Strategic Trade Review

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Non-State Actors
Drivers for Proliferation

Free Zones and Strategic Trade Controls
Proliferation Vulnerabilities and Recommendations

Customs Codes and Export Control Lists
Rating Correlations and Interface Enhancement

Trade Sanctions
Considerations on Effectiveness

Strategic Trade Controls in Southeast Asia
A Regional Comparative View

Authorized Economic Operators
Costs and Benefits of Trusted Trader Status

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Letter from the Editor

One year since the publication of the first issue of the Strategic Trade Review, the literature available regarding the field of strategic trade has expanded and advanced, allowing high-level perspectives and analyses to reach a highly diverse readership. As the journal evolves, interest in ever more specialized areas of the field demonstrate that strategic trade merits its own place in the international research community.

This third issue continues to question accepted practices and offer creative ideas and models for strengthening strategic trade controls. From exploring the critical role of Customs authorities in effective export control implementation, to exposing vulnerabilities in the system presented by free zones, this issue focuses strongly on enforcement. Articles considering the effectiveness of trade sanctions, regional models for strategic trade control implementation, and an analysis of the costs and benefits of trusted trader status offer further insights into certain specialized areas of the field.

Finally, this issue includes the first half of a special series dedicated to enterprise outreach. Industry–represented by exporters, shippers, freight forwarders, brokers, and more–plays a critical role in securing the supply chain–indeed, any effort to strengthen nonproliferation starts with them. The articles included in this issue present methodologies, case studies and recommendations on how to cooperate and enhance communication between governments, research and enterprises.

As the journal continues to expand and broaden the network linking researchers and practitioners involved in strategic trade, I invite further advanced research and exploration through future manuscript submissions.

ANDREA VISKI

Non-State Actors as Proliferators: Preventing their Involvement

IAN J. STEWART AND DANIEL SALISBURY[1]

Abstract

Non-state actors are frequently involved in the efforts of states to acquire Weapons of Mass Destruction (WMD). UNSCR 1540 was passed by the UN Security Council in 2004 seeking to limit non-state actors' role in this regard. This paper explores the drivers for and against non-state actor state proliferation as exporters, suppliers and brokers. A framework through which to analyze the drivers for and against non-state actor involvement is developed. This framework considers that non-state actors can be innocent, ignorant, indifferent, or ideologically motivated, while also taking into consideration factors against involvement. The framework is used to analyze three specific case studies. The paper concludes by considering the lessons that can be derived from this framework in efforts to counter proliferation in the future.

Keywords:

Non-state actors, non-proliferation, strategic trade control, weapons of mass destruction (WMD)

Introduction

All states that hold the capacity to manufacture the prerequisite items required for use in Weapons of Mass Destruction (WMD) programs have recognized their obligation not to transfer them for WMD purposes. Nonetheless, the risk that a non-state actor could supply goods without the

1 Ian J. Stewart is a Senior Researcher in the Department of War Studies at King's College London where he heads Project Alpha. He is also the training advisor for the consortium implementing the European Union's Peer-2-Peer program on dual-use goods. He is a specialist on issues related to export controls, sanctions, and non-proliferation more generally. Ian, an engineer by training, has many years of experience in government and working with companies and international organizations in relation to non-proliferation matters. He was also a research fellow at Harvard's Belfer Center for Science and International Affairs. Daniel Salisbury is a Postdoctoral Fellow at the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies at Monterey. He was previously a Research Associate at the Centre for Science and Security Studies at King's College London and a researcher at Project Alpha.

knowledge or blessing of the exporting state continues to be significant. In addition to frequent inadvertent involvement in proliferation, non-state actors have also deliberately acted on behalf of the nuclear programs of Pakistan, North Korea, Iran and probably other states to procure illicit goods without the authorization of the exporting state. The adoption of United Nations Security Council Resolution 1540 in 2004 highlights the priority policymakers have placed in tackling the involvement of non-state actors—defined by the resolution as 'individuals or entities, not acting under the lawful authority of any state'—in proliferation.[2]

Nonetheless, despite the fact that it has been more than ten years since the passage of this fundamental resolution, questions regarding the role of non-state actors in proliferation have been inadequately addressed in academic literature. While the literature on proliferation behavior has expanded significantly in recent years, this body of work is still largely focused on the strategic, political and economic considerations of states rather than on the calculus of non-state actors in facilitating proliferation. This article seeks to address the following issues: what motivates non-state actors to become involved in illicit trade? By considering motivations, what can be learned about the necessary policy responses?

This article draws upon on insights from a variety of different academic sources in order to provide an original analytical framework through which to consider the principal factors that drive the involvement of non-state actors in proliferation. This framework is also used to consider policy responses that could deter or prevent non-state actor involvement in proliferation.

The paper proceeds as follows: Firstly, existing literature on non-state actor and drivers for their involvement in proliferation is explored. Next, an original model is presented through which the drivers for and against non-state actor involvement in proliferation can be identified. The paper will then explain how the framework allows for a better conceptualization of policy tools, highlighting some areas that could be improved. Finally, the paper concludes by considering how this framework can aid analysis of proliferation through future research.

The Proliferation Driver Literature

Since the end of the Cold War, 'driver' or 'behavior' literature has become more prevalent.[3] This body of work encompasses literature that seeks to understand and explain why and how states pursue the acquisition of nuclear weapons. While this body of literature has delivered interesting insights from both historical and contemporary policy perspectives, it has also been somewhat limited in scope, since these efforts were mostly focused on analysis of state-level behavior. Even though some theories have considered the roles of individuals—politicians, military strategists and technologists—working within the state context, the roles of these individuals are considered through the lens of that respective state's nuclear decision-making, military and technological interests, and infrastructure.[4] In simple terms, this analysis has addressed how these individuals influence or affect the ability of a state to proliferate.

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2 United Nations Security Council 1540, S/RES/1540, New York, April 2004.

3 For a sample of the recent state of the field, see the two volumes of William C. Potter and Gaukhar Mukhatzhanova, *Forecasting Nuclear Proliferation in the 21st Century,* (Stanford, CA: Stanford University Press, 2010).

4 Peter R. Lavoy, "Nuclear Myths and the Causes of Nuclear Proliferation," *Security Studies 2,* (Spring/ Summer 1993) pp. 192-212.

The dominant proliferation pathway for many states in recent decades including Iraq, Iran, Pakistan and North Korea has involved the use of non-state actor intermediaries to the international marketplace. Despite the extent of involvement of non-state actors in state proliferation, there have been few attempts to systematically consider what drives the non-state actors that make proliferation possible. Instead, a considerable number of publications have focused on a handful of specific cases that may or may not be representative of all cases - more specifically on A.Q Khan and others in Khan's black-market network.[5] In the absence of anything similar in scope or significance to compare Khan's network against, this literature has tended to be more descriptive rather than analytical. There has nonetheless been scholarship on the role of non-state actors in proliferation. This includes literature that has examined how proliferation networks can form and sustain.[6]

This article seeks to move beyond this existing literature in order to provide insight into what drives non-state actors' involvement in proliferation. Rather than considering proliferation at the 'macro' or state-level, the authors seek to emphasize the 'micro' level and consider proliferation as an on-going process. It is beneficial to expand proliferation driver literature to include non-state actors. By gaining an understanding of the motivations of non-state actors that are involved in proliferation activities, the modalities of today's most prevalent form of proliferation can be understood. However, building such a framework does not come without challenges; these are explored in the following section.

Challenges in Building a Framework: Actors and Complicity

The diversity of actors encompassed by the term 'non-state actor' and the huge spectrum of individual cases which could constitute involvement in proliferation—among other factors—present a number of difficulties in constructing a single framework. Different levels of complicity are also important to consider. A framework needs to be flexible enough to take the multiplicity of actor types into account. This section argues that a key factor in considering motivations, rather than the type of actors, relates to their deliberate complicity. Building a framework in this regard, therefore, will provide more insights into motivations.

The definition provided by resolution 1540 encompasses many different types of non-state actors. While many analysts have considered UNSCR 1540 primarily as a counter-terrorism tool, those involved in penning the resolution state that it was originally more of a counter-proliferation tool, intended not only to prevent non-state actors from acquiring or using WMD, but also to prevent non-state actors from helping other states to do so.[7] In this respect the framework must encompass a wide variety of actors involved in proliferation, be it through trade, theft or any other means.[8] This includes technology holders—manufacturers, exporters and distributors—as well as those that may enable the transfer of these technologies—such as transportation companies, financiers, and insurers.

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5 See for example Gordon Correra, *Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A.Q. Khan Network,* (Oxford: Oxford University Press, 2006).

6 Alexander H. Montgomery, "Ringing in Proliferation: How to Dismantle an Atomic Bomb Network," *International Security 30:2*, (October 1, 2005), pp. I53–87.

7 Interview with Tobey, W., conducted by Ian Stewart, Summer 2013.

8 See for example, Glenn Anderson, "Points of Deception: Exploring How Proliferators Evade Controls to Obtain Dual-use Goods, *Strategic Trade Review 2*, (Spring 2015) pp. 4-24.

Besides the actors' functions in the supply chain, the non-unitary nature of different actors also needs to be taken into account. The term 'non-state actor' can equally be applied to individuals, groups of individuals, or larger organizations. These groups and organizations may be acting as unitary bodies, but there could also be elements of organizations acting alone or without authorization from above. For example, sales people in the company may be selling goods to sanctioned destinations without proper oversight.

However, this issue cannot be analyzed fully without consideration of the issue of complicity. To view non-state actors as either complicit—knowingly working to supply WMD programs—or non-complicit—lacking knowledge of such activities—is an oversimplification. It is possible, for example, that the non-state actors could either not understand that what they are doing is wrong, or that they have been in some way deceived by other elements in the supply chain.

Complicity relates to key pieces of knowledge and understanding: an actor's position and role in the supply chain, their knowledge and understanding of the other actors, products and their potential end-uses and proliferation as a broad concept. In many senses, it is only the ultimate end-user who possesses the 'full picture' regarding the supply chain, and even this is not always the case.

It is often challenging to identify levels of complicity. The level of knowledge available to the different parties in a supply chain differs based on what information is supplied to them in the first instance, their desire to find out more, and what they are able to find out. If the party knows that the true end-use is prohibited, they can be considered complicit; if the party has been duped then they can be considered ignorant. For example, the supplier has a limited ability to judge whether a customer will actually use the goods in the way described. Similarly, any third party to a transaction may also either be deceived or be deceiving. For the same reasons, when considering whether to authorize an export, governments may have visibility of the trade through the licensing and Customs enforcement mechanisms but may not have access to sufficient information to identify proliferation risks.

A final challenge relating to complicity is that, looking at individual cases, few proliferators talk openly about their efforts. When they do, it is often difficult to fully gauge levels of complicity because those wittingly involved in proliferation may be hesitant to admit so for a number of reasons, including potential legal consequences. Take for example the words of Chinese middleman Karl Li who was indicted twice by the US courts for transfers of materials to Iran's missile program in 2009 and 2014, and is alleged to have continued supply until more recently.[9] In a 2013 interview, Li is allegedly noted: 'Sure, we did business with Iran, but we did not export the goods they said we did, missiles or whatever.'[10] Even in such cases where evidence is overwhelming, non-state actors often continue to deny that they did anything wrong.

Factors such as the long and complex nature of modern supply chains, the diversity of non-state actors, their not-necessarily unitary nature, and the difficulties in establishing complicity can

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9 Daniel Salisbury, and Ian Stewart, "Li Fang Wei (Karl Lee)," Proliferation Case Study Series, Project Alpha, King's College, 2014, <http://npsglobal.org/eng/images/stories/pdf/karllee.pdf>, p. 8; Discussion with former government official.

10 William Maclean and Ben Blanchard, "Exclusive: Chinese Trader Accused of Busting Iran Missile Embargo," *Reuters*, March 1, 2013, <http://www.reuters.com/article/2013/03/01/us-china-iran-trader-idUSBRE9200BI20130301>.

make for a highly complex picture. Take for example a large organization—a manufacturer or an exporter—that is involved in transfers to a sanctioned program. While certain elements within the organization (such as a rogue salesman) may be complicit, the broader organization, including other salespeople, the compliance team, and management, may not. If the rogue salesperson knows that the end-use of the goods is prohibited, they may make efforts to deceive other elements of the organization that it is not. Similarly, the organization's interest in export compliance, the adequacy of the compliance chain of command, or organizational oversight may not be sufficiently well developed to prevent 'rogue' actors within that organization from acting independently.

Why Do Non-state Actors Become Involved?

Two principle drivers could lead non-state actors to become involved in proliferation. The first is 'profit,' meaning financial gain and related social benefits. The second, 'ideational motivations,' relates to the beliefs of those involved. These drivers may not be exclusive and will be explored below in more detail using a variety of examples.

Proliferation for Profit

Profit in this context primarily relates to financial gain. However, it may also encompass other benefits related to profit such as community status, reputation, and prestige. In most cases, there is little prestige or reputational gain to be made—at least in the long-term—from involvement in proliferation (although some individuals appear to have enjoyed the notoriety of becoming associated with proliferation).[11] However, a number of cases—notably those where actors have been able to obtain some form of loose protection from a state, or are able to avoid US judicial efforts—have shown that the monetary benefits can be substantial.

Profit as a driver needs to be considered in a number of respects. Profit is obviously a principal driver for business activities. There are many different ways in which profit can be realized. It could be the result of longer-term business relationships, for example, or it could be the result of one-off transactions. Difficult decisions may be necessary when pursuit of one type of profit jeopardizes pursuit of another. For example, more established companies might opt not to pursue higher-risk shorter-term profits where this would jeopardize longer-term business interests. Less established companies, on the other hand, could perhaps be expected to be less risk averse.

What is certain is that there is profit to be made, both in gross terms and in individual transactions. Uncovering profits in gross terms is often difficult, but several examples can provide insights into the magnitude of such gains. In gross terms, Khan, for example, is said to have made $100 million.[12] The involvement of other middlemen in Khan's network was also driven by profit. For example, one intermediary in the network is said to have taken a ten percent cut on top of a $5 million base.[13]

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11 Nick Gillard, "Catch Me if you Can: The Illicit Trade Network of Daniel Frosch," Proliferation Case Study Series, Project Alpha, King's College, January 2015, <https://www.acsss.info/proliferation/item/380-new-alpha-case-study-the-illicit-trade-network-of-daniel-frosch>.

12 D.E. Sanger and W.J. Broad, "Pakistani's Nuclear Earnings: $100 Million," *New York Times*, March 15, 2004, <http://www.nytimes.com/2004/03/16/international/asia/16NUKE.html>.

13 Bruno Gruselle, "Proliferation Network and Financing," Fondation pour la Recherche Stratégique, March 3, 2007, <http://www.stanleyfoundation.org/publications/working_papers/Delory5.pdf>, p. 11.

The scale of Khan's network has not been replicated, but the activities of a Chinese businessman, Li Fang Wei, who has been indicted multiple times by the U.S for his role in supplying Iran's missile program, highlight the more modest, but still significant scale of potential profits. Recently, U.S authorities seized $6,895,000 from the numerous front companies that Li had been using to undertake his proliferation-related activities.[14]

In terms of the profit that may inspire a normally compliant manufacturer or exporter to make an illicit sale, the premiums paid by those sourcing goods illicitly may be a driving factor. For example, Khan is said to have regularly paid up to fifty percent above the legal market price for goods in his procurement activities for the Pakistani nuclear program.[15] A more recent case involving the sale of pressure transducers to Iran's program saw units sell at a little over a one hundred percent mark-up on price, some of which could have been used to pay off others involved.[16] Beyond actively driving a non-state actor to illicit transactions, the lucrative profits or mark-up may drive a normally law-abiding individual to turn a blind eye to such activities, or undertake less due diligence.

The profitability of involvement in illicit trade needs to be considered in the context of opportunity cost versus the risk of being discovered and facing justice. In this regard, some business relationships and business structures might be more sustainable than others. The cases above—Khan and Li—where individuals were able to amass millions of dollars from their activities, involved actors located in countries that did not seek to actively stop their efforts at the time and which might have prevented other countries from taking action against these individuals.[17] It might be that longer-term profiles will generally be smaller and business relationships shorter and less sustainable in more carefully regulated jurisdictions.

Ideas and Involvement

The second principal driver is what the authors have termed 'ideational motivations.' These relate to both 'principled' and causal beliefs.[18] Principled beliefs are those that pertain to conceptions of what is right and what is wrong.[19] In this context, this could refer to a non-state actor's belief in the injustice of the current state of affairs. This could in turn contribute to a disdain for the objectives of the 'discriminatory' nature of export controls, the supplier regimes, and indeed perhaps the whole non-proliferation regime. It could also relate to a sense

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14 See for example, Ian Stewart and Daniel Salisbury, "Wanted: Karl Lee," *The Diplomat*, May 22, 2014, <http://thediplomat.com/2014/05/wanted-karl-lee/>.

15 "Nuclear Black Markets: Pakistan, A.Q Khan, and the Rise of Proliferation Networks - A Net Assessment," International Institute for Strategic Studies, May 2, 2007, <https://www.iiss.org/en/publications/strategic%20dossiers/issues/nuclear-black-markets--pakistan--a-q--khan-and-the-rise-of-proliferation-networks---a-net-assessmen-23e1>, p. 26.

16 Ian Stewart, Andrea Stricker and David Albright, "Chinese Citizen's Involvement in the Supply of MKS Pressure Transducers to Iran: Preventing a Reoccurrence," ISIS Reports, April 14, 2014, <http://isis-online.org/uploads/isis-reports/documents/MKS_China_30Apr2014-final.pdf>.

17 Eben Harrell, "Nuclear Proliferation: The Crime with No Punishment?," *Time Magazine*, September 16, 2011, <http://content.time.com/time/world/article/0,8599,2092585,00.html>.

18 Judith Goldstein, and Robert Keohane, *Ideas and Foreign Policy*, (Ithaca: Cornell University Press, 1993).

19 Ibid, 9.

of injustice regarding a specific country's exclusion from the international market, or an affinity with the people of that state on such grounds. The Khan case is a key case in this respect. In interviews following his arrest, Khan made a number of statements justifying his actions in this manner. In a 2008 interview, he noted that he 'broke their [the West's] monopoly.'[20] He also stated that 'If you become so subservient, even a child can jump and sit on your back. If you have no pride and you become a crony and a stooge, this sort of thing happens.'[21] Khan was also said never to have talked of 'selling the technology, only of "sharing" it.'[22]

Causal beliefs, on the other hand, are those regarding cause-effect relationships.[23] These for example could relate to the belief that the non-state actor's actions would help to make the unjust situation better. Alternatively, the non-state actor may like to see the proliferating state succeed and hold causal beliefs regarding both their material contribution to this end and the effect that this might have on the state affairs. This could be achieved, for example, by improving the country's security or rectifying an unjust regional balance of power.

One tenant of these causal beliefs relates to an individual's nationality and related politics. For example, due to either strong political allegiances or weaker connections through their involvement in diaspora communities, a number of illicit procurement cases to Iran have involved Iranian diaspora communities abroad, including the Tanideh case set out below. In recent Iranian illicit procurement cases, for example, Iranian nationals have been involved in procuring equipment from businesses in a number of more developed countries, including Canada, the Philippines, the UK, the U.S, and Malaysia.[24] Of course, some of these may have been—loosely—acting on behalf of the Iranian state, however not under their 'lawful authority.'

It must not however be assumed that ideology always plays a central role in driving the actions of individuals in diaspora communities. A recent case involving the transfer of valves from Germany and India to Iran presents a case in point.[25] While it would be easy to assume the three German-Iranian dual nationals involved and later jailed—a father and son duo, and another—were acting on the basis of allegiance to the aims of the Iranian regime, it seems that this was not the case. An eyewitness who attended the trial noted that while the father and son were clearly motivated by their allegiance to the Iranian regime, the other did not share this politics and was more motivated by profit.[26] Intuitively, it seems likely that other factors such as loyalty might also have been factors.

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20 Saeed Shah, "Transcript of Interview with A.Q. Khan," The Globe and Mail, June 4, 2008, <http://www.theglobeandmail.com/news/world/transcript-of-interview/article1056036/?page=all>.

21 Ibid.

22 "A Tale of Nuclear Proliferation: How Pakistani Built His Network," *New York Times*, December 2, 2004.

23 Judith Goldstein, and Robert Keohane, *Ideas and Foreign Policy*, (Ithaca: Cornell University Press, 1993), p. 10.

24 See, for example, Ian Stewart, and Nick Gillard, "Iran's Illicit Procurement: Past, Present and Future," Project Alpha Report, Project Alpha, King's College, July 24, 2015, <https://www.acsss.info/proliferation/item/428-iran-s-illicit-procurement-past-present-and-future>.

25 Cathrin Gilbert, Holger Stark, and Andreas Ulrich, "German Investigators Uncover Illegal Exports," *Spiegel Online*, October 1, 2012, < http://www.spiegel.de/international/world/nuclear-technology-for-iran-german-investigators-uncover-illegal-exports-a-858893-2.html>.

26 Interview, unnamed individual that attended the November 2013 trial in Hamburg, Germany, conducted January 10, 2014.

Why Do Non-state Actors Not Become Involved?

A framework that fully considers the decision-making calculus of non-state actors must also consider what factors could cause them not to become involved. On this side of the equation, there are two types of factors that lead to a conscious decision on the actors' behalf to restrain themselves. These are deterring factors, which require broader social and normative considerations.

Deterrence

For an actor to be deterred, the potential perceived cost of the action must outweigh the benefit. The previous section identified the primary benefit for involvement in proliferation as financial. Therefore, the possible punishment must, on balance, outweigh the potential financial gain.

Two conditions must be met in order for non-state actors to be deterred from involvement in proliferation. Firstly, the cost (or punishment) of undertaking the prohibited action must be greater than the benefit. Secondly, the likelihood of paying this cost must be sufficient not to change this calculus (i.e., deterrence must be 'credible'). For the deterrent effect to be realized, it may also be that the actor be aware of the costs involved in their actions and that they are rational. These factors are explored in turn.

Punishment

While resolution 1540 does require states to criminalize involvement in WMD proliferation, there is no standardization over the level of penalties involved. In Malaysia, a violation of the Strategic Trade Act can result in a death sentence, whereas in Ireland the maximum penalty is twelve months imprisonment—the lowest in Europe.[27] As Bauer highlights in the case of the European Union, penalties for involvement in proliferation activities vary considerably from state to state.[28] It is evidently difficult to infer the cost of non-financial penalties such as prison sentences (although in Austria one serial proliferator was offered the chance to 'buy out' of prison by paying a fine for every day that he would otherwise have spent in prison).[29]

In a handful of cases, it has not only been the actor's own government that has taken enforcement action, but also third party governments (particularly, the United States) or, in a limited set of cases, the United Nations. The actions taken in these cases have involved freezing financial assets and pursuit of extraditions.

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27 Ibid.

28 Sibylle Bauer, "WMD-related Dual-use Trade Control Offences in the European Union: Penalties and Prosecutions," EU Non-proliferation Consortium Paper no. 30, July 2013, <http://www.sipri.org/research/disarmament/eu-consortium/publications/nonproliferation-paper-30>.

29 Nick Gillard, "Catch Me if you Can: The Illicit Trade Network of Daniel Frosch," Proliferation Case Study Series, Project Alpha, King's College, January 2015, <https://www.acsss.info/proliferation/item/380-new-alpha-case-study-the-illicit-trade-network-of-daniel-frosch>.

Credibility

For the deterrence effect to be realized, it is not enough for a law to exist. Instead, the risk of the punishment being enacted must also be taken into account—that is, the punishment must be credible.

There are several challenges to the credibility of violations in the export control domain, not least is the variation in the existence of national laws. Another factor is the lack of prosecutions for involvement in proliferation. It has been well documented that much of A.Q Khan's network escaped prosecution for a variety of reasons.[30] In many countries, such as the UK, violators are offered the option of settling violations anonymously. The net effect is that most actors will not know others who have been prosecuted and may conclude as a result that the likelihood of action against them is low.

Awareness and Rationality

Beyond the specific challenges to the deterrence effect outlined above, two preconditions can be linked to its effectiveness. The first is awareness. The second is rationality.

It is apparent that an actor must be aware of the severity and likelihood of punishments if they are to be deterred. However, at present, there does not appear to be a broad awareness of export compliance requirements, let alone of the penalties for non-compliance in most countries around the world. Additionally, it may be the case that actors must be rational in order to be deterred.

A key challenge is that most actors that could become involved in proliferation are not unitary actors. Usually, they are companies with more than one employee. In this circumstance, it may not be sufficient for one member of staff to have an awareness of the costs involved in a violation as another employee could decide to act on their own. While effective corporate governance should overcome this risk, in reality, there are many examples of export control violations occurring because of the actions of individual employees or groups of employees. Also, it is key to note that compliance does not always lead to nonproliferation, and at the same time, non-compliance does not always mean supply of programs of concern. It has been demonstrated a number of times that firms have to go beyond compliance in order to prevent illicit trade. It is compliance and not the spread of these beyond compliance practices that is driven by deterrence.

Broader Social and Normative Factors

Broader social and normative factors need to be considered beyond deterrence. Individuals and companies might avoid involvement in illicit trade because they think that it is not the right thing to do in moral terms. Perhaps they are making a conscious effort to maintain a good reputation and image. These types of factors are clearly a driver when it comes to beyond-compliance behavior. Larger organizations often have a Corporate Social Responsibility (CSR) program. It is evidently difficult to quantify this effect, however, as such normative considerations might only be applicable to actors with a high level of understanding about how their actions could contribute to proliferation.

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30 Eben Harrell, "Nuclear Proliferation: The Crime with No Punishment?," *Time Magazine*, September 16, 2011, <http://content.time.com/time/world/article/0,8599,2092585,00.html>.

The Four 'I's: Building a Framework for Non-state Actors

The drivers, both positive and negative, considered above are clearly not mutually exclusive when factored into a non-state actor's decision-making process. They also may vary in terms of context—for example on a specific transfer, recipient, technology or shipment route.

These driving factors—in different directions—and the considerations relating to the witting and unwitting-ness of actors can be brought together into the 'four 'I's' framework, is shown in figure 1 below. Across a spectrum, the presented framework provides a loose typology of four types of non-state actors that may become involved in proliferation. These four types encompass four levels of witting-ness and the likely motivations of these actors, and are illustrated with hypothetical examples. They are as follows:

- **Innocent** – these actors believe that they have done nothing wrong. In fact, they are often unaware that they may have done something wrong until they are alerted by the national authority. Take for example a manufacturer that exported sensitive goods to a customer in China on good faith, having conducted appropriate levels of due diligence and other checks, often involving the national authority (perhaps by applying for a necessary export license). They are later contacted by the national authority and alerted to the fact that their goods may have ended up in Iran. While driven primarily by profit—as most all business activity is—they are unaware of their involvement, and hence they are not driven by any more specific factors.

- **Ignorant** – these actors do not possess an understanding of the regulations and controls, proliferation risks, and the broader social and political implications of their actions. Take for example a distributor that exports a small electronic component. They do not often sell this component, are unaware of the product's uses and hence its risks, and the product's control status (perhaps it has recently been added to the control list). Perhaps they do not have a systematic approach to compliance, and are not yet familiar with the regulations and what needs to be done to go beyond compliance. These actors, again, are driven purely by profit.

- **Indifferent** – these actors understand what they have done, they know it is probably wrong, but do not care. An example could be a businessman, which would take an opportunity to supply a customer in a sanctioned state. The transaction may be illegal or in a 'gray area,' however the businessman did not investigate further, but believed that it was unlikely that he would get caught and was happy to take this risk. These actors are driven primarily by profit, although beliefs are also likely to figure in their reasoning. Perhaps they believe that export controls are unfair and burdensome, for example.

- **Ideological** – these actors clearly understand that their actions are 'wrong' either in a legal or moral sense. In fact, this may be part of what drives them to act in this way. While they may have other motives, including financial ones, those ideological or pertaining to their worldview outweigh the potential profits of their involvement.

This typology and the different motivations are summarized in the figure below.

Figure 1: The Four 'I's: A Framework Setting out the Role of Non-State Actors in Proliferation

	Non-complicit		**Complicit**	
Type of actor	Innocent	Ignorant	Indifferent	Ideological
Factors driving involvement				
	Profit	Profit	Profit > Ideology	Profit < Ideology
Factors driving restraint				
Legal and normative	✓	✓	×	×
Deterrence by threat of financial or custodial penalty	✓	✓	✓	×
Prevent by financial or custodial penalty	✓	✓	✓	✓

Policy Tools and Responses

The typology presented in the four I's framework is useful in categorizing the different types of non-state actors involved in proliferation. It is also useful in considering the utility of different government policies and industry actions in preventing proliferation. For each category, different strategies can be used to reduce the likelihood that actors will become involved in proliferation. The matrix below provides some examples of different supply-side strategies to prevent the proliferation of sensitive technologies and their utility.

Figure 2: Supply-side Strategies and their Utility According to the Four 'I's Framework

Strategy Type		**Innocent**	**Ignorant**	**Indifferent**	**Ideological**
Preventative	Denial	×	✓	✓	✓
Coercive	Deterrence	✓	×	✓	×
Normative	Norms alone	×	×	✓	×
	Education and training	Sometimes	✓	×	×

Denial

This strategy involves making it difficult or impossible for the actor to become involved in proliferation. The specific measures that could be used to achieve this strategy could involve imprisonment, removal of export privileges, removal of business licenses, and travel bans (where travel is assumed to help establish trading relations).

