

Chapter 1

Multilateral Export Control Regimes: Operations, Successes, Failures and the Challenges Ahead

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The international non-proliferation community has been grappling with a number of challenges over the past few years. Recent research suggests that terrorist groups are becoming interested in acquiring weapons of mass destruction (WMD), that state actors continue to remain interested in developing latent WMD capability (if not the weapons themselves), and that the black market in materials and technologies that can assist both types of actors in this quest continues to thrive. This situation persists even as we see a growth in the number of international agreements and initiatives to control the proliferation of nuclear, chemical, biological weapons and missiles. Within these, the agreements to regulate trade and transfers of sensitive dual-use technologies have been under maximum strain. Globalization of liberal free market ideology, the diffusion of advanced technologies to an ever larger number of states, and the transnationalization of the high-tech industry have together created an environment where controls on export of sensitive technologies are hard to legislate upon, and even harder to implement and enforce at the national level. Reaching and sustaining export control agreements between nations has become correspondingly more difficult. Despite these trends, the four major multilateral export control regimes: the Nuclear Suppliers Group (NSG), the Missile Technology Control Regime (MTCR), the Australia Group (AG) and the Wassenaar Arrangement (WA) have survived, and are engaged in efforts to re-equip themselves to face the changed environment (see Table 1.1). In order to assess whether, and to what extent, they will succeed in their mission, we must examine their origins, operations, successes and failures.

Origins of Multilateral Export Control Coordination and Cooperation

The first post-Second World War attempt to coordinate export controls resulted in the establishment of the Coordinating Committee on Multilateral Export Controls (COCOM) by the United States and its allies. Yet the objective of export controls in COCOM was not the prevention of WMD proliferation in general: the focus was

primarily on denial of technology to the opposing Communist Bloc – the Soviet Union, China and members of the Soviet-led alliance.¹ In time, the focus expanded to include states that were either considered sympathetic to the Communist ideology or were deemed to be potential conduits of western technology to the Communist Bloc.

Within two decades of the formation of COCOM, during the late 1960s, negotiations on the Nuclear Non-proliferation Treaty (NPT) produced near-identical drafts from the United States and the Soviet Union regarding the broad contours of the proposed treaty: the two ideological adversaries recognized their common interest in preventing the proliferation of nuclear weapons technology to other states. The final form of the NPT text, however, had no specifics on how to implement and enforce Article 2 commitments.² Suppliers within the NPT formed the Zangger Committee to create guidelines on regulating nuclear exports within the mandate of NPT.³

The nuclear test by India in 1974 necessitated the creation of an alternate arrangement that would regulate nuclear trade *more strictly* than the NPT-bound Zangger Committee. Thus was born the first of the multilateral export control regimes in 1975: the London Suppliers Club – later renamed the Nuclear Suppliers Group (NSG).⁴ Subsequently, two other parallel regimes came to be established: the Australia Group (AG) to regulate trade in chemical and biological technologies in 1985⁵ and the Missile Technology Control Regime (MTCR) in 1987.⁶ The fourth regime, the Wassenaar Arrangement (WA) was established in 1995 (Smith and Udis 2001, 81–92). It was a refurbished and updated successor to the COCOM which, by 1993, had already lost its *raison d'être* as the primary targets of this regime – the Soviet Union and the Warsaw Pact – disintegrated.

Table 1.1 The Four Multilateral Export Control Regimes⁷

The Nuclear Suppliers Group (NSG) is an informal agreement established in 1975. Currently, 45 states are members (with the European Union as an observer). NSG members agree to common guidelines governing exports of nuclear materials, technologies and related equipment. NSG seeks to ensure that civilian nuclear trade does not contribute to nuclear weapons acquisition. The Group's actions are viewed as complementary measures in support of the 1971 Nuclear Non-Proliferation Treaty and the 1954 International Atomic Energy Agency (IAEA). The IAEA first published the NSG guidelines on nuclear export in 1978. There are two sets of NSG Guidelines: the first one governs the export of items that are especially designed or prepared for nuclear use, while the second one includes items that can make a major contribution to an unsafeguarded nuclear fuel cycle or nuclear explosive activity, but which have non-nuclear uses as well. The Group has no charter or constitution. It operates by consensus. Members voluntarily adhere to the guidelines, and share information on nuclear proliferation concerns. Recently, NSG members have begun to consider proposals for responding to the threat posed by nuclear terrorism. Website: <www.nsg-online.org>.

Table 1.1 continued

The Australia Group (AG) is an informal agreement established in 1984. Currently, 39 states are members (with the European Union and Singapore as observers). AG members agree to common guidelines governing chemicals, pharmaceuticals and pathogens, and related technologies and equipment. AG seeks to ensure that exporting or transshipping countries do not inadvertently assist chemical and biological weapon (CBW) proliferation. Members meet annually in Paris. The Group's actions are viewed as complementary measures in support of the 1925 Geneva Protocol, the 1972 Biological and Toxins Weapons Convention and the 1993 Chemical Weapons Convention. The Group has no charter or constitution. It operates by consensus. Members voluntarily adhere to the guidelines, and share information on CBW proliferation concerns. Recently, AG has become the first regime where members have agreed to adopt catch-all controls as a means for ensuring greater government–industry partnership in controlling sensitive exports to suspect end-users. Website: <www.australiagroup.net/>.

