vol. 38, Issue. 3 (Summer 1994), pp. 439-456.

20 In 1992, the NSG participants also issued a statement in which they declared that full-scope safeguards would be required as a condition for future transfers. See, Carlton E. Thorne, ed., *A Guide to Nuclear Export Controls 1999-2000*, second edition (Burke, VA: Proliferation Data Services, 1999).

21 The AG focused initially just on chemical weapons but later expanded its scope to include biological weapons. After the ratification of the Chemical Weapons Convention (CWC) in 1995, the Organization for Prohibition on Chemical Weapons (OPCW) was established. It is charged with the implementation of export control and verification protocols of the CWC. AG members now view the institution as aiding their efforts to meet obligations under the CWC of 1993 and the Biological and Toxin Weapons Convention (BTWC) of 1972.

weapon articles, it also seeks to ensure that legitimate trade is not inhibited.[22]

U.S. concerns regarding the proliferation of space-launch capabilities and a series of events in the late 1970s and early 1980s, including a South Korean ballistic missile test in 1978 and India's successful launch in July 1980 of its Satellite Launch Vehicle (SLV)-3, prompted negotiations on a missile control consortium. These culminated in the establishment on April 16, 1987 of the Missile Technology Control Regime (MTCR) and the release of its guidelines. The United States had been the first to conceive of missiles as a proliferation problem and had unilaterally implemented some export controls in the early 1980s.[23] Until this point, efforts to limit delivery means for WMD had been confined to arms control negotiations between the United States and the Soviet Union. The concern that other states – particularly in the developing world – could wed the growing availability of ballistic missile technology with nuclear weapons prompted U.S.-led efforts to coordinate supply-side controls. In 2002, a group of states sought to supplement missile nonproliferation efforts by adopting an International Code of Conduct (ICOC), later renamed the Hague Code of Conduct (HCOC).[24] The HCOC primarily involves voluntary confidence-building measures, and the MTCR remains the primary vehicle for missile-related export controls.

The NSG, AG, and MTCR were, like COCOM, creations of the Cold War, albeit without the dedicated targeting of export controls on the Soviet bloc. With the dissolution of the Soviet Union, COCOM's *raison d'être* disappeared. Most members, particularly European Union Member States, were eager to expand trade, with some former COCOM members pressing for its full termination.[25] However, the United States sought to create a successor regime, but with the recognition that a new regime would have to accommodate the economic concerns of the majority of member states.[26] The resulting Wassenaar Arrangement was, as noted by Michael Lipson, "created with greater concern for its effect on commerce than had characterized

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22 Amy E. Smithson, "Separating Fact from Fiction: The Australia Group and the Chemical Weapons Convention," *Occasional Paper 34* (Washington, DC: Stimson Center, March 1997); Jean Pascal Zanders, Melissa Hersh, Jacqueline Simon and Maria Wahlberg, "Chemical and Biological Weapon Developments and Arms Control," *SIPRI Yearbook 2001*; Brad Roberts, "Export Controls and Biological Weapons: New Roles, New Challenges," *Critical Review in Microbiology*, Vol. 29 (Fall 1998), pp.235-254; Benoit Morel, "How Effective is the Australia Group," in Kathleen Bailey and Robert Rudney eds., *Proliferation and Export Controls* (Fairfax, VA: National Institute for Public Policy, 1993), pp.57-68.

23 The rudiments of the MTCR were enunciated in National Security Decision Directive 70 (NSDD-70) of November 30, 1982. In addition to mandating the immediate implementation of stringent unilateral export controls on missile-related military and dual-use equipment and technology, NSDD-70 also called for simultaneously trying to multilateralize this effort among key Western supplier countries. See Scott A. Jones, "Emptying the Haunted Air: Delivery Means and the Post-Modern MTCR," in Daniel Joyner, ed., *Non-proliferation Export Controls: Origins, Challenges, and Proposals for Strengthening* (London: Ashgate, 2006).

24 Somewhat cynically, India joined the HCOC in early 2018 to enhance its MTCR membership application bid. See Dipanjan Roy Chaudhury, "India joins Hague Code of Conduct against Ballistic Missile Proliferation," *Economic Times*, July 12, 2018.

25 See Ron Smith and Bernard Udis, "New Challenges to Arms Export Control: Whither Wassenaar?" *The Nonproliferation Review*, Vol. 8, No. 2 (Summer 2001), pp. 81-92.

26 See, Kenneth A. Dursht, "From Containment to Cooperation: Collective Action and the Wassenaar Arrangement," *Cardozo Law Revie*w, Vol. 19, No. 3 (December 1997), pp. 1079-1123.

CoCom."[27] The Wassenaar guidelines and control lists were designed to promote transparency, an exchange of views and information, and greater responsibility in preventing "destabilizing accumulations" of advanced conventional weapons and related technologies.[28] States have attempted to put some restraints on conventional arms transfers into legally binding form with the UN adoption of the Arms Trade Treaty in 2013. See Figure 1 for a timeline that places the creation of the MECR in the context of other key developments.