Analysis of this framework suggests that the only strategy that can be used against ideologically driven individuals is preventative. A key challenge, therefore, is employing such measures in a timely manner: conventional legal proceedings can take many years, even after sufficient evidence for a prosecution is assembled. It is notable, therefore, that in some jurisdictions, increased use of 'designations' and denial of export business privileges have been employed even without the case having been tested in court (although, in Europe in particular, many of these designations have been overturned by courts of various types on human rights grounds).

Deterrence

This strategy involves increasing the credibility and severity of punishments in order to change the cost-benefit calculus of those that could become involved in proliferation. As previously noted, this requires an awareness of credible risks.

Normative

This strategy can help to combat proliferation but evidently not when the actor is indifferent or ideologically motivated. This strategy could be pursued through promoting the inclusion of nonproliferation measures in Corporate Social Responsibility schemes.

The multilateral regime Nuclear Suppliers Group (NSG) has taken some steps in this direction. In 2011, the group discussed a UK submission entitled "Good Practice Guidelines for Corporate Social Responsibility," which was subsequently recognized by all but one of the then NSG participants and placed on the NSG's website as an example of 'national practices.'[31] Some efforts have also been made to encourage corporations to adhere to the guidelines, including through, for example, the 'Partners against Proliferation' initiative, through which UK firms come together to discuss how best to implement nonproliferation controls. Nonetheless, much more work is needed on a global basis to secure corporate support for nonproliferation practices that go beyond national export control requirements.

It is difficult to identify specific transactions that have not taken place because of normative considerations alone. Instead, normative actions might tend to manifest in risk avoidance behaviors in which companies opt not to do business with certain markets. It should be noted that normative factors also cannot usually be examined in isolation. For example, for several years up to the time of writing, pressure groups sought to dissuade companies from doing business in Iran by evoking normative and social factors. However, the public naming of companies that did not comply with the request to cease operations in Iran had a potential negative impact from a public relations perspective. Anticipation of this would also change the company's cost-benefit analysis.[32]

Awareness Raising, Education and Training

Some actors become involved in proliferation by accident—be it because they were unaware that their goods were sensitive or controlled or because they did not know what due diligence should have been conducted. For such firms, awareness raising, training and education is key.

There can be substantial challenges to awareness raising for national authorities, however, and there is a general sense in most countries that smaller companies and academia do not have a good understanding of export control requirements. This is likely a result of some very practical challenges: the sheer size of the control lists means that a very large number of manufacturers and exporters may need to know about controls. This number grows substantially when the service sectors (shippers, financiers, and insurers) are taken into account, particularly if the focus of the activity is to go 'beyond compliance.'

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31 "Good Practices for Corporate Standards to Support the Efforts of the International Community in the Non-Proliferation of Weapons of Mass Destruction," Nuclear Supplier Group, <http://www.nuclearsuppliersgroup.org/en/national-practices>.

32 One such group was "United Against Nuclear Iran." Details of which can be found on the UANI website: <http://www.unitedagainstnucleariran.com/>.

There are many cases each year in which a firm that is seemingly unaware of export control requirements exports goods. It should be noted that such 'legal non-compliance' does not necessarily mean that proliferation has occurred.

Generally, non-compliance as a result of a lack of awareness is dealt with by civil penalties or administrative actions as opposed to criminal charges. This partly reflects the fact that in many countries export control violations are not 'strict liability' offenses and partly reflect a desire by regulators to not over-regulate.

Real-world Cases

Cases where non-state actors discuss their motivations and the deterrent effect of enforcement actions are rare. One of these few cases involves an Australian national, David Levick, who has been unusually frank since being charged by U.S authorities of involvement in illicit trade. Another relevant case relates to the proliferation network of Hossien Tanhedih. A third case relates to MKS Instruments Ltd.

The Levick Case

Levick was indicted in February 2012 by an American district court for allegedly supplying U.S-origin electronic components and helicopter parts to Iran.[33] According to press reports, Levick supplied these parts to Iran via an Iranian national who had himself been indicted on charges of export control violations by the U.S government three years prior.[34] Even though Levick and his company were operating from an address in Sydney, U.S law nevertheless restricts the supply to Iran of the components involved, and Levick was charged with participating in a conspiracy to breach U.S export controls over a two-year period.[35]

The indictment against Levick alleges a series of willful deceptions on his part. Levick allegedly provided false destinations and end-users for the goods he purchased from the U.S, indicating that they were being purchased for companies and destinations in Australia or New Zealand. Placing an order with a U.S supplier for helicopter parts, for example, Levick said that the parts were being bought for BHP Billiton, an Anglo-Australian mining company. The indictment states that the parts (as with several of his other procurements) were actually destined for Iran.[36]

Levick himself has admitted supplying goods to Iran. He says, though, that he was ignorant of the export control laws that regulated the sale of American-origin goods to that country. To

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33 "Australian Man and His Firm Indicted in Plot to Export Restricted Military and Other U.S. Technology to Iran," United States Department of Justice, February 29, 2012, <http://www.justice.gov/opa/pr/australian-man-and-his-firm-indicted-plot-export-restricted-military-and-other-us-technology>.

34 Dylan Welch, and Nick Ralston, "Iran Sale: 'They say I'm Incognito'," *The Sydney Morning Herald*, March 2, 2012, <http://www.smh.com.au/federal-politics/political-news/iran-sale-they-say-im-incognito-20120301-1u61x.html>; "Iranian Man and His Company Charged in International Scheme to Supply Iran with Sensitive U.S. Technology," United States Department of Justice, <http://www.justice.gov/opa/pr/iranian-man-and-his-company-charged-international-scheme-supply-iran-sensitive-us-technology>.

35 "United States vs. David Levick and ICM Components, Inc.," United States District Court for the District of Columbia, February 29, 2012, <https://www.bis.doc.gov/index.php/forms-documents/doc_view/455-filed-indictment>.

36 Ibid.

The Australian newspaper, Levick stated that he 'didn't realize I wasn't allowed to sell stuff to Iran.'[37] In an interview with the Australian Broadcasting Corporation after the indictment was made public, Levick said:

> *Well, I didn't even know there was an embargo against [Iran] because the guy that actually contacted me actually thought I was in Austria and when I sent back saying I was in Australia he asked me all these questions and can I supply these and I said yeah okay I'll supply ya and that was it, I didn't know they had an embargo against them or anything like that.*[38]

Levick's statements to the press suggest that he had some awareness of export controls generally, if not those in place with respect to Iran.

> *I, well, I didn't realize that I wasn't allowed to sell stuff to Iran. I knew we weren't to sell stuff to Iraq and Afghanistan and all those other places but I didn't know about Iran. It is only Turkey, Cameroon and all those other places.*[39]

Evidence presented in the indictment demonstrates a different picture of Levick's awareness of regulations on trade and business with Iran during the period he is accused of involvement in illicit trade. In March 2008, Levick reportedly stated to his Iranian contact:

> *I have just been informed that the U.S have [sic] put more restriction[s] on the mo[ve]ment of funds from Iran. The ANZ bank close[d] its funds transfers contract with Iran at the end of last month. So you will have to do it from Malaysia next month. Will keep you posted[.] Bloody yanks.*[40]

Then, in April, he reportedly wrote:

> *I have always tried my best to get the parts & del[iver to] you [as required]…As U know there are restriction on Iran & I have to do my best to get the parts.*[41]

These statements, while revealing, still leave unclear the precise nature of Levick's awareness of the 'restrictions' on trade with Iran and their legal implications.

Levick's case also gives some insight into the effect of restraining factors upon illicit trade. During the course of 2008, Levick became aware that his activities were being subject to increasing scrutiny by authorities. In June, he reportedly said to his Iranian contact:

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37 "Australian Indicted in U.S Says He Didn't Know about Iranian Sales Embargo," *The Australian*, March 1, 2012, <http://www.theaustralian.com.au/news/world/australian-man-indicted-in-us-for-selling-military-components-to-iran/story-e6frg6so-1226285897363>.

38 Meredith Griffiths, "U.S Indicts Australian Businessman," *The World Today – Australian Broadcasting Corporation*, March 1, 2012, <http://www.abc.net.au/worldtoday/content/2012/s3443347.htm>.

39 Ibid.

40 "United States vs. David Levick and ICM Components, Inc.," United States District Court for the District of Columbia, February 29, 2012, <https://www.bis.doc.gov/index.php/forms-documents/doc_view/455-filed-indictment>.

41 Ibid.

> *I have been get[ting] some questions about some of the stuff I have been sending so I do[n']t want to draw attation [sic] to it. As for shipping I think it was the last lot I sent to Iran that the questions started getting asked.*[42]

Later that year, Levick's office was reportedly raided by the Australian Security Intelligence Organization (ASIO), a domestic security service. According to statements made by Levick to the press, ASIO seized his computers and warned him about supplying goods to Iran.[43] Levick apparently described this raid in an email to his Iranian buyer dated September 2008 and cited in the American indictment:

> *I am sending you this email to let you know that the [Australian government] & the U.S. Customs know about what parts I have supplied to you as I have had a visit from both. I was questioned over the weekend about the business we have done & everything has been taken. Computers, Bank accounts & all paperwork that has to do with the parts supplied & emails are being monitored…So I could advise you of what it [sic] happing [sic] & while [sic] you have had no replies from me as I could face charges & fine for breaking trade rules & 5y in jail.*[44]

This raid, by Levick's account, ended his supply relationship with his Iranian buyer. As he told the Australian media in two separate accounts:

> *It wasn't until [Australian authorities] told me 'you shouldn't be sending these' – I canceled everything...straight away.*[45]

> *It wasn't until ASIO told me that oh you shouldn't be sending these then I canceled everything. I canceled…everything that I had on order with them I just canceled straight away - as soon as ASIO said you shouldn't be supplying them so I said okay that's it.*[46]

Indeed, the indictment provides no evidence that Levick made any further sales to Iran beyond this time. The effect of the indictment on Levick, made public in March 2012, was serious indeed. If extradited and found guilty on the charges facing him (conspiracy to defraud the United States and violating the International Emergency Economic Powers Act), Levick would face a maximum sentence of twenty-five years in prison. Levick's response shortly after the release of the indictment was recorded by *The Australian* newspaper:

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42 Ibid.

43 "Australian Indicted in U.S Says He Didn't Know about Iranian Sales Embargo," *The Australian*, March 1, 2012, <http://www.theaustralian.com.au/news/world/australian-man-indicted-in-us-for-selling-military-components-to-iran/story-e6frg6so-1226285897363>.

44 "United States vs. David Levick and ICM Components, Inc.," United States District Court for the District of Columbia, February 29, 2012, <https://www.bis.doc.gov/index.php/forms-documents/doc_view/455-filed-indictment>.

45 "Australian Indicted in U.S Says He Didn't Know about Iranian Sales Embargo," *The Australian*, March 1, 2012, <http://www.theaustralian.com.au/news/world/australian-man-indicted-in-us-for-selling-military-components-to-iran/story-e6frg6so-1226285897363>.

46 Meredith Griffiths, "U.S Indicts Australian Businessman," *The World Today – Australian Broadcasting Corporation*, March 1, 2012, <http://www.abc.net.au/worldtoday/content/2012/s3443347.htm>.

> *I'm as nervous as shit […] I'm in a sweat and I feel like I should be going out and getting drunk.*[47]

Levick is not known to have made further public comments on the case, and apparently has neither faced charges in an Australian court nor been extradited to the U.S (indeed, it is unclear if his alleged actions would meet the legal thresholds set by the Treaty on Extradition between Australia and the United States of America).[48] He is listed in an Australian government business registry as the operator of an electronics component supply firm in Sydney.[49]

In terms of the four I's framework, Levick would seem to fall somewhere between the ignorant and indifferent categories. He was primarily motivated by profit and may have known that his actions were illegal. In terms of preventative action, normative and awareness raising activities did not prevent Levick's actions. Instead, it appears that it was preventative enforcement action that ultimately ended Levick's business with Iran.

The Tanideh Network

The Tanideh network involved the procurement of millions of dollars' worth of specialist valves for the Arak heavy water reactor in Iran, which prior to the alterations agreed as part of the JCPOA could have been used to produce plutonium for nuclear weapons.

At the center of the case was Hossein Tanideh. Tanideh had been 'Vice President' of Iran's Pentane Chemistry Industries Board of Directors as well as Managing Director of the Sherkate Sakhtemani Rahtes Sahami Company, also known as the Rahtes Company.[50,51] Pentane has been involved in illicit procurement activities, being linked to a shipment of phosphor bronze wire mesh intercepted at Seoul International Airport during trans-shipment between Tianjin, China and Turkey. The UN's Iran sanctions Panel of Experts investigated the interdiction and included findings in its 2011 report that this constituted a breach of sanctions.[52]

In this case, Tanideh is alleged to have acted on behalf of Modern Industries Technique Company (MITEC), an Iranian company that has used multiple aliases, in order to procure the specialist valves valued at $7.7 million for the Arak reactor.[53,54] MITEC contacted Hossein

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47 Ibid.

48 "Treaty on Extradition between Australia and the United States of America," Australian Treaty Series 1976 No. 10, Department of Foreign Affairs, Canberra/ Washington, May 14, 1974, <http://www.austlii.edu.au/cgi-bin/sinodisp/au/other/dfat/treaties/1976/10.html>.

49 "Current Details for ABN 50 318 452 138," Australian Government, Australian Business Register, <http://abr.business.gov.au/SearchByAbn.aspx?SearchText=50318452138>.

50 "Fact Sheet on Increasing Sanctions Against Government of Iran," United States Department of State, United States Virtual Embassy in Iran Website, July 12, 2013, <http://iran.usembassy.gov/treasfs.html>.

51 "Covert Iranian Nuclear Dealings via Turkey Revealed", *Today's Zamen*, March 12, 2013, <http://www.todayszaman.com/news-309539-covert-iranian-nuclear-dealings-via-turkey-revealed.html>.

52 "Final Report of the Panel of Experts Established Pursuant to Resolution 1929 (2010)," S/2012/395, June 12, 2012, p. 15.

53 "Final Report of the Panel of Experts Established Pursuant to Resolution 1929 (2010)," S/2013/331, June 5, 2013, p. 7.

54 Cathrin Gilbert, Holger Stark, and Andreas Ulrich, "German Investigators Uncover Illegal Exports," *Spiegel Online*, October 1, 2012, <http://www.spiegel.de/international/world/nuclear-technology-for-iran-german-investigators-uncover-illegal-exports-a-858893-2.html>.

Tanideh, purportedly the owner of a number of companies in Germany and potentially elsewhere, to request the procurement of three types of valves.[55] Tanideh's role was allegedly one of facilitator: he identified and approached the manufacturers, including the German firm MIT-Weimar and the Indian firm Bell-o-seal and provided details of false front companies after these manufacturers were approached by the German authorities. He also appears to have used two other individuals, Gholamali Kazemi and Kianzad Kazemi, working for him in Germany to facilitate the scheme. Tanideh allegedly introduced himself to German industrialists as a 'refinery manager.'[56] Valves frequently have applications in the petro-chemical industries, and assuming this fabricated position, may have inspired confidence in his *bona fides*. Some media sources do cite an email address supposedly used by one of the defendants (although it is not known which one) as ghost18273@hotmail.com.[57]

Rudolf Mayer

Tanideh first made contact with Rudolf Mayer, owner of MIT-Weimar, in 2007.[58] There is some ambiguity regarding the exact role played by Mayer and MIT-Weimar. Some press reports detail Mayer as a 'valve manufacturer,' citing German intelligence reports that also describe him as a 'manufacturer.'[59] An individual who attended the trial also verified that Rudolf Mayer's company was said to be the manufacturer of the valves.[60]

Various national authorities, including from the U.S and Germany, had concerns about Iran's procurement activities relating to valves since at least 2009.[61] The U.S State Department first expressed concern to German colleagues around April 2009 with regards to the targeting of German company MIT-Weimar by MITEC.[62] Again, in September 2009, U.S authorities expressed concern to German authorities regarding attempts by MITEC to procure stainless steel valves, this time from two German companies, including a firm called MIT-Weimar.[63]

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55 Ibid.

56 "Startling Revelations from an Iranian Smuggling Case in Hamburg," The Algemeiner Blog, September 17, 2013, <http://www.algemeiner.com/2013/09/17/startling-revelations-from-an-iranian-smuggling-case-in-hamburg/>.

57 "Verstoß gegen Handelsembargo: Deutsche Exporteure wegen Iran-Deals vor Gericht," *Der Spiegel,* July 25, 2013, <http://www.spiegel.de/politik/ausland/prozess-in-hamburg-geschaeftsleute-sollen-iran-embargo-verletzt-haben-a-913080.html>.

58 Ibid.

59 "Startling Revelations from an Iranian Smuggling Case in Hamburg," The Algemeiner Blog, September 17, 2013, <http://www.algemeiner.com/2013/09/17/startling-revelations-from-an-iranian-smuggling-case-in-hamburg/>.

60 Interview, unnamed individual that attended the November 2013 trial in Hamburg, Germany, conducted January 10, 2014.

61 "Startling Revelations from an Iranian Smuggling Case in Hamburg," The Algemeiner Blog, September 17, 2013, <http://www.algemeiner.com/2013/09/17/startling-revelations-from-an-iranian-smuggling-case-in-hamburg/>.

62 "NIAG 9028: Entity with Ties to Iran's Nuclear Program Attempting to Procure Stainless Steel Valves," United States State Department Cable No.09STATE34336, April 8, 2009, <http://wikileaks.org/cable/2009/04/09STATE34336.html>.

63 "NIAG 9130: Iran Seeks German-origin Valves," United States State Department Cable No. 09STATE96891, September 17, 2009, <http://www.wikileaks.org/plusd/cables/09STATE96891_a.html>.

By December 2009, investigations undertaken by the German authorities indicated to the U.S, incorrectly, that concerns with regards to the targeting of MIT-Weimar were groundless. A cable noted that the German authorities 'found no evidence of a pending export of steel valves to Sherkat-E Sakhtemani-Ye Rahtess.'[64] Sherkat-E Sakhtemani-Ye Rahtess was said to be working on behalf of Rahkar Sanaye Novin Company (MITEC) and on behalf of the Atomic Energy Organization of Iran.[65]

Some of these were specified to the Institute of Electrical and Electronics Engineers (IEEE) standard 382 (for nuclear power generating stations), and actuators with "an IP rating of 67."[66] The IEEE 382 standard is particularly notable given that products meeting this specification are able to operate in a radiation environment.[67] This number of valves is believed to be sufficient to equip the entire Arak facility and had a value of $7.7m USD.

Bekasar Industrietechnik GmbH

A second dimension to the case involved the procurement of valves from a Halle-based business. Attempts were made to procure 655 valves, with fifty-five being transferred to Iran. This Halle-based company is Bekasar Industrietechnik GmbH, described as a 'wholesaler' of industrial products.[68] It is unknown where the valves were procured from in this case—Bekasar is not a manufacturer.

Gholamali and Kianzad Kazemi

Gholamali and Kianzad Kazemi worked on behalf of Tanideh in Germany to facilitate the scheme. Kianzad Kazemi, the son of Gholamali Kazemi, was undertaking an apprenticeship at Bekasar.[69] He was in the second year of the apprenticeship and had been given responsibility for deals involving Iran, amongst other activities. Kianzad was allegedly present at the initial meeting between Mayer and Tanideh. The Kazemis also have other business interests, purportedly in the import-export area. However, there is no evidence that any of the above companies were used by the Kazemis in their illicit activities.

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64 "NIAG 9028: Germany Says No Deals in Place to Send German Origin Steel Valves to Iran," United States State Department Cable No. 09BERLIN1535, United States Embassy Berlin, December 3, 2009, <http://wikileaks.org/cable/2009/12/09BERLIN1535.html>.

65 "NIAG 9028: Entity with Ties to Iran's Nuclear Program Attempting to Procure Stainless Steel Valves," United States State Department Cable No.09STATE34336, April 8, 2009, <http://wikileaks.org/cable/2009/04/09STATE34336.html>.

66 Ibid.

67 See the IEEE 382 Standard, available online at: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=531658>.

68 Interview, unnamed individual that attended the November 2013 trial in Hamburg, Germany, conducted January 10, 2014; "Bekasar Waren Import Export," listing on HelloTrade website, available online at: <http://www.hellotrade.com/bekasar-waren-import-export/>.

69 Interview, unnamed individual that attended the November 2013 trial in Hamburg, Germany, conducted January 10, 2014.

Kinzaid Kazemi and his father Gholamali Kazemi are alleged in some cases to have been 'responsible for coordinating the project in Germany.'[70] This would seem a possibility given Tanideh's arrest in Turkey.

Indian Aspects

Unable to source all the valves required within Germany, Tanideh purportedly sourced valves from the Indian firm 'Bell-o-seal' using front companies in Turkey. The Indian enterprise developed a capability to manufacture bellows-sealed valves after the country's isolation from the global nuclear market following its nuclear tests.

There are conflicting reports as to whether the Indian government issued a license for the export. In fact, some media reports allege that a license was not required.[71] If a license was issued, it suggests that insufficient due diligence was conducted by Indian licensing officials.

Case Outcomes

Tanideh was designated by the U.S under EO13382 in mid-2012. He was arrested in January 2013 and was in prison in Turkey awaiting trial with German extradition requests. Turkish authorities denied Germany's request, and released him from prison in 2014.[72] On November 8, 2013, four German nationals were also convicted of involvement in the conspiracy in a German court.[73]

- Rudolph Mayer (German national) – Weimar-based businessman and owner of MIT-Weimar received three years in prison;
- Gholamali Kazemi (German-Iranian national) – Received four years in prison;
- Kianzad Kazemi (German-Iranian national) – employee of Bekasar, son of Gholamali K. received two years, nine months in prison;
- Hamid Khouran (German-Iranian national) – Received a suspended sentence of one and a half years.

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70 Cathrin Gilbert, Holger Stark, and Andreas Ulrich, "German Investigators Uncover Illegal Exports," *Spiegel Online*, October 1, 2012, <http://www.spiegel.de/international/world/nuclear-technology-for-iran-german-investigators-uncover-illegal-exports-a-858893-2.html>.

71 "India Denies Charge of Involvement in Illicit Nuclear Trade," *The Hindu*, October 30, 2013, <http://www.thehindu.com/news/national/india-denies-charge-of-involvement-in-illicit-nuclear-trade/article5286629.ece>.

72 "German Authorities Sentence Four Men for Supplying Iran with Valves for Heavy Water Reactor," Iran Watch, February 25, 2015, <http://www.iranwatch.org/our-publications/international-enforcement-actions/german-authorities-sentence-four-men-supplying-iran-valves-heavy-water-reactor>.

73 Cathrin Gilbert, Holger Stark, and Andreas Ulrich, "German Investigators Uncover Illegal Exports," *Spiegel Online*, October 1, 2012, <http://www.spiegel.de/international/world/nuclear-technology-for-iran-german-investigators-uncover-illegal-exports-a-858893-2.html>; "Haftstrafen für Embargo-Verstoß: Gericht verurteilt vier Geschäftsleute," *Die Welt*, November 9, 2013, <http://www.welt.de/print/die_welt/hamburg/article121709163/Haftstrafen-fuer-Embargo-Verstoss.html>.

One of the four will spend time in prison.[74] The actions and testimony of the four in court can shed some light on what drove them to take part in these transactions.[75] Mayer and Khouran seemed to be motivated by the financial gain. The Kazemis appeared to be more motivated by their allegiance to the Iranian regime. Khouran did not share such an allegiance.

Applying the Four I's Framework

It is helpful to examine this network through the four I's framework as it involves actors that can be categorized in different parts of the framework.

The Indian entity appears to fall into the category of either 'innocent' or 'ignorant.' The valves were allegedly not subject to control, which would imply 'innocence.' However, the nature of the products perhaps should have resulted in additional questions being asked about the nature of the end-use. There are no grounds to believe that if the Indian firm had known the true end-use, it would have proceeded with the transaction.

Mayer appears to fall into the category of 'indifferent.' His company continued to engage in the transactions despite the fact that German authorities had visited the company to ask questions about the deal. It is possible also that the German-Iranians were simply indifferent, although their nationality could lead one to suspect that they were ideologically motivated. Certainly, the threat of punishment was not sufficient to end their interests in the deal.

Tanideh appears to fall into the category of 'ideological' or 'ignorant.' This reflects the fact that he became involved in this network after having worked for Iran's nuclear program and that he took active steps to create mechanisms to evade non-proliferation controls.

MKS Shanghai Ltd. Case

MKS Instruments Ltd. is one of the main producers of a vacuum measurement instrument known as a capacitance manometer. Hundreds of such devices are required in any uranium enrichment program and Iran is known to have acquired many MKS units even though no exports to Iran's program were authorized from the U.S. It is not known how all of the instruments reached Iran, but it is known that several hundred units were diverted from a wholly owned subsidiary of MKS Instruments Ltd known as MKS Shanghai Ltd. to Iran in the period 2009-2012.

An employee of China-based MKS Shanghai Ltd., Qiang Hu, and another Chinese National, Sihai Cheng, has entered a plea agreement with U.S prosecutors in relation to this case. From that plea agreements it appears that Cheng had a long-standing relationship with an Iranian national named Jamili, an individual known to be linked to Iran's nuclear program. Jamili, it is alleged, approached Cheng about obtaining capacitance manometers. Cheng then approached MKS Instruments Ltd., and the company's then sales manager and brother of the general manager, Qiang Hu, advised Cheng to seek the goods through a business acquaintance, Wang

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74 "The Arak Trial in Hamburg: Sanctions against Iran and German Control Authorities," Stop the Bomb website, November 16, 2013, <http://de.stopthebomb.net/en/germany-iran/bafa.html>.

75 Interview, unnamed individual that attended the November 2013 trial in Hamburg, Germany, conducted January 10, 2014.

Ping, who was the owner of other businesses, including one named Racy System and a Hong Kong registered business named Wang Chao International Trade Co. Ltd.[76]

Hu had pressure transducers shipped to the businesses of Wang Ping, who in turn is alleged to have had the capacitance manometers shipped to unauthorized end-users through his front companies.[77] It is also alleged that Hu knowingly submitted false end-user undertakings to MKS Instruments Ltd. in Andover, Massachusetts for ultimate submission to the U.S export licensing authorities.[78] A stock of goods that had been shipped to MKS Shanghai Ltd. for another named customer was also diverted.[79]

Based on court documents, it is believed that the network changed a mark-up of around 100% on the usual MKS sales price (bringing the total to $1.8m for 790 units).[80] This demonstrates the potentially lucrative profits that can be achieved by trading illicitly in controlled goods, for which there is high demand and limited supply.

Applying the Four I's Framework

As with the last case, this case is an interesting one to examine through the four I's framework as different actors can be considered in different positions. The US-based MKS Instruments Ltd. appears to be either 'innocent' or 'ignorant,' given that they sought export licenses in good faith based upon the information provided by their subsidiary. The staff of MKS Shanghai Ltd. and, allegedly, Cheng, also appear to be 'indifferent.'

It should be noted that most of the individuals involved in this case were located in China—a country considered to have a lax counter-proliferation enforcement record. Indeed, it appears that the action, while illegal, could not have been prosecuted as a criminal offence in China because of certain inadequacies in Chinese law at the time. Evidently, this would erode any deterrence effect of the controls. It is also interesting to note that the individuals in this case face justice not in China but in the United States. In 2012, Hu flew to Boston's Logan airport and was arrested, while Cheng was extradited to the United States after being detained when arriving at Heathrow airport in London in 2014.

While little is known about Jamili, it appears that his role working as a procurer for Iran's nuclear program would place him in the 'indifferent' or 'ideological' category. Certainly, there are no signs that he was deterred as a result of the potential consequences of his actions.

Interestingly, the response of MKS Instruments Ltd. to the case was to implement what they describe as the 'controlled delivery model,' a logistics approach that bypasses the involvement of non-state actors in proliferation.[81] This involves shipping goods directly from MKS

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76 "United States of America vs. Qiang Hu a/k/a/ Johnson Hu: Government Sentencing Memorandum," Case 1:12-cr-10188-PBS, filed July 18, 2014.

77 Ibid.

78 Ibid.

79 Ibid.

80 Ian Stewart, Andrea Stricker, and David Albright, "Chinese Citizen's Involvement in the Supply of MKS Pressure Transducers to Iran: Preventing a Reoccurrence," ISIS Reports, April 14, 2014, <http://isis-online.org/uploads/isis-reports/documents/MKS_China_30Apr2014-final.pdf>.

81 Ian Stewart, and J. McGovern, *Beyond Compliance: Preventing the Diversion of Sensitive Vacuum Measuring Equipment - The Controlled Delivery Model,* (London: CSSS Occasional Paper Series, 2013).

headquarters to customers. The shipping agent is a large corporate entity that also serves other multinational companies. MKS describe the motivation of involving such an entity in the process as 'taking profit out of proliferation' because it would not be in this company's financial interest for MKS stock to be diverted. This model is thus an illustration of how an understanding of the drivers for non-state actor involvement in proliferation can help to design approaches that can counter the role of such actors in proliferation.

Conclusions

This paper has examined the factors that could drive non-state actors to become involved in proliferation and the factors that could cause restraint. A framework through which to examine these competing factors was also developed.

The framework highlights a number of potential drivers for non-state actors to become involved in proliferation. Perhaps the most notable of these drivers is profit. However, in some important cases, ideological factors have also contributed substantially to the actions of proliferators. It is notable that, in some cases, ignorance of legal requirements and proliferation risks appears to have aided proliferation. The framework also highlights possible policy responses for each type of driver, which could prevent, or at least discourage, involvement in proliferation.