The Missile Technology Control Regime (MTCR) is an informal agreement established in 1987. Currently, 34 states are members. MTCR members seek to prevent the proliferation of unmanned delivery systems that may be used for delivering weapons of mass destruction. It controls exports of missiles (and related technology) whose performance in terms of payload and range exceeds stated parameters. There are two categories of items controlled. Category I includes complete systems and subsystems capable of carrying a payload of 500 kg over a range of at least 300 km, and specially designed production facilities for such systems. Category II includes missile-related components such as propellants, avionics equipment and other items used for the production of Category I systems. The Group has no charter or constitution. It operates by consensus. Members voluntarily adhere to the guidelines, and share information on missile proliferation concerns. Members meet annually in Paris. Website: <www.mtc.info/>.

The Wassenaar Arrangement (WA) is an informal agreement established in 1995. Currently, 39 states are members. WA members seek to prevent destabilizing accumulations of conventional weapons and sensitive dual-use goods and technologies. Accordingly, WA was designed to promote transparency, exchange of views and information, and greater responsibility among supplier states. The Group has no charter or constitution. It operates by consensus. Members voluntarily adhere to the guidelines, and share information on conventional weapons and dual-use proliferation concerns. The institution has no list of target countries or restricted entities, although it does (since December 2001) target 'terrorist groups and organizations, as well as individual terrorists'. There are, however, agreed lists of items: a munitions list that consists of the same basic categories of major weapons-systems as the UN Register on Conventional Weapons; and a dual-use technology list that is broken into two tiers. Tier 1, the basic list, is made up of sensitive items and technologies; and tier 2 consists of very sensitive items that are subject to more stringent monitoring. Final interpretation and implementation of these lists is left to the national discretion of participating states. There is a small secretariat located in Vienna, and there are several expert and technical working group meetings held each year in addition to the plenary in December. The Wassenaar Arrangement replaced the Cold War export control mechanism (COCOM) that sought to deny military-related articles to the Soviet Union and its allies. Website: <www.wassenaar.org/>.

Information is current as of September 2005.

There were a few common factors that formed the bases for the creation of these four regimes. Each regime arose as a response to the perceived gap in the existing formal non-proliferation treaty that regulated state behaviour with regard to a particular type of technology. Each regime sought to overcome the implementation and enforcement weaknesses in the existing arms control and non-proliferation agreements. Each defined its own practices and procedures based on the assumption of a rosy future in which the capabilities and the motivations of the target states would be contained primarily through supply-side controls and strengthening non-proliferation norms on the one hand, while on the other, the technological oligopoly of its members would continue unchallenged into the distant future. Finally, participants/members of each of these regimes shared a unity of purpose which came from a mix of shared security and commercial concerns.

Table 1.2 Basic Principles of Multilateral Export Control Regimes⁸

Principle/ Regime	NSG	AG	MTCR	WA
Prevent proliferation of WMDs	Nuclear weapons	Chemical and biological weapons	Ballistic and cruise missiles	Advanced conventional weapons and WMD-relevant dual-use technologies
Support the relevant international treaty	NPT, CTBT, IAEA	CWC and BWC		UN Arms Register, EU Code of Conduct on Conventional Weapons
Monitor and regulate exports of WMD-relevant technology	Fissile material, nuclear weapons technology, related dual-use materials and technology, nuclear power plant equipment	Chemicals, plant, animal and human pathogens, and industrial and laboratory equipment used for manufacturing these	Missiles, satellite launch vehicles, missile components, composite materials	
Not interfere in legitimate civilian trade	Export licences granted for qualified end-users, and under certain conditions	Export licences granted for qualified end-users, and under certain conditions	Export licences granted for qualified end-users, and under certain conditions	Export licences granted for qualified end-users, and under certain conditions

Operations of the Multilateral Export Control Regimes (MECR)

Each of the four regimes aims to stop proliferation of (a particular type of) WMD-technology, while ensuring that civilian trade in these technologies is not unduly hampered (see Table 1.2). Each regime claims to support international non-proliferation norms and treaties, and exhorts non-members to adopt guidelines similar to its own. Each has a detailed and fairly specific control list of items, mostly graded into lists or tiers denoting their level of sensitivity. Export of more sensitive items requires stricter scrutiny of the recipient's antecedents by the exporting member. All items on a control list require members to exercise caution when exporting outside the group, and to institute conditions that a recipient (importing) state and/or entity must agree to before the export can be licenced. These could vary from the requirement of end-use/end-user certification in the pre-licence phase to the requirement of post-shipment verification by the exporting state after the export has taken place. Yet, in all cases, the agreements only set the guidelines for export licensing for their members – the actual licensing decision is made by the individual member state and is not a collective decision.