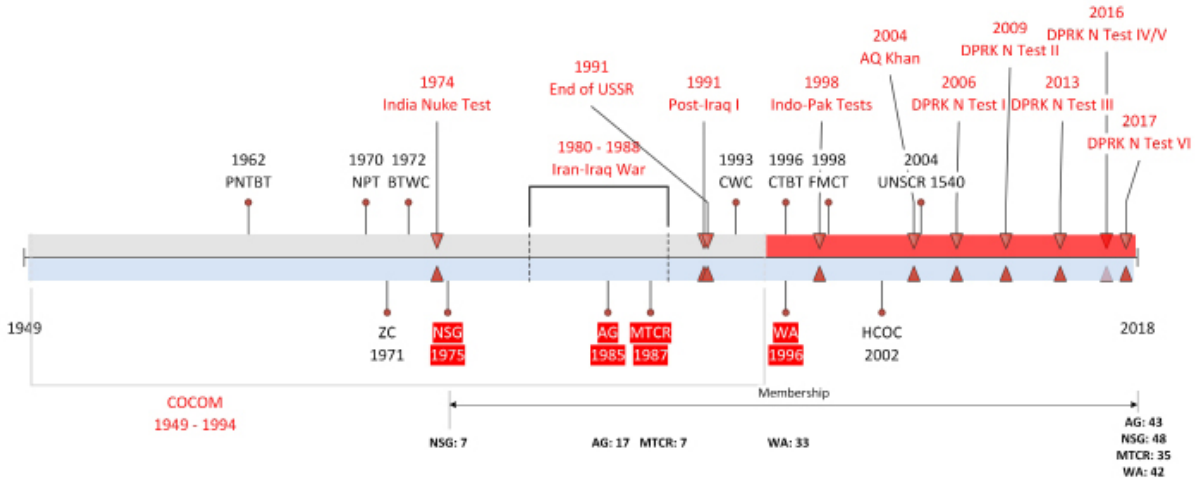

Figure 1. Relating the MECRs to key WMD-related world events

During the late 1990s and early 2000s, the study of the MECRs flourished. Numerous scholarly and government studies of the regimes canvassed a range of issues relating to MECR history, status, and effectiveness.[29] The authors were involved in one of the first major systematic studies

27 Michael Lipson, "The Reincarnation of CoCom: Explaining Post-Cold War Export Controls," *The Nonproliferation Review*, Vol. 6. No. 2 (Winter 2009).

28 Richard T. Cupitt and Suzette R. Grillot, "COCOM is Dead, Long Live COCOM: Persistence and Change in Multilateral Security Institutions," *British Journal of Political Science*, Vol. 27 (1997).

29 See, for example, Kenneth A. Dursht, "From Containment to Cooperation: Collective Action and the Wassenaar Arrangement," *Cardozo Law Review*, Vol. 19, No. 3, December 1997, pp. 1079-1123; Michael Lipson, "The Reincarnation of COCOM: Explaining Post-Cold War Export Controls," *The Nonproliferation Review*, Vol. 6, Issue 2 (Winter 1999); Michael Beck, "Reforming the Multilateral Export Control Regimes," *The Nonproliferation Review*, Vol.7, No. 2 (Summer 2000); Study Group on Enhancing Multilateral Export Controls For US National Security: Final Report, April 2001 (Washington, DC: Henry L. Stimson Center); United States General Accountability Office (GAO), "Strategy Needed to Strengthen Multilateral Export Control Regimes," GAO-03-43, September 2003; Lewis Dunn, et al., "Final Report: Strengthening Multilateral Suppliers Regimes: Challenges, Responses, and Possible U.S. Initiatives," Advanced Systems and Concepts Office, Defense Threat Reduction Agency, DTRA 01-00-D-0003/DO 21, July 26, 2005.

of the regimes. This University of Georgia study combined survey data with regime theory to conclude that the regimes were suboptimal organizations given their structural constraints (e.g., informal, voluntary organizations composed of increasingly diverse Member States). The next sections of this article examine the evidence for such a conclusion.

Most prior studies have emphasized what they see as basic limitations of the regimes, including their informality, consensus decision making rules, lack of enforcement capability, vague membership criteria and provisions, and inadequate transparency.[30,31] Galhaut and Zaborsky, for example, argued that MTCR and NSG effectiveness were being undermined by the inclusion of both more and increasingly diverse states.[32] They argued that cartel-like informal organizations, as illustrated by the initial membership of the AG, NSG, and MTCR, are inappropriate for larger, politically diverse memberships, some of whom are not actually supplier states. In a similar vein, the U.S. General Accountability Office (GAO) noted that the regimes were constrained in achieving their nonproliferation missions by limited information sharing, uneven and timely adoption of control list changes, and disparate levels of export control capabilities amongst regime members.[33]

From 2003-2004, a University of Georgia (UGA) study undertook the first – and until that time the only – systematic assessment of the MECRs.[34] The UGA study identified several problems with the regimes. First, the requirement for unanimity in all decision, coupled with divergent perspectives on security among the Member States, was slowing the emergence of new nonproliferation norms. Even a single member could hold up efforts to modify regime

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30 For instance, members of the Wassenaar Arrangement, which seeks to prevent "destabilizing accumulations" of arms by regulating transfers by suppliers, have been unable to define, to the satisfaction of all parties, what the term "destabilizing accumulation" means. See Kenneth A. Dursht, "From Containment to Cooperation: Collective Action and the Wassenaar Arrangement," *Cardozo Law Review*, Vol. 19, No. 3 (December 1997), pp. 1079-1123.

31 While not an exhaustive list, the above noted limitations represent a consensus view across MECR studies. See, in particular, Michael Beck and Seema Gahlaut, "Creating a New Multilateral Export Control Regime," *Arms Control Today*, April 1, 2003, <https://www.armscontrol.org/act/2003_04/beckgahlaut_apr03>.

32 Seema Galhaut and Victor Zaborsky, "Do Export Control Regimes Have Members They Really Need?" *Comparative Strategy*, Vol. 23 (Summer 2004), pp. 73–91.

33 United States General Accountability Office (GAO), Strategy Needed to Strengthen Multilateral Export Control Regimes, GAO-03-43, September 2003.