Examining proliferation through the lens of the four I's framework can be used to inform efforts to prevent illicit trade. In particular, it is apparent that awareness efforts should be expanded and more publicity should be sought in relation to enforcement actions. It should also be noted that for certain types of actors no deterrent-based strategy is likely to be effective. Therefore, preventative strategies, including imprisonment and denial of export privileges, are also required.

Free Zones and Strategic Trade Controls

ANDREA VISKI AND QUENTIN MICHEL[1]

Abstract

Free zones have been used in numerous WMD proliferation-related cases and present unique opportunities and incentives for proliferators. This article examines the ways in which free zones present a proliferation risk and recommends practical actions to strengthen strategic trade controls as a nonproliferation tool in the context of free zones. Existing international and regional legal frameworks, free zone incentives and vulnerabilities, and case studies are presented. The article concludes with recommendations in four specific areas: strengthening legal frameworks, empowering Customs authorities, training and awareness, and further research.

Keywords

Strategic trade controls, free zones, revised Kyoto Convention, nonproliferation, Customs, World Customs Organization

Introduction

Supply chain security plays an important role in nonproliferation of weapons of mass destruction (WMD) efforts. The rise in the global supply chain's complexity due to multiplication of actors, trade globalization, and technological advancement has opened trade routes to exploitation

1 Dr. Andrea Viski works as a researcher for the European Commission Joint Research Centre in the field of nonproliferation, strategic trade controls and nuclear security. She is also the Editor-in-Chief of the Strategic Trade Review. Dr. Quentin Michel graduated from the University of Liege. He is Ordinary Professor in European Studies at Department of Political Science Liège University. His current fields of researches are: Decision making process of EU Institutions in particular the role of informal governance and strategic trade control regimes. His present research is devoted to the increasing responsibility of industries ands exporters in proliferation risk analysis, EU sustainable development policies in regards to its links with other policies and nuclear regulation policies.

by those seeking to acquire strategic goods for WMD purposes. Free zones are one major area of vulnerability that merit greater attention in strategic trade literature.[2] While several reports have been issued on the relationship between free zones and activities such as money laundering, intellectual property rights violations, and illegal cigarette smuggling, this article opens analysis of free zone to the strategic trade realm specifically.[3]

Free zones have been used in numerous WMD proliferation-related cases and present unique opportunities and incentives for proliferators. This paper examines the ways in which free zones present a proliferation risk and recommends practical actions to strengthen strategic trade controls as a nonproliferation tool in the context of free zones.

The article is structured as follows. The first section examines existing international and regional laws that define and regulate these areas, in particular the revised Kyoto Convention (RKC), international export control regimes and other related organizations, as well as regional legal structures such as that of the European Union (EU). The second section explores vulnerabilities specific to free zones and presents past proliferation case studies. In conclusion, the paper offers concrete recommendations in four specific areas: strengthening legal frameworks, empowering Customs authorities, training and awareness, and further research.

International Legal Framework

Free trade zones are the most commonly referred to types of free zones. Free zones themselves are synonymous with special economic zones and are often used interchangeably in available sources. But free trade zones are also referred to with different terminologies depending on the country. The United States refers to them as foreign-trade zones while in other countries they are referred to as free ports or export processing zones. International law offers a working definition of free zones that helps clarify the varying nomenclature.

The International Convention on the Simplification and Harmonization of Customs Procedures, otherwise known as the Kyoto Convention, sets up the legal framework governing free zones.[4] The convention was developed by the World Customs Organization (WCO) and entered into force in 1974 as the main trade facilitation Customs convention. It was revised and the new version adopted by the WCO Council in 1999. The convention's aim is to facilitate trade and maintain effective controls by harmonizing and simplifying Customs procedures and practices.[5]

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2 This article refers to free zones and groups free trade zone as one type of free zone. This is because a) international law in the form of the Revised Kyoto Convention refers to free zones and b) some free zones have been created for activities other than trade, such as manufacturing.

3 This article uses the definition of strategic trade controls as can be found in Catherine B. Dill and Ian Stewart, "Defining Effective Strategic Trade Controls at the National Level," *Strategic Trade Review* Vol. 1, (Autumn 2015), p. 4.

4 Bernard M. Hockman, Philip English, and Aaditya Mattoo, "Development, Trade and the WTO: A Handbook," World Bank, June 12, 2002, <http://documents.worldbank.org/curated/en/2002/06/5051874/development-trade-wto-handbook>.

5 Revised Kyoto Convention, World Customs Organization, February 3, 2006.

The RKC consists of three parts: text, ten chapters of a general annex, and ten specific annexes. The text lays out definitions, scope, structure, management, organization, responsibilities of contracting parties, and final provisions. The general annex covers core Customs procedures and practices that aim to harmonize and simplify Customs procedures across countries' respective administrations. It also covers general principles, definitions, clearance and other Customs formalities, duties and taxes, security, Customs control, application of information technology, relationship between Customs and third parties, information supplied by Customs, and appeals in Customs matters. Importantly, as delineated in the text, the entire general annex is binding on contracting parties and no reservations are possible regarding their implementation.

The specific annexes of the RKC, however, are not binding. They consist of standards and recommended practices regarding other aspects of Customs procedures. Therefore, according to the general text, contracting parties can accept one or more of the specific annexes as well as submit reservations to recommended practices to the WCO.[6] There is an obligation to review reservations periodically, and no reservations to standards are allowed. The areas covered by specific annexes are: arrival of goods in a Customs territory, importation, exportation, Customs warehouses and free zones, transit, processing, temporary admission, offenses, special procedures and origin. The part of the RKC dealing with free zones is in the specific annex and therefore not binding on contracting parties.

Free zones are dealt with in Chapter II of Specific Annex D. Here, they are defined as "a part of the territory of a Contracting Party where any goods introduced are generally regarded, insofar as import duties and taxes are concerned, as being outside the Customs territory."[7] The standards and recommended practices supply the only existing hard law international legal framework for free zones. Importantly, the definition only regards goods as being outside of the Customs territory in relation to the traditional revenue collection role of Customs, but does not touch other important responsibilities of Customs such as inspections and seizures. Standard four of the Annex states: "Customs shall have the right to carry out checks at any time on the goods stored in a free zone." It is important to underscore this point, especially with regards to the actual obstacles faced by many Customs authorities regarding their access to free zones discussed later in this article.

Most of the standards and recommended practices in the Specific Annex set wide boundary conditions for states. For example, regarding the kinds of goods consumed within a free zone, the Annex states as a standard that: "National legislation shall enumerate the cases in which goods to be consumed inside the free zone may be admitted free of duties and taxes and shall lay down the requirements which must be met."[8] The most important points, apart from Standard Four mentioned above, are in the form of recommended practices, and therefore at the bottom of the pyramid in terms of legal obligations on state signatories. Recommended Practice six, for example, importantly acknowledges that certain goods may not enter a free zone due to public security concerns.

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6 Samson Bilangna, "The Revised Kyoto Convention," CAREC Customs Cooperation Committee Technical Assistance Inception Workshop, April 7-9, 2014, <http://www.carecprogram.org/uploads/events/2014/CCC-TA-Workshop-AZB/Presentation-Materials/Day-2/009_112_209_The-Revised-Kyoto-Convention.pdf>.

7 Revised Kyoto Convention, World Customs Organization, February 3, 2006.

8 Ibid.

It is unclear to what extent states implement the Revised Kyoto Convention after signing it, especially regarding the Specific Annex. Interestingly, the World Free Zones Organization, the only association of free zones on an international level, states in its 2015 "manifesto" that there is no clear definition of a free zone, either overlooking the Revised Kyoto Convention or perhaps pointing to its irrelevance.[9] According to the WCO official website, there are currently 103 contracting parties.[10] However, of these, based on states' notifications on Specific Annexes or *notes verbales* signaling accession, very few have expressed adherence to the Specific Annexes, and in particular Specific Annex D. There is also insufficient information in the public domain to understand to what extent contracting parties implement the Convention in general, and for the states that do follow Specific Annex D, specific implementation practices and measures are not identified.

The emphasis on the RKC stems from first, its role as the only source of international law regarding free zones, and second, due to its potentially significant role in addressing vulnerabilities germane to free zones that render them a weak point in strategic trade supply chains. Research beyond the starting point of the RKC regarding definitions and terminology yields as many different descriptions of zones as number of zones themselves. There are free ports, free trade zones, free economic zones, export processing zones, exclusive economic zones, enterprise zones, foreign trade zones, special economic zones, and many more. While there are differences between each kind of zone, these differences are accepted without a firm internationally accepted legal underpinning.

Given that free zones represent a proliferation risk in the context of strategic trade controls, subject-relevant international bodies could address free zones in their guidelines, associated best practices, or implementing guides. An analysis of such bodies demonstrates that only one organization, the Wassenaar Arrangement, does so.

The Proliferation Security Initiative, which commits participants to establish a coordinated and effective basis through which to impede and stop WMD-related trafficking, does not address free zones specifically in its guiding principles or other documents.[11] Of the four major export control regimes, the Nuclear Suppliers Group (NSG), the Australia Group (AG), the Wassenaar Arrangement (WA), and the Missile Technology Control Regime (MTCR), only the WA addresses free zones in their best practice guidelines for transit and trans-shipment. The WA publishes many such guides, which constitute a soft law element of the international strategic trade control legal framework. The guide calls on WA Participating States to:

> *"Establish and apply a transparent legal and regulatory system that allows, where appropriate, the authority to control items in transit or trans-shipment, including the authority to, where necessary and appropriate, stop, inspect and seize a shipment,*

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9 "World Free Zones Organization: Manifesto," World Free Zone Organization, 2015, <http://www.worldfzo.org/AnnualReports/World%20FZO_Manifesto_E2014.pdf>.

10 "Position as Regards Ratification and Accession," World Customs Organization, July 25, 2015, <http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/conventions/~/media/WCO/Public/Global/PDF/About%20us/Legal%20Instruments/Conventions%20and%20Agreements/Revised%20Kyoto/20140204E95.ashx>.

11 The Proliferation Security Initiative, <http://www.psi-online.info/>.

> *as well as legal grounds to dispose of a seized shipment when law enforcement activities are completed. This authority should extend fully to activities taking place in special Customs areas located within a sovereign state's territory, such as free-trade zones, foreign trade zones and export processing zones."*[12]

This is the only reference to free zones by an export control regime and indicates that Customs authorities should retain their political power to inspect and seize suspicious shipments. However, the guide is specific, as referenced in the text, to the forty-one Participating States of the WA.[13] These states are assumed to have the strongest strategic trade control systems in place and present less vulnerabilities in their free zones than states outside the regime. Export control regimes are composed of the major worldwide suppliers of particular groups of dual-use goods, but major transit and trans-shipment countries are often not included. As the vulnerabilities of free zones apply mostly in these countries, there are weak incentives for them to follow and apply WA best practice guide recommendations, or to even know that the guide exists, unless they are targeted by WA outreach activities specifically on this subject.

What remains at the international legal level, having considered the Revised Kyoto Convention and international export control regimes, is that a universal legal obligation specific to free zones does not exist. Instead, the current framework is built on voluntary, generalized guidelines as well as bits and pieces of soft law guidelines from various organizations.

Regional Legal Frameworks

Even if several regional organizations in Europe, Africa, and America have adopted some form of Customs union, common ruling principles of free zones are almost non-existent in particular provisions concerning strategic trade control.[14] The European Union (EU), which constitutes one of the most integrated regional custom organizations, dedicates some provisions to free zones in its Community Customs Code. The Code stipulates the establishment of free zones, categories of goods admissible, and the nature of the operations.[15] None are related to the manufacturing or the transfer of the strategic items in a free zone. Therefore, it is up to EU Member States to adopt national provisions.

Nevertheless, export and transit of strategic items in the European Union are ruled by Dual-Use Council Regulation 428/2009 that, although not explicitly mentioning trans-shipment, indirectly gives EU Member States the possibility to control strategic item-related activities in

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12 "Best Practice Guidelines for Transit or Trans-shipment," Wassenaar Arrangement, 2015, <http://www.wassenaar.org/wp-content/uploads/2016/01/01Best-Practice-Guidelines-for-Transit-and-Trans-shipment.pdf>.

13 This refers to the number of members as of October 2016.

14 For example, the European Union (EU), the Southern African Customs Union (SACU), or the North American Free Trade Agreement (NAFTA).

15 Articles 166 to 181 of the Council Regulation (EEC) No. 2913/92 establishing the Community Customs Code (*Official Journal* L 302, 19/10/1992 P. 0001) and articles 799–814 of the Commission Regulation (EEC) No. 2454/93 of 2 July 1993 laying down provisions for the implementation of Council Regulation (EEC) No. 2913/92 establishing the Community Customs Code (*Official Journal* L 335, 31/12/1993 P. 0001).

free zones.[16] Stemming from this, three situations can be considered. The first situation concerns the import of items from a third country into an EU free zone or the import of items from an EU free zone into the EU Customs territory. As long as an import of strategic items into the European Union is not submitted to nonproliferation control provisions, those operations are not controlled. At the national level, EU Member States have not adopted national legislation controlling such transactions.

The second situation concerns strategic items transiting through the European Union. This operation is targeted by the EU Dual-Use Regulation that defines transited items as "items which are not assigned a Customs-approved treatment or use other than the external transit procedure or which are merely placed in a free zone or free warehouse and where no record of them has to be kept in an approved stock record."[17] The Regulation offers legal ground to allow EU Member States to prohibit, on a case-by-case basis, dual-use items passing through the European Union, including free zones, if authorities have reasonable grounds for suspecting from intelligence or other sources that the items are or may be intended in their entirety or in part for proliferation of WMD or of their means of delivery in the end-user country.[18] This provision has been used occasionally by Member States, including for items transiting through EU free zones.

The third case concerns exporting dual-use items to a free zone established in a country outside of the EU. The Dual-Use Regulation does not contain dedicated provisions ruling such exports or guidelines delineating principles to be considered by Member State authorities. A prohibition to use European Union General Export Authorizations (EUGEA) exists only if the items are exported to a Customs free zone or free warehouse that is located in a destination covered by the authorization. Therefore, EU Member States are free to authorize or not export to free zones as long as they respect general export conditions and criteria defined by the Regulation. Consequently, the EU free zone export policy consists of varying situations whereby some Member States will deliver the authorizations (including global authorizations) while others will prohibit such exports.

Similarly to international law, the European Union has not adopted a clear legal obligation ruling strategic trade specifically in free zones. The result is a kaleidoscope of situations that cannot pave the way for a potential international instrument. Therefore, it is necessary to identify common existing characteristics of free zones that allow for the framing of proposals ruling their activities.

Free Zones: Growth and Incentives

What characterizes all free zones, beyond the baseline definition of the revised Kyoto Convention, are the incentives they provide economic operators. The exact number of free zones worldwide is unknown. One estimate from a Financial Action Task Force (FATF) report from 2010 puts the

16 Council Regulation (EC) No. 428/2009 of 5 May 2009 Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items, Official Journal of the European Union (L 134/1) of May 29, 2009.

17 Ibid.

18 Ibid.

number of free zones at 3,000 in 135 countries worldwide.[19] The latest figure, from the World Free Zones Organization in 2015, is 3,500, with around 70 million employees.[20] The growth in free zones has been exponential given that in 1975 there were a mere seventy-nine such zones.[21] This number is certainly higher presently than in 2015 and will undoubtedly increase further due to the significant role of free zones in global economic activity, especially in developing countries.

The baseline incentive for countries to establish and use free zones is the potential boost to economic development. This can take place in numerous ways, giving rise to the multiplicity of different kinds of zones and accompanying nomenclature. Free zones aim to facilitate business activities, boost foreign investment, and spur technological advancement and transfer. Some zones, such as export processing zones, specialize in manufacturing for exports that offer firms free trade conditions and a liberal regulatory environment.[22] All free zones try to attract economic activity by offering less regulation and governmental "red tape."

The potential gains from free zones can be attractive for developing countries, but the gains from free zones are not absolute.[23] Free zones can help achieve economic goals if they are well-managed, and the outcome depends strongly on the country and its circumstances. For example, when Jordan created the Aqaba Special Economic Zone in 2001, it literally created a separate Customs agency for the zone that was disconnected from the central government.[24] This model had to be revised because, due to its extraterritoriality, the zone remained isolated. Due to Aqaba's ineligibility to become a WCO member, businesses were dis-incentivized as they could not qualify as Authorized Economic Operators.[25]

Regardless of the exact model or level of deregulation, free zones offer an attractive option for governments and economic operators. Yet the same characteristics that make free zones attractive to legitimate business also can attract abuse by illicit actors. The lack of oversight in these zones can be exploited by criminal elements for the purposes of illicit trade. The

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19 Financial Action Task Force, "Money Laundering Vulnerabilities of Free Trade Zones," March 2010, <http://www.fatf-gafi.org/media/fatf/documents/reports/ML%20vulnerabilities%20of%20Free%20Trade%20Zones.pdf>.

20 "World Free Zones Organization: Manifesto," World Free Zone Organization, 2015, <http://www.worldfzo.org/AnnualReports/World%20FZO_Manifesto_E2014.pdf>.

21 "Controlling the Zone: Balancing Facilitation and Control to Combat Illicit Trade in the World's Free Zones," International Chamber of Commerce, May 2013, <http://www.ip-watch.org/weblog/wp-content/uploads/2013/05/FTZ-report.pdf>.

22 Madani Dorsati, "A Review of the Role and Impact of Export Processing Zones," World Bank, August 1999, < http://www.worldfzo.org/AnnualReports/World%20FZO_Manifesto_E2014.pdf>.

23 Ibid. Dorsati looks at real economic gains from a variety of different perspectives and discusses recommendations.

24 "Controlling the Zone: Balancing Facilitation and Control to Combat Illicit Trade in the World's Free Zones," International Chamber of Commerce, May 2013, <http://www.ip-watch.org/weblog/wp-content/uploads/2013/05/FTZ-report.pdf>.

25 For more on AEO see Mariya Polner, "Compendium of Authorized Economic Operator Programs," World Trade Organization, July 2010, <http://www.wcoomd.org/en/topics/research/activities-and-programmes/~/media/43AC3326904F4887925CBB339C135BFE.ashx>.

following section details some of the vulnerabilities of free zones, using several case studies to demonstrate the risk of these zones to global nonproliferation efforts.

Vulnerabilities

In order to understand the role of free zones in the illicit trade of dual-use materials and equipment, it is necessary to go into what has been described, even by some Customs officers, as a "black hole" or "gray zone." The relative passiveness to concretely tackle the risks and vulnerabilities posed by free zones, especially in the context of security concerns such as illicit trade of dual-use strategic goods, is probably due to the fear that exposing vulnerabilities will lead inevitably to more regulation, and that the regulation-free reputation of free zones will be slowly eaten away by the imposition of new controls. Yet just as in other fields, and strategic trade controls are an ideal example, economic incentives and benefits must be responsibly balanced against security priorities.

The following vulnerabilities do not apply to all free zones. There are many free zones where Customs exercise the breadth of their responsibilities, where oversight is strong, and where applicable laws are enforced in full force. The vulnerabilities noted in this section do apply however to many free zones, especially in developing countries, that have been involved in cases of illegal activities and therefore do present a security risk due to the interconnectedness of global trade. In addition, countries without a strategic trade control system or with a very weak one, tending again to be developing countries, will be most susceptible to the vulnerabilities noted here.[26] Because proliferators exploit weak links, closing the gaps where supply chains are vulnerable merits international attention, resources, and action.

Interviews conducted with Customs officials, as well as other open sources, indicate that while according to the Revised Kyoto Convention they have the right to perform all Customs duties except for revenue collection, in reality they are not often given the financial, intelligence or enforcement powers to do so. A report from the International Chamber of Commerce notes that taking away the revenue collection role of Customs leads in practice "to a further erosion—real and perceived—of its non-tariff activities."[27] This is because even if the government where a free zone is located has authority over the zone, the exemption from duties and taxes means that the scope of Customs to inspect cargo is limited. In addition, an incentive exists for Customs not to inspect cargo due to the economic incentives the zone brings to the state.

Additionally, risk assessment and targeting of Customs in these zones may be weaker due to less available information through documentation. The lack of consolidated risk-assessment, streamlined with non-free zone trade data, can further lead to lack of Customs inspections

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26 This is also evidenced by United Nations Security Council Resolution 1540 Committee reports and matrices delineating the strategic trade control measures for legislation and enforcement countries have in place. See United Nations Security Council 1540, S/RES/1540, New York, April 2004 and "The 1540 Matrix," 1540 Committee, UN Security Council, New York, <http://www.un.org/en/sc/1540/national-implementation/matrix.shtml>.

27 "Controlling the Zone: Balancing Facilitation and Control to Combat Illicit Trade in the World's Free Zones," International Chamber of Commerce, May 2013, <http://www.ip-watch.org/weblog/wp-content/uploads/2013/05/FTZ-report.pdf>.

and seizures due to lack of targeting of suspicious cargo in these zones. Where document management does exist, in some zones the zone authority uses a different system than the Customs authority, which can further hurt risk assessment.[28]

Illicit actors can forge documents and use free zones to repackage or relabel goods, or manufacture and assemble new goods in the zones. The laws applicable to free zones and their enforcement can also be outdated given the rapid increase in the number of zones worldwide.[29] In some cases, the criteria that economic operators have to meet in order to conduct activity in the zone are vague. For example, in some zones ownership information is not even necessary to set up activity, or only minimal information is required. This makes it easy to set up shell companies or mask the true company owners. Companies on entity lists or subject to sanctions may therefore exploit such weak requirements.

The decreased power of Customs to act, coupled with weak or outdated regulatory frameworks, information deficits, and weak transparency, lead to an overall lack of oversight in many free zones that can be exploited by proliferators. The highest risks are transit and trans-shipment because it is easier for proliferators to disguise the final destination of goods.[30] This masking can be done by switching bills of lading once goods arrive in the free zone, switching containers and their contents, or simply by shipping goods to a different destination than the stated one. Free zones could also potentially be used as distribution points, or even an area to import unfinished goods and then "further manufacture" them. While for most sensitive dual-use goods complete manufacture of goods in a free zone would not be feasible, the potential exists for certain goods to be wholly manufactured and then exported from them.

Cases

Most case studies concerning illegal activity in free zones have concentrated on illegal cigarettes, intellectual property violations, and money-laundering/anti-terrorism. The tobacco industry's ardent focus on free zones stems from the significant revenue loss—estimated at more than 11 billion euro caused by illegal cigarette trafficking.[31] The vast resources available to tobacco companies allows them to devote entire research teams, as well as lobbyists, consultants, and politicians to promote awareness, reform, and even training. For example, in 2014 the World Customs Organization undertook Operation Gryphon, the first global Customs operation focused on the illicit tobacco trade. The six-month operation involved 93 Customs authorities and resulted in a large number of seizures, arrests, and investigations.[32]

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28 Based on a questionnaire regarding free zones. See Financial Action Task Force, "Money Laundering Vulnerabilities of Free Trade Zones," March 2010, <http://www.fatf-gafi.org/media/fatf/documents/reports/ML%20vulnerabilities%20of%20Free%20Trade%20Zones.pdf>.

29 Ibid.

30 Yuan, Zhigang, *New Strategic Research on China (Shanghai) Pilot Free Trade Zone,* (Hackensack: World Century Publishing Corporation, 2013).

31 "Project Sun: A Study of the Illicit Cigarette Market," KPMG, June 8, 2016, <https://home.kpmg.com/uk/en/home/insights/2015/05/project-sun-a-study-of-the-illicit-cigarette-market.html>.

32 "WCO Announces the Results of its First Global Operation Against Illicit Trade in Tobacco," World Customs Organization, October 13, 2014, <http://www.wcoomd.org/en/media/newsroom/2014/october/wco-announces-the-results-of-its-first-global-operation-against-illicit-trade-in-tobacco.aspx>.

While the focus on the particular vulnerabilities of free zones and their contribution to the illicit tobacco trade may have instigated attention to other illicit activities, the nonproliferation community has not focused on the use of free zones in proliferation cases thus far. Known cases are few, but deeper analysis in terms of why or how free zones were used in the cases is nonexistent and warrants further future research.

Free zones are used in the proliferation context mostly as trans-shipment points. In the many books and articles that are available regarding the Khan network, all note that free trade zones in Dubai were critical in allowing nuclear technology to reach Iran, DPRK, Libya, and other states.[33] While the Khan case may be the most famous, a Wisconsin Project timeline noting "UAE Trans-shipment Milestones" lists at least three dozen cases implicating free zones in the UAE with proliferation cases.[34] Documented cases begin in the 1980s, and increase almost proportionally to the growth of number of zones and expansion in terms of incentives offered by the zones. Some examples include German uranium enrichment components shipped illegally to Pakistan; mustard gas and nerve agent precursors shipped from India to Iran; attempted export of a high-speed oscilloscope from the Netherlands to Pakistan; export of maraging steel from Belgium to Iraq; export of heavy water from Germany to India, all of which involve UAE free zones as trans-shipment points. These were followed by several unveiled cases of Dubai free zones being used by the Khan network.

Until the late 1990s, almost all cases involve India, Pakistan, Iran, and Iraq as end-users, with most goods coming from Europe and the United States. In the 2000s, new end-users begin to appear such as Jordan, Syria, Libya, and DPRK. In the 2000s, China and Turkey also appear as supplier countries. The UAE, while having some of the most important free zones in the world, is only used here to demonstrate the nature of some public proliferation cases, and has in fact begun to tighten oversight over their free zones.[35] Other free zones commonly used are located in China, Singapore, Malta, and many others.

Caution should again be taken in considering these countries—just because proliferation-related cases have been noted there does not mean that they are necessarily better or worse than countries that have not been publicly noted. As with most research on strategic trade prosecutions, open source evidence of crimes may indicate stronger strategic trade control implementation in terms of enforcement, while countries without any cases does not necessarily indicate a lack of criminal activity. The information regarding which country a free zone is located in is important only insofar as the legal and political actions that country has taken to prevent, or punish, free zones being used for proliferation purposes.

A couple of more recent cases can help shed light on the way in which free zones are used in the modern proliferation context. Again, further research is necessary to establish the strategic intentions and role free zones played in each case, as well as a greater understanding of how

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33 Jack Boureston and James A. Russell, "Illicit Nuclear Procurement Networks and Nuclear Proliferation: Challenges Intelligence, Detection, and Interdiction," *STAIR* 4:2 (2009): 24-50.

34 "United Arab Emirates Trans-shipment Milestones 1971-2009," Wisconsin Project, *The Risk Report* 15:4 (July-August 2009).

35 Aaron Dunne, "Strategic Trade Controls in the United Arab Emirates," EU Non-proliferation Consortium, *Non-proliferation Papers* 12 (March 2012), 1-18.

such illegal activity could take place in the free zones involved. The following are cases from open source documentation, mostly U.S court documents. It is certain that more cases exist that are not yet available in open source. While more cases exist, the following have been chosen because of the relative comprehensiveness of open source information related to them as well as the circumstances involved which exemplify many proliferation trends inherent in modern criminal practice.

The first case involves two individuals, Jirair Avanessian, owner of the company XVAC, and Farhoud Masoumian, who in 2009 were charged with multiple violations related to a conspiracy to violate the U.S International Emergency Economic Powers Act (IEEPA) and the Iranian trade embargo, including smuggling, money laundering, and other crimes.[36] A third individual involved in the conspiracy, Amirhossein Sairafi, was arrested in Germany. The three men, over two years, arranged the export of controlled vacuum pumps and related equipment to Iran through a UAE free trade zone on seven separate occasions.[37] After receiving orders for the goods from Sairafi, Avanessian would procure the goods and ship them to the UAE, falsely declaring the UAE as the end-destination. Sairafi would then send the goods from the UAE to Iran. In order to avoid detection, Avanessian declared the value of the goods to be under 2,500 dollars in order not to have to file an export declaration as required by U.S law. In addition, the men re-labeled the contents as "spare parts" to further decrease the chances of inspection from Customs.[38]

The second case involves a Chinese national, Sihai Cheng, who committed export violations and smuggled goods from the United States to Iran. Cheng conspired with an Iranian national, Seyed Abolfazl Shahab Jamili to illegally export hundreds of controlled pressure transducers to Iran.[39] MKS Instruments, a U.S company, manufactured the pressure transducers. Through each operation, the Shanghai free trade zone was used. Cheng would export them to the zone using fraudulent export licenses. He would then remove the serial numbers of the pressure transducers once they arrived in China. The goods were then shipped to Iran.[40]

These two cases illustrate the vulnerabilities of free zones as well as the methods used by proliferation networks to trans-ship their goods. While further research must be undertaken to understand the reasons for using the zones, and the specific reasons the activities went undetected or were not followed up, it is important to begin pinpointing recommendations and

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36 "Press Release: Glendale Resident and Two Iranian Men Charged in Scheme to Illegally Export Technology to Iran without a License," Iran Watch, Wisconsin Project, January 13, 2010, <http://www.iranwatch.org/library/government/united-states/executive-branch/department-justice/press-release-glendale-resident-and-two-iranian-men-charged-scheme-illegally>.

37 Certain vacuum pumps and related equipment are controlled because they can be used in uranium enrichment.

38 "Summary of Major U.S. Export Enforcement, Economic Espionage, Trade Secret and Embargo-related Criminal Cases," United States Department of Justice, January 2015, <https://www.justice.gov/sites/default/files/nsd/pages/attachments/2015/01/23/export-case-list-201501.pdf >.

39 Pressure transducers can be used in gas centrifuges to enrich uranium and produce weapons-grade uranium and are therefore subject to strict export controls.