Table 1.3 Common Rules of Operation

Rule/Regime	NSG	AG	MTCR	WA
Informal	X	X	X	X
Closed membership	X	X	X	X
Consensus	X	X	X	X
National discretion	X	X	X	X
Annual plenaries	X	X	X	X
Detailed control lists of items	X	X	X	X
Broad guidelines for export conduct	X	X	X	X
Technical working groups	X	X	X	X
Episodic review of control list	X	X	X	X
Episodic review of guidelines	X	X	X	X
Rotating chairmanship	X	X	X	X
Permanent secretariat	–	–	–	X
Permanent point of contact	X	X	X	–
Secure database of shared information	X	X	X	X

Each of the regimes has certain common rules under which it operates (see Table 1.3).⁹ Each is an informal political arrangement among its members. There is no document that a state has to sign in order to become a member. Membership in each of the regimes is restricted: all members have to agree to allow a new member to join. All decisions within the regime require unanimity and consensus. For instance, revisions of the control list (whether adding or deleting or further detailing an item) cannot take place unless all members agree. Each member is free to exercise 'national discretion' when making a particular export licensing decision. Thus, while

regime guidelines are the same for every member, implementation and enforcement details of the same are left to the national level agencies. For example, although all members of the MTCR might agree to its guidelines that members should not export item X to a country that might use it in a WMD programme and almost all members agree that country Y fulfils this risk criterion, an individual member could use its national discretion to licence export of item X to country Y because it deems the risk of diversion to a WMD programme to be minimal. In such a situation, dissenting members might criticize the offending member in bilateral or group meetings, but the group as a whole has no formal mechanism to either veto the export, or establish that a violation has occurred, or even be able to punish the violating member.

Much of the actual nuts and bolts work of a particular regime, such as revisions of guidelines or control list, takes place within Technical Working Groups (TWGs) that meet several times through the year. Review and revisions of guidelines and control lists are episodic and not mandated to be regular and periodic. If one or more members believe that some revision or modification is necessary, a TWG is established to discuss and debate all aspects of the proposed change. The TWGs are theoretically open to all members, but in practice, tend to have just a few members, especially those that have a direct interest and expertise relating to the issue-item being discussed. The agenda of a TWG is mostly set by the member state that has proposed a particular change. Much of the debate and negotiation on the issue-item happens within the TWGs, and only consensus decisions are tabled at the plenaries where the rest of the members have the option to agree or disagree with the proposed change. Even one dissenting vote means that the matter goes back to the TWG for further debate – which now includes the dissenting member. Depending on the depth of the dissent, contentious revisions sometimes take years to be resolved and accepted into the group's guidelines – although individual members sometimes adopt the change unilaterally, even before formal acceptance by the entire group.

Members share aggregate information about their dual-use exports and export denials, as well as intelligence about proliferation programmes of target states. Theoretically all members are supposed to share such intelligence with all other members. In reality, however, members with more intelligence resources share more information, and do so selectively – more sensitive information is shared among only those members that work together closely in other related fora.

Table 1.4 Membership (as of September 2005)

NSG	AG	MTCR	WA
Argentina	Argentina	Argentina	Argentina
Australia	Australia	Australia	Australia
Austria	Austria	Austria	Austria
Belarus	–	–	–
Belgium	Belgium	Belgium	Belgium
Brazil	–	Brazil	–

Table 1.4 continued

NSG	AG	MTCR	WA
Bulgaria	Bulgaria	Bulgaria	Bulgaria
Canada	Canada	Canada	Canada
Cyprus	Cyprus	–	–
China	–	–	Croatia
Croatia	–	–	Czech Republic
Czech Republic	Czech Republic	Czech Republic	Czech Republic
Denmark	Denmark	Denmark	Denmark
Estonia	Estonia	–	Estonia
Finland	Finland	Finland	Finland
France	France	France	France
Germany	Germany	Germany	Germany
Greece	Greece	Greece	Greece
Hungary	Hungary	Hungary	Hungary
–	Iceland	Iceland	–
Ireland	Ireland	Ireland	Ireland
Italy	Italy	Italy	Italy
Japan	Japan	Japan	Japan
Kazakhstan	–	–	–
Korea, South	Korea, South	Korea, South	Korea, South
Latvia	Latvia	–	Latvia
Lithuania	Lithuania	–	Lithuania
Luxembourg	Luxembourg	Luxembourg	Luxembourg
Malta	Malta	–	Malta
Netherlands	Netherlands	Netherlands	Netherlands
New Zealand	New Zealand	New Zealand	New Zealand
Norway	Norway	Norway	Norway
Poland	Poland	Poland	Poland
Portugal	Portugal	Portugal	Portugal
Romania	Romania	–	Romania
Russia	–	Russia	Russia
Slovakia	Slovakia	–	Slovakia
Slovenia	Slovenia	–	Slovenia
South Africa	–	South Africa	–
Spain	Spain	Spain	Spain
Sweden	Sweden	Sweden	Sweden
Switzerland	Switzerland	Switzerland	Switzerland
Turkey	Turkey	Turkey	Turkey
Ukraine	Ukraine	Ukraine	Ukraine
UK	UK	UK	UK
USA	USA	USA	USA
45	39	34	39

Membership (see Table 1.4) in the regimes is by invitation, and all members must approve of the decision to induct a particular new member. Each regime, broadly, has a set of basic qualifications that a prospective member must have before it can be considered for membership. All regimes require that members must be signatories of major international non-proliferation treaties or their equivalent bilateral or multilateral agreements. They must all be treaty signatories in good standing. They must commit that they will not proliferate WMD technologies and must have or will establish strong national export control systems to implement and enforce this commitment. Despite the restricted membership rules and the essentially self-selecting nature of the regimes, membership in each has grown substantially in the past two decades. This expansion, however, has come with its own set of problems.