34 Concerns about the efficacy of multilateral export control efforts mounted during the 1990s, prompting The University of Georgia Center for International Trade and Security (CITS) to undertake a comprehensive, multiyear study aimed at evaluating and strengthening multilateral export control regimes, helping them meet new nonproliferation challenges, and attain their objectives. In carrying out this study, researchers from the Center interviewed and surveyed over 100 officials and nongovernmental experts around the world. This exploratory research was followed by intensive off-the-record discussions at two workshops in Washington, DC, USA and Copenhagen, Denmark. The preliminary findings of the study were published in two reports: *Strengthening Multilateral Export Controls: A Nonproliferation Priority* (December 2002) and *Restructuring Multilateral Export Controls: A New Regime for the 21st Century* (November 2003). Subsequent studies by the authors include: Michael D. Beck, "Creating a New Multilateral Export Control Regime," *The Nonproliferation Review*, Summer 2000, pp. 91-103, Daniel H. Joyner, "Restructing the Multilateral Export Control Regime System," *Journal of Conflict and Security Law*, Vol. 9, No. 2 (2004), pp. 181–211; and Michael Beck and Seema Gahlaut, "Creating a New Multilateral Export Control Regime," *Arms Control Today*, April 1, 2003, <https://www.armscontrol.org/act/2003_04/beckgahlaut_apr03>.

standards indefinitely. Second, Member States were either not sharing information (e.g., on denials and end-users of concern) or not providing information in a timely manner. Third, members' implementation or enforcement of regime guidelines was vastly uneven. Finally, the regimes appeared unable to adequately reformulate rules and norms to deal with technological developments and increased dual-use trade.

Beyond these institutional and political problems, the UGA study had identified a major structural weakness: redundancy. The four regimes worked separately to perform essentially the same multilateral export control functions: establish best practices in the area of enforcement, identify end-users of proliferation concern, and address emerging proliferation issues such as terrorism. The repetitious agenda of meetings held under each regime, as well as the effort of maintaining four separate and nonintegrated information-sharing systems, wasted both scarce funds and the time of the personnel who administer the regimes. The MECRs have maintained this structure to date. But, it is not clear that this structure is sustainable or desirable in the coming decades in light of the changing geopolitical and technological circumstances enumerated earlier.

Limitations of the Existing Multilateral Control Regimes

Informality

The multilateral export control regimes represent a particular type of international institution: informal consultative arrangements best suited for coordinating policies among a small number of *like-minded* countries. During the Cold War, when the export control regimes (save the Wassenaar Arrangement) emerged, they were comprised of a small number of like-minded countries. However, the regimes have grown over the last dozen years to include an increasing number of countries, both supplier and non-supplier, with different security outlooks and interests. And the growth has come without a corresponding increase in the formality and institutionalization of the regimes. Unfortunately, without increased institutionalization and creation of more formal structures (along with changed procedures, to be discussed below), the nonproliferation regimes may no longer be efficient nonproliferation mechanisms.

The current problems of the control regimes, such as vague provisions, uncertain membership criteria, and inability to effectively harmonize control mechanisms across the entire membership are results of the lack of structure within the arrangements. As noted, the export control regimes were designed to be consultative gatherings by which a small number of like-minded suppliers could coordinate export control policies. Hence, there was no need to institutionalize what in essence was already *de facto* agreed upon: the source of threat. The collapse of the Soviet Union and admission of new members—many of whom were former targets of controls—has highlighted the limitations of such organizations. If the members do not share common interests or have much in the way of common identities or common political, economic, and social structures, informal ways and means of establishing goals and agendas become less

effective in coordinating efforts to slow proliferation. [35]

Some officials also noted that the informal nature of the control regimes is problematic given various regime guidelines and provisions that are vague and open to a range of interpretations. Members of the Wassenaar Arrangement, which seeks to prevent "destabilizing accumulations" of arms by regulating transfers by suppliers, have been unable to define, to the satisfaction of all parties, what the term "destabilizing accumulation" means.[36] Likewise, they have been unable to determine officially that conventional weapons trade would potentially destabilize any region. As a result, Member States are forced to rely on norms created outside of the regime (e.g., the declaration of an embargo on warring parties by the UN Security Council), or their own national decision-making rules. The former mechanism is, of course, prone to veto by a non-Wassenaar member, China. The latter obviously makes a multinational regime irrelevant if countries no longer consider coordinating their policies.

In the absence of binding and consistent interpretations of the guidelines, countries are able to adjust their export policies to meet other economic or policy goals that may conflict with the intent of the multilateral regimes. There are also no formal mechanisms to resolve differences in how the guidelines are interpreted by Member States. This situation is a further indication of the limitations of informal control regimes. Finally, harmonized effort is also a problem within the export control regimes. Export control officials note that because the multilateral control agreements are informal and implemented at the discretion of national governments, one cannot speak of compliance with or violations of the regimes. According to one official, one can only speak of a country permitting exports that are "inconsistent" with regime guidelines. Unfortunately, according to many of those interviewed, the informal status of the regimes leaves members with few effective tools (persuasion being of limited utility with certain members) to promote uniformity of interpretation of the regime guidelines.[37] And without such uniformity, export control regimes will continue to fail to live up to their potential.

Although the above criticisms are widespread, government officials, in an earlier study, indicated that they believed that the multilateral export control regimes should not be disbanded entirely. Many were strongly supportive of the multilateral efforts, indicating that the opportunity to debate the interpretation of regime guidelines, share information, or discuss national export

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35 Macur Olson Olson emphasized the influence of group size on the fixed costs of collective provision, noting that transaction costs increase with group size, further raising the costs of sustaining collective action. This is particulary the case in organizations with high degrees of member interest heterogeneity. As such, he also poisted that the degree of sub-optimality in collective provision would increase with group size. See, Mancur Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups* (Cambridge, MA: Harvard University Press, 1965).

36 The term "destablizing accumulations" is referenced in the "Initial Elements" of the Wassenaar Arrangement, one of the Arrangement's foundational documents. Not only is it difficult to define what a "destabilizing acquisition" of weapons entails, but some, like Colin Gray, argue that the concept itself is incoherent: a category mistake, since it is governments, not weapons, that cause war. See Colin S. Gray, *House of Cards: Why Arms Control Must Fail* (Ithaca, NY: Cornell University Press, 1992). See also Ron Smith and Bernard Udis, "New Challenges to Arms Export Control: Whither Wassenaar?" *The Nonproliferation Review*, Vol. 8, Issue 2 (Summer 2001), pp. 82-32, p. 82.