40 Ian J. Stewart, Andrea Stricker, and David Albright, "Chinese Citizen's Involvement in the Supply of MKS Pressure Transducers to Iran: Preventing a Reoccurrence," Institute for Science and International Security, Project Alpha, King's College, April 29, 2014, <http://isis-online.org/uploads/isis-reports/documents/MKS_China_30Apr2014-final.pdf>.

actions that can be used to close the opportunities free zones present to proliferation network. Given the very real threat posed by WMD, especially by non-state actors, the international community has an obligation to act before a significant incident takes place.

Conclusions and Recommendations

Governments and international organizations have poured resources into outreach and capacity-building over many years to create, update and strengthen strategic trade control systems worldwide. These activities have focused on legal frameworks, enforcement, outreach to exporters, and other measures to secure ports or combat the transfer of intangibles technologies, for example. However, the challenge to nonproliferation capacity-building remains, in large part, staying a step, or several steps, ahead of proliferators. Capacity-building efforts must envision and take specific actions to address how proliferators act, which vulnerabilities they choose to take advantage of, and how they think out-of-the box to minimize their risks of interception. Due to the very nature of free zones as areas with less regulation, less oversight, and weaker power of enforcement authorities, they have often been used in proliferation cases. There are relatively simple, clear and potentially effective measures that could work towards securing this supply chain vulnerability and which merit greater international attention and action.

The recommendations suggested in this article focus on four areas: strengthening legal frameworks, empowering Customs authorities, training and awareness, and further research.

Legal Framework

Better defining free zones, and types of free zones, as well as delineating general norms through internationally binding legislation is the first step in countering illegal activity. This applies to proliferation as well as other crimes in which criminals target free zones specifically because of their particular vulnerabilities. In this context, relying on the revised Kyoto Convention in its current form, in which states can voluntarily support Specific Annex D, is inadequate. Here several options are available:

- Amend the Kyoto Convention, bringing the section regarding free zones into the General Annex rather than the Specific Annex, in order for them to be binding on signatory states. In addition, better define free zones and create more specific practices that states should follow;

- In the case it is not possible to amend the Kyoto Convention, identify other international legal instruments that can be used to create obligations for states. For example, through the United Nations Security Council 1540 framework, the 1540 Committee may consider the issue of free zones it their comprehensive reviews and reports, and may consider specifically mentioning obligations for states in the WMD field in subsequent Resolutions amending 1540;

- Create and use a common definition of free zones, and their typologies, in export control regimes. Include specific commitments for Member States not only through best practices but also through obligations written into regime guidelines;

- Integrate free zone definitions and awareness-raising within Proliferation Security Initiative activities and proceedings;

- Until any of the above steps can be accomplished, use public information regarding states that have not expressed support for Specific Annex D of the revised Kyoto Convention to apply political and economic pressure for them to do so. This should apply especially to those States with the largest amount of free zone traffic as well as those that have appeared as the most common targets of illicit trade.

Empower Customs

As described previously in this article, stripping Customs authorities of their revenue collection power inadvertently has the effect of further erosion of their other non-tariff related responsibilities as well, such as detection, inspection, and interdiction. While the revised Kyoto Convention specifically states that this should not be the case, given that the free zone part of the Convention is voluntary, Customs authorities may not have the legal basis to defend their non-tariff duties and assert more control in free zones. Due to the speed and efficiency expected of free zones by the economic actors using them, and the potential economic and investment benefits they bring to countries, without a more firm mandate, Customs authorities may have more reason to turn a blind eye to free zone activity than to risk opening a Pandora's box.

In the years since the passage of UNSCR 1540, however, increased attention given to the importance of strategic trade international implementation and enforcement has influenced Customs authorities in important ways. In 2013, calls for action by Member States led the WCO to launch the Strategic Trade Control Enforcement (STCE) Project.[41] This project underscores the WCO's increased attention to the role of Customs authorities in international security, specifically in the domains terrorism, proliferation of weapons and materials of mass destruction, trafficking of small arms and explosives, and illicit diversion of dual-use goods.[42] The three main activities of the STCE are the organization of awareness-raising seminars, the production of a comprehensive STCE training curriculum for Customs and co-ordination of a global strategic trade law enforcement operation. The project has also issued an implementation guide.[43] The increased attention by the WCO to international security has also been underscored by the Punta Cana Resolution of December 2015 that resolved for the organization to take certain specific actions to increase the authority and effectiveness of Customs authorities in the security field.[44]

The positive trend of expanding the role and duties of Customs beyond mere revenue collection may provide the necessary mechanism to tie the security vulnerabilities of free zones, especially in the strategic trade context, to WCO awareness and capability-enhancing security-related projects. Several concrete actions in this regard could be:

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41 "Strategic Trade Control Enforcement Project," World Customs Organization, <http://www.wcoomd.org/en/topics/enforcement-and-compliance/activities-and-programmes/security-programme/stce-project.aspx>.

42 Ibid.

43 "Strategic Trade Control Enforcement: Implementation Guide," World Customs Organization, 2014, <http://www.wcoomd.org/en/topics/enforcement-and-compliance/instruments-and-tools/~/media/7A05799E8D3A46C8B8355175EEBA4322.ashx>.

44 Punta Cana Resolution, World Customs Organization, December 2015.

- Similar to Operation Gryphon, which focused on free zones and the illicit tobacco trade, or Operation Cosmo, which focused on cross-border trade in strategic goods, conduct a WCO-led exercise for Customs authorities specifically on free zones and strategic goods;
- Revise the WCO Strategic Trade Customs Enforcement guide to include a section on transit and trans-shipment, with special attention given to outlining and reinforcing Customs responsibilities in free zones;
- Introduce the topic of free zones and the rights and responsibilities of Customs in awareness-raising and capacity-building activities of the STCE;
- Conduct outreach to high-level government officials involved in order to raise their awareness regarding the importance of Customs activities in free zones, prioritizing such outreach to countries that pose the highest security risk;
- Within the framework of capacity-building programs that focus on the creation and updating of strategic trade legislation, encourage partner countries to support Specific Annex D of the revised Kyoto Convention as well as check that appropriate national legislation is in place to allow Customs authorities to exercise their detection, inspection, and interdiction responsibilities;
- At the international, regional, and national level, provide more resources for Customs authorities to act in free zones.

Training and Awareness

While the first steps to secure free zone vulnerabilities *vis-à-vis* strategic goods must start with legal frameworks and Customs, awareness raising and training may be considered for other actors operating in free zones as well, mainly free zone operators, personnel and administrators, financial bodies and exporters. Regarding free zone operators, according to a Financial Action Task Force (FATF) report, the way that free zones have been managed and operated in the last several decades has changed dramatically.[45] Previously, zones were run by governmental agencies. Most zones currently are run by private companies or through private-public partnerships. In 2005, 62% zones in developing countries were run by the private sector whereas in the 1980, less than 25% of such zones were private.[46] This liberalization has led to an increase in the number and kinds of actors doing business through free zones.

Training may be considered for all free zone personnel and administrators whether they are governmental or private in order to raise their awareness of security risks posed by WMD proliferation through free zones. Such training need not be time or resource intensive, but rather focus strictly on basic concepts and raising awareness. It should be given to all personnel, taking care to account for frequent changes in personnel that may occur.

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45 Financial Action Task Force, "Money Laundering Vulnerabilities of Free Trade Zones," March 2010, <http://www.fatf-gafi.org/media/fatf/documents/reports/ML%20vulnerabilities%20of%20Free%20Trade%20Zones.pdf>.

46 G Akinci, and J. Crittle, *Special Economic Zones: Performance, Lessons Learned, and Implications for Zone Development* (Washington DC: FIAS, World Bank Group, 2008).

Outreach to exporters, as part of standard enterprise outreach conducted by governments and international organizations to their own exporters or as part of global capacity-building, may also incorporate awareness raising specifically on the risks of free zones. Exporters should be encouraged to scrutinize orders that mention free zones along the supply chain. In such cases, exporters should pay particular attention for other signs or "red flags" of potential diversion or criminal activity.[47] Exporters should be also encouraged to integrate awareness of free zone risks in their internal compliance programs (ICPs) and training.

Further enhancement of communication and cooperation between zone operators, exporters and governmental competent authorities can also contribute to more effective risk-assessment and intelligence regarding patterns and trends.

Conclusions and Further Research

This article has analyzed vulnerabilities of free zones specific to strategic goods that can be used in WMD proliferation by looking at the overarching international and regional legal frameworks governing free zones, specific vulnerabilities of free zones in the context of the global supply chain, and presenting several cases of free zones being used in WMD proliferation. In addition, the article has offered a variety of specific actions that can be taken by governments and the international community in order to mitigate the risks and secure the vulnerabilities posed by free zones to nonproliferation efforts.

Above all, however, the strategic trade researcher and practitioner community should acknowledge the important contribution they can make to implementing measures targeting free zones. Further research must be conducted on current practices in free zones, especially those most at risk of being used by proliferation networks, and good practices in this specific field must be identified. Research may also focus on the gathering of proliferation cases involving free zones and the upkeep of documentation of such cases in the future. Finally, research organizations can help raise awareness by organizing workshops and forums where all actors involved, including policy-makers, exporters, free zone personnel, competent authorities, and others can discuss and offer further ideas for how to tackle proliferation risks posed by free zones.

The number of free zones worldwide will continue to increase, especially in countries seeking ways to enhance economic performance, trade, and investment. However, the risks posed by WMD proliferation, whether to state or non-state actors, remains a hugely important international security challenge. Proliferators will continue to search for the weakest links in the global supply chain, and free zones will remain an easy target until greater attention and action is focused on mitigating the risks they pose. Such action does not mean sacrificing the economic benefits of free zones, but rather investing resources into allowing such benefits to continue while enhancing security through targeted nonproliferation measures.

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47 Some typical red flag indicators can be found on the U.S Department of Commerce website. See "Red Flag Indicators," United States Department of Commerce, Bureau of Industry and Security, <https://www.bis.doc.gov/index.php/enforcement/oee/compliance/23-compliance-a-training/51-red-flag-indicators>.

Rating Correlations Between Customs Codes and Export Control Lists: Assessing the Needs and Challenges

RENAUD CHATELUS AND PETE HEINE[1]

Abstract

Correlation tables are the linchpin between the customs codes used to classify commodities in international trade and the control lists used for strategic trade control (STC) purposes. While understanding the customs classification system can help the STC community better understand strategic trade flows, better identify which trade operations require permits, and more effectively detect illegal exports, the two systems are different in scope, philosophy, content, and objectives. Many indications point to the limitations of these correlation tables, and it is important to understand the nature of the limitations and the complex underlying reasons to conceive possible improvements. As part of its Strategic Trade and Supply Chain Analytics Initiative, Argonne National Laboratory supported a study with the University of Liège's European Studies Unit of a subset of the European Union's TARIC correlation table. The study included development of a methodology and an approach to rating the quality and relevance of individual correlations. The study was intended as a first step to engage the STC community in deflections and initiatives to improve the conception and use of correlations, and its conclusions illustrate the scope and complex nature of the challenges to overcome. This paper presents the two classification systems, analyzes the needs for correlation tables and the complex challenges associated with them, summarizes key findings, and proposes possible ways forward.

1 Renaud Chatelus is a researcher at University of Liège and senior fellow of the University of Georgia (U.S). He has 20 years of practical and academic experience in non-proliferation, export control, customs and IAEA Safeguards. He was investigator in the French customs before joining the IAEA as weapons inspector and nuclear trade specialist. HE also worked as researcher at the European Commission Joint Research Centre. His recent activities include research on non-proliferation and trade control, as well as national capacity building for a number of international organizations and international assistance programs. Peter Heine is Director of the Center for Strategic Security at Argonne National Laboratory. His has worked on dual-use trade control for over 20 years, particularly in the advancement of effective strategies for identifying high-risk shipments and the establishment of training programs for export control enforcement personnel. Currently, he is also seconded to the World Customs Organization as a Strategic Trade Control Enforcement National Expert.

Keywords:

Export control, strategic trade control, harmonized system, correlation tables, trade data, commodity classification, control list

Introduction

Since the early 1990s, a number of countries have actively participated in multilateral export control arrangements to produce guidelines for strategic trade controls (STC) including lists of dual-use material, components, equipment, and technology to be subject to export control.[2] The EU has consolidated these lists into one integrated dual-use list, creating the most internationally adopted control list for strategic commodities. However, this classification system for strategic trade control did not come in an empty landscape.

Customs services around the world had already established a global and comprehensive system of classification for all commodities to serve as a basis for the determination of import-export obligations, customs duties, and international trade statistics. The Harmonized System Convention, which is now used by 207 countries, territories, or customs or economic unions, defines six-digit codes (HS codes) to which countries can add additional digits for more detailed itemization.[3]

Customs officers, companies' compliance staff, and academics have to work with these two different systems when dealing with trade in strategic goods. Unfortunately, these systems are defined and updated by different sets of people who have different purposes, and for a long time little attention was given by the two communities into making the two systems compatible. On both sides, procedures, political considerations, and heavy international negotiation processes make such mutual adaptation a challenging task. The need to work with both systems for a number of STC related tasks triggered the creation of correlation tables relating the two.

Correlation tables are the linchpin between trade data, customs obligations, and STC. The EU's TARIC correlation table in particular is the most well-known and used beyond EU borders. It correlates hundreds of entries of the EU consolidated control list (Export Control Numbers – ECN)[4] and thousands of Customs codes. Yet, existing correlation tables suffer from several shortcomings. Intrinsic challenges derive from structural differences that are difficult to overcome, but improvements appear possible in view of a close examination of the various aspects of this complex problem.

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2 The Nuclear Suppliers Group, the Wassenaar Arrangement, the Australia Group, and the Missile Technology Control Regime.

3 "List of Contracting Parties to the HS Convention and countries using the HS," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/overview/list-of-contracting-parties-to-the-hs-convention-and-countries-using-the-hs.aspx>.

4 European Commission Delegated Regulation No. 2420/2015 amending Council Regulation (EC) No. 428/2009 Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items, Official Journal of the European Union, October 12, 2015.

Taking this perspective, Argonne National Laboratory's Strategic Trade and Supply Chain Analytics Initiative undertook to study a sample of correlations with the support of the European Studies Unit of University of Liège. The objectives were to provide a first indication of the quality of existing individual correlations, investigate the utility of devising a rating scale for the quality of individual correlations, and create a basis for discussion and further studies. The present paper analyzes the various aspects of the correlation challenge, presents the study and, based on its key observations, proposes possible ways to improve correlation tables.

1. Customs Classification Codes as an Essential Element of Strategic Trade Control Implementation

Customs classification codes are essential to different aspects of STC implementation. Any exported or imported item must be classified within one several thousand customs codes defining the kind of item in import-export databases. National customs codes are built upon a comprehensive universal classification system based on international treaties.[5] In contrast, strategic control lists are not comprehensive; they define controls only for strategic commodities and are implemented by some countries with national variations (as multilateral regimes issue only non-legally binding guidelines). However, customs commodity codes do not help sort out which commodity is controlled and which is not. This work remains a cumbersome human process of verification of individual cases. It is based on open text descriptions and technical specifications that are often not available in standard shipping and customs documentation.

The problem is acute for risk management systems used by customs to select the small percentage of shipments that they will have the means to examine, out of an immense volume of exports. Using potentially relevant customs commodity codes is much more practical than a keywords search in commodity description fields of customs declarations. The same is true when companies try to identify which of their products are potentially subject to export control requirements, or when authorities use customs declarations to identify which companies might require outreach efforts or audits.

In these cases, the inability to use HS codes precisely correlated with export control lists means that significant resources are needed to manually identify potentially controlled items, that non-strategic exports are unduly disrupted, and that the risks of illicit exports of strategic items going undetected remain high. The HS is also the basis for international trade statistics. When estimating the economic impact of controls on trade, using relevant HS codes is the main (and often only) way to measure international strategic trade flows.

In the authors' experience, it is common to meet customs practitioners in the public and private sector who do not understand why strategic trade control measures are not directly attached to already defined customs commodity codes. The present paper thoroughly examines why such a simple solution is not an option.

Improving the correspondence between the two systems is therefore essential to the efficiency, efficacy and understanding of strategic trade control. While improvements may be realized on each side, for example by improving the convergence of definitions, changes on both sides are

5 See section 2 below.

costly and slow and require understanding and willingness. In the short term, correlation tables between the two systems will remain essential to enable the use of customs codes for strategic trade control purposes. The accuracy and precision of these tables is therefore a determinant factor of the quality of strategic trade control implementation.

2. Using the HS for Strategic Trade Controls: Correlation Tables

a. The Customs Harmonized System: A Universal Commodity Classification System for International Trade

The Harmonized Commodity Description and Coding System, generally referred to as Harmonized System or simply "HS," is a multipurpose international product nomenclature developed by the World Customs Organization (WCO). The HS is governed by The International Convention on the Harmonized Commodity Description and Coding System, also known as the HS Convention, which entered into force in 1988.[6] The HS Convention has 154 Contracting Parties and is used as the basis for Customs tariffs, for the collection of international trade statistics, and for standardization of trade documentation and the transmission of data by 207 countries and Customs or Economic Unions. Over ninety-eight percent of the merchandise in international trade is classified in terms of the HS.[7]

The HS comprises over 5,000 six-digit commodity codes arranged in a legal and logical structure that is supported by well-defined rules to achieve uniform classification. The HS is organized into twenty-one sections of commodity sectors and ninety-six chapters, accompanied with general rules of interpretation, legal notes, and explanatory notes. The first two digits of the HS code designate chapters, starting with crude and natural products and then manufactured products of increasing complexity. The first four digits are referred to as headings, with the final two digits defining sub-headings, as shown in fig. 1 below. In total, the latest version of the HS (2012) has 1,222 four-digit headings and 5,367 subheadings. In general, trade in a commodity should exceed $50M USD annually to warrant creation of a specific six-digit subheading for that commodity.

Heading	H.S. Code	
39.09		**Amino-resins, phenolic resins and polyurethanes, in primary forms.**
	3909.10	- Urea resins; thiourea resins
	3909.20	- Melamine resins
	3909.30	- Other amino-resins
	3909.40	- Phenolic resins
	3909.50	- Polyurethanes

Figure 1: Example HS Heading and Subheadings (HS Codes)

6 "International Convention on the Harmonized System," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs_convention.aspx>.

7 "What is the Harmonized System?," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/overview/what-is-the-harmonized-system.aspx>.

International customs classification has existed since 1931, but the current HS was established in 1988 after sixteen years of preparation and negotiations. It is updated every five years through a complex and rigorous review process. The current fifth edition has been in force since 2012 and a new one will enter into force on January 1, 2017. Proposed modifications currently under consideration may yield new subheadings to facilitate classification of many strategic commodities, but would not be implemented until the next revision in 2022.

States party to the convention can request technical assistance, be members of committees, sub-committees, and working parties, make proposals, raise questions, and vote. These states are also obligated to publish trade statistics, providing the source of trade data used by economists and statisticians around the world.

b. Export Control Lists

Control lists are a more recent creation than customs categorization systems that are used to identify and specify the goods subject to export control. While export controls are administered at the national level, a degree of control list harmonization and standardization is provided by the multilateral export control arrangements, namely the Wassenaar Arrangement, the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG), and the Australia Group (AG), as well as by the Schedules of the Chemical Weapons Convention (CWC). Each of the multilateral arrangements provide unique control lists specifying the goods relevant to their interest areas such as conventional weapons, delivery systems, nuclear facilities, and chemical and biological agent production.

By far the most universal of dual-use control lists is that of the European Union, currently Annex I of EC 428/2009, as updated by EU 2015/2420, which brings together the separate control lists of the Wassenaar Arrangement, the MTCR, the NSG, the AG, and the CWC.[8] This control list is used by the EU Member States and serves as a model for the control lists of many other countries, including the United States. The consolidated EU control list is divided into ten technical categories, with each category subdivided into five product groups. A five-character code is used to designate each control, with the first digit denoting the technical category and the second character denoting the product group. The third digit indicates the regime origin of the control, and the last two digits are simply item numbers without inherent meaning. Beyond the five-character code, the export control number (ECN) is often subdivided using a hierarchical outline, for example 1C002.a.1.

c. Correlation Tables

Logically, STC practitioners, private companies, and academics have been looking for a correspondence between items of interest for STC, mainly those defined in control lists, and the HS. This need has led to many efforts to create correlation tables to link the two systems, such as the EU TARIC Correlation Table and many others. They may be available as a tool to help exporters or as an integral part of automated systems triggering export control obligations. Tables typically establish many-to-many relations, meaning one HS code corresponding to

8 European Commission Delegated Regulation No. 2420/2015 amending Council Regulation (EC) No. 428/2009 Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items, Official Journal of the European Union, October 12, 2015.

many controls and one control corresponding to many HS codes. The EU TARIC correlation table has 6179 lines, connecting 593 dual-use ECNs of the EU consolidated dual-use control list on the one hand,[9] with 1204 of the 9000 customs tariff codes of the EU customs Combined Nomenclature (CN8) on the other hand.[10]

The number of correlations could even be higher if each ECN's hierarchical outline of subdivisions were fully expanded and included. In addition, some dual-use entries describe several items or alternative forms of items, and each could theoretically be individually itemized, leading to even more correlations.

An example of this many-to-many relation is the EU dual-use ECN *2A003.c* covering different types of signal analyzers. In the EU TARIC table, it is correlated with three CN8 codes about instruments. In turn, one of these HS codes, *90308930,* representing *"Electronic instruments, apparatus and machines for measuring or checking, not elsewhere specified in chapter 90*," correlates with twenty-seven ECNs of the dual-use list.

d. Different Rationales for Different Uses

The STC community uses the HS and correlation tables for multiple purposes that can be grouped into three categories: normative, trade evaluation, and identification.

Normative

Determining the nature of commodities in trade, together with their values and origins, is central to customs processing of commercial operations, and Customs use HS-based tariff codification to classify commodities. Thus, the HS is one of the main structuring elements of customs obligations and IT systems. It is therefore not surprising that the first reaction of STC professionals discovering the HS and of customs officers discovering STC is to ask for the HS codes corresponding to the controlled items. From this normative perspective, correlation tables should establish which HS code is correct for each controlled commodity.[11]

Normative correlations should be based on technical definitions and rules governing classification in both systems.

Trade Evaluation

The multilateral export control arrangements stress that they aim to curb WMD proliferation without unduly hindering legitimate trade.[12] On the customs side as well, trade facilitation is as

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9 This figure it taken from the EU TARIC Correlation table.

10 The CN8 is the eight-digit customs classification system used in the EU, in which two digits have been added to the internationally standard six-digit HS code.

11 In the EU, the TARIC correlation table does not determine when exporters must request a permit, but it does determine when exporters must assess whether their exported commodity requires a permit or not. When the customs tariff number indicates a correlation with the dual-use list, EU exporters must fill in Codes X002 (controlled) or code Y901 (not controlled) in Box 44 of the Single Administrative Document (i.e., the customs declaration).

12 For example, on its website page about objectives, the MTCR stresses "the importance of controlling the transfer of missile-related technology without disrupting legitimate trade." See Missile Technology Control Regime, <http://mtcr.info/>.

important a mandate as are enforcement and revenue collection. The question of the economic impact of STC measures on trade is therefore always part of the equation, for example when controls are proposed, introduced, or reexamined. Policy makers must regularly estimate how much trade will be impacted by STC measures and how great will be the licensing burden associated with controls. Trade statistics based on HS/Tariff classification are needed to estimate how many operations, how many companies, how much trade value, or which economic sectors might be concerned by the regulation.

Trade evaluation can also be used to characterize industrial activities and capabilities. The IAEA, for example, uses trade evaluation to profile countries nuclear-related trade and verify States' declarations.[13] Additionally, STC capacity-building programs like the EU Partner to Partner (P2P) Program or the U.S Department of Energy's International Nonproliferation Export Control Program use trade analysis to help plan and tailor their outreach activities.[14,15,16]

For these trade evaluation purposes, correlation tables are used to extract data from international trade statistics that could serve as a basis for estimating the magnitudes of dual-use trade. However, correlations useful for trade evaluation cannot be solely based on technical correctness. Exporters do not always seek technically and legally exact customs classification. Instead, they rather often select a customs tariff code by habit or by key word search in the tariff database. They also sometimes use single HS codes for shipment of multiple items. Often little attention is paid to correctness of the HS code since customs duties typically apply to imports.

Therefore, from this trade evaluation perspective, correlations should ideally be based on the real practices, regardless of technical correctness and classification rules.

Identification

The third category of use of correlation tables is to identify individual operations potentially subject to export control, in combination with other information.

A large company reassessing its export control compliance or a country implementing export controls will be looking for a way to identify exports that should require a permit. Looking at shipments of commodities with HS codes corresponding to controlled goods is seen as a first step to trigger further research on the nature of the exported commodity.

Along the same line, but taking the process one step further, Customs services look for HS codes to introduce in their risk management system in order to identify (and target for further examination) shipments of goods with the highest probability to require a license. Similarly,

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13 See for example, Cristina Versino, Erik Wolfart, Guido Renda, and Willem Janssens, "Trade Analysis and Open Source Information Monitoring for Nonproliferation," presented at the INMM 55th Annual Meeting, July 20-24, 2014, in Atlanta, Georgia USA, "Information Analysis Technologies, Techniques and Methods for Safeguards, Nonproliferation and Arms Control Verification," proceedings pp. 173-183.

14 European Union Partner-to-Partner Export Control Programme, <https://export-control.jrc.ec.europa.eu/>.

15 "International Export Control Cooperation," National Nuclear Security Administration, United States Department of Energy, <https://nnsa.energy.gov/aboutus/ourprograms/nonproliferation/controllingwmdmaterialsexpertise/intlexportcontrolcooperation>.

16 A good example of this approach is Cristina Versino and Pete Heine, *Strategic Trade Atlas - Country-Based Views,* (Ispra; Joint Research Centre Technical Report, 2007).

companies trading in commodities falling under these HS codes may be selected for outreach and audit. For these identification purposes, correlation tables should indicate which HS codes correspond to controlled items.

A complication arises when using correlation tables for identification purposes, as one must not only be interested in technically correct correlations or those used in practice, but also in correlations that are wrong, unusual, or too broad but nevertheless possible and of interest when combined with other information. A classic example is the correlation between many technology controls (e.g., EU dual-use list 1D002 "Software" for the "development" of organic "matrix," metal "matrix" or carbon "matrix" laminates or "composites"), and the customs tariff code for DVDs (NC8 85234951).[17] While hardly sensible from a trade evaluation perspective, it may be useful when customs officers know that a technology will be exported in a tangible form within two days by express parcel service.

So-called "residual" HS codes provide a less extreme and more common example. Codes labeled "other" or "not elsewhere specified…." can be found throughout the Harmonized System and are often used by convenience to avoid the work required by a proper customs classification. Problematically, these "residual" HS codes are often the correct classification codes for strategic items, as their low trade volumes have not warranted creation of specific HS codes for them. There are also customs codes intentionally used to avoid detection or deter inspection, such as commodities that are dangerous, difficult to scan or search, or too common. Some of these codes are used as cover for illegal operations. The use of these codes may not be appropriate on their own to indicate an STC fraud. But they can still be useful in certain circumstances, in combination with other elements of information relating, for example, the timing, the item or the parties involved in a specific transaction.

From this identification perspective, correlation tables should indicate which HS codes correspond to controlled items, including loosely related ones, as well as codes relevant to fraud patterns, but it may be useful to include an indication that not all correlations are equally indicative.

e. Insufficient Reliability

As discussed above, different uses may lead to different correlations. Unfortunately, existing correlation tables are generally not explicit about the purpose for which they were built. Even within each table, correlations corresponding to different purposes might co-exist without being identified accordingly. As a result, correlation tables are being used for normative, trade evaluation or commodity identification purposes with a high probability they were never intended for such use. This leaves STC practitioners and observers with a significant chance of using correlations ill-suited for the use they want to make of them.

The possible mismatch between purpose and use of correlation tables is likely one of the reasons why correlations can be seen as not reliable, aside from unreliability of export declarations themselves.

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17 According to the TARIC Correlation table, see "Integrated Tariff of the European Union: Correlation Table," European Commission, <http://trade.ec.europa.eu/doclib/html/153050.htm>.

The following section provides some indications of the nature and magnitude of the problem. But the most convincing evidences of the confusion around the existing instruments are indirect:

- In the authors' experience, many specialized customs practitioners on the government and on the industry side do not consider correlation tables as reliable tools to support their work;
- Estimates of trade volumes for controlled dual-use goods vary by an order of magnitude, ranging from a few percent to double digits percentage of global export value;[18]
- A comparison of correlation tables established in 2011 for NSG trigger list entries by the German export control authority (BAFA) on the one side (113 lines) and by the European commission DG-TAXUD on the other side (237 lines), shows only fifty-nine lines in common (about 20%).

f. Challenges of Correlating Customs Tariffs and Control Lists

Some HS code descriptions are not far from dual-use control list entries, leaving open the possibility to refine existing HS codes or create more detailed codes that would correspond to the control specifications. Such is the case, for example, for certain chemicals.[19] It is nevertheless much easier to find cases of mismatch than points of compatibility. Many complex challenges hinder the potential to create reliable correlation tables. Before exploring ways of improving these tools, it is first necessary to examine the various challenges of bridging the two systems.

While both the HS and control lists are designed to facilitate the implementation of measures relating to international trade operations by providing global harmonization and transparent criteria, and while both take the form of lists of items and classification criteria, diverging objectives of the customs and trade control communities lead to important structural differences.