The export control regimes originated with groups of like-minded supplier states, notably the United States and its allies in western Europe and Japan, who agreed on the nature of the threat and appropriate responses. Since the end of the Cold War, the number of states participating in the regimes has grown, but at the cost of diluting the original membership criteria. From being exclusive groups of western industrial states, membership has expanded to include former Soviet states (including Russia), developed Asian states, and a number of Eastern European states. This expansion was driven primarily by the euphoric belief within the non-proliferation community that the end of the Cold War had inaugurated an era in which former Warsaw Pact states would make common cause with the West to squelch WMD proliferation (Beck and Gahlaut 2003). Another factor was the consolidation of the European Union (EU) into a common economic market with few barriers to the movement of goods and services. The extension of the export control regimes to include the EU thus became almost automatic.¹⁰ Interestingly, although the regimes began as groups of like-minded supplier states, that is, states that had the capabilities to produce, export and control exports of WMD-relevant dual-use items, a large number of later entrants are neither suppliers nor have strong export controls, or are particularly like-minded! Indeed, some of the new entrants have been invited solely because they have political and economic agreements with major supplier states which make them potential transit and trans-shipment points for exports from the major supplier states.

Successes

Some of the practices that one or more of the regimes established have had salutary impact on the international non-proliferation arena. By providing a forum for technology suppliers to share information and concerns about proliferation, and by establishing some rules (see Table 1.5) to coordinate their exports better, the regimes have helped develop habits of cooperation among states that might otherwise have engaged in mutually destructive competition to sell dangerous technologies. The practice of regular information sharing, inter and intra-state consultations and the pro-active identification of proliferation-sensitive technologies, equipment and processes all helped establish the minimum common expectations about others' behaviour.

Table 1.5 New Rules for a New World

New Rule	NSG	AG	MTCR	WA
No undercut rule	Yes	Yes	Yes	No
Prior notification of export licence granted	Yes	Yes	Yes	No (only post-facto notification)
Periodic notification of export licence denials	Yes	Yes	Yes	Yes (aggregate; for past 3 years)
Share data on approvals	No (except for dual-use items)	No (except via CWC)	No	Yes (but only aggregate)
Catch-all controls	Yes 2004	Yes	Yes 2003	Yes 2003 (but only re UNSC embargos)
Controls on intangible technology transfers	Yes	Yes	Yes 2004	Yes 2001
Black list (terrorist groups)	-	Yes	-	-

To the extent that the regimes are essentially suppliers' cartels, they have successfully managed the issue of selective denials and controlling the supply of proliferation-sensitive technology that have uses in civilian sectors. The international non-proliferation treaties accept the right to civilian uses of dual-use technologies and prescribe minimum conditions that signatories have to meet in order to access technology for civilian uses. However, treaty-mandated provisions for detecting violations of these prescriptions, for establishing wrongdoing, and for resultant denial of access to technology are mostly complicated and have loopholes that cheating signatories can exploit for years. Export control regimes closed this loophole by asserting their identities as separate from treaties: thus they assert their right to go beyond treaty-mandated criteria and processes. They can deny a treaty signatory state access to technology even when it apparently meets the basic minimum conditions.

These regimes, despite being outside the framework of established non-proliferation treaties, have helped establish some recognizable non-proliferation norms and best practices. The idea that responsible states not only have laws that uphold commitment to non-proliferation but also clear and specific control lists has gained currency as the regimes have developed more comprehensive control lists. They have had an impact on members as well as non-members' behaviour: states have unilaterally adopted/adapted regime control lists and guidelines and some have declared themselves to be adherents (although they are not members).¹¹ As such, regimes have gained growing legitimacy vis-à-vis the formal treaty system. Their actions have been acknowledged as effective in slowing proliferation programmes: monitoring and denials by major suppliers of technology have raised the costs of proliferation for many states.

Again, their non-treaty-based nature has allowed the regimes to be flexible and adaptable. They have, in some cases, become informal channels of give and take on non-proliferation issues with prospective members.¹² They have been successful in recruiting disparate states to their cause: former enemies and targets have been co-opted as fellow members or adherents. As a new technology environment was identified or as new proliferation patterns were seen, the regimes were able to respond relatively quickly: they have the flexibility to adapt control lists to new developments.

Challenges

Despite their apparent success in slowing proliferation, socializing new members into their norms, and converting more non-members to consider becoming members, the regimes also suffer from certain inadequacies that might hamper their effectiveness in the future. For some scholars, unless they respond to the challenges posed by globalization, alternative suppliers and terrorism, the regimes will ultimately be overtaken by events.¹³ First, the high technology industry is now truly globalized, where much of technological innovation takes place in the private sector and is driven by teams of scientists and engineers who work across national boundaries. Most of the innovative companies are multinational, not only in terms of physical location, but also of workforce, management, ownership and target markets. Members of the export control regimes, therefore, need to define their rules and regulations more clearly and coherently, keeping in mind the need to balance non-proliferation requirements with the realities of high-tech commerce. Yet we have a constellation of four separate regimes that essentially do the same things to control different technologies relevant to weapons of mass destruction, while maintaining minor differences in procedures. This situation not only makes it harder for industry to comply, but also threatens to leave loopholes for future A.Q. Khans to exploit.