37 Interviews are drawn from authors' recent research (2017- November 2018) and on the 2002 and 2003 University of Georgia reports. See fn. 32.

control efforts is important in advancing supply-side norms.[38] In the authors' past and current interviews, it is clear that regime participants see the regimes as valuable forums for building a common, cooperative-security mindset among members. These officials are quick to point out that the nonproliferation regimes cannot operate unless a significant number of the major suppliers take part, and since certain major suppliers have both varying threat perceptions and varying abilities to commit resources to export controls, differences among regime members are endemic. The imperative to bring non-like-minded members into the fold means that the arrangements must continue to focus on norm creation and convergence, with the more liberal and cooperative members working hard and devoting significant resources to instilling these norms in the newcomers.[39]

Consensus Rules

Consensus rules represent a particularly intractable problem for all of the export control regimes. The regimes, which require unanimous votes to make or change policies, lists, or structures, are thus poorly equipped to handle the increased number of member countries, especially when those countries have significantly different concerns regarding the downsides of free trade in sensitive technologies. Because of consensus rules, efforts to further enhance the effectiveness of these regimes can be effectively blocked by any member, and, unfortunately, this is not uncommon (especially in the Wassenaar Arrangement).[40] The West's increasingly antagonistic relationship with Russia suggests that consensus on regime changes in the years to come will be hard to come by.

A common refrain among the government officials that were interviewed was that the regimes could not *do anything* because one or two recalcitrant members hold them hostage. These problem members cannot be removed from the existing regimes since such decisions also require consensus (and they presumably would not vote for their own removal). According to many regime participants, the need for consensus and the infrequency with which consensus is attained makes the regimes slow to react to intelligence about new military applications of existing technologies, new channels of illicit technology acquisition adopted by proliferators, and emerging threats to international security.[41] Intelligence is likewise constrained by growing mistrust amongst key participants (e.g., United States and Russia). Also, delays in decontrolling obsolescent technologies from regime control lists are common and subject to intense public

38 Joyner, Daniel H. "Restructing the Multilateral Export Control Regime System," *Journal of Conflict and Security Law*, Vol. 9, No. 2, 2004, pp. 181–211.

39 An in-depth examination of the membership problem as it pertains to the MTCR is found in Scott Jones and Victor Zaborsky, "Missile Proliferation and the MTCR: The Nth Member and Other Challenges," Occasional Paper, Center for International Trade and Security, Athens: University of Georgia, 1997. See also Aaron Karp, "Stemming the Spread of Missiles: Hits, Misses, and Hard Cases," *Arms Control Today*, 42 (3), April 2012, <https://www.armscontrol.org/act/2012_04/Stemming_the_Spread_of_Missiles_Hits_Misses_and_Hard_Cases>.

40 Samuel Evans, "Technological Ambiguity & the Wassenaar Arrangement," New College University of Oxford, A thesis submitted for the degree of Doctor of Philosophy Trinity Term 2009, pp. 305-7 <https://core.ac.uk/download/pdf/28875216.pdf>.

41 Authors' interviews, Washington, Paris, Beijing, and Buenos Aires, August-November 2018.

pressure from industry.[42]

Ultimately, the authors view the consensus rules of the nonproliferation export control regimes as severe handicaps to the realization of the nonproliferation goals of the Member States. With little ability to adapt to new realities, and no ability to remove members who threaten the security of all members by their individually deviant behavior, the regimes could potentially come to *undermine*, rather than bolster, international security.

Lack of High-Level Political Support

Mid-level government officials administer the current export control mechanisms. These officials have a tremendous store of practical and substantive knowledge about national export control mechanisms. Wherever there is continuity of personnel in the bodies designated to oversee export controls, an in-depth understanding of how the multilateral regimes operate usually exists. In many countries, one official attends several or all of the meetings of the export control arrangements, in addition to implementing the day-to-day tasks associated with export controls. While this indicates that resources for the export control bureaucracy are indeed scarce, it does have the effect of giving these particular officials a broad knowledge of the multilateral regimes. However, even in countries with export control bureaucracies built around a division of labor (e.g., with different representatives attending meetings of the four regimes), many officials feel overworked and indicate that it is difficult to keep up with all of the meetings in addition to their responsibilities within their national systems. In short, even though nonproliferation export controls are widely deemed to be one of the most important bulwarks in the international security system, they have not been given attention or resources commensurate with their importance by many governments.

Without high-level officials' knowledge of the efficacy of export controls, as well as political support reflecting the high priority placed on export controls in the foreign policies of the Western countries, mid-level bureaucrats assigned to handle the technical issues and diplomacy related to the regimes are unable to clear away obstacles to cooperation. Several of those whom the authors interviewed indicated that instances of Russian intransigence were likely to increase in the current political environment, particularly in the absence of significant political leverage, thereby disincentivizing the pursuit of compromise strategies.

Finally, the lack of high-level attention to export controls may indicate to both member and non-member countries that nonproliferation export controls are not considered a priority among the leading states in Europe, the U.S., and Japan. This has obvious counter-productive implications and effects on efforts by mid-level officials who are trying to help other countries develop fully capable export control systems.

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42 The recent policy debates in the United States, for example, regarding drone exports highlight the challenges facing slow-moving regime control parameters. See Daniel Cebul, "Strict Export Regulations May be Costing U.S. Industry Billions in Foreign Sales," *Defense News*, June 18, 2018.

MTCR Case Study

In response to the increasing use of drones in a range of applications, President Obama announced a significantly revised drone export policy in 2015 to little practical effect. In May 2018, President Trump undertook a similar policy initiative, with sceptics noting its limited prospects.[43] Meanwhile, Chinese and Israeli drone exports, commercial and military, have come to dominate the global market.[44] Both China and Israel are not MTCR members. U.S. export constraints are predicated upon the antiquated MTCR control parameters which the current administration is also trying to modify.[45] When the MTCR was established, drones were less sophisticated and ubiquitous. Today, drones are complex delivery platforms more akin to manned aircraft than ballistic or cruise missiles. Nevertheless, drones are controlled as such. Michael Horowitz, an associate professor of political science at the University of Pennsylvania, contends that "regulating the export of drones and drone parts using range and payload standards relevant for missiles represents a mismatch between technology and reality, which could have negative effects (on the regime)."[46] The complexities presented by drones represent some of the more salient challenges confronting contemporary "missile" nonproliferation efforts, undertakings that have traditionally centered upon the Missile Technology Control Regime.