A first fundamental difference is that the HS is designed to cover all possible commodities and enable differentiated policies and duties, depending on the type of commodity.[20] The HS is a classification system breaking down global trade into manageable categories.

Conversely, control lists include only specific items of potential strategic utility. Entries in export control lists are based on the associated proliferation risks, potential economic impacts,

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18 See Cristina Versino, *Dual-use Trade Figures and how they Combine*, (Ispra: JRC Scientific and Policy Reports, 2015).

19 For chemicals, the OPCW and the WCO collaborated in the 1990s to define specific HS codes for thirty-four CWC scheduled chemicals. Other chemicals are also defined in relatively similar terms in both systems, leaving only one criteria (i.e., concentration) as gap to bridge.

20 The WCO describes the harmonized system as a "multipurpose international product nomenclature" and "a universal economic language and code for goods." See "What is the Harmonized System?," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/overview/what-is-the-harmonized-system.aspx>. It remains however mainly designed to facilitate and harmonize the implementation of customs duties and economic regulations on commercial imports.

and practicality of control.[21] The crafting of control language does not consider import duties, anti-dumping rights, or sanitary regulations. Therefore, control lists define objective criteria to subject exports of specific commodities to export control requirements.

There is objectively no reason to expect that the level of detail, type of criteria, specifications, way to group categories, and classification rules of the two lists coincide. Important differences include the following:

- The HS categorizes only physical commodities. Intangible information ("software," "technology") have to be declared according to the media storing them, if there is one;

- Generally, six-digit HS codes are only given to commodities with at least $50M USD worth of annual trade, meaning that the HS provides unique codes for items that are common and pushes rare, specialized ones into residual codes labeled "other" or "not elsewhere specified."[22] Conversely, many control entries are defined as narrowly as possible to capture the very specific equipment/component/material with proliferation risks and avoid unduly impacting high-volume trade in common items. In fact, a control becomes inapplicable when an item is too commonly traded, and items can be de-listed for this reason. For example, digital oscilloscopes (9030.20 in the HS), while still relevant for nuclear testing purposes, were delisted from the NSG control list when they became too common;

- The level of precision varies throughout control lists. It may range from specific electronic devices to very generic "equipment for the production of…." On the other side, HS codes are also diverse in their precision. Commonly, items defined in a generic way on one side are defined specifically on the other side, or worse, items may be defined in generic terms on both sides. The case when items or codes are defined precisely on both sides, in ways that are compatible, is the exception. As an example, ECN 1B115 is derived from a MTCR control on "equipment for the production of propellant and propellant constituents," which may correspond to many different types of equipment. The TARIC correlation table links this ECN with seven CN8 codes, including very generic ones like 84799080: "Parts of Machines and Mechanical Appliances Having Individual Functions, not elsewhere specified;"

- The type of criteria employed varies. Both may use the purpose (e.g., "for use in…"), performances (e.g., "capable of…"), compositions (e.g., "made of…"), or manufacturing process to define items/codes, but not necessarily in the same way. For example, in the control lists, carbon, glass and aramid fibers are grouped under a control for fibrous and filamentary materials, but the HS puts these various fibers into completely different chapters based on the material;

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21 Paragraph 32 of NSG document INFCIRC/539r6 states that "the NSG Guidelines introduce a degree of order and predictability among suppliers and harmonize standards and interpretation of suppliers' understanding with the aim of ensuring that the normal process of commercial competition does not lead to outcomes that further the proliferation of nuclear weapons. Consultation among NSG participants are also designed to ensure that any possible impediments to international nuclear trade and cooperation are kept to a minimum." See Nuclear Suppliers Group, <http://www.nsg-online.org/en/>.

22 "Other… not elsewhere specified in this section/chapter/heading" is usually the terminology in the HS system.

- The six "General Rules for the Interpretation of the Harmonized System" are central to HS classification, sometimes leading to counterintuitive classifications.[23] Control lists include the notion of "essential elements" but are more focused on technical specifications.[24] Although both systems leave room for interpretation, they may lead to classifications on an entirely different basis. In a recent decision, the HS committee ruled that a specific quadrocopter drone should be classified as a camera rather than as a toy or an aircraft because the camera was giving the aircraft its "essential character."[25]

g. Possible Ways to Address the Problem

In the face of this complexity, simple solutions do not exist. There are different types of challenges calling for different approaches, and none of them completely solve the problems. The dream of an automatic link between categories on both sides is not realistic, and export control systems establishing export license requirements based on Customs tariff codes are likely to either impede trade unnecessarily, create needless administrative costs, or let controlled items slip through the system, if not all three together.

Approaches to solve the problem must be multiple and differentiated. Below are several approaches that may enable design, improvement, or better use of correlation tables.

Disambiguating Correlation Tables

Many improvements could take the form of disambiguation—being aware and explicit about rationale and objectives. In addition to improving the classification and correlation systems, the understanding and use of them can also be improved. For example, the U.S. DOE has developed a "commodity fingerprint" approach based on combining the HS code with other identification indicators associated with specific strategic commodities. Work can also be done on the correlation tables themselves. Below are a few examples of disambiguation efforts that could be undertaken. The study presented further below takes into consideration these clarifications.

- Relevance of individual correlations varies greatly. For almost any use, it is essential for users of correlation tables to have an indication about this relevance, i.e. an understanding (even rough) of the probability that a commodity belongs to corresponding categories in both systems. The correspondence between beryllium compounds (included in ECN 1C230) and the generic "other metal oxides" (HS 282590), cannot be treated like the correspondence

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23 General Rules of Interpretation (GRI) are essential elements of the Harmonized System. There are six of them. The first four must be applied in sequence, i.e., Rule 2 is to be considered when Rule 1 is not sufficient to classify an item. The last two are to be applied as needed. Any HS classification ruling by the WCO refers to the rule(s) used for that decision. For more on GRI, see "Instruments and Tools," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs_nomenclature_2012/~/media/B7BC612CEB3B417BB5183841DA7413CB.ashx>.

24 See General Note 2 of the EU Dual-use regulation's Annex I. European Commission Delegated Regulation No. 2420/2015 amending Council Regulation (EC) No. 428/2009 Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items, Official Journal of the European Union, October 12, 2015.

25 "Classification Rulings: HS Committee 55th Session," Decision 21,World Customs Organization, March 2015, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs_classification-decisions/~/media/4459C0A917AB4D66A8EE9F76DB395071.ashx>.

between controlled Hydrogen fluoride (7664-39-3) and the HS code for Hydrogen fluoride "hydrofluoric acid" (HS: 2811.11);

- No correlation should be established and used without defining explicitly for which purpose. Opting for one of the three types of correlation purposes defined in paragraph 1.d above will make correlation tables significantly more useful and clear up many misunderstandings between designers and users;
- Correlations might be of very different relevance depending on the direction. One controlled item might need to be always classified under a customs code while being a very marginal part of this code. In such case, the correlation is relevant to identify under which HS the controlled item should be classified, but less useful to find the controlled item through an HS search. The opposite situation might occur as well. Existing correlation tables do not differentiate the direction of correlations, and it is unclear whether correlations were established because they were relevant for one direction only or for both directions. Therefore, correlation tables should give some indication about the direction for which they are most relevant. If one tries to rate the relevance of individual correlations, this rating should be different depending on the direction.

Better Itemization in the Correlation Table

Even if the export control lists and HS could not be modified in any way, the correlation table could be improved by providing correlations at a deeper level of the ECN hierarchy. For example, rather than correlating fifty CN8 codes with 1C010, as the current TARIC correlation table does, more relevant correlations could be provided separately for 1C010a, b, c, d, and e. This may be the easiest fix to implement.

Better Itemization in the Respective Systems Themselves

As noted above, the two systems are not itemized at the same level and the same way for the same items. Here too, a specific approach can in a number of cases bring significant improvements.

- For a number of controlled items and codes, definitions could be more precise on both sides. For some of them, the HS or national derivative could include more precise sub-headings, in line with or compatible with controlled items definitions. Conversely, some generic regime definitions could be itemized by subcategories or by illustrative lists. The better itemized categories are not likely to bring one-to-one correspondence for a range of technical and procedural reasons, but could bring improvements at minimal cost;[26]
- Possibilities are not limited to modifications in the definitions themselves. On both sides, explanatory notes could include considerations regarding the other system and illustrative examples could be made useful, if not compatible, with the other system. For example, the ECN 1B115 about specially designed production equipment for the systems, sub-systems and components of various types of rocket and missile motors could include an illustrative list that would be more immediately accessible and more concrete than explanations of the MTCR handbook.[27]

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26 See next section on challenges to improvements of the correlation tables.

27 See section 3 below on examples of correlation rating.

Streamlining of Criteria and Thresholds

In some cases, the criteria used are close and could be streamlined. To take the example of Magnesium, both the NSG and the HS take into consideration the purity of the material to isolate highly pure magnesium but they define it differently. The NSG controls magnesium which contains less than 200 parts per million by weight of metallic impurities other than calcium; and contains less than ten parts per million by weight of boron (both conditions must be met). The HS distinguishes between magnesium with at least 99.8% purity (8104.11) and other magnesium (8104.19)

h. Challenges to Improvements of the Correlation Tables

Challenges are numerous and do not allow one solution. Rather, progress can be made through limited multiple improvements in different areas for different sets of correlations.

Several institutional challenges must also be bypassed or overcome to achieve improvements.

- The two systems relate to the control of international trade, but the two work communities have in fact little in common. Not many practitioners on the non-proliferation/licensing side have a good understanding of customs processes, constraints, knowledge, assets and work culture. Conversely, in customs, the community understanding of export control and dual-use goods is often limited to a very small circle of specialized experts, with insufficient awareness of the vast majority of customs officers.[28] The two communities, and even administrations or offices within these communities, might have different perceptions of the importance of certain issues, such as the strategic importance of commercial transit for customs or the strategic and political sensitivity of export control as perceived by the licensing officers. The customs community might be more sensitized than the licensing export control community to the need of addressing the correlation problem;

- Classifying commodities requires an experience and techniques on its own, even more so on the customs side, where classification rules are complex and sometimes counterintuitive. Chemists and engineers can be found on both sides. Customs laboratories and in some cases specialized customs headquarters officers, are the most likely to be at the intersection of the two competences. But dual-use classification experts and customs classification experts work in two different worlds with little interaction. Most customs classification experts at the WCO, in the EU or within countries are focused on the complicated implementation of classification rules to settle disputes related to duties and quotas. Most dual-use classification experts have no knowledge of customs commodity classification. The greatest pool of common expertise however may lie with the private sector, which has to combine customs compliance and export control compliance. There two different cultures sometimes co-exist, but there can also be a separation between engineers and lawyers involved in classifying dual-use products to file license requests and Customs departments processing the customs declarations;

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28 See Renaud Chatelus, Willem Janssens, Quentin Michel, Andrea Viski and Christos Charatsis, "Non-Proliferation Community: Do We Really Speak the Same Language?," paper delivered at the IAEA Safeguards Symposium, Vienna, Austria, March 23, 2015.

- The two classification systems are decided independently through separate complex international negotiation and experts' discussion processes: the regimes and national licensing offices on the dual-use side; the HS Committee, related subcommittees, and specialized national customs classification departments on the customs side. On both sides, changes are challenging, slow and costly. Interaction between two such complex processes is not likely to be simple. Institutional challenges include also different sets of parties or member states, different processes to introduce and adopt changes and different review cycles (yearly for export control and every five years for the HS).

3. Assessing a Sample of Existing Correlations

In view of the different aspects of the matter described above, especially the institutional forces complicating changes to the HS and to export control lists, improving the design and use of correlation tables may be more expedient and realistic than reforming the systems themselves. The first step in this process is to understand the nature and extent of the problems with the existing correlation tables. A preliminary study was undertaken under Argonne National Laboratory's Strategic Trade and Supply Chain Analytics Initiative. The objective was to provide a first indication of the quality and utility of existing individual correlations and give a basis for discussion and further studies.

A large part of the work was dedicated to defining an approach that would meet the objectives within a limited envelope of working time. The study focused on disambiguating the question, defining a sample to study, developing a rating methodology and explicitly identifying limitations of this approach to avoid misinterpretations. Despite these limitations, the rating exercise illustrated the nature of the challenge and provided an interesting basis for discussions and ideas on how to move forward.

a. Disambiguation

Considering the observations made in the previous paragraphs, the study had to prevent the confusions generated by the existing correlation tables.

Fundamentally, a choice had to be made between normative, trade evaluation, or identification purposes. The choice was essentially normative—to focus on technical definitions and classification rules.

- In a first step, technically incorrect correlations were identified and excluded;

- In a second step, the technically correct correlations were assessed based on detailed examination of the correlated definitions to estimate to what extent each customs code describes a correlated controlled item or how commonly items falling under the control might be classified under a correlated customs code,[29] For example, 4A102 "Hybrid computers" specially designed for modeling, simulation or design integration of space launch vehicles (…) part is not likely to be a large proportion of items traded under the HS code 847130 describing portable computers with keyboards and screen.

29 See paragraphs 2.c and 2.d. below.

A separate correlation rating was made for each *direction*. For each individual correlation assessed as technically correct, two ratings were established:

- To estimate how likely would the controlled item be classified in this HS code, vs. other HS codes (ECN→HS);
- To estimate what proportion of trade under the HS code might the controlled item represent, vs. other controlled and non-controlled items (HS→ECN).

b. Sampling

Data set

The correlation table selected for study was the TARIC correlation table.[30] The version used was the one available as of December 2015.

Sample

The TARIC correlation table includes 6179 lines. The scope of the exercise could only allow the rating of a small subset of this table. The sample chosen for study comprised the set of correlations between controls deriving from the MTCR and customs codes from chapter 84 of the HS (i.e., machinery, mechanical appliances, and parts). This subset provided a sample of 108 correlations at the CN8 level (corresponding to 92 at HS6 level), between thirty-nine ECNs and fifty-three CN8 codes (48 HS6 codes).

The sample did not include controlled raw materials and chemicals, which might be better correlated with customs codes.

Itemization

To be more universal, the customs codes were itemized at the HS6 level rather than the more detailed EU CN8 level. This had only a limited impact on the key observations.[31] On the ECN side, the TARIC table only includes five or six characters of the ECN (e.g., 9A116 or 9A116 d). While many ECNs use levels of hierarchical outline to more precisely identify controlled items, the TARIC correlation table does not take advantage of them.

30 "Integrated Tariff of the European Union: Correlation Table," European Commission, <http://trade.ec.europa.eu/doclib/html/153050.htm>.

31 See 4.e below.

c. Rating Methodology

To isolate technically wrong correlations, the following technical relevance rating was used:

Table 1. Scale Definition for Technical Correctness

Rating	Interpretation
Y	*An item controlled in the ECN could be correctly classified in the correlated HS*
N	*An item controlled in the ECN should not be classified in the correlated HS*
P	*Whether an item controlled in the ECN should or not be classified in the HS is to be assessed with relevant expert*

To assess relevance of technically correct correlations, the following two rating scales were used:

Table 2. Scale Definitions, for Relevance

Rating	HS→ECN I.e., what proportion of trade under this HS code, does the controlled item represent (vs. other controlled and non-controlled items)	ECN→HS I.e., how likely will the controlled item be classified in this HS code (vs. other HS codes)
1	*Finding the controlled commodity in trade flow declared under this HS would be exceptional*	*The controlled commodity is exceptionally categorized in this HS code*
2	*A very marginal fraction of the trade under this HS is made of the controlled commodity*	*The controlled commodity is rarely categorized in this HS code*
3	*A small but noticeable fraction of the trade under this HS is made of the controlled item*	*The controlled commodity is often categorized in this HS code*
4	*A significant part of the trade under this HS is made of the controlled item*	*The controlled commodity is very likely categorized in this HS code*
5	*Most of the trade under this HS code is made of the controlled item*	*The controlled commodity is always be categorized in this HS code*

The scale is not defined by measurable values or percentages. It is a qualitative expert estimate providing a rating in relative terms (i.e., correlations rated one are less relevant than correlations rated three) on the basis of definitions only.[32]

The levels may also be understood as follows:

- Level five means that the correlation can likely be directly used;
- Levels three and four mean that the correlation may be usable in combination with other information;
- Levels one and two mean that the correlation is not likely to be usable outside specific circumstances or combined with very specific additional information.

Sources of Information

To assess the relevance of correlations, several sources were used:

- MTCR control list and notes;[33]

32 See 2.d. below.

33 "MTCR Equipment, Software and Technology Index," MTCR/TEM/2016/Annex, MTCR, March 17, 2016.

- MTCR public guidebook;[34]
- HS codes descriptions;[35]
- CN8 codes descriptions corresponding to the selected HS codes and TARIC chapter notes;[36]
- Technical and commercial Internet resources.

Additionally, the study benefited from the professional multinational experience of the authors in both customs and dual-use classification- commodity identification, licensing processes, customs processes, HS, proliferation, trade analysis, and safeguards.

d. Limitations and Disclaimers

Before examining the key findings of the study, it is essential to outline its limitations to ensure that the results will be well understood and not lead to false interpretations. Below is a list of considerations to take into account for interpretation of the findings:

- The study rates individual correlations (one HS vs. one ECN), but correlation tables are typically many-to-many relations. The rating does not give the chance that an HS includes a controlled item, but only the chance that the HS includes the specific controlled item. Some HS are relevant to many controlled items and might deserve a higher relevance rating from that perspective, even more so when considering the entire tariff and not just the chapter 84. How different the ratings would be in that case was not assessed;

- The study focused on rating an existing correlation table. It did not assess how complete the table might be. It is possible that certain ECN entries (or components of these entries) require correlations that are absent from the TARIC correlation table, and conversely, that certain HS codes which should be there are absent. The study did not assess such cases;

- Establishing correlation is very complex and subject to interpretation. However, the TARIC correlation table does not include explanatory or interpretation notes that would shed light on their rational. In particular, the study was conducted without knowing for which of the three purposes correlations were intended;

- As earlier stated, the rating was established by experts with broad experience including dual-use goods identification and classification and customs classification. However, this varied experience cannot match the expertise of specialized experts on both sides. HS classification rules, rulings and practices are particularly difficult to know and master without a daily exposure to the topic. Inputs by classification experts would bring gains of efficiency and accuracy in the rating exercise;

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34 *Missile Technology Control Regime (MTCR) Annex Handbook*. 2010, <http://mtcr.info/wordpress/wp-content/uploads/2016/04/MTCR_Annex_Handbook_ENG.pdf>.

35 "HS Nomenclature 2012 Edition," World Customs Organization, 2012, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs_nomenclature_2012/hs_nomenclature_table_2012.aspx>.

36 Commission Implementing Regulation 1101/2014 Amending Annex I to Council Regulation (EEC) No. 2658/87 on the Tariff and Statistical Nomenclature and on the Common Customs Tariff, October 16, 2014, Official Journal of the European Union, October 31, 2015.

- The study was conducted on a relatively small sample of 104 individual correlations out of the 6,179 of the TARIC Correlation table (1.7%). Moreover, the sample relates to a particular type of commodity (chapter 84 of the HS) and only to MTCR controls. A different sample might have given a different result, and a random sample may have been more representative;
- The TARIC correlation links ECN numbers with CN8 customs codes whereas the study rates the correlations at the HS6 level. In theory, this difference might lower the relevance of correlations. However the impact was found to be limited.[37]

4. Examples

Below are three summarized examples of rated individual correlations extracted from the study:

Example 1: Flow forming machines

The correspondence appears to be technically correct. Flow forming machines should be classified under this HS code. However, the HS is not specific to flow forming machines. In the EU TARIC, 846390 specifies three specific CN8 codes for different types of machines, none of which are flow forming. At this eight-digit level, the TARIC correlation table refers to the fourth sub-heading "other."

ECN: **2B109**	Correctness	HS: **846390**
ECN DESCRIPTION Flow-forming machines, other than those specified in 2B009, and specially designed components as follows: N.B.: SEE ALSO 2B209. a. Flow-forming machines having all of the following: 1. According to the manufacturer's technical specification, can be equipped with "numerical control" units or a computer control, even when not equipped with such units; and 2. With more than two axes which can be coordinated simultaneously for "contouring control". b. Specially designed components for flow-forming machines specified in 2B009 or 2B109.a. Note: 2B109 does not control machines that are not usable in the production of propulsion components and equipment (e.g., motor cases) for systems specified in 9A005, 9A007.a. or 9A105.a. Technical Note: Machines combining the function of spin-forming and flow-forming are for the purpose of 2B109 regarded as flow- forming machines	(Y/N/Possibly) **Y**	HS DESCRIPTION "other" "Other machine tools for working metal or cermets, without removing material: "
ECCN→HS: Likelihood that the controlled item be classified in this HS code (vs. other HS codes):		HS→ECCN: Proportion of trade under this HS code which the controlled item represents (vs. other controlled and non-controlled items):
1-exceptionally to 5-likely: **5/5**		*1-exceptionally to 5-predominantly:* **2/5**

37 See 4.e below.

Example 2: Production equipment for various missile propulsion systems

In this case, the correlation links two generic categories, each including a range of items. In the absence of more explicit lists, the correlation is not very good in either direction. The chance that some of the dual-use items be classified under the given HS exists however, but many other possibilities of HS classification are to be expected, including possibly specific HS codes for some equipment subject to the ECN. The present study did not include research in that direction.

ECN: **9B115**	Correctness	HS: **846610**
ECN DESCRIPTION Specially designed "production equipment" for the systems, sub-systems and components specified in 9A005 to 9A009, 9A011, 9A101, 9A102, 9A105 to 9A109, 9A111, 9A116 to 9A120 * *- These entries correspond essentially to various types of rocket propulsion system, jet engines, reentry vehicles and some their key components. **Comment:** The control is not very specific. There might be more specific HS for certain components	(Y/N/Possibly) Y **Comment:** Only parts of machines are mentioned on the HS side. No machine is mentioned.	HS DESCRIPTION "Tool holders and self-opening dieheads" of Parts and accessories suitable for use solely or principally with the machines of headings 8456 to 8465 (machine tools), including work or tool holders, self-opening dieheads, dividing heads and other special attachments for machine tools; tool holders for any type of tool for working in the hand **Comment:** Very generic HS
ECCN -> HS: Likelihood that the controlled item be classified in this HS code (vs. other HS codes):		HS -> ECCN: Proportion of trade under this HS code which the controlled item represents (vs. other controlled and non-controlled items):
1-exceptionally to 5-likely: **3/5**		*1-exceptionally to 5-predominantly:* **1/5**

Example 3: Electronic equipment for reentry vehicles

In this last example, the rationale for linking the ECN sub-category for re-entry vehicles with portable computers including keyboard and screen could not be found. This correlation appears to be technically incorrect.

ECN: **9A116.d**	Correctness	HS: **847130**
ECN DESCRIPTION Reentry vehicles, usable in "missiles", and equipment designed or modified therefor, as follows: d. Electronic equipment specially designed for reentry vehicles.	(Y/N/Possibly) **N** This control is about computers on board missiles and other air vehicles. The rationale for correlation with computer units with keyboards and screens could not be identified	HS DESCRIPTION "Portable automatic data-processing machines, weighing not more than 10 kg, consisting of at least a central processing unit, a keyboard and a display"
ECCN→HS: Likelihood that the controlled item be classified in this HS code (vs. other HS codes):		HS→ECCN: Proportion of trade under this HS code which the controlled item represents (vs. other controlled and non-controlled items):
1-exceptionally to 5-likely: **N/A**		*1-exceptionally to 5-predominantly:* **N/A**

5. Key Findings

a. A Significant Proportion of Technically Incorrect Correlations

The first step of the relevance rating exercise was to identify possibly technically incorrect correlations. Results are shown in figure 2. Only fifty-three of ninety-three correlations were found to be technically correct (58%) and nine (10%) would require further expertise to be assessed. About a third (31/92) appear to be incorrect, or their rationale could not be identified with the expert knowledge base. It is possible that with input from more specialized experts, or a broader analysis taking into account other chapters, this proportion may be decreased. The number is still very high for a correlation system used in the EU and by many countries as a basis to determine exporters' obligations.

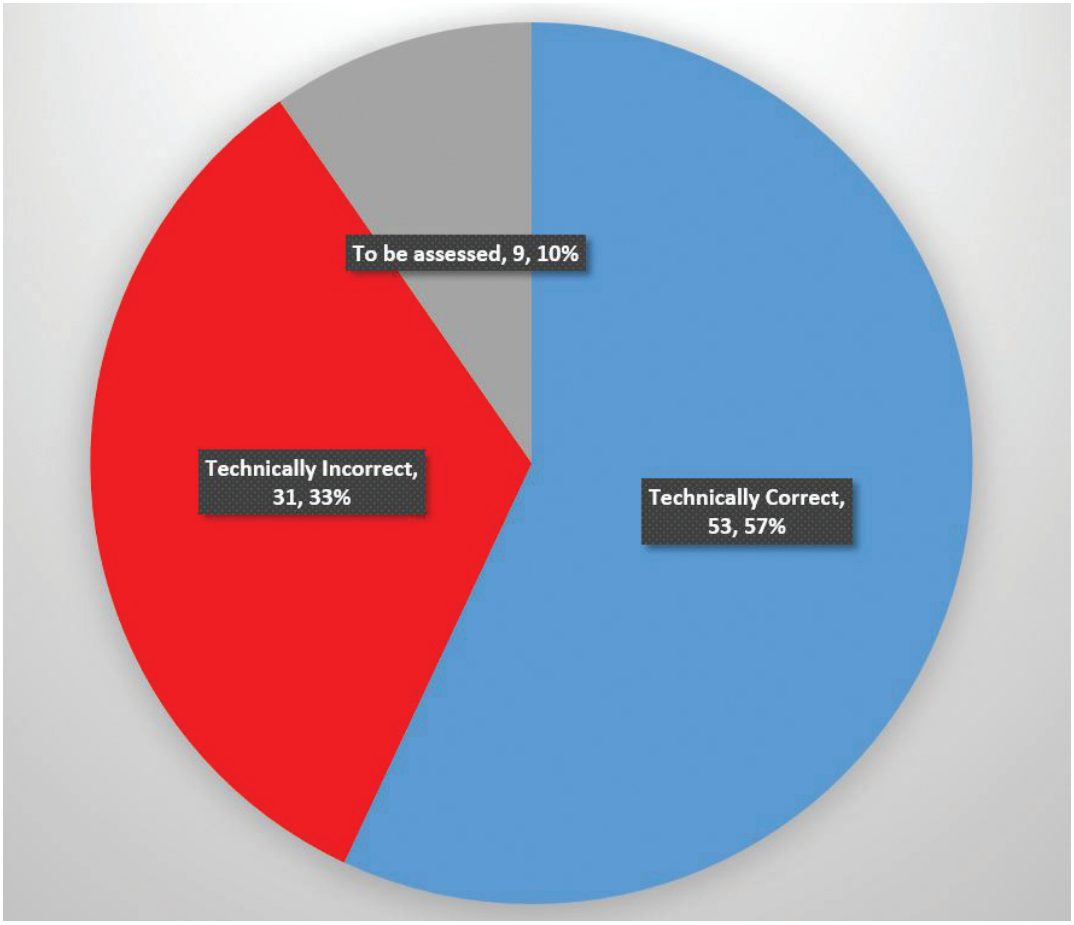

Figure 2: Technically Correct and Incorrect Correlations

Figure 3 shows the distribution of the suspected reasons why thirty-one correlations were classified as incorrect. The majority was estimated as incorrect on the basis of apparent misunderstandings of either the HS or ECN descriptions.

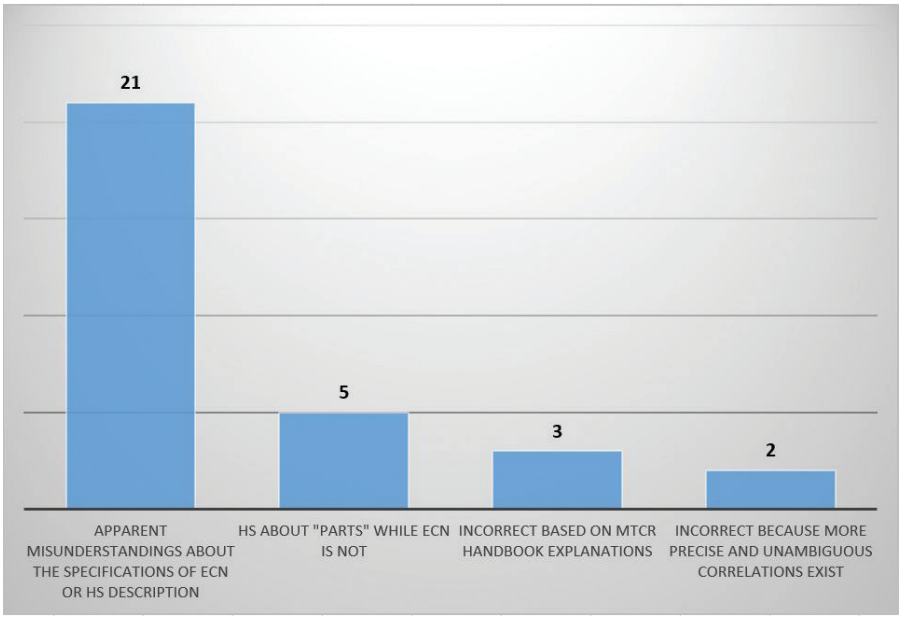

Figure 3: Distribution of the Reasons for Assessing the Correlations as Incorrect

b. Significant Differences between the Two Directions of Correlation

The assessment conducted on the sample confirmed the assumption that the relevance of individual correlations can be very different depending on the direction. In particular, customs classification of dual-use items appears to be less challenging than using HS codes to identify dual-use items. Figure 4 illustrates this observation, representing the distribution of relevance by number of correlations. It clearly shows the distribution of HS→ECN correlations is skewed toward lower ratings (mostly 1-2), while the distribution of ECN→HS correlations is skewed higher (mostly in the 3-5 range).