Second, the private sector in developed economies has replaced the state as the locus of technological innovation and market expansion, and dual-use technologies claim a growing share of exports in most dynamic economies. The civilian markets for these technologies are now global in scope and immensely lucrative. They also show how economic liberalism can be an engine of prosperity in the world. Controlling civilian dual-use trade on the basis of fuzzy or unilateral foreign policy considerations puts domestic industry at a disadvantage. Globalization has created more markets in states outside the comfort zone of the regimes. Members increasingly use national discretion to interpret regime guidelines in ways that favour their domestic industries and manufacturers.

Third, as defence budgets shrink everywhere in the developed world (except in the United States), manufacturers of high technology are forced to compete for foreign markets. The economic and security interests of the regimes' members overlap less and less. Serious implications for the regimes' cohesion and unity of purpose could result from divergent interests. The rift within the Wassenaar

Arrangement between exporters of conventional weapons and exporters of dual-use technologies, for instance, has stymied reform in the past. States such as China, India and Israel have emerged not only as possible alternative suppliers of such goods, but also as attractive markets for technology-embedded capital investment and as useful partners for collaborative development of certain technologies. The regimes will find it increasingly difficult to allow these countries to collaborate in one technology sector while forbidding collaboration in another, because many dual-use technologies are fungible across sectors.

Finally, international concern about state-to-state proliferation has grown in the recent years and few states would like to attract international opprobrium. Therefore, it is increasingly likely that in the future proliferation may take place either with covert official blessing or via unauthorized collusion among significant domestic actors within states. North Korea, Pakistan, Malaysia, South Africa and the United Arab Emirates have already become – willingly or unwillingly – the alternative sources of high-tech goods and/or conduits for proliferation networks (Albright and Hinderstein 2005). Either way, these states will pose a unique challenge to the regimes as secondary suppliers from the developing world. Their technologies may not be advanced but might be just enough for non-state actors seeking either weapons of mass disruption or for economic and political blackmail.

Failures

Despite the changes in their external environment and internal composition, regimes seem content to maintain their original rules and practices. From a modernization perspective, this stasis would increasingly undermine the adaptability of the regimes over time.¹⁴ While there has been a severe dilution of the original membership criteria (like-mindedness and supplier capability) within the regimes, yet each of the regimes maintains rules unsuitable for a growing and diverse membership (unanimity, discretion, response to violations, and arbitrary and/or vague criteria for membership).¹⁵

Continuation of the consensus voting rule is a perfect example. This rule reflected the character of the regimes at their inception, when they were all groups of like-minded suppliers of WMD-relevant technologies. Now, however, membership in the regimes has expanded to include states that are either not suppliers or are not like-minded or do not have the domestic consensus to abide by all regime guidelines. Consensus voting might prove counterproductive under such circumstances. The intransigence of a single member can stymie updates to the control lists or guidelines, causing the regimes to lag behind developments in technology, bringing them to the same level of inefficiency plagued by international treaties.

Controls on exports of dual-use items and technologies can only be effective, and will only earn the willing support of domestic industry, when all *relevant* actors adhere to them. Yet the regimes allow their members unlimited national discretion: members are free to interpret regime guidelines according to their national interests,

with little care for how fellow members' economic and security interests might be undercut by self-serving interpretations (Beck and Gahlaut 2003).

Despite the growing clamour for transparency and accountability within treaties and agreements in various spheres, export control regimes have not been able to significantly change their members' behaviours. The regimes still do not require their members to fully disclose which exports they have approved and which they have denied, causing opacity that sometimes allows one member to supply a controlled item that was denied by another. For example, a recent US General Accounting Office (GAO) report noted that many governments that participate in the Nuclear Suppliers Group have yet to share any information on export denials. Nor have they shared even the informal suggestions they have issued to businesses advising them not to pursue contracts with suspect end-users (see US GAO 2002). The GAO report also drew attention to problems of *timely* information sharing. The report noted that the United States did not report any of 27 Australia Group-related export licence denials between 1996 and 2001 and also pointed out that nearly half of the Wassenaar member states failed to submit information on export denials within established reporting timeframes. The report observed, furthermore, that regime members often failed to incorporate the decisions reached within the regimes into their national export control regulations quickly and uniformly. There have been cases in which some countries, including the United States, have taken as long as a year to make the agreed-upon changes to their national laws (*ibid.*, 23).

Finally, although there is no dearth of discussion about corporate accountability today, the export control regimes have no mechanism for prosecuting violations by members. In effect they rely on individual members to rebuke and bring pressure on violators through bilateral diplomacy. Violations have typically elicited little more than protests and demarchés from some members. Diplomatic action generally has little impact, since offenders choose to interpret unilateral protests as subjective, politically motivated, or contrary to the principle of national discretion (Gahlaut and Jones 2004). This does not bode well for the future regime cohesion and effectiveness.

In their efforts to regulate or deny dual-use technology to non-members, all four export control regimes face criticism from non-members for being opaque, part of an exclusionary club based upon discrimination against the Third World, subjective, and going beyond the mandates of existing non-proliferation treaties.¹⁶ These criticisms are unlikely to subside in the near future, especially now as the control lists of the regimes expand to accommodate terrorist-relevant (that is, relatively unsophisticated) technologies (Van Diepen 2002).