Consensus Rules and Growing Membership

The MTCR has expanded nearly five-fold since 1987. Some have argued that membership expansion increases the representational value of the MTCR and nominally broadens the international norm against missile proliferation. Others fear, however, that adding new members with disparate security interests will make it more difficult for the MTCR to reach consensus on addressing emerging challenges, in particular, the need to control new underlying technologies that will enable the growth of missile proliferation in the next two decades.

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43 Sarah Kreps, Separating Fact From Hype in Trump's New Policy on Drone Exports, *World Politics Review*, May 11, 2018. See also, Lisa Seligman, "Trump's Push to Boost Lethal Drone Exports Reaps Few Rewards," *Foreign Policy*, December 6, 2018.

44 Sharon Weinberger, "China Has Already Won the Drone Wars," *Foregin Policy*, May 10, 2018 and Josh Meyer, "Why Israel dominates global drone exports," *Quartz*, July 2013.

45 The basic two-part MTCR technical annex has not been amended since 1987. While items have been added and removed, the underlying Category system is intact. Since at least 2002, the U.S., in particular, has attempted to revise the Category system. For example, in 2002, President George W. Bush enacted National Security Presidential Directive (NSPD) 23: National Policy on Ballistic Missile Defense in order to facilitate the transfer of ballistic missile defense systems to allied countries. Fundamentally, NSPD sought to modify Category control parameters and the corresponding "presumption of denial" licensing disposition.

46 Michael Horowitz, "Drones Aren't Missiles, so Don't Regulate Them Like They Are," *Bulletin of the Atomic Scientists*, June 26, 2017. Horowitz further notes that "the current approach to grouping drones in the MTCR threatens to undermine the regime as a whole."

MTCR membership criteria, although they have never been officially announced, include like-mindedness and effective export controls.[47] Since 1987, the MTCR has expanded to include thirty-five countries considered important for controlling missile technology, nearly half of which are not major suppliers of missile systems. (See Table 1). In addition, a number of other countries (e.g., China, Israel, and Romania) have made unilateral statements of their intention to adhere to the MTCR Guidelines, with China formally expressing its intent to join the regime in 2004.[48] However, unilateral adoption of export control measures based on MTCR guidelines and lists is not tantamount to actual "adherent" status, as Member States have independent policies for the determination an official adherence. For example, the United States recognizes adherent states only after a bilateral accord has been reached. Furthermore, adherence has not curtailed the missile and drone exporting activities of key suppliers like Israel and China.

Year	Total Members	Members
1987	7	Canada, (West) Germany, France, Italy, Japan, UK, U.S.
1990	13	Spain, Belgium, Luxembourg, Netherlands, Australia, Denmark
1991	18	Norway, New Zealand, Austria, Sweden, Finland
1992	22	Portugal, Switzerland, Ireland, Greece
1993	25	Iceland, Argentina and Hungary
1995	28	Russia, South Africa, Brazil
1997	29	Turkey
1998	32	Czech Republic, Poland, Ukraine
2001	33	South Korea
2004	34	Bulgaria
2017	35	India

Table 2. MTCR membership

At its inception, the regime's informal membership criteria emphasized like-mindedness, effective export control laws and enforcement, and a strong nonproliferation track record and counted only exporters as members. As the MTCR has expanded to 35 members, however, its standards have eased, allowing countries to be admitted which are not like-minded (e.g. Russia), do not completely share the same nonproliferation ideals as the original members (e.g. Ukraine), and are not even exporters (e.g. Iceland).[49]

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47 Richard Speier, "Russia, Ukraine, and the Nth Member Problem," in "Missile Proliferation and MTCR: The Nth Member and Other Challenges," Occasional Paper, Center for International Trade and Security, University of Georgia, June 1997, pp. 6–7.

48 See See, Scott A. Jones, "Emptying the Haunted Air: Delivery Means and the Post-Modern MTCR," in Daniel Joyner, ed., *Nonproliferation Export Controls: Origins, Challenges, and Proposals for Strengthening* (London: Ashgate, 2006).

49 Moreover, over the past two years of the Trump Administration, it is clear that U.S. foreign and security policies, including nonproliferation interests, do not align neatly with other member countries. The most obvious examples include differences between the United States and EU countries with respect to Iran and the JCPoA, and conflicting interests of the United States and Russia.

Rather than the more standardized criteria of the past, admission of new members to the MTCR today has become a bargaining process involving political and commercial tradeoffs and side payments. So, whether or not China, for example, joins the MTCR is going to depend largely on what demands the current members and Beijing bring to any accession negotiation and the prospects that they can be realized or surrendered.[50]

Although one of the principal objectives of the regimes is to coordinate or harmonize national policies, it is clear that some countries are not implementing and enforcing export controls in a manner consistent with their nonproliferation objectives. Aside from the United States and some of the larger supplier states, for instance, few countries are actually imposing civil or criminal penalties for export control violations. This suggests that enforcement is lacking. Indeed, various studies of national export control systems continue to show that wide discrepancies among the control systems of regime member countries persist.[51]

Inadequate Information-Sharing

Information-sharing is critical to effective multilateral control efforts. Despite extensive efforts aimed at developing information-sharing networks, MTCR members are not sharing information fully or efficiently. A study by the U.S. General Accounting Office (GAO) drew attention in particular to the failure of some states to pool information about denials of export license applications.[52] The GAO found, for example, that 65 percent of members have never reported export denials.[53] Many countries provide pre-license consultations that result in *de facto* denials. These, too, are also almost never reported to other regime members.[54] The failure to share information, or to share it in a timely manner, undercuts the ability of members to assess

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50 V. Zaborksy, "Does China Belong in the Missile Technology Control Regime?"*Arms Control Today*, Vol. 34, No. 8 (October 2004).