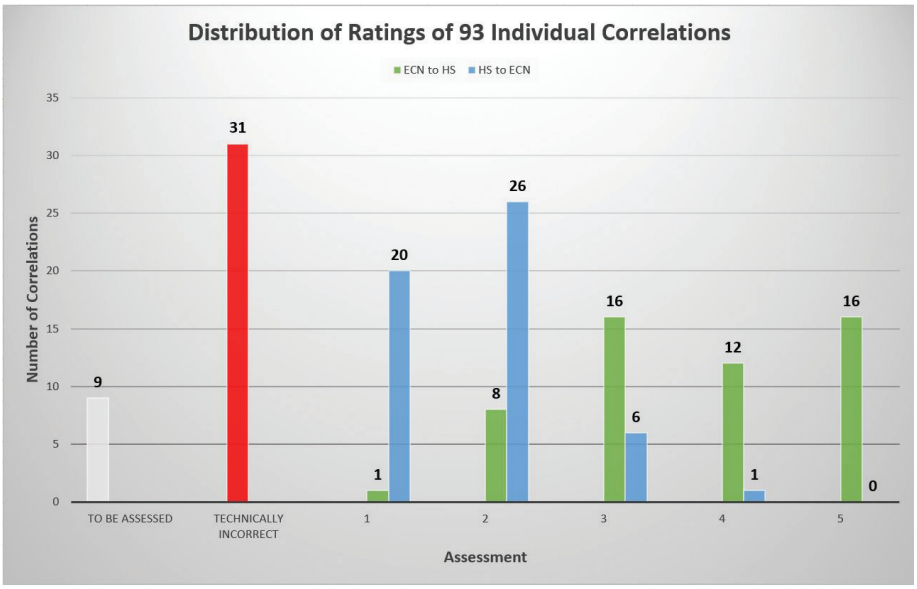

Figure 4: Distribution of Individual Correlations by Level of Relevance from 1-low to 5-high (by numbers of correlations)

c. From ECN to HS: Moderate Relevance of Correlations

Figure 4 includes the distribution of correlations in the direction from ECN to HS according to the five-level scale. Levels three to five (medium to high relevance) represent 83% of the sample. For these ECNs, the correlation table provides a good indication of where in the HS they should be classified. Part of the less relevant correlations relate to broad ECNs describing a diverse range of items that would be classified differently in the HS. In such a case, the correlation table is not explicit about which component of the ECN the correlation is meant for.

d. Low Relevance of HS to ECN Correlations

The relevance of correlations from HS to ECN is much lower. 87% of the technically correct HS are at best marginally relevant to the correlated ECN. The lower relevance of correlations in this direction might be the consequence of HS codes being defined broadly to capture the broader trade flows whereas ECN are designed to designate dual-use items as narrowly as possible.

This finding shows that on this specific sample, the current TARIC correlation table is often not well suited to identify dual-use items from customs codes.

e. Limited Difference in Relevance between Correlations at HS6 Level and at CN8 Level

The correlation was rated at the HS6 level, whereas the correlation table is designed for the more detailed CN8 level. Considering the relatively low level of relevance found, it was important to understand whether rating the correlation at the CN8 level would have made a significant difference. For that purpose, the HS codes of the fifty-three correct correlations at the HS6 level were examined to understand if the derived CN8 codes were more precise or more adapted to control lists definitions. As shown in Figure 5, the CN8 definitions were only marginally better than HS6 definitions (only for 19% of the correlations). Even when CN8 codes are more accurate than HS6 codes, they did not necessarily provide a significantly better rating.

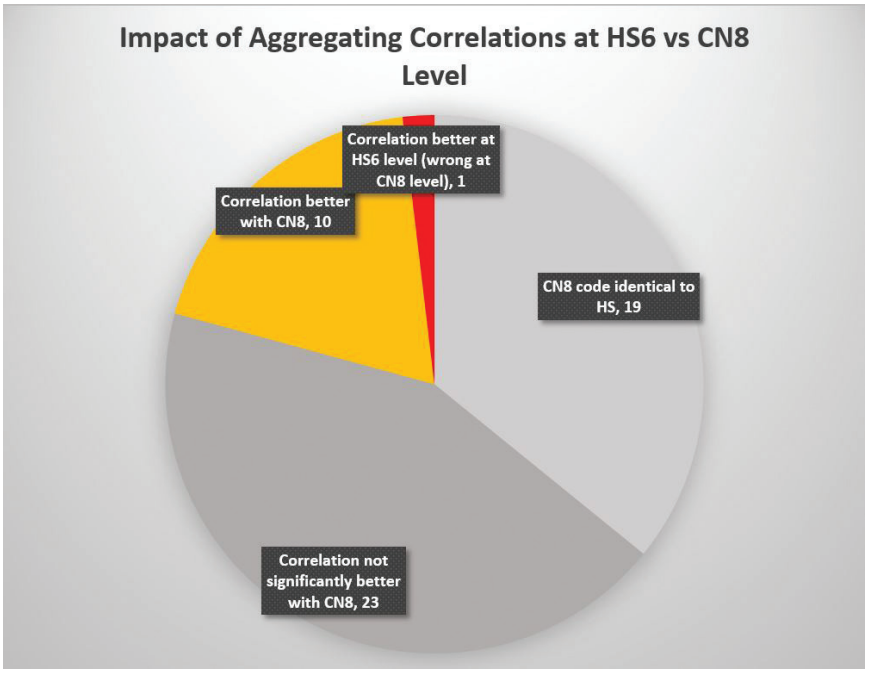

Figure 5: Distribution of Individual Correlations ECN to HS Codes by Relevance Level (percentages)

f. General Lessons Learned from the Study

Due to the heterogeneity of correspondences, the creation, updating, rating or use of correlation tables cannot bypass a detailed examination of correlations, line by line. Knowledge of both lists, technical understanding of their content, and a solid analytical methodology are necessary. Without them, deriving global trade figures from statistics or targeting specific illicit shipments based on the correlation tables alone is not likely to be successful.

The workload necessary to create, correct and/or rate correlations is significant. The rating of ninety-two correlations alone required three person-weeks. Any approach should be realistic in this regard. It should be either scalable to the entire classification system or limited to a subset.

However, correlations are difficult to rate without a global view. Individual ECNs often include items of different natures that are classified in different chapters. Conversely, an HS code may be relevant to many ECNs from different export control regimes. Focusing strictly on a defined sample without considerations for other parts of the classifications might bring some shortcomings. Establishing or rating correlations should be done by HS specialists knowledgeable of the rest of the HS and nonproliferation specialists aware of other regimes' controls.

Notes of the HS or TARIC were only marginally helpful for the correlation rating as they do not relate to dual-use controls and rarely include information about criteria used in control lists.

Rating the relevance of correlations is not sufficient. Identifying and eliminating correlations that are incorrect with regards to certain purposes is also necessary.

Finally, the customs classification of commodities can be as technically challenging as dual-use classification. The technical capacity required for dual-use classification is not uncommon. But proposing correct HS codes for controlled items cannot be done without the contribution of specialists of customs classification. In addition to the legal competence to establish normative HS classifications, the HS classification rules are more complex and require specific knowledge going beyond technical knowledge. Expertise in export control classification or customs classification may be readily found, but combined HS and ECN expertise is rare, and comprehensive expertise of both systems may not exist.

6. Conclusions and Ways Forward

The analysis of the correlations question and the sample study demonstrate that as it is, the TARIC correlation table is not optimized for normative use. The results hint at a possible mismatch between intentions of authors of correlations, which largely remain unknown, and how tables are being used by different stakeholders of the STC community.

Nevertheless, correlation tables and the use of customs tariff codes remain the main and sometimes only tools at hand for a number of aspects of STC work. The relevance of the TARIC table in particular is crucial because is it the basis for EU exporters obligations to state whether their export requires a license or not, and because the EU correlation table, as well as the EU consolidated dual-use list, is used by many non-EU countries around the world.

There are many possible reasons why the relevance of correlations is so uneven and some are difficult to tackle, but it is necessary to improve the conception and use of correlation tables

and/or work on both systems to improve their compatibility. The size of the obstacle does not make it less necessary to overcome. Even if fixing the two systems or making them more compatible is not possible, refining correlation tables and ranking the relevance of correlations, knowing which ones are good and which ones are poor (or wrong), or in which direction(s) they can be relied upon, is already useful.

a. A Range of Actions Rather than a Comprehensive Approach

The scope of the work, but also the various perspectives on it, call for a number of improvements in different areas, possibly in different frameworks. Building from the possible improvements outlined in chapter 1.g above, below are examples of concrete steps that could be taken.

Above all, correlation tables must be disambiguated. Should new correlation tables be created or current ones significantly reviewed, authors should explicitly indicate on which basis or for which purpose they are established. Incorrect correlations should be identified and eliminated. For correct correlations, taking advantage of additional levels of the ECN hierarchy may result in more precise and useful correlations.

Even from a purely technical perspective, the relevance of current correlations varies greatly. Users need to be able to discriminate individual correlations depending on their relevance. Rating the relevance of correlations even imperfectly or partially would make correlation tables more useful for different purposes.

Correlation tables could also be built in a user-friendly format, including items/codes descriptions, notes and other useful information, which are sometimes sufficient to provide users with a first idea of the level of relevance to a specific purpose. In the EU, the TARIC takes essentially the form of a two column table linking specific ECN numbers with specific CN8 codes, or a reference to the dual-use regulations when exporters enter correlated ECN in the export declaration system. Understanding what these codes relate to requires work that many operators do not have the means to conduct for their product and even less for the 6179 correlations of the table. Explicit and user-friendly formats would enhance the ability of users to make their own judgment about the relevance of correlation, at minimal cost.

As earlier indicated, depending on the item, improvements could include more detailed itemization on both sides or simply more detailed (less aggregated) correlations. Certain ECNs could be broken down into more detailed individual items and new HS or CN8 codes could be created to sub-divide existing HS headings and sub-headings.[38]

More informal approaches also could be taken. Control lists could provide more illustrative lists of items for certain controls like in the example above of equipment for the production of missile propulsion systems. When relevant, correlation tables could then correlate HS codes with items of these illustrative lists or more generally, with levels of the ECN hierarchy, deeper than the formal five digits level.

Streamlining of criteria and thresholds would also be useful steps, to be taken by both sides, as illustrated in chapter 1.g above.

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38 CN8 codes were often identical to HS6 codes (only adding 00) as the two additional digits. The same situation can be found between headings (HS4) and sub-headings (HS6), with no difference in itemization.

b. Which Framework for Which Improvement?

Improvements must be conducted by people and organizations with legal competence, technical capabilities, financial resources, and interest, at the international and at the national levels. No organization can claim to have all these characteristics. Most improvements will need to be collaborative. A few possibilities are listed below.

- Enforcement experts participating in the multilateral export control arrangements could study whether and how correlation could be established or evaluated to be useful to enforcement efforts, for customs risk management efforts;

- Regimes or regime members could work with the customs community to better itemize lists and codes on both sides. Most importantly, regime participating governments could coordinate with their own representatives to the WCO's Harmonized System Committee to bring the export control perspective to the HS context;

- National export licensing specialists, members of the HS Committee, the European Commission's DG TAXUD (in charge of the TARIC system), and the private sector could join efforts to propose normative correlations at the international HS6 level or at the national 8/10 digits level, when appropriate;

- The same community could propose notes in each system, bringing some useful elements for the classification in the other system;

- The European Commission DG-TAXUD could develop an information system adding more contextual information to the correlation table, including rationale for individual correspondences;

- For trade evaluation purposes, national authorities could study which HS codes are used in practice by exporters to declare their licensed exports;

- The WCO could contribute to harmonize the correlation tables established in different parts of the world;

- Members of the WCO's HS Committee could undertake to introduce new HS codes for regime-listed commodities currently relegated to residual classification codes.

NGOs might have a key role to play in triggering and coordinating some of these initiatives. These include the specialized academic and research community (e.g., nonproliferation community, the International Network of Customs Universities (INCU), etc.), industry associations (e.g., logistics industry, nuclear industry, defense-aerospace industry), and professional associations (e.g., the EU Nonproliferation Consortium, European Safeguards Association-ESARDA, etc.). Tackling the issue is of common interest to all stakeholders of strategic trade control.

Enhancing the Interface between the Harmonized System and Strategic Trade Controls

HYUK KIM[1]

Abstract

This paper examines the possible enhancement of the interface between Customs clearance and Strategic Trade Controls. The paper suggests that finding convergence of two communication tools for licensing and Customs processing can enhance both trade facilitation and controls. Identifying key factors and challenges, this paper provides feasible and practical options that can be taken at the international, regional, and national levels.

Keywords

Strategic Trade Controls (STC), Export Control Number (ECN / ECCN), Harmonized System (HS), World Customs Organization (WCO)

Introduction

One of the definitions of language is "the words, their pronunciation, and the methods of combining them used and understood by a community."[2] A language spoken by a certain community might not be easily understood by other groups unless their languages have the same origin. In the field of international trade, there are two different communities that often represent competing interests: trade facilitation and trade control. Within the different

1 Mr. Hyuk Kim is a Nonproliferation and Nuclear Security Fellow of Pacific Forum CSIS. Prior to joining Pacific Forum, he served as a guest researcher at the Dual-use and Arms Trade Control Program of Stockholm International Peace Research Institute, research assistant at the Export Control and Nonproliferation Program of the James Martin Center for Nonproliferation Studies, and international trader at Daewoo International Corporation. Kim holds a M.A in Nonproliferation and Terrorism Studies, a B.S in Nuclear Engineering, and a University Diploma in International Nuclear Law. His e-mail is kim.hyuk.001@gmail.com.

2 Merriam-Webster, <http://www.merriam-webster.com/dictionary/language>.

communities, each language has developed independently with different objectives. However, in the context of responding to the risk of proliferation, the control of strategic goods should not compete with trade facilitation. Rather, the two have become reciprocal and mutually indispensable. Therefore, it is worthwhile to explore the extent to which the two communication tools developed by these different communities, broadly categorized as licensing and Customs processing, can be made more compatible for effective implementation of Strategic Trade Controls (STC) to facilitate trade in a secure global supply chain.

This study aims to find a practical way to improve the interface between the classification systems of the two communities. After a brief explanation about the functions and classification systems used for trade facilitation and control, this paper will examine the degree of integration of two classification systems and why it is necessary to improve the interface between them. This paper will argue that it is desirable to informally pursue integration of the two systems at the international level while the trade facilitation classification system could be best utilized in STC at the national or regional levels. Recommendations for improving the interface for these systems are also provided.

The Communities And Their Languages

While both the trade facilitation and control communities share an interest in classifying commodities, the objectives of and mechanisms used in the classification process are different. The internationally standardized tariff nomenclature, referred to as the *Harmonized System* (HS), was designed by the World Customs Organization (WCO). The HS facilitates international trade by making types of traded items readily identifiable solely with the HS and reducing expenses associated with reclassification when goods are transferred between different Customs areas. Currently, there are 153 *Contracting Parties* (CPs) to the HS Convention and 207 designated Customs areas are applying the HS in their Customs tariff nomenclatures.[3]

The HS is a hierarchically structured classification system that categorizes traded items based on their objective characteristics, using six digits to provide a specific characterization of the item. The standardized six-digit code is composed of two-digits from Chapter, Heading, and Subheading in which the level of hierarchy decreases in a sequential order. In other words, goods are more specified as the classification is narrowed from Chapter to Heading to Subheading. As the number of HS digits increases, characteristics of a traded item are further identified. For example, Chapter 85 classifies a commodity as "electrical machinery and equipment and part thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles."[4] Heading 01 defines that item as "electric motors and generators (excluding generating sets)," and Subheading 02 further describes it as "universal AC/DC motors of an output exceeding 37.5 W."

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3 "List of Contracting Parties to the HS Convention and Countries Using the HS," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/overview/~/media/4236F2D774364330BF0ECD6FCB79A6D5.ashx>.

4 International Convention on the Harmonized System, World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs_convention.aspx>.

Contracting Parties to the HS Convention have the discretion to adopt an indigenous classification system with additional digits following the universal 6-digit HS codes up to a total of 12 digits. Those additional digits set up by the CP's national law are referred to as Customs tariff nomenclature or statistical nomenclatures depending on specific needs, levying duties on imported goods, and collection of data, respectively. Or, if national nomenclature was established for both purposes, it is called *Combined Nomenclature* (CN). Within the European Union, the Combined Nomenclature was established according to Council Regulation (EEC) No 2658/87. The EU CN consists of the HS and additional subdivisions that are harmonized within the European Union. The CN is used for determining import and export duty rates. For statistical purposes, each EU Member State collects trade data structured with CN and sends it to Eurostat, the database run by the European Commission, for an aggregated view of EU trade.[5,6] In the US system, HS850120 is further divided into four groups based on the minimum and maximum outputs of AC/DC motors while the EU system has three divisions under HS850120 depending on types of aircraft and output limit which is different from the US criteria.

CHAPTER 85 ELECTRICAL MACHINERY AND EQUIPMENT AND PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES

HEADING 01 Electric motors and generators (excluding generating sets):

Subheading 01 Motors of an output not exceeding 37.5 W:
Subheading 02 Universal AC/DC motors of an output exceeding 37.5 W:

United States	**20 00** Exceeding 37.5 W but not exceeding 74.6 W **40 00** Exceeding 74.6 W but not exceeding 735 W **50 00** Exceeding 735 W but under 746 W **60 00** Other
European Union	**00 10** Of an output exceeding 735 W but not exceeding 150 kW, for use in civil aircraft **00 20** Of an output of less than 750 W or exceeding 150 kW, for use in certain types of aircraft **00 90** Other

Figure 1: Tariff Nomenclature Systems of the United States and the European Union under HS850120[7]

The HS community interprets its classification system in a universally uniform way based on its primary purpose, trade facilitation. Each categorization, the HS code, should be interpreted the same way by every CP. In so doing, the Customs' clearance process is expedited, tariff collections are readily determined, and commercial disputes like levying inappropriate duties due to misclassification of traded goods are avoided. The HS community keeps refining its

5 "The Combined Nomenclature," Taxation and Customs Union, European Commission, <http://ec.europa.eu/taxation_customs/customs/customs_duties/tariff_aspects/combined_nomenclature/index_en.htm>.

6 "Overview of Eurostat," Eurostat, European Commission, <http://ec.europa.eu/eurostat/about/overview>.

7 "2016 HTSA Basic Edition," European Commission Taxation and Customs Union, European Commission, <https://hts.usitc.gov/current>.

classification system by amending the HS Convention every five to six years in order to ensure uniform interpretation, to reflect changing patterns of international trade, and to meet the needs of its members.

Meanwhile, the STC community aims to prevent the proliferation of weapons of mass destruction (WMD) and sensitive military equipment by controlling the movement of strategic and dual-use goods and technologies. Unlike the formal universal classification system associated with trade facilitation, the STC does not have a universal classification system. Within the STC community, there are several associations of states that were established for different reasons, yet share the common goal of preventing the proliferation of a particular class of strategic goods, and seek to coordinate national export licensing efforts aimed at preventing their proliferation.

As a mechanism for imposing an arms embargo on the Soviet Union, other Warsaw Pact nations, and the People's Republic of China, the Coordinating Committee on Multilateral Export Controls (COCOM) was established by the Western bloc in 1949. After the Cold War, the focus shifted to global and regional security concerns, which led to the establishment of a forum for multilateral cooperation to control the export of conventional arms and dual-use goods and technologies in 1996, called the Wassenaar Arrangement (WA).[8] Similarly, the Nuclear Suppliers Group (NSG), the Australia Group (AG), and the Missile Technology Control Regime (MTCR) were established in 1974, 1985, and 1987, respectively, for controlling the export of goods and technologies associated with nuclear, chemical and biological weapons, and missiles. With varying memberships, each of these multilateral export control regimes (MECRs) has developed a list of specific goods and technologies that should be controlled to prevent the proliferation of WMD and their delivery systems.

Unlike the formal universal classification system associated with trade facilitation under the auspices of the WCO, the classification system associated with STC is based primarily on the control lists associated with the four regimes mentioned above and implemented at the national level. Under the broad and somewhat vague concept of STC, each country is responsible for developing and managing its own control list that can lead to a different judgment on export permits for the same item.

In an effort to standardize the application of the four multilateral export control regimes, the European Commission has developed a common classification system to identify goods and technologies, known as the EU dual-use control list, integrating the control requirements outlined in the four MECRs and the Chemical Weapons Convention. The classification system and the associated control list are contained in Council Regulation (EC) No. 428/2009's Annex I. This paper assumes that this classification system, which has become generally recognized as a model by several countries outside the European Union that have implemented a national strategic control program, could be considered an emerging standard. The Export Control Number (ECN) classification system used in the EC regulation is widely used as a standard reference to identify items on the control lists in the four export control regimes.

The ECN is a five-digit alphanumeric coding system that classifies specific dual-use items. The first two digits, which consist of a number and a letter, are adopted from the classification

8 "About Us," The Wassenaar Arrangement, <http://www.wassenaar.org/>.

system of the WA. The first digit, which is a number between 0 and 9, represents the Category of dual-use items such as zero for "Nuclear material, facilities, and equipment" and three for "Electronics." The second digit, in form of a letter from A to E, divides an item by Product Group as shown in the table below. The last three digits of the ECN, also in numeric form, indicate specific items on the control lists of the export control regimes, especially the first digit which identifies the specific regime. Specifically, the WA, the MTCR, the NSG, the AG, and the Chemical Weapons Convention are associated with zero through four respectively.

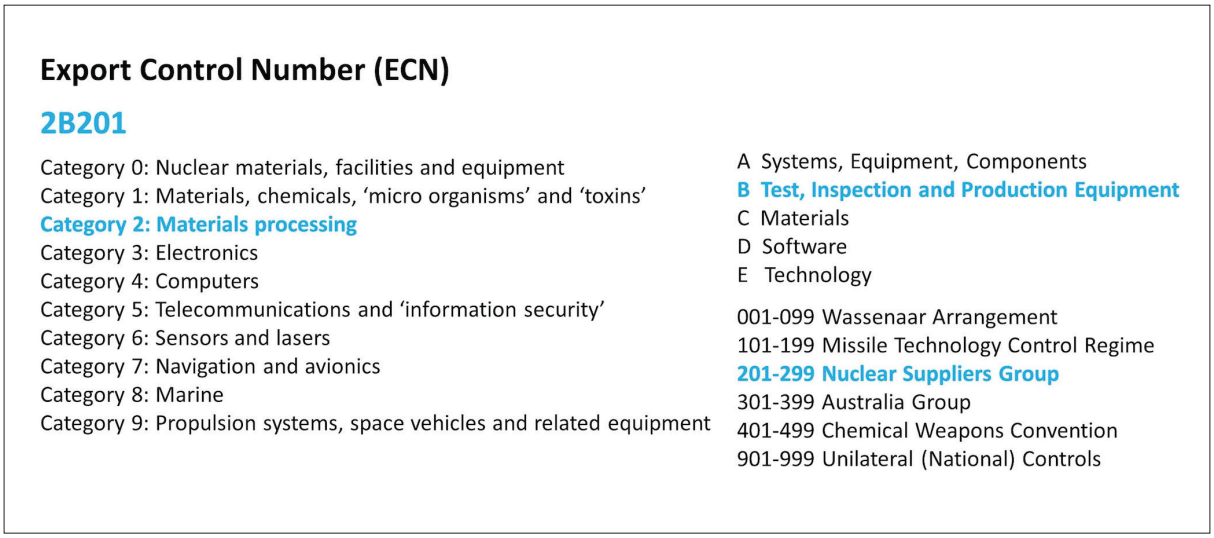

Figure 2: Export Control Number (ECN)

In the framework of STC, identification of a controlled item requires circumstantial judgment regarding the use of an item, which contradicts the principle of uniform interpretation of physical properties applied in the WCO's HS. While seeking indisputable identification of items is the most important principle for the HS community (based on uniform interpretation for the same item), the STC community focuses on whether goods should be approved for export and other forms of trading, like brokering, depending on national law. There are certain dual-use items that can be intuitively categorized as strategic goods such as nuclear materials or other items clearly matching the control lists of export control regimes. However, the interpretation of the control definitions and parameters for specific items can pose challenges. Also, items not on the control lists can be subject to control and authorization under the catch-all clause. The classification of those items is contingent on supplementary information, such as who is going to use those items and how those items will be used. End-use and end-user are critical factors in trade control practice.

In sum, the two communities and their classification systems are distinctive in terms of goals, formality of regime, and practices. The HS community aims to facilitate trade by having a universally and legally standardized language that should be construed in a uniform way within the community. The more informal STC community targets prevention of WMD proliferation through trade controls based on national control lists utilized in a conditional manner.

Incompatibility Between The Two Classification Systems

Since the two classification systems were developed independently and for different purposes, there is no particular reason why they should be compatible. Specifically, the criteria for classifying goods of two systems are different, which makes it hard to make one-to-one matches between HS codes and ECNs. Most controlled items from the export control regimes cannot be classified using the current HS coding system as one item can fall under multiple HS codes. In trade controls, multiple dimensions such as functions, raw materials, and industrial specifications are considered together in the licensing process while the HS begins by classifying goods based on a specific industrial sector and then hierarchically drills down. Therefore, many controlled items can be characterized using multiple HS codes depending on components or intended function. In addition, the fact that each regime concerns different aspects for the same type of item makes streamlining correlations between HS and ECN even harder. For instance, the NSG, the MTCR, and the AG control centrifuges based on different technical aspects. The NSG focuses on diameter and capability of a peripheral speed while the MTCR and the AG concern acceleration and liquid flow rate, respectively. Centrifuges controlled under these regimes are clearly different goods, but HS cannot clearly distinguish one from the other.

The European Commission has attempted to develop a system to correlate the two classification systems. The EU Correlation Table, which was created and is maintained by the European Commission's Taxation and Customs Union Directorate General (DG TAXUD), shows the degree of incompatibly between the two classification systems. The TAXUD website informs traders in the European Union of trade regulations possibly related to EU CN codes. For the Dual-use Regulation, each ECN is connected to a CN code to which the ECN is classified when exported or imported. The Table enumerates about 6,000 correspondences between ECN and CN codes. If an ECN cannot be linked to one CN code, that ECN appears in the correlation table as corresponding to all the potentially relevant CN codes. In the 2015 version of the Correlation Table, 4,993 CN codes are duplicated out of a total 6,198 correlations between ECN and CN codes.[9] This means most items that are a concern to the STC community cannot be classified with one particular nomenclature code.

As a simple example, ECN 0B001 is used to identify a plant for separation of uranium or fissile materials or relevant equipment for those purposes. The EU Correlation Table includes 75 unique CN codes that are related to ECN 0B001. Those correspondences include CN codes that can fall under one broad category such as CN 84012000 "machinery and apparatus for isotopic separation," CN 84219900 "parts of gas centrifuges," or CN 84141025 "vacuum pumps." Vacuum pumps can be a necessary part for a centrifuge, and the parts of a centrifuge can fall under the definition of machinery for isotopic separation. At the same time, the Correlation Table lists CN 84219900 as being correlated to ECN 2B352. The reason there are two separate correlations is "centrifugal separators" are on the control lists of the Australia Group although the NSG and the AG focus on different technical aspects of centrifuges that cannot be detailed in the HS due to manifold control parameters of each regime.

In addition, the Correlation Table demonstrates that the classification system for trade facilitation cannot accurately associate controlled technology with particular nomenclature

9 "Correlation Table between Export Control Classifications and Combined Nomenclature Code," DG Trade, European Commission, <http://trade.ec.europa.eu/doclib/html/153050.htm>.

codes. Knowledge and technology are incorporeal assets that must be assessed based on content and cannot be classified as goods. Their proliferation requires physical tools for transfer like books or CDs unless transferred by intangible means such as telecommunications or facsimile. Therefore, there is no other way but to connect Product groups D and E of ECN to tariff nomenclature codes representing books or films except for a few cases. For instance, according to the Correlation Table, ECN 0D001, which is software for the development or production of nuclear-related items, is correlated to CN codes representing books, films, or discs such as CN 49019900, CN 37059010, and CN 85238099.

The STC community often claims that the incompatibility of the two classification systems should be addressed to promote stronger nonproliferation enforcement. Part of the STC community argues that the two classification systems should be progressively harmonized to that end. In practice, Customs authorities normally serve as the initial detection authority for STC since Customs officers are primarily responsible for border controls. For their main responsibility, revenue collection, Customs officers solely rely on the HS to identify traded goods. However, in the case of STC, Customs officers cannot readily identify cargoes with proliferation risk based on HS codes due to the incompatibility of the two systems. Customs officers are required to develop expertise in detecting and profiling cargoes with proliferation risk. Moreover, the difficulty detecting cargo with proliferation risk is a disincentive for Customs since costs associated with stopping legitimate cargo flows for inspection are hard to justify and almost impossible to recover. The argument is that if the ECN system and HS could be harmonized, STC enforcement would be more effective as Customs officers could more easily detect cargoes with proliferation risks without hindering legitimate cargo flows.[10]

Despite the desirability of harmonizing the systems, the differently structured HS and ECN inevitably entails costs for translating one to the other. For Customs, additional time and expertise is required to identify cargoes with proliferation risk. For the private sector, having in-house personnel with expertise in STC reflects an additional production cost. However, neglecting to properly address STC requirements could also entail enormous economic costs associated with administrative penalties. Enhanced compatibility between two classification systems can contribute to optimizing time, expertise, and economic costs for the separate processes required for trade facilitation and trade controls.