However, there have been a few positive developments in this context during the past few years. First, the informal export control regimes have communicated their goals and methods with significant non-members. Such outreach has lessened suspicions of developing nations somewhat.¹⁷ Second, several regime studies have attempted to counter criticisms by gathering data on the actual quantum of licence denials for sensitive items, thereby placing the onus on the critics to provide

counterfactual evidence to support their claims that the regimes limit economic development. Third, several major critics, such as Argentina, Brazil, China, South Africa, have been admitted as members in the informal regimes. Fourth, there is growing realization within the informal regimes that they should have mutually supportive operational relationship with international organizations that are engaged in monitoring, verification, and other enforcement activities relevant to trade and transfers of sensitive items. Some scholars now see the World Customs Organization, the IAEA, the Organization for the Prohibition of Chemical Weapons (OPCW) as complementary organizations with whom the regimes ought to have greater interaction via periodic sharing of expertise and information (Agersnap 2004; see also Feakes 2001). Clearly, multilateral export control regimes are not adequately working with other non-proliferation organizations. The Director General of the IAEA, Mohammed ElBaradei recently noted, '... there is no linkage between the export control system and the verification system. Export control information is not systematically shared with the IAEA, nor even fully among the members of the Nuclear Suppliers Group' (ElBaradei 2004).

Finally, the added advantage of closer cooperation with established non-proliferation organizations would be that the regimes will gain greater legitimacy – something they have tried to claim unilaterally in the past by a one-way relationship: the submission of 'notification of intent' to treaty-based organizations like the IAEA and the OPCW by individual members. These legitimacy claims will become more acceptable to the sceptics if the informal regimes find ways to have a genuinely mutual relationship with the formal elements of the non-proliferation regime.

Beyond the above challenges and failures, the regimes have had some unintended consequences: on the one hand, these consequences suggest that the regimes were successful in their mission, but on the other hand, the very success may have spawned new conditions that alter the future operative environment of the regimes. For instance, in most cases of opportunistic proliferators, the regimes helped raised the costs of acquiring WMD capabilities. One could argue that de-proliferation by states such as Argentina, Brazil, Ukraine, South Africa, Kazakhstan, Belarus and Libya was at least partially induced by the tightening rules of the regimes. At the same time, the more determined targets of the regimes, such as China, India, Israel, Iran, Pakistan and North Korea, hardened their resolve to increase their self-reliance. In the process of resisting the regimes they have developed capabilities that might no longer be as susceptible to technology-denials in the future. In turn, these programmes have also developed the capacity to be alternate suppliers and to form supply-chains that defeat the regimes' rules. China, Pakistan and North Korea have already proven their capability and intent for horizontal proliferation,¹⁸ while Iran remains on the brink (Ghattas 2005). China has been co-opted by the regimes to some extent: it is now in the NSG and efforts continue to bring it into the MTCR in the near future.¹⁹ However, thus far, India and Israel continue to exercise restraint unilaterally, based on internal political decisions.²⁰

Choices before the Multilateral Export Control Regimes

The world of technology is changing exponentially. The biggest challenge that the export control regimes face is keeping abreast of technological developments and institutional innovations in the field of business. National boundaries no longer circumscribe how technology-innovation and export is managed in the private sector. At a time when businesses are streamlining their operations to innovate, produce and export faster, the members of the control regimes must streamline their own regulatory efforts if they hope to keep up. This could conceivably be done in several ways. One would be to update internal procedures and establish cross-regime linkages and information sharing. A more radical means would be to establish one unified export control regime (instead of the current four), which is empowered to establish objective procedures to determine when a violation has taken place and how a collective reprimand should be administered.

The regimes are essentially at the crossroads of several procedural paths. They have to choose between increasing formality of commitment versus continuing to allow national discretion. As their membership becomes more diverse, the rules of unanimity and informality will perpetuate existing problems of delays in adapting to emerging situations. If the regimes are to be truly effective, members will need to establish and enforce common standards for export licensing, ensuring that national commercial considerations do not triumph over collective decision, that free-riding by some members is curtailed, and that industry has a level playing field across increasingly integrated markets. Accordingly, the scope of national discretion within the regimes will have to be narrowed somewhat and more specifically defined.

So long as the regimes were primarily focused on preventing state-to-state transfers, they created control lists based on technology trajectories that some of their own members went through. The common assumptions behind such lists were that states interested in developing credible WMD capability will look for advanced technology that will allow them to develop precise and battle-useable weapons. The recent intelligence about growing interest of terrorist groups in acquiring WMDs has changed the equations: terrorist groups are typically not interested in precise and advanced weapons. Their objectives are crude and direct: hit the enemy – to destroy and to cause mayhem – and, if required, to die in the operation. Precision, stealth, proven kill-capacity and battle-hardiness are irrelevant for such operations. This would imply that old, obsolete technologies and easily available materials might be enough to fashion crude WMDs. The consequent challenge for the regimes would be to begin controlling relatively low-level items and technologies as well. In essence, widening the control lists at a time when industry is demanding more streamlined lists of more strictly controlled items. The related challenge for regime members is to focus on import-monitoring as well. Thus far, regime members do not scrutinize exports to fellow members, because they are considered trustworthy. However, experts are suggesting that terrorist groups might find it easier to assemble a weapon in the target country itself rather than build it in another country and attempt to launch it from there or to import an assembled weapon into the target

country. Regime members will have to institute procedures to scrutinize orders for dangerous items – even when they emanate from a fellow member state – verify their end-use/end-user and inform the national authorities of the importing state of the transfer.