51 See, for example, Michael Beck, Richard T. Cupitt, Seema Gahlaut, and Scott Jones, eds., *To Supply or To Deny: Comparing Nonproliferation Export Controls in Five Key Countries* (New York: Kluwer Law International, 2003).

52 "Nonproliferation: Strategy Needed to Strengthen Multilateral Export Controls," U.S. General Accounting Office, Report to Congressional Committees 03-43, October 2002. The GAO found that the failure to share information on approvals prevents regime members from determining whether undercutting was taking place. Since the 2002 study, the regime literature has decresed. In our literature review, we have not identified a sustained and focused study on the regimes.

53 Ibid., p. 12.

54 *De facto* denials refers to the practice in several countries whereby informal consultations between the exporters and the licensing officials help exporters decide whether they should even bother to apply for a particular export license. Officials may indicate that a license for a particular export to an end-user is likely to be denied, discouraging the exporter from even applying. Several regime members have low rates of denial, according to their official statistics, because of such pre-screening. Absent the pre-screening data, fellow members may grant a license for the same item.

patterns in technology trading or acquisition and detect activities of proliferation concern.[55] Efforts to strengthen information sharing, including proposals that would have Member States report on export approvals, have met with resistance from a few regime members. The consensus rules cited above have allowed resistance from a determined minority to stall badly needed reforms in this area.

Outmoded Technological Parameters

While the initial focus of the Regime was on controlling the proliferation of nuclear-capable systems, its purview was expanded to include missiles for the delivery of chemical or biological weapons (CBW) in 1993. MTCR members have nominally agreed to exercise the most stringent control over what are referred to as Category I systems, or MTCR-class. The technical means – predicated as they are on the physical laws governing ballistic missiles – to determine this category, however, are inadequate for controlling many unmanned systems, such as cruise and loitering missiles and unmanned aerial vehicles (UAVs).[56] Moreover, the underlying technology of cruise missile and UAV systems is nearly identical with that of manned systems and therefore ubiquitous.[57] For example, more than 80 countries today have cruise missiles of some kind. Eighteen of these countries manufacture cruise missiles domestically. The remaining 63 countries import these weapons.[58]

While the MTCR has been relatively effective in limiting the spread and sophistication of ballistic missiles, its ability to control more precisely the proliferation of unmanned systems

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55 Unfortunately, most regime discussions are truly black boxes. For example, in a 2011 interview, NSG Chair Ambassador Piet de Klerk observed: "It's clear there is a tension between transparency on the one hand and confidentiality on the other. We have formulated a number of guidelines about communication and stronger relationships with different stakeholders, be it media, be it civil society. This interview is part of that thinking. But how far you can go in discussing sensitive issues like the Chinese supplies and whether India should become a member remains to be seen. You can't be too specific about debates that are still under way and are not finished yet." "The NSG in a Time of Change: An Interview With NSG Chairman Piet de Klerk," *Arms Control Today*, October 2011 <http://www.armscontrol.org/act/2011_10/Interview_NSG_Chairman_Piet_de_Klerk>.

56 The flexibility of cruise missiles to trade off payload and range configurations makes agreement on how to calculate capabilities difficult. Moreover, overlapping military and civilian technology increases pressure to allow technology exports. Ballistic missiles do have a civilian counterpart technology – space launch vehicles – but the technologies are not nearly as ubiquitous as they are for UAV technologies in the aircraft industry. See National Air and Space Intelligence Center (NASIC), "Ballistic and Cruise Missile Threat," NASIC-1031-0985-17, June 2017.

57 There is no universally accepted definition of cruise missiles, but they can be categorized as unmanned aerial vehicles (UAVs) that are a) continually powered by an air-breathing or rocket engine; b) generally guided for their entire flight; c) weaponized; and d) generally optimized for one-way missions. This contrasts with weaponized UAVs such as the Predator, that can perform multiple missions, but they are treated similarly under the MTCR.

58 See United States Air Force, "2017 Ballistic and Cruise Missile Threat Report," National Air and Space Intelligence Center June 2017 and International Institute for Strategic Studies (IISS), *The Military Balance* (Routledge: London, 2017).

is insufficient.[59] Although most cruise missile sales to date have been of relatively short-range anti-ship systems, it is clear that ranges are increasing. Moreover, the ease with which anti-ship systems can be converted to the land-attack role suggests that LACM inventories could readily increase. The land attack-capable Taiwanese *Hsiung Feng* II, for example, which has been offered for export, is effectively a reverse engineered U.S. *Harpoon* ASCM. The relative simplicity of cruise missile technology and the increasing availability of technologies, such as the Global Positioning System (GPS), mean that an increasing number of countries are acquiring the ability to develop land attack cruise missiles. Category I type controls will be further outstripped by growth in air vehicle types and applications. As a result of the inflexibility of current MTCR controls, proliferators can purposely design systems to circumvent Category I controls, such as the Indo-Russian "Brahmos" supersonic anti-ship cruise missile (ASCM).[60]

Conclusion

The multilateral export control regimes have made important contributions in defining what items can make a contribution to WMD or have military significance and should thus be regulated. The lists of the regimes have become the *de facto* international standard for most all states establishing comprehensive control systems. The regimes have also helped to develop and disseminate export norms and practices for trade in listed items. And finally, they have provided fora for sharing of best practices in implementing controls at a national level.

According to regime theorist Arthur Stein, "[R]egimes are maintained as long as the patterns of interest that gave rise to them remain."[61] The shortcomings of the regimes as noted above stem from both external and internal shortcomings. Internally, the regimes are stymied by an informal structure that allows some member governments to flout the norms, consensus rules that slow efforts to reform, discretionary implementation, and members with increasingly divergent interests that run against the original idea of having "like minded" countries. External challenges abound as the regimes have not shifted to deal with the acquisition methods of sub-state groups, nor responded to realities of global technology creation and movement, nor responded to growing concerns about new "emerging technologies" that remain unregulated. New geopolitical realities mean that the regimes as currently constituted cannot be reformed.