Enhanced compatibility between the two classification systems would also facilitate a coordinated view on the international trade of strategic goods. Most databases for international trade such as UN Comtrade, Eurostat, and the Global Trade Atlas use the HS codes. At the current stage, it is only possible to guess the upper thresholds for volumes of candidates for certain controlled items. However, if the HS were aligned with the ECN system, controlled items could be better distinguished from non-controlled ones in those trade databases, which would contribute to nonproliferation research, reinforcing the existing nonproliferation verification regime and STC implementation.[11]

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10 Renaud Chatelus, "The Role of Customs in Strategic Trade Controls: Challenges and Potential," Center for International Trade and Security, 2015, <http://cits.uga.edu/uploads/documents/chatelus_customs.pdf>.

11 Gunnar Jeremias and Iris Hunger, "Building Transparency in the Worldwide Trade in Biological Dual-Use Equipment," Research Group for Biological Arms Control, December 2010, <http://www.biological-arms-control.org/projects_trademonitoring/TradeMonitoring-OccPaper2010-Final.pdf>.

For instance, if it is determined that a NSG Member State exported items on the NSG Trigger List to countries where IAEA safeguards are not in place, it signals that the exporting state may not be fulfilling its commitments under the NSG. In terms of reinforcing the verification regime, having a clear view on the volumes of imports of items in ANNEX II of the Model Additional Protocol (AP) by a state party to the AP can be useful in verifying whether the state is fulfilling its obligation to declare all trade of such items.[12] Also, if a volume of imports of certain sensitive goods is in excess of civilian needs, it could signal the potential WMD intentions of that country. For implementation of STC, outreach to industry can be more efficiently organized when it is possible to identify industrial sectors with a high volume of strategic goods exports. In addition, if certain strategic goods that are not indigenously produced are exported by a country, it means there may be weaknesses in that country's re-export controls.

Venue For An Integration Of The Two Classification Systems

The classification system for trade controls could be formally or informally integrated into the HS at the international level. Formal integration would mean an amendment to the HS Convention to make strategic items distinguishable in the universal HS. Informal integration would mean a WCO Recommendation, a non-legally binding document that recommends Contracting Parties to the Convention to open national statistical nomenclatures for certain items. Although a WCO Recommendation is not a legally binding document, once it is adopted by a Customs administration it becomes an obligation at the national level.[13]

Both HS amendments and WCO Recommendations are adopted at the HS Review Cycle. The amendment process is also referred to as an Article 16 procedure as it is governed by Article 16 of the HS Convention.[14] The HS Review Cycle is a continuous five-year cycle that includes a drafting period and a two-and-half year implementation period, which simultaneously occurs with the drafting period. For example, the drafting period for HS 2012 was from June 2005 to June 2009, and the drafting period for HS 2017 was between July 2009 and June 2014. The implementation period for HS 2012 was from July 2009 to December 2011, which overlaps with the drafting period for HS 2017.

During the drafting period, each contracting party can submit proposals for amendments to the HS Convention to the WCO Secretariat, which refers them to the Harmonized System Review Sub-Committee (the Sub-Committee) for consideration. Once a consensus is reached on the proposed amendment by the Sub-Committee, proposals are examined at the biannual

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12 Cristina Versino, Giacomo Cojazzi, Erik Wolfart, Guido Renda, and Willem Janssens, "Tools for Trade Analysis And Open Source Information Monitoring For Non-Proliferation" presentation delivered at the Symposium on International Safeguards: Linking Strategy, Implementation and People, Vienna, Austria, October 2014, <https://www.iaea.org/safeguards/symposium/2014/home/eproceedings/sg2014-slides/000293.pdf>.

13 "WCO Recommendation Related to the Harmonized System Convention," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/~/media/78D3C844FB2248228F34CE3CC1B40206.ashx>.

14 "HS Convention," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs_convention.aspx>.

Harmonized System Committee (the Committee) meetings.[15,16] A decision on the amendment proposal at the Committee is made by a two-thirds majority vote by the Members. Then the amendment proposal is referred to a governing body of the WCO, the Council, for an approval. A simple majority vote is required in case of a non-binding WCO Recommendation.[17]

Once the Council approves the amendment, an implementation period begins. The first six months following the approval is a reservation period, during which any contracting party can introduce a veto to any of the amendments, and amendments will be deemed accepted if no objection is raised. The following two years are used for preparing the Explanatory Notes and correlation table between old and new HS versions, database, legislative process in Member States, and training of Customs officials.[18]

HS amendment can contribute to strengthening the effectiveness of STC implementation through enhanced identification of strategic goods globally while in case of a WCO Recommendation the effect will be limited to countries adopting the Recommendation. Also, HS amendment will bring about a coordinated view on global trade of controlled items at the internationally consistent Subheading level. In case of the WCO Recommendation, it is necessary to translate a national nomenclature to that of the other country in order to view the global movement of a particular item, since each country can assign different nomenclature codes for the same item. However, despite the stronger effects of HS amendment, a Recommendation is more feasible option for the STC community since there is a better chance it will be adopted by the HS Committee. A WCO Recommendation is not an obligation and only requires a simple majority vote. More details will be discussed in the following sections.

Factors To Consider In Integration Of ECN Into HS

To align the HS with the ECN system, the main factor to consider is what items will be integrated into the HS. The lack of a universally institutionalized regime for controlling the trade of strategic goods means that the initial problem is reaching agreement on what strategic goods should be included in the HS system. The STC community should begin by coming up with a list of items that can be easily incorporated into the HS. That list must be very concise so that it doesn't pose a burden to CPs in their implementation of a new version of HS since there are about 400 sets of amendments in each HS review cycle.[19]

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15 "Rules of Procedure of the Harmonized System Review Sub-Committee," World Customs Organization, <http://www.wcoomd.org/en/about-us/wco-working-bodies/tarif_and_trade/~/media/WCO/Public/Global/PDF/About%20us/WCO%20Working%20Bodies/Tariffs%20and%20Trade/HS%20Review%20Sub-Committees/HS_Rules_Procedure_Reviewsub_En.ashx>.

16 "Amending the HS," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/activities-and-programmes/amending_hs.aspx>.

17 "Rules of Procedure of the Harmonized System Committee," World Customs Organization, <http://www.wcoomd.org/en/about-us/wco-working-bodies/tarif_and_trade/~/media/WCO/Public/Global/PDF/About%20us/WCO%20Working%20Bodies/Tariffs%20and%20Trade/HS%20Committees/HS_Rules_Procedure_En.ashx>.

18 "Amending the HS," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/activities-and-programmes/amending_hs.aspx>.

19 Dayong Yu, "The Harmonized System – Amendments and Their Impact on WTO Members' Schedules," World Trade Organization, February 2008, <https://www.wto.org/english/res_e/reser_e/ersd200802_e.pdf>.

To make the list concise, first, the scope of items should be limited to those related to any international treaty or at least on the control lists of the multilateral export control regimes. In so doing, the amendment proposal for integrating STC concerns would be more appealing to members of the Committee. Second, the list must contain items that could directly contribute to WMD development or items with significant proliferation concern to exclude dual-use items with broad civilian applications that require circumstantial judgments for classification. Third, the type of goods should be a subset of a particular heading that does not overlap with coverage of other headings, and the control parameters of that item should be able to be realized at the Subheading level under the respective heading. Finally, candidate items should be those whose control parameters are not easily affected by rapid technology development since the five-year HS review cycle cannot be aligned with the pace of updating control lists.

The following two cases will present examples of attempts to integrate the two classification systems, and how the aforementioned factors affected those efforts.

Research Group for Biological Arms Control

The case of the Research Group for Biological Arms Control (the Research Group) exemplifies the effort made by a private academic organization to amend the HS Convention for incorporating STC-related features into the HS at the international level. The attempt was not successful mainly due to the lack of legitimacy of its proposal. This case also demonstrates that the scope of items for HS amendment could be very limited.

In 2007, the Research Group, affiliated with the University of Hamburg in Germany, requested that the Secretariat of the WCO consider its proposal to incorporate a number of dual-use goods to the HS at the 36th Session of the HS Review Sub-Committee. The proposal included a list of biological dual-use items adopted from the control lists of the UN Monitoring, Verification and Inspection Commission for Iraq (UNMOVIC), the control list of the Australia Group, and the list of equipment that was to be used in establishing a verification system of the Biological and Toxin Weapons Convention (BTWC). The Research Group claimed that the listed biological dual-use items should be individually identifiable in the HS as a means to promote implementation of UNSCR 1540, to monitor the trade flows of biological dual-use items in trade databases, and to provide a verification system for the BTWC.[20]

Throughout the HS review process, the proposal submitted by the Research Group was challenged by questions regarding the legitimacy of the source, which led to suspension of the amendment process. Since the Research Group was neither a signatory to the BTWC nor an internationally sanctioned agency for the BTWC, at the 37th session of the Sub-Committee in May 2008 the Canadian delegation shared its concern that the Sub-Committee could be seen as an authority for the BTWC if they adopted the amendment for BTWC verification while signatories to the BTWC discarded their effort to establish a verification regime in 2001. Also, it was suggested that if the Sub-Committee accepted the proposal of the Research Group, it would open the door for any group or organization with environmental, social, or commercial needs to directly submit proposals to the Committee for their interests. The Japanese delegation shared a similar

20 "Possible Amendment of the Nomenclature: Proposal by the Research Group for Biological Arms Control," 36th Session of Harmonized System Review Sub-Committee, Brussels, Belgium, November 5, 2007.

view that the amendment procedure should have begun with considering "the appropriateness of the proposal."[21] As a result, it was concluded by consensus that the amendment procedure would not be pursued. In view of this decision, some delegates recommended the Research Group find sponsors among contracting parties that would be willing to adopt the proposal. It was also emphasized that having support from major powers such as the United States or the European Union is a vital factor.[22]

As another procedural issue, there was a time limitation for considering the proposal as a formal amendment to the HS. When the proposal was first put on the table in November 2007, only four sessions were left before the review process for HS Nomenclature 2012 edition ended in early 2009.[23] Since the WCO Secretariat considered that four sessions would not be enough time to review all technical details, it suggested a WCO Recommendation as an interim option. However, the Research Group expressed its desire for an amendment to the HS Convention as a publicly available trade database would not be changed without an HS amendment.[24]

In terms of the items to be included, many of those listed in the proposal of the Research Group could not be translated into the HS nomenclature. The list suggested by Research Group included dual-use items that need to be identified by end-use criteria. For example, the Research Group suggested that spray drying equipment should be broken down into two different Subheadings depending on its end-use, "Designed for use with biological material" and "Not designed for use with biological material."[25] This proposed designation was challenged by members of the HS Committee based on the uniform interpretation principle of HS. At the 41st Session of the HS Committee, members claimed that the HS classification should be based on objective characteristics of goods, and end-use cannot be verified when the exporting good is declared or presented.[26] Another delegate expressed the view that the scope of dual-use items to be classified should be limited to certain goods that could directly contribute to the production of biological weapons.[27] In addition, most of the items contained in the proposal were described with multiple HS codes, or multiple items were found to fall under one HS code. These difficulties could not be properly addressed during the review process.

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21 "Report of the 37th Session of the Harmonized System Review Sub-Committee," 37th Session of Harmonized System Review Sub-Committee, May 21, 2008.

22 Gunnar Jeremias and Iris Hunger, "Building Transparency in the Worldwide Trade in Biological Dual-Use Equipment," Research Group for Biological Arms Control, December 2010, <http://www.biological-arms-control.org/projects_trademonitoring/TradeMonitoring-OccPaper2010-Final.pdf>.

23 Ibid.

24 "Possible Amendment of the Nomenclature (Proposal by the Research Group for Biological Arms Control)," 36th Session of Harmonized System Review Sub-Committee, Brussels, Belgium, November 5, 2007.

25 "Classification of the Biological Dual-use Items of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction," 41st Session of Harmonized System Committee, February 19, 2008.

26 Ibid.

27 "Report to the Customs Cooperation Council on the 41st Session of the Harmonized System Committee," 41st Session of Harmonized System Committee, March 20, 2008.

Organization for the Prohibition of Chemical Weapons (OPCW)

The HS 2017, which was formally adopted through the HS review cycle between 2009 and 2014 and will be in force from January 1, 2017, contains Subheadings for chemicals controlled under the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (CWC.) The CWC is an international treaty that prohibits use or production of chemical weapons and requires the destruction of existing weapons. As an administering body of the CWC, the Organization for the Prohibition of Chemical Weapons (OPCW) conducts inspections and verifies Member States' compliance with the treaty. The CWC provides three schedules of chemical substances, and restrictions on each schedule under the CWC are different. For example, schedule I contains substances with limited civilian application apart from chemical weapons purposes, and parties to the CWC should not produce, retain, or transfer of the chemicals in schedule I except for research or medical purposes.[28] On the other hand, for schedule III, which is a list of chemicals with broad civilian applications, states are obliged to declare their production activities with a capacity of a certain threshold and must secure assurance from a recipient state that the end-use of the substance are not prohibited activities.[29]

Before the CWC entered into force in 1997, the Preparatory Commission of the OPCW requested that the WCO incorporate individual Subheadings for chemical substances subject to the CWC into the HS for the purpose of collecting data on global trade flows of the controlled chemicals.[30] Instead of an amendment to the Convention, the proposal was adopted as a Recommendation that calls on CPs to open national statistical nomenclature for the listed chemicals in 1996. However, the CWC Recommendation has not to date been adopted by the majority of the WCO community.[31] One possible explanation is the fact that many CPs had difficulty assigning national statistical nomenclature codes for chemicals on the Recommendation so they preferred not to have a complicated national nomenclature system.[32] Presumably for this reason, another Recommendation concerning the CWC was adopted in 2009. The new Recommendation provides a truncated list with commonly traded chemical substances including all chemicals on

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28 "Regime for Schedule 1 Chemicals and Facilities Related to such Chemicals," Organization for the Prohibition of Chemical Weapons, <https://www.opcw.org/chemical-weapons-convention/annexes/verification-annex/part-vi/>.

29 "Regime for Schedule 3 Chemicals and Facilities Related to such Chemicals," Organization for the Prohibition of Chemical Weapons, <https://www.opcw.org/chemical-weapons-convention/annexes/verification-annex/part-viii/>.

30 "Recommendation of the Customs Co-operation Council on the Insertion in National Statistical Nomenclatures of Subheadings for Substances Controlled under the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (June 18, 1996)," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/~/media/E72C538D5610434CA38CAD2694010E1D.ashx>.

31 "Position of Contracting Parties to the Harmonized System Convention and Non-Contracting Party Administrations," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/overview/~/media/18E06EB6930C4F1FB0CFE39CF10571EC.ashx>.

32 "Recommendation of the Customs Co-operation Council on the Insertion in National Statistical Nomenclatures of Subheadings for Substances Controlled under the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (June 26, 2009)," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/~/media/463D38FA940441F9885D0F5C1C3AE325.ashx ibid>.

schedule 3 of the CWC.[33] The 2009 Recommendation was adopted as an amendment to the HS Convention for the HS 2017 Edition.[34]

FRANCAIS	ENGLISH
N° 2930.50.	Subheading 2930.50 :
Nouvelle rédaction :	Delete and substitute :
"2930.80 - Aldicarbe (ISO), captafol (ISO) et méthamidophos (ISO)".	"2930.80 - Aldicarb (ISO), captafol (ISO) and methamidophos (ISO)".
Nouveaux n°s 2930.60 et 2930.70.	New subheadings 2930.60 and 2930.70.
Insérer les nouvelles sous-positions suivantes :	Insert the following new subheadings :
"2930.60 - 2-(N,N-Diéthylamino)éthanethiol	"2930.60 - 2-(N,N-Diethylamino)ethanethiol
2930.70 - Sulfure de bis(2-hydroxyéthyle) (thiodiglycol (DCI))".	2930.70 - Bis(2-hydroxyethyl)sulfide (thiodiglycol(INN))".
Nouveaux n°s 2931.3 à 2931.39.	New subheadings 2931.3 to 2931.39.
Insérer les nouvelles sous-positions suivantes :	Insert the following new subheadings :
" - Autres dérivés organo-phosphoriques :	" - Other organo-phosphorous derivatives :
2931.31 -- Méthylphosphonate de diméthyle	2931.31 -- Dimethyl methylphosphonate
2931.32 -- Propylphosphonate de diméthyle	2931.32 -- Dimethyl propylphosphonate
2931.33 -- Éthylphosphonate de diéthyle	2931.33 -- Diethyl ethylphosphonate
2931.34 -- Méthylphosphonate de sodium 3-(trihydroxysilyl)propyle 2931.35 --	2931.34 -- Sodium 3-(trihydroxysilyl)propyl methylphosphonate
2,4,6-Trioxide de 2,4,6-tripropyl-1,3,5,2,4,6-trioxatriphosphinane 2931.36 --	2931.35 -- 2,4,6-Tripropyl-1,3,5,2,4,6-trioxatriphosphinane 2,4,6-trioxide
Méthylphosphonate de (5-éthyl-2-méthyl-2-oxido-1,3,2-dioxaphosphinan-5-yl)méthyle et de méthyle	2931.36 -- (5-Ethyl-2-methyl-2-oxido-1,3,2-dioxaphosphinan-5-yl)methyl methyl methylphosphonate
2931.37 -- Méthylphosphonate de bis[(5-éthyl-2-méthyl-2-oxido-1,3,2-dioxaphosphinan-5-yl)méthyle]	2931.37 -- Bis[(5-ethyl-2-methyl-2-oxido-1,3,2-dioxaphosphinan-5-yl)methyl] methylphosphonate
2931.38 -- Sel d'acide méthylphosphonique et d'(aminoiminométhyl)urée (1 : 1)	2931.38 -- Salt of methylphosphonic acid and (aminoiminomethyl)urea (1 : 1)
2931.39 -- Autres".	2931.39 -- Other".

Figure 3: Some Chemicals subject to the CWC realized in HS 2017[35]

The OPCW case can be differentiated from the Research Group case in terms of who made an attempt to amend the HS Convention, the types of proposed items, and how the proposal was adopted as a formal amendment to the Convention. First, the OPCW is an internationally acknowledged agency administering the CWC. Conversely, the fact that the Research Group is not related to either the BTWC or UNSCR 1540 makes its proposal less appealing to members of the HS Committee. In term of items to be included, there is no internationally agreed upon list for biological dual-use items, and the proposal of the Research Group included items that were not even accepted by the signatories to the BTWC. In addition, chemical substances were relatively more easily translated into HS codes since the type of goods is important while it is difficult to define specific parameters for many biological dual-use items proposed by the Research Group. Finally, the OPCW's attempt began with a Recommendation while the Research Group was reluctant to consider that approach. The CWC Recommendation was officially integrated into the HS about 20 years after adoption as a Recommendation. During that time, the Recommendation had been refined to ensure better acceptance by contracting parties.

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33 Ibid.

34 "Amendment to the HS Nomenclature effective from 1 January 2017," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs-nomenclature-2017-edition/amendments-effective-from-1-january-2017.aspx>.

35 "Amendment to the Nomenclature Appended as an Annex to the Convention Accepted Pursuant to the Recommendation of 27 June 2014 of the Customs Co-operation Council," World Customs Organization, <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs-nomenclature-2017-edition/~/media/97CAFB37DA7144B488DF7FB83387DC7A.ashx>.

Conclusion: Possible Options For The Stc Community

What do the cases of the OPCW and the Research Group mean to the STC community?

The STC community should carefully consider how it could present a proposal to the HS Committee or the Sub-Committee. The STC regime is not a universally institutionalized regime: the four export control regimes are exclusive groups of like-minded countries for different types of goods. If a member of the one of the export control regimes submits an HS amendment proposal presenting an interest of only a part of the international community, it might not be successful in acquiring two-thirds of the votes of members of the HS Committee. While the 1540 Committee could be considered a candidate that could pursue an HS amendment, it is not an appropriate body for doing so unless its current mandate is reviewed and resources are secured for such initiative. More significantly, while UNSCR 1540 does mandate the control of strategic goods, there is no agreed upon list of controlled items under the resolution, and compiling a control list is currently at the national discretion of UN Member States. This means that another extensive consultation process for defining the scope of items is required before pursuing HS amendment.

One option for the STC community, especially for NSG members, would be to submit a proposal of a WCO Recommendation for key materials and items related to the Treaty on Nonproliferation of Nuclear Weapons (NPT) under the auspices of the International Atomic Energy Agency (IAEA.) Since the IAEA is an internationally sanctioned body for administering the safeguards system according to Article III of the NPT, it does not suffer from the lack of a mandate for verification of treaty compliance. In addition, the fact that a WCO Recommendation requires a simple majority vote makes the Recommendation option more feasible than an HS amendment as an initial step.

As discussed, items that can be most easily integrated into the HS structure are those related to international legal instruments, acknowledged as significant proliferation concerns, fit into the current HS classification scheme, and are not frequently affected by technological development. Items on the NSG trigger list could be considered for HS amendment as a common ground between the IAEA and the STC community. First, although with various differences, the Trigger List is similar to Annex II of the Additional Protocol that lists the items whose export must be communicated to the IAEA.[36] Also, providing a clearer view on global nuclear trade could contribute to the IAEA's evaluation process for drawing a safeguards conclusion for its Member States.[37] Second, the NSG guideline requires a recipient state to accept full scope safeguards, construed as developing a Comprehensive Safeguards Agreement (CSA) as a condition of supply. This supports the idea that the items on the NSG trigger list have direct significance to promoting nonproliferation. In delineating the list for HS amendment, the NSG

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36 Filippo Sevini, Renaud Chatelus, Malin Ardhammar, J. Idinger, Pete Heine, "States' Reporting of Annex II Exports (AP) and the Significance for Safeguards Evaluation," International Atomic Energy Agency, 2014, <https://www.iaea.org/safeguards/symposium/2014/home/eproceedings/sg2014-papers/000263.pdf>.

37 Cristina Versino, Giacomo Cojazzi, Erik Wolfart, Guido Renda, and Willem Janssens, "Tools for Trade Analysis And Open Source Information Monitoring For Non-Proliferation" presentation delivered at the Symposium on International Safeguards: Linking Strategy, Implementation and People, Vienna, Austria, October 2014, <https://www.iaea.org/safeguards/symposium/2014/home/eproceedings/sg2014-slides/000293.pdf>.

members or the IAEA could select items that currently fall under particular HS codes but necessitate a clear distinction from purely civilian items. In addition, control parameters for these items should not be affected by the updates to the NSG guidelines.

For instance, the IAEA may consider proposing a breakdown of HS 284410, which indicates "Natural uranium and its compounds; alloys, dispersions (including cermets), ceramic products and mixtures containing natural uranium or natural uranium compounds" to distinguish nuclear materials subject to the safeguards measures from those that are not. In this case, since the starting point of safeguards is "composition and purity suitable for fuel fabrication or for being isotopically enriched," it is necessary to come up with a clear and indisputable technical definition for what constitutes such a composition or purity.[38] Also, subdivisions for nuclear grade graphite can be introduced under HS headings indicating graphite such as HS 3801 and HS 8545 with certain density and purity as control parameters.

What are the options at the national level?

Before the STC regime is universally institutionalized, the STC community can enhance the interface between STC and Customs clearance at the national level. There are at least two ways: one is each country can better utilize existing correlation tables; the other is opening breakdowns under particular Subheadings to make strategic items distinguishable for a better a view on national strategic trade and enhanced STC enforcement.

As an example of better utilization of the correlation table, the Korea Strategic Trade Institute (KOSTI) maintains a website called Yestrade as a part of its strategic trade control licensing system where exporters can conduct self-classification to determine whether their goods should be classified as strategic goods. On the self-classification platform, the incompatibility between the ECN system and the HS is mitigated by the use of a Parameter Sheet that provides control parameters associated with each ECN. Yestrade provides a list of all potential strategic goods that might be related to a particular HS code, allowing exporters to determine what they intend to export among multiple correspondences between the ECN and the HS. The Parameter Sheet helps the exporter in identifying a license requirement by listing the technical control thresholds for the item that cannot be specified solely with HS. However, better utilization of the correlation table cannot fundamentally resolve the incompatibility issue given the fact that exporters are held liable for the outcome of self-classification. For this reason, exporters can request legally valid official classification to the KOSTI in which HS codes are not considered.[39]

Opening breakdowns for strategic goods can be differentiated from the better utilization of the correlation table as a legal approach. Legalizing classification of particular strategic goods by certain nomenclature subdivisions can be achieved at the national or the regional levels without altering the internationally consistent HS. For instance, within the European Union, upon request and with consent by the EU members, DG TAXUD could assign CN codes under HS 380110, which represent artificial graphite, to make graphite with nuclear or missile applications identifiable. For the graphite used in missile technology, CN 38011010

38 *IAEA Safeguards Glossary* (Vienna, International Atomic Energy Agency, 2002), <https://www.iaea.org/sites/default/files/iaea_safeguards_glossary.pdf>.

39 Chaewook Lim (a staff member of KOSTI), interviewed by Hyuk Kim, March 1, 2016.

could be open to indicate artificial graphite having a specific gravity of 1.7 g/cm^3 or more whereas nuclear graphite CN 38011020 specifies artificial graphite having a specific gravity of 1.5 g/cm^3 or more, containing impurities less than 5 ppm of boron and a particle size less or equal to 100 μm. Artificial graphite for other applications can be classified as "Other" under CN 38011090.[40] Likewise, any country can open national breakdowns under HS 380110 with control parameters that are consistent with their national control lists.

The Way Forward

In conclusion, if the STC community is interested in strengthening the effectiveness of STC implementation through the integration of two classification systems, it needs to adopt a gradual and systematic approach. Since there is no internationally agreed upon item list for STC, it is desirable to begin with a WCO Recommendation for nuclear-related items on the Trigger List of the NSG. A list of candidate items for a Recommendation must include short-listed items that fall under particular HS codes. To secure enough time for technical consultation as part of the HS review process, it is recommended that such efforts be initiated at the beginning of each HS review cycle. Once it is adopted as a Recommendation, the STC community can monitor implementation of the Recommendation by Contracting Parties to the Convention to refine a list for eventual HS amendment. In the meantime, the STC community can try to reach consensus on controlled items for HS amendment as well.

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40 A reviewer of this article in communication with the author, September 7, 2016.

An Additional Tool for Economic Integration? How Coordination on Strategic Trade Controls Can Promote Regional Cooperation within ASEAN

FRAUKE RENZ[1]

Abstract

The Association of Southeast Asian Nations (ASEAN) has made the next step toward regional integration with the ASEAN Economic Community. With increased trade in the region, the risk of proliferation of dual-use items rises. Such items could be used for the development of weapons of mass destruction, and might fall into the wrong hands due to the lack of comprehensive strategic trade controls in several of ASEAN's Member States. Given the proximity to North Korea and the influx of the Islamic State in the region, this could evolve into a significant security threat. The need to establish a more effective strategic trade control regime throughout ASEAN should however be viewed as more than just an unavoidable necessity; it can serve as a tool for enhancing regional integration. The example of the European Union's strategic trade control regime presents multiple policies that can be pursued and adapted to the regional context of Southeast Asia, to both foster cooperation and prevent the spread of sensitive dual-use items. It also offers an insight into the numerous implementation challenges that exist even within the deeply integrated European Union. Suggestions as to how successful cooperation on export controls might be achieved include: the establishment of national strategic trade control frameworks, the coordination on export control lists, assessing the potential use of the ASEAN Single Window as well as the establishment of a regional export control network for cooperation with experienced outside actors such as the European Union. By promoting effective strategic trade control programs and adapting uniform control lists, the region can reduce risks and become more attractive to investors.

1 Ms. Frauke Renz is a Visiting Researcher at the Georgetown University Law Center, a Pacific Forum CSIS Non-Resident WSD-Handa Fellow, and is pursuing her PhD in public international law at the University of Bern. She worked, researched and studied in China, the Philippines and the U.S. for the past four years, has work experience in political and security risk analysis as well as consulting, holds a Master of International Relations from Tsinghua University in Beijing and is founder of IR.Asia, for which she has interviewed leading experts from think tanks, academia and industry. She has a background in international law, international relations and economics and has been published in The National Interest, The Diplomat, Strategic Insights and the Indian Military Review.

Keywords

Association of Southeast Asian Nations (ASEAN), European Union (EU), export controls, regional cooperation, strategic trade controls, Southeast Asia, Weapons of Mass Destruction (WMD), Islamic State

Introduction

In early September, North Korea announced its fifth and according to seismic data most powerful nuclear test, this time of a nuclear warhead.[2] Such an event serves as a reminder of the dangers presented by the fallibility of the export control regimes currently in place within the region, as the nation successfully circumvented sanctions and controls to reach its goal of becoming a nuclear state. In the past, the A.Q. Khan network already made use of Southeast Asian firms and lax export controls regimes in Malaysia to provide parts to Libya's nuclear weapons program.[3] Especially in light of the increasing foothold of terrorist groups such as the Islamic State in Southeast Asia,[4] preventing nuclear proliferation is essential for both national as well as regional security. Consequently, the question of how to counter the spread of weapons of mass destruction (WMD) through effective strategic trade controls (STC) is more than an intellectual exercise but a necessity in the increasingly economically integrated Association of Southeast Asian Nations (ASEAN). Another region that went through the process of deepening economic cooperation while also facing the challenging task of establishing effective export control mechanisms is the European Union (EU). Hence, the study of the EU STC regime and its development offers the opportunity to assess how a STC system could be successfully established within ASEAN.