Regimes now face a challenge in terms of choosing a specific path towards shoring up their effectiveness. They can institute stronger guidelines and internal procedures that deepen the commitment of existing members. For instance, they can develop a unified, coherent strategy for dealing with potential secondary suppliers and strongly encourage member states to share information freely with respect to acquisition strategies used by state and non-state actors linked to these states. Alternatively, they can focus on widening the membership by co-opting some of the secondary suppliers. In this case, it would make sense not to make the internal rules harsher and risk scaring away relevant new members who might not be ready to commit to such rules.

A more crucial trade-off that the regimes face relates to their attempts to gain legitimacy. Thus far, the regimes have responded to charges of illegitimacy – which usually cite their secrecy of operations and self-selection – by increasing transparency about their motives, functioning and guidelines. This has been done primarily in two ways: establishing websites and releasing consensus decisions at the end of plenaries on the one hand, and by engaging in outreach on the other. A related strategy of establishing legitimacy has been to harden their linkages with non-proliferation treaties. For instance, all four regimes assert that their objective is to uphold the norms and objectives of one or more treaties; NSG members routinely submit letters to IAEA affirming their adherence to some change in NSG guidelines; WA members refer to the UN Register and EU Code of Conduct in their operations; all four regimes set membership in the NPT or equivalent non-proliferation agreement as a crucial criterion for membership and for receipt of sensitive exports.

However, in the attempt to burnish their links with not just the norms but also the principles (legal commitments) of the formal treaties, the regimes might be boxing themselves in, perhaps becoming less flexible. The original intent behind the formation of the regimes was to have more flexibility – the ability to forge non-traditional/innovative solutions to proliferation problems – which formal treaties did not have. Ever closer and direct linkages with the treaties – while gaining the regimes more acceptance among their critics – would circumscribe their independence of action. A good example of these trade-offs is the issue of civilian nuclear cooperation with India. The July 2005 bilateral agreement between the United States and India (United States 2005) goes against the NPT norm²¹ as well as makes an exception vis-à-vis the NSG full-scope safeguards requirement.²² The NSG membership has yet to approve of this US initiative, although a few individual members have welcomed the deal (Chandrasekar 2005; White 2005; Willard 2005). A major institutional argument in support of the deal is that NSG is the only forum which was designed to be adaptable to new circumstances and to fill the loopholes that treaty-bound NPT cannot. In short, the more closely tied NSG is to NPT, the harder it will be for the NSG to maintain its flexibility to innovate.²³

The final challenge the regimes face is that of the growing gap between their mandates and expectations from them. Political and public assessments of output and outcomes tend to be critical of the regimes – especially as new cases of proliferation come to light. However, much of this criticism stems from a lack of popular understanding about what regimes were designed to do and what ‘power’ they have, and consequently, unreasonable expectations from the regimes. For instance, disclosures of proliferation from the A.Q. Khan network led to sharp criticism of NSG based on the common assumption that NSG rules failed to control the actions of non-members (such as Pakistan, Iran, Iraq, China and so on).²⁴ When most NSG members did not sanction Russian nuclear cooperation with India and Iran, NSG was seen as a failure – without any realization that the voluntary nature of NSG commitments and the national discretion allowed to members precludes a unified response or even a mandatory response by all NSG members. Critics of WA focus on high levels of conventional arms exports by some members, even though WA is merely a transparency regime and not strictly a non-proliferation regime. The bottom line is that most members of the public and even the policymakers expect the regimes to stop proliferation – whereas the regimes have been set up to merely delay proliferation. Regimes are expected to perform like treaties – especially when fellow members are deemed to be in the wrong – yet individual members are loath to cede their own decisional independence. They often cite the informal nature of the regimes in support of their own actions that go beyond common understandings and guidelines! Regimes can minimize this duality of expectations only through public outreach within the member states.

Conclusion

The four multilateral export control regimes have performed reasonably well in curtailing the enthusiasm and ability of proliferators in the past decades. However, their operational environment is changing slowly in some cases (character and nature of the hard cases they have to focus on) and rapidly in others (technological innovation and globalization). Consequently, experts have presented a range of proposals to help the regimes renew and refurbish themselves. These range from the incremental changes within the regimes to meso-level changes in supporting institutions to the radical proposal of merger.

Incremental change proposals usually relate to the nuts and bolts issues within each regime – where better coordination and better specification of guidelines can improve implementation (Heine et al. 2004). Meso-level proposals take two tracks: first, a focus on improving national export control implementation among members and second, initiative to improve regional export control implementation such as United Nations Security Council Resolution 1540 and targeted outreach to regime non-members. Other proposals at this level include ideas for creating new micro-regimes (Cevasco 2001) and loose codes of conduct²⁵ on specific sub-categories of dual-use items or technologies. The proposal of merger is based on the argument

of efficiency and consolidation: maintaining four separate information sharing systems and piecemeal sharing of information on WMD procurement efforts negates international efforts in the past decade to streamline the non-proliferation regime as a whole as well as efforts to integrate the activities of the export control regimes (Gahlaut et al. 2004).