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59 The Wassenaar Arrangement picks up the lower range of the capability spectrum with respect to cruise missile and UAV systems. Wassenaar, which supercedes Cold-War COCOM (Coordinating Committee) export controls, specifically regulates UAVs and UAV technology designed for military purposes. Thus, exports of cruise missiles with ranges shorter than 300 km that can carry warheads weighing less than 500 kg that are not destined for countries with WMD programs are subject to restrictions under Wassenaar. However, Wassenaar includes exceptions, as does the MTCR, for technologies and components intended for manned aircraft.

60 "Why Brahmos Sale To Vietnam Is No Violation Of Missile Technology Control Regime Commitment," *Outlook*, August 23, 2017 <https://www.outlookindia.com/website/story/why-brahmos-sale-to-vietnam-is-no-violation-of-missile-technology-control-regime/300671>.

61 Common interests can evolve from regimes predicated upon common aversioin and vice versa. In some respects, it can be aruged that the MECR, with changes in membership, have evolved from regimes created to address dilemmas of common interest. Arthur A. Stein, "Coordination and Collaboration: Regimes in an Anarchic World," *International Organization*, Vol. 36, No. 2 (Spring, 1982), pp. 299-324.

The United States is increasingly focusing its export controls on denying China access to dual-use items and a range of emerging and foundational technologies that have yet to be defined.[62] Russia is now another principle target of U.S. sanctions and U.S. export controls, yet is a member of three of the four regimes.[63] The U.S. decision to withdraw from the Joint Comprehensive Plan of Action (JCPoA) with Iran has resulted in a rift between the United States and all other parties to the deal, including the European Union. As such, U.S. efforts to sanction and to impose restrictions on trade with Iran lack support from even traditional U.S. allies. Simply put, there is very little like-mindedness amongst key members of the multilateral export control regimes.

At present, the MECRs can be located within a "nonproliferation regime complex" (see Figure 2).[64] Colgan, Keohane, and Van der Graaf describe the process of regime complex innovation as resulting from dissatisfaction with the *status quo* in an issue area, such that new regimes may emerge within a complex to address emerging problems.[65] Institutional stasis is a function of interest divergence. As noted by Keohane, et al., "As the dissatisfaction of a given issue-area decreases, the regime complex is likely to become frozen, retaining the structure that it developed during the previous period." Transcending the impasse, regime innovation can be described as proceeding via a "punctuated equilibrium" model of development: long periods of institutional stasis interrupted by sudden bursts of innovation.[66] The prompt for institutional change arises when levels of dissatisfaction are acute and shared by powerful states.

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62 See, for example, The United States-China Economic and Security Review Commission, "2018 Annual Report to Congress," November 4, 2018, <https://www.uscc.gov/Annual_Reports/2018-annual-report>.

63 For example, on August 2, 2017, President Trump signed into law the "Countering America's Adversaries Through Sanctions Act." See <https://www.treasury.gov/resource-center/sanctions/Programs/Pages/caatsa.aspx>.

64 Where interests and power are fragmented, incentives for cooperation often lead to what Kal Raustiala and David Victor have called "regime complexes." In their terms, a regime complex is "an array of partially overlapping and nonhierarchical institutions governing a particular issue area." See, K. Raustiala, and D. Victor, "The Regime Complex for Plant Genetic Resources," *International Organization*, Vol. 58, No. 2, Spring 2004, pp. 277–309.

65 See, Jeff D. Colgan, Robert O. Keohane, and Thijs Van de Graaf, "Punctuated Equilibrium in the Energy Regime Complex," *The Review of International Organizations*, Vol. 7, Issue 2 (June 2012), pp. 117-143.

66 "Regime complexes, like other institutions, will be sticky in the sense that they are hard to change. As a result, we expect changes in regime complexes to exhibit a pattern of punctuated equilibrium, driven by sporadic trigger events and dissatisfaction among major states." Ibid., p. 4. In many respects the MECR are "innovations" of the nonproliferation regime complex, emerging in response to critical international events for which the treaties were necessary but insufficient solutions to WMD proliferation.