The ten ASEAN Member States are at a crossroads in several ways. Struggling to find a unified response to issues such as the policy towards China and the disputes in the South China Sea, the establishment of the ASEAN Economic Community (AEC) in 2015 was a major milestone.[5,6] ASEAN does however continue to struggle with regional cooperation because of concerns about

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2 Victor Cha, "Snapshot of North Korea's Five Nuclear Tests," *Beyond Parallel,* September 9, 2016, <http://beyondparallel.csis.org/fifth-nuclear-test-snapshot/>; Katie Hunt, K.J. Kwon, and Jason Hanna, "North Korea Claims Successful Test of Nuclear Warhead," *CNN,* September 10, 2016, <http://edition.cnn.com/2016/09/08/asia/north-korea-seismic-activity/>.

3 David Albright, Paul Brannan, and Andrea Scheel Stricker, "Detecting and Disrupting Illicit Nuclear Trade after A.Q. Khan," *The Washington Quarterly* 33 (2010), pp. 89, 98; Stephanie Lieggi, "Dual-Use Technologies in Southeast Asia: Nonproliferation Challenge for the Next Decade," *Strategic Trade Review* 2 (Autumn 2015), p. 74.

4 Phuong Nguyen and Conor Cronin, "Recalibrating the Islamic State Threat in Southeast Asia," *Southeast Asia from Scott Circle* VII (2016): 4; Joseph Chinyong Liow, "ISIS in the Pacific: Assessing Terrorism in Southeast Asia and the Threat to the Homeland," *Testimony before the House Subcommittee on Counterterrorism and Intelligence,* April 27, 2016, <https://www.brookings.edu/testimonies/isis-in-the-pacific-assessing-terrorism-in-southeast-asia-and-the-threat-to-the-homeland/>.

5 "ASEAN Economic Community," ASEAN, <http://asean.org/asean-economic-community/>.

6 "*ASEAN: A Blueprint for Growth, ASEAN Economic Community 2015: Progress and Achievements,*" (Jakarta, Indonesia, 2015), <http://www.asean.org/storage/images/2015/November/aec-page/AEC-2015-Progress-and-Key-Achievements.pdf>.

national sovereignty and largely differing views concerning fundamental political, security, and economic issues.[7] Thus, the AEC offers a distinct model for cooperation when compared to other regional economic integrative efforts such as the EU. While the goal of the AEC is to create an integrated regional economy, enhance sectoral cooperation and simultaneously deepen the integration of ASEAN into the global economy, these Southeast Asian nations are by no means pursuing the level of regional integration and cooperation practiced in the EU.[8] Newly initiated cooperation through the AEC is nevertheless an important step for the world's fourth largest exporting region and offers new opportunities for intra-regional trade of technology, further boosting its attractiveness as an investment destination and manufacturing hub.[9,10] However, the uneven application of STC in the region creates risks concerning the growing prevalence of intra-regional trade as well as the export of dual-use goods.

Sectors that are of particular concern regarding dual-use items include oil & gas, chemical, aerospace, nuclear energy, electronics, and automobile manufacturing.[11] Even though increased investments in these sectors within ASEAN would be beneficial for both regional economic integration as well as the development of ASEAN and the AEC, the lack of effective export controls in some Member States leads to the risk of the proliferation of dual-use items. National trade authorities being limited by available resources and competing economic interests further complicates the implementation of such controls.

Addressing this common security challenge requires regional cooperation because in an increasingly integrated regional economy, trade in dual-use items cannot be regulated sufficiently by one nation alone. Working toward a comprehensive STC regime can be more than an unavoidable necessity. Instead, it offers opportunities for increased regional cooperation, just as envisioned in the AEC Blueprint 2025. There is no expectation that the AEC will mirror the level of economic integration of the EU. Consequently, this article will not address how an EU STC regime could be implemented within the AEC for three primary reasons: First, the level of economic integration between the Member States of ASEAN and of the EU is not comparable. Second, willingness differs among ASEAN Member States to subject themselves to formalized instruments that might erode national sovereignty. Finally, STC regimes in many ASEAN Member States are nascent and can therefore not be directly compared to EU efforts in the area of export control.[12] Instead, this article will highlight the lessons that can be learned from the EU to identify benefits that can derive from cooperation on a regional STC regime.

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7 Shaun Narine, *Explaining ASEAN: Regionalism in Southeast Asia* (Boulder: Lynne Rienner Publishers, 2002), p. 206.

8 "ASEAN Economic Community," ASEAN, <http://asean.org/asean-economic-community/>.

9 Stephanie Lieggi, "Dual-Use Technologies in Southeast Asia: Nonproliferation Challenge for the Next Decade," *Strategic Trade Review* 2 (Autumn 2015), p. 76.

10 *ASEAN, ASEAN Economic Blueprint 2025* (Jakarta, Indonesia, 2015), <http://www.asean.org/storage/2016/03/AECBP_2025r_FINAL.pdf>.

11 Stephanie Lieggi, "Dual-Use Technologies in Southeast Asia: Nonproliferation Challenge for the Next Decade," *Strategic Trade Review* 2 (Autumn 2015), p. 75.

12 David Albright, Paul Brannan, and Andrea Stricker, "Detecting and Disrupting Illicit Nuclear Trade after A.Q. Khan," *The Washington Quarterly* 33:2 (April 2010), p. 91. More on the current state of national STC legislation in Southeast Asia: Carl Baker, David Santoro, and John K. Warden, "Implementing Strategic Trade Controls in Continental Southeast Asia," *Issues & Insights* 15 (2015), pp. 1-10.

First, this article briefly outlines what STC regimes encompass. It then considers the EU STC regime with its core elements and finally it offers policy recommendations that can be drawn from EU cooperation on STC and adapted to increasing regional cooperation among ASEAN Member States.

Strategic Items and Strategic Trade Controls

An STC system encompasses strategic export controls as well as border, transit, and trans-shipment controls.[13] There are several multilateral export control arrangements (MECAs) in place, such as the Australia Group (AG), the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG), the Wassenaar Arrangement (WA) and the Zangger Committee. These MECAs offer countries the opportunity to coordinate national export policies and seek to prevent the spread of dual-use goods, chemical and biological weapons, nuclear weapons as well as WMD and their delivery systems.[14] They are however closed-membership organizations and thus have limited normative impact on non-Member States.[15] While EU Member States are members of most MECAs, this is not the case with the ASEAN Member States and in some cases reflects a broader skepticism of those instruments.[16]

On an international level, United Nations Security Council Resolution (UNSCR) 1540 calls for countries to establish effective export control systems.[17] Adopted under Chapter VII of the UN Charter, UNSCR 1540 is legally binding for all UN Member States. The goal of the resolution is to deny non-state actors access to WMD and the means needed to develop them. According to UNSCR 1540, control lists are among the cornerstones of national STC systems. If items are on the control lists, their transfer requires government authorization, thus limiting the potential for WMD proliferation.

Examples for existing control lists include the lists provided by the various MECAs. The WA has both a military as well as a dual-use list and thus covers some of the content of the other control lists.[18] The common control lists of the AG include chemical weapons precursors, dual-use chemical manufacturing facilities and equipment, related technology and software, dual-use biological equipment, related technology and software, human and animal pathogens, and toxins as well as plant pathogens.[19] It thus includes many of the elements of the WA but goes beyond it

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13 Catherine B. Dill and Ian J. Stewart, "Defining Effective Strategic Trade Controls at the National Level," *Strategic Trade Review* 1 (Autumn 2015), p. 5.

14 Ibid, 7.

15 Matthew Fuhrmann, "Making 1540 Work: Achieving Universal Compliance with Nonproliferation Export Control Standards," *World Affairs* 169 (2007), p. 143.

16 Some countries such as Indonesia are critical to multilateral efforts as they believe that they limit cooperation. More on this: Andy Rachmianto, "Indonesia's Approach to Strategic Trade Controls: The Perspective of a Developing and Archipelagic Country," *Strategic Trade Review* 2 (Spring 2016), pp. 131-133.

17 United Nations Security Council Resolution 1540, S/RES/1540, New York, April 2004.

18 D. J. van Beek, "A Practical Way to Implement Export Control Lists in Developing Countries," *1540 Compass* 7 (Fall 2014), pp. 24-25.

19 "Australia Group Common Control Lists," Australia Group, <http://www.australiagroup.net/en/control lists.html>.

in its specificity with regards to chemical and biological weapons. The NSG sets out guidelines for nuclear transfers as well as the transfer of nuclear-related dual-use equipment, materials, software, and related technology. [20] Finally, the MTCR integral common list of controlled items covers those related to unmanned delivery systems capable of delivering WMD.[21]

On a national level, many countries chose to adopt a military list as well as a dual-use list. Military goods, meaning items specifically intended for military use, such as weapons, small arms, armed vehicles, and protective equipment are on the military list. This article will not include items on the military list, but rather focuses on dual-use lists, given their multifaceted implications for large manufacturers as well as regional economic integration within ASEAN. Items that have both civilian as well as potential military applications such as sensors, lasers, and high-end electronics, belong on the dual-use list.[22] To keep up with technological advancements and guarantee comprehensive control of dual-use items, the list needs to be updated on a regular basis.[23]

At first sight, establishing an STC system poses constraints on businesses seeking to export their products and trading globally. But given the essential importance of STC in preventing the proliferation of WMD, it is indispensable that nations realize the need to establish effective export control systems, often times necessitating cooperative efforts. Further countering initial concerns that these control regimes are a burden to economic development, a study has suggested that export controls do not have a negative impact on trade.[24] Moreover, STC have shown to be a positive factor in the process of regional economic integration. A look at EU cooperation on STC regimes demonstrates how coordinated regional efforts to counter the trade in dual-use items can be beneficial for individual Member States. Aside from the obvious advantage of countering the spread of dual-use items, other benefits include strengthened regional cooperation as well as reduced compliance costs and greater legal clarity for companies operating in the region.

The European Union Path to Cooperation on Strategic Trade Controls

The EU STC regime is enabled by inter-agency cooperation and a network between different regional as well as national authorities. This process of cooperating on STC dates back to the 1990s, when economic cooperation within the EU, then called the European Community, was less established. A predominant challenge to establishing an effective export control regime within the EU was to find the right balance between security and trade. This combined with differing

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20 "Guidelines," Nuclear Suppliers Group, <http://www.nuclearsuppliersgroup.org/en/guidelines>.

21 "MTCR Guidelines and the Equipment, Software and Technology Annex," Missile Technology Control Regime, <http://www.mtcr.info/english/guidelines.html>.

22 "Common Dual-Use and Military Control Lists of the EU," United States Department of State, <http://www.state.gov/strategictrade/resources/controllist/>.

23 Commission Delegated Regulation (EU) No. 1382/2014 of 22 October 2014 Amending Council Regulation (EC) No. 428/2009 Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items, Official Journal of the European Union (L 371/1), December 30, 2014.

24 Scott Jones and Johannes Karreth, *Assessing the Economic Impact of Adopting Strategic Trade Controls* (Washington D.C.: U.S. Department of State, 2010), pp. 31-32.

national as well as regional preferences complicated export control efforts. Understanding the difficulty in finding this balance and ways to manage expectations realistically is of critical importance when assessing the potential for cooperation on STC within ASEAN. Beyond takeaways for the AEC from the current EU STC regime, analyzing the way in which the regional system on export controls developed in the EU and the impact it had on regional cooperation and economic integration proves even more useful.

In the past, some ASEAN Member States have voiced criticism that Western security agendas are imposed on developing nations without taking their particular security needs and national priorities into consideration.[25] As questions about export control regimes involve debates about national security, many countries prefer to make those decisions on a national level. This was initially also the case for the European Union, where Member States long preferred to retain sovereignty over arms transfer policies.[26] But while sovereignty concerns are an argument for regulation of exports on a national level, differing regulatory schemes can create larger security risks. Additionally, disparities in national regulation can become problematic for regions looking to further economic cooperation, as companies might engage in license shopping and thus favor less regulated countries, creating economic imbalances and setting wrong incentives. Moreover, some companies might be reluctant to locate manufacturing hubs or invest in countries that do not have strong STC regimes. Not only might companies shy away from such places because of the reputational risk associated with any potential contribution to proliferation, the lack of legal clarity and predictability also increases compliance costs and thus negatively impacts their profit margin.[27] By having uniform or at least coordinated regulation in place, it is easier to create an integrated economy in which all actors stand to gain from economic cooperation.

Under the provisions of Regulation 3381/94 of 1994, which preceded the current EU STC regime, an export authorization was deemed valid throughout the European Community, creating a mutual recognition system.[28] While there was still significant leverage for national authorities in adopting additional control measures, it acknowledged the equality of export authorizations issued by one national authority throughout the entire Community and therefore set a precedent for community-wide acceptance of national decisions, even if made by another country's authorities. This fostered cooperation among national authorities as well as trust in

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25 Tanya Ogilvie-White, "Non-proliferation and Counter-terrorism Cooperation in Southeast Asia: Meeting Global Obligations through Regional Security Architectures," *Contemporary Southeast Asia 28 (2006)*, p. 6.

26 Yann Aubin, Arnaud Idiart, Aude de Clercq, and Laurent Papiernik, "The European Union," in: Yann Aubin and Arnaud Idiart (eds.), *Export Control Law and Regulations Handbook: A Practical Guide to Military and Dual-Use Goods Trade Restrictions and Compliance,* 2nd ed. (Alphen aan den Rijn: Kluwer Law International, 2011), p. 107; More on the debate about sovereignty versus comprehensive export regulation in the EU: Panos Koutrakos, "The Reform of Common Rules on Export of Dual-Use Goods under the Law of the European Union," *European Journal of Law Reform* 2 (2000), pp. 167-189.

27 "EU Export Control Policy Review: Online Public Consultation Report," DG Trade, European Commission, p. 7, <http://trade.ec.europa.eu/doclib/docs/2015/november/tradoc_154003.pdf>.

28 Anna Giulia Micara, "Current Features of the European Union Regime for Export Control of Dual-Use Goods," *Journal of Common Market Studies* 50 (2012), p. 582; Panos Koutrakos, *EU International Relations Law,* 2nd ed. (Oxford: Hart Publishing Ltd, 2015), p. 489.

the decision-making process of another country.[29] This mutual recognition principle is still in place and enables the free trade of dual-use items within the European Union up until today, with certain exceptions.

However, even among EU Member States, emphasizing national sovereignty when denying export authorizations and the particular means of implementing EU regulations continue to interfere with the overall export control system. Therefore, while the approach of mutual recognition is useful in the process of regional integration, it is likely too early for ASEAN as it requires greater transparency and a significant level of trust in other national authorities' decision-making processes.

The Current European Union Strategic Trade Control System

The EU's export control regime is based on Regulation (EC) No 428/2009 (hereafter: the Regulation). The Regulation addresses dual-use items and also covers technology transfers.[30] According to the Regulation, export authorization is required for items that are on the EU Control List, listed in the Regulation's Annex I. Those items derive from the various MECAs and thus include items related to WMD development, as addressed in the MTCR, the NSG and the AG but also span the items listed in the Chemical Weapons Convention (CWC).

Additionally, items not listed can be controlled under a catch-all clause if they might be used in violation of an arms embargo or in connection with a biological, chemical, nuclear weapons or delivery system program.[31] The catch-all clause will be discussed later on in more depth.

For exceptional cases and if public security or human rights are under scrutiny, EU Member States can even impose controls for other non-listed items.[32] Because of the common control system, dual-use items can be traded freely within the EU Single Market. Exceptions are highlighted in the Regulation, particularly in Annex IV.[33]

Consolidated Dual-Use List

The EU's consolidated dual-use list (Annex I to the EU Dual-Use Regulation) is based on the WA, the MTCR, the NSG, the CWC, and the AG's export control regime control lists.[34]

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29 Panos Koutrakos, *Trade, Foreign Policy and Defence in EU Constitutional Law: The Legal Regulation of sanctions, exports of dual-use goods and armaments* (Oxford and Portland: Hart Publishing, 2001), p. 97.

30 European Commission Delegated Regulation No. 2420/2015 amending Council Regulation (EC) No. 428/2009 Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items, Official Journal of the European Union, 12 October, 2015, Art. II.

31 "The EU Dual Use Export Control Regime," DG Trade, European Commission, 2014, <http://trade.ec.europa.eu/doclib/docs/2014/february/tradoc_152181.pdf>.

32 Ibid.

33 Ibid, 2.

34 European Commission Delegated Regulation No. 2420/2015 amending Council Regulation (EC) No. 428/2009 Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items, Official Journal of the European Union, 12 October, 2015, Annex I, List of Dual-Use Items and Technology.

The EU list is updated on a regular basis and the last update was undertaken in December 2015, taking into account technical, industrial, scientific as well as commercial developments and thus protecting EU competitiveness and reflecting changes in the MECAs.[35] To allow for swifter integration of changes to the control list, EU institutions have approved a fast track mechanism.[36]

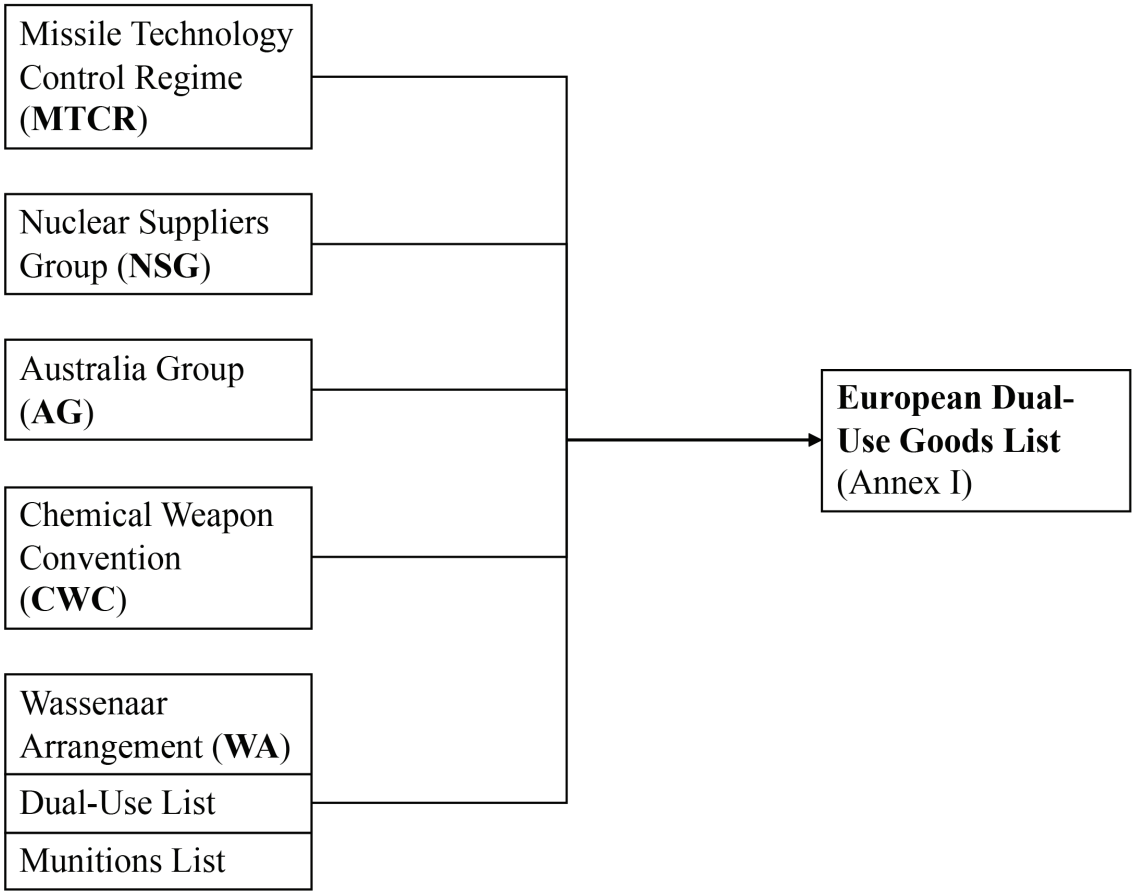

Figure 1: European Dual-Use Goods List[37]

The EU has opted for a consolidated dual-use goods list over parallel lists of the individual Member States. While such a consolidated list is more complicated to draft and update than parallel lists from each Member State, it minimizes double coverage and allows for a more

35 For an overview on the methodology used for the 2015 update of the Dual-Use List: "Comprehensive Note Change Summary For the Council Regulation 428/2009," DG Trade, European Commission, October 2015, <http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153893.pdf>.

36 SIPRI and Ecorys, *Final Report: Data and Information Collection for EU Dual-Use Export Control Policy Review* (Stockholm and Rotterdam, 2015), p. 97.

37 This graph is based on: Joachim Wahren, "The Export Control Lists of the European Union," presentation at Pacific Forum CSIS/Institute of International Relations of the National Chengchi University Workshop on Strategic Trade Controls, Taipei, Taiwan, September 2, 2014.

comprehensive regulation.[38] Ultimately this contributes to regional economic integration by helping to overcome conflicting regulations and promoting clarity for the risk assessment processes of governments and exporters. It does however, require the existence of a significant level of regional cooperation, a commitment to establish common legal and institutional frameworks as well as a willingness for national authorities to cede powers to supranational ones. Adopting this approach in ASEAN, where Member States are uncomfortable with ceding competences to supranational organizations, is infinitely more complicated. Even in the EU system with the consolidated list, the need to implement the regulation domestically, resulting in twenty-eight potentially differing interpretations, mitigates the benefits that result from such cooperative efforts.

Licensing Procedures

Export of dual-use items to non-EU Member States requires an authorization, which can be obtained through a license for dual-use exports. In the EU, there are four different types of export licenses that can be obtained:

1) EU General Export Authorizations (GEA), whereby one of the six currently existing EU GEAs has been given to seven countries, namely Australia, Canada, Japan, New Zealand, Norway, Switzerland (including Liechtenstein), and the United States (EU001), while the others cover exports of certain dual-use items to certain destinations (EU002), exports after repair/replacement (EU003), temporary export for exhibition or fair (EU004), telecommunications (EU005), and chemicals (EU006);[39]

2) An individual export license covering one transaction with one particular end-user (for example, for very sensitive items) whereby national practices can differ from state to state;

3) General export licenses offering simplified procedures for export of controlled goods to certain destinations; and

4) A global export license, which can be granted to a specific company that needs to export certain goods to specified destinations over a predefined period of time.[40]

EU Member States retain the right to deny export licenses for public policy or public security reasons whereby the Regulation provides criteria to be assessed in this process.[41] When denying an export license however, they need to subsequently inform their counterparts in the other EU Member States about their decision so that they are aware of the proliferation risk.[42]

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38 Ibid, 5.

39 "Fact Sheet on New EU General Export Authorisations," DG Trade, European Commission, Doc. No. CG/2011/Nov/02 rev. 1, <http://trade.ec.europa.eu/doclib/docs/2011/december/tradoc_148466.pdf>.

40 Yann Aubin, Arnaud Idiart, Aude de Clercq, and Laurent Papiernik, "The European Union," in: Yann Aubin and Arnaud Idiart (eds.), *Export Control Law and Regulations Handbook: A Practical Guide to Military and Dual-Use Goods Trade Restrictions and Compliance,* 2nd ed. (Alphen aan den Rijn: Kluwer Law International, 2011), pp. 117-118.

41 Ibid, 118.

42 Ibid, 120.

This guarantees that national concerns and sovereignty considerations are respected as well as regional consistency. Aside from the benefit of having largely uniform standards for exports to non-EU Member States, this approach also facilitates intra-regional trade of dual-use items.

Additional Provisions and Their Impact

Two additional provisions regulate dual-use trade with vastly differing effects for regional cooperation: the no undercut principle and the catch-all clause. Understanding these provisions, their challenges, and their implications for regional coordination of export control efforts is important for ASEAN regional coordination considerations.

The no undercut principle prevents a company from attempting to acquire an authorization by one Member State, if the authorization was previously denied by another Member State. This prevents license shopping by companies. In the case of disagreement between Member States about whether an authorization should be granted, they have to consult with one another and inform the European Commission.[43] This principle is supposed to help streamline regional export control efforts and is thus beneficial to regional cooperation. It prevents companies from benefiting from disagreements among the EU Member States while preventing the creation of regulatory loopholes that could potentially enable proliferation of dual-use goods.

The catch-all clause of Art. IV of the Regulation presents a very different example. It is aimed at controlling the export of goods that are not listed in Annex I but might be used for military purposes by a country under an arms embargo or if the development of WMD might be the end-use of the goods. In such cases, Member States can deny the export and subsequently must inform other national authorities of their decision.[44] This level of national discretion opens the door for inconsistent licensing procedures and discrimination of enterprises because of differing national legislation, especially as there is no requirement to implement the same level of controls throughout the region upon notification.[45] The 2015 Export Control Forum addressed this fundamental challenge with regards to catch-all clauses. While comprehensive export controls were recognized as an important tool, the uneven implementation and resulting lack of legal clarity was highlighted as the weak link in the chain of controls. The goal, as stated in the Communication by the EU Commission, a policy document with no mandatory authority, was to establish an EU catch-all database and to harmonize catch-all controls.[46] This would certainly be another step toward deepened regional cooperation and would ultimately make the STC regime more effective.

In order to discuss how the current export control regime should evolve, the European Commission holds talks with major stakeholders from industry associations, academia and civil society to identify existing problems and avoid that reform efforts negatively affect key actors. The impact assessments by the European Commission are then used to prepare proposals

43 Ibid.

44 Ibid, 121.

45 Anna Giulia Micara, "Current Features of the European Union Regime for Export Control of Dual-Use Goods," *Journal of Common Market Studies* 50 (2012), p. 586.

46 "The Export Control Policy Review: State of Play and Prospects," DG Trade, European Commission, 2015, <http://trade.ec.europa.eu/doclib/docs/2015/december/tradoc_154041.pdf>.

for amendments to the Regulation as part of the review process, which will be elaborated on later in this paper[47] In the last EU Export Control Policy Review, the necessity to improve the existing regime of catch-all controls was also highlighted, arguing that greater legal clarity and predictability through converged catch-all controls would reduce compliance costs and enhance competitiveness. Of those stakeholders questioned, eighty-six percent were in favor of harmonization of the definition and scope of catch-all controls.[48] The broad support from industry and other major stakeholders showed that, for extending cooperation, only the willingness of national authorities is missing to further harmonize STC and ensure comprehensive controls.

Expert Networks and Information Sharing

As set forth in Art. XXIII of the Regulation, the Dual-Use Coordination Group (DUCG) examines issues concerning the export control regime and brings together experts from Member States as well as the EU Commission.[49] The DUCG discusses best practices and is seen as the basis of the EU Export Control Network, which the Commission wants to develop in order to strengthen information exchange among export control authorities and outreach and capacity-building activities.[50] To support the practical implementation of the measures provided for under the Regulation, the DUCG has developed the "EU Guidelines on Dual-Use Export Controls."[51] Establishing a similar network among experts within ASEAN would create the potential to share information on challenges the individual Member States are experiencing and would create capacity-building potential. A practical challenge with regards to information sharing among authorities, even within the EU, is however the existing concern over secrecy, the protection of industry, and the economic interests of the Member States. This will likely be an even bigger hurdle within ASEAN.

Other measures ensuring the implementation of the Regulation include industry outreach activities and dialogue with academia. Additionally, the Commission hosts a Dual-use e-System (DUeS) allowing all Member States to exchange information concerning denials on dual-use items.[52] The DUeS could potentially become the basis of a common IT platform for the EU Export Control Network, enabling structured information sharing, trade control synergies via the IT platform as well as operational cooperation through a pool of experts.[53] For this measure to be implemented within ASEAN, the STC regime would need to be significantly more developed and more importantly, countries would need to be able to sufficiently trust each other to allow for this level of information-sharing.

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47 "Dual-use Export Controls," DG Trade, European Commission, <http://ec.europa.eu/trade/import-and-export-rules/export-from-eu/dual-use-controls/>.

48 Ibid, 7.

49 "Report from the Commission to the Council and the European Parliament on the Implementation of Regulation (EC) No. 428/2009 Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-use Items," COM/2013/0710, European Commission, p. 6.

50 "The Export Control Policy Review: State of Play and Prospects," DG Trade, European Commission, 2015, <http://trade.ec.europa.eu/doclib/docs/2015/december/tradoc_154041.pdf>.

51 Ibid, 6.

52 Ibid, 7.

53 Ibid.

Review of the Regulation and Identified Challenges

Every three years, a review process of the Regulation is initiated in accordance with Art. XXV, for which the aforementioned meetings with key stakeholders are held. The next proposal for amendments to the Regulation, a result of the review process, is expected this year. The main goal of the review process is to highlight the difficulties existing within the currently existing system. The findings of this review process are thus important for ASEAN as they offer direct insights into what struggles another region, albeit at a very different stage of integration, faces in coordinating their STC efforts.

One key problem within the existing STC regime is differing national implementation, which can mitigate some of the benefits of uniform regional policies and undermine the basic idea of creating a level playing field.[54] Given that this is already a challenge within the highly integrated EU, it will be even more difficult to achieve for ASEAN Member States, which worry more about losing their competitive advantage over neighboring states. A key focus highlighted in the review process is thus also the establishment of a "risk-based approach" when considering licensing decisions so that license applications are assessed in a more uniform way. This would create a level playing field within the EU, in that companies have to expect similar waiting times and costs for the application of export licenses.[55] Within ASEAN, the lack of uniform licensing standards and