It is not clear which path of reform the export control regimes are going to choose in the near future. However, some emerging issues in export control would continue to require multilateral coordination – whether inside the regimes or outside them. Among these are the dilemmas posed by the emerging suppliers, by terrorist groups, and by the transnational black market in WMD technologies. Each of these dilemmas further underlines the need to sensitize multinational industry regarding the modus operandi of suspect procurers. These also necessitate the training and equipping of customs, immigration and border security agencies to filter suspect transactions from vast volumes of legitimate ones, and to coordinate with their counterpart agencies across national boundaries in pursuit of proliferators. Recent meetings of regimes have attempted to establish such cross-regime linkages, but the question remains: will such piecemeal adaptations be able to overcome the new proliferation challenges facing the regimes?

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Notes

1. For a comprehensive look at COCOM's origins and evolution, see Mastanduno (1992).
2. NPT Article I states: 'Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices'. Article IIIb states: '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'.
3. For more, see Schmidt (1994).
 4. For a more detailed look at the successive establishment of Zangger Committee and NSG, see Thorne (1997).
 5. For one of the earliest detailed descriptions and analyses of AG, see Perry Robinson (1992).
 6. For a comprehensive examination of MTCR, see Mistry (2003).
 7. Adapted from Gahlaut et al. (2004).
 8. This table summarizes the information available at the official websites of the four regimes. For NSG, see <www.nsg-online.org>; for AG, see <www.australiagroup.net>; for MTCR, see <www.mtc.info>; and for WA, see <www.wassenaar.org>.
 9. This draws from author's collaborative research at the University of Georgia, see Gahlaut (2002).
 10. For more on the implications of EU expansion on export control regimes, see Jones (2003, 81–9).
 11. India, Israel, Singapore and China are some of the countries that have 'harmonized' their control lists with those of the NSG and MTCR. China had declared itself an adherent to the MTCR in the mid-1990s – although it had a somewhat different understanding of some of the MTCR guidelines, which have led to numerous protests and sanctions on China by major MTCR members until now. See BBC (2005).
 12. The primary means of this communication have been outreach activities undertaken by some regime members on behalf of the group. NSG uses a troika – a group of three – consisting of past, present and future chairs, who have engaged states with the potential of proliferation (such as India and Israel) and those that have pledged to stem proliferation (China and Pakistan). MTCR and AG use a similar strategy aimed at relevant non-members. The regimes also hold seminars or other interactive events to exchange views regarding proliferation threats and non-proliferation 'best practices' with non-members.
 13. This section borrows heavily from Gahlaut and Jones (2004).
 14. This section draws upon Gahlaut et al. (2004).
 15. For a detailed look at the implications on diverse membership, see Gahlaut and Zaborsky (2004, 73–91).
 16. AG, for instance, has been attacked in the Biological Weapons Convention (BWC) and the Chemical Weapons Convention (CWC) by some members of the non-aligned movement seeking to abolish export controls on CBW-related goods (see van Diepen, 2002). However Argentina, Brazil, China, India, Iran, Pakistan and South Africa were some of the major members of the non-aligned movement that routinely criticized the NSG for denying technology to developing states, based on commercial rather than non-proliferation concerns. Argentina, Brazil, China and South Africa, of course, went on to become members of NSG and India seems intent to follow suit!
 17. The fact that significant non-members like India and Israel have begun voluntarily to incorporate NSG and MTCR control lists into their national export control lists is a good indicator of this trend.
 18. When Libya decided to give up its WMD programmes in 2003, it turned over all the relevant materials and documents to the United States and the IAEA. One of the interesting finds in this material was a blueprint of a Chinese warhead that Dr A.Q. Khan had supplied to Libya, from among the technologies Pakistan had acquired from

- China in the 1980s. See Broad and Sanger (2004). For details on China's proliferation to Pakistan, see DeSutter (2003) and Burr (2004). For the missiles-for-enrichment technology swap between Pakistan and North Korea, see Hersh (2003) and Kampani (2002, 107–16).
19. For more on this, see Srivastava (2005).
 20. For India's policy and behaviour regarding horizontal non-proliferation, see Gahlaut and Srivastava (2005). A new Israeli export control order entered into force on July 2004: 'It fully incorporates the NSG Trigger List and the List of Nuclear-Related Dual Use Equipment, Materials, Software and Related Technology. The Israeli legislation goes beyond NSG lists and includes a "catch-all" clause' (Frank 2004).
 21. The NPT itself does not forbid civilian nuclear cooperation with a non-member – it only stipulates that the transfers be under safeguards.
 22. Since 1992, NSG has required that a recipient state accept IAEA safeguards on all its civilian nuclear activities.
 23. For more on this argument, see Gahlaut (2005).
 24. One report was specific in limiting the blame to South Africa's lapses (see Blackford 2004). However, most reporting on the case did not make this distinction.
 25. For example, the Hague Code of Conduct was established to shore up the missile non-proliferation commitments of MTCR-non-members.