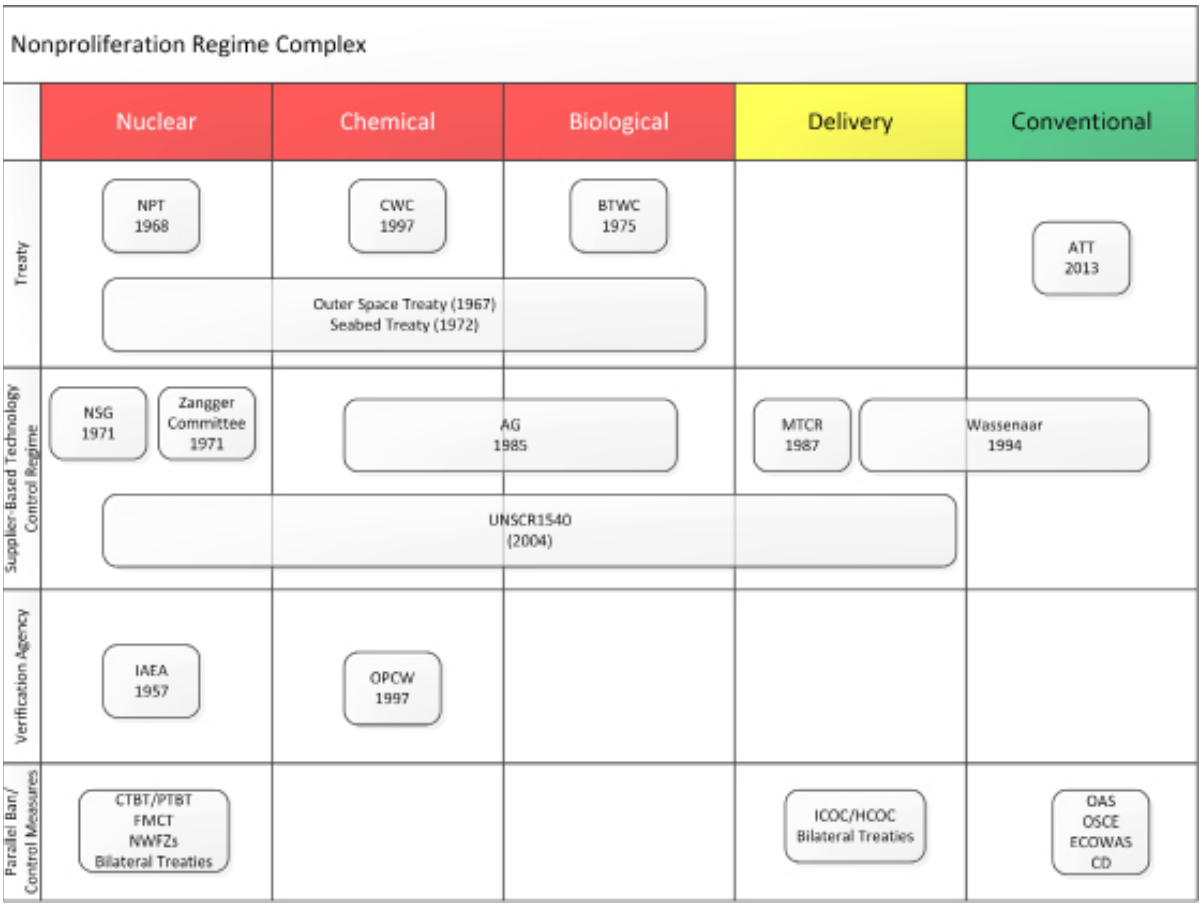

Figure 2. The nonproliferation regime complex

Given these realities, what can we expect from these informal institutions? Given that all the regimes perform similar functions with respect to defining control lists, sharing information, and establishing best practices, one approach would be to coordinate these efforts at one forum. This would mean that rather than having technical experts meet at four different venues to review lists, it would be done at one venue, albeit with different working groups. Another group would be dedicated to coordinating and defining best practices relevant to all the regimes (e.g., brokering, intangibles, transit/transshipment controls) and, to the extent that it is still possible, share information on activities of proliferation concern. The benefits of such an approach are to preserve the key functions that the regimes have played while minimizing transaction costs.

At the same time, the forum for the regimes might serve as a focal point for creating new regimes and to hold other multilateral consultations on controlling strategic trade. For example, a regime might focus on establishing best practices for UN sanctions implementation being open to a wider array of countries. It might work to establish a set of common forms (e.g. end-user certificates) to help lower the growing trade compliance costs for global companies. If members of the Wassenaar Arrangement are unable to agree on a new range of "emerging technologies" to regulate, a new informal agreement or group might be negotiated to regulate or monitor such trade. Such a regime might involve a smaller set of states that can find common ground. Simply put, the idea would be to create a forum or gathering site for establishing norms and guidelines for regulating or monitoring trade in a wider array of "strategic" items and for sharing information on such trade. This approach recognizes geopolitical realities (diverging

national security interests of major powers) while also allowing for efficient multilateral export control coordination to the extent possible.[67]

Regardless of what approach is taken, the international community is approaching a period of increased complexity in trade controls. Now more than ever, major trading states are turning to export controls and sanctions as tools of "economic statecraft" designed to achieve national security objectives. Those objectives are rarely aligned, especially as "national security" is coming to be defined in terms of "economic security."[68] A failure of the United States and others to pursue greater coordination, however, risks creating a morass of controls that businesses will not be able to navigate. Current U.S. unilateral export control and sanctions efforts in particular may restrict U.S. trade and international transactions that have served to advance the U.S. economy for decades. As such, the Trump Administration may wish to recognize the limits of "America First" when it comes to managing strategic trade.[69]

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67 See Michael Gilligan, *The Transactions Costs Approach to International Institutions. Power, Interdependence and Nonstate Actors in World Politics* (Princeton: Princeton University Press, 2009).

68 As noted in the 2017 National Security Strategy, "We stood by while countries exploited the international institutions we helped to build. They subsidized their industries, forced technology transfers, and distorted markets. These and other actions challenged America's economic security." National Security Strategy of the United States of America, 2017.

69 For example, see Jeffrey Lewis, "American Hypocrisy Is Harming Nonproliferation Efforts," *Foreign Affairs*, October 2, 2018.

The Center for Information on Security Trade Controls (CISTEC) Export Control Model of Japan: Role, Utility, and Management

CISTEC[1]

Abstract

This article focuses on the role, utility, and management of Japan's Center for Information on Security Trade Controls (CISTEC) model. The article provides analysis on CISTEC's development, mission, human resources, and financial structure. The article then explains CISTEC's impact on Japan's Ministry of Economy, Trade, and Industry (METI), other government agencies, and industry. The article concludes by identifying new and future challenges for CISTEC and providing several observations regarding the uniqueness of the CISTEC model.

Keywords

Japan, export controls, Center for Information on Security Trade Controls (CISTEC), Asia, capacity-building, Ministry of Economy, Trade, and Industry (METI)

Introduction

Recently, significant attention has been given to Japan's Center for Information on Security Trade Controls (CISTEC) due to its development of a "CISTEC model" or "Japanese model" for export control cooperation. Requests for participation in various international export control seminars and conferences and information about the role and function of CISTEC have been conspicuously increasing. There are two reasons for this increased interest. First, international partners have indicated that the model can be helpful for establishing and enhancing export controls in their countries. Second, there are few similar organizations that exist worldwide. This article explains the factors that contribute to the effectiveness of the CISTEC model in

1 CISTEC is a non-profit and non-governmental organization specializing in export controls in Japan. This article was co-written by CISTEC's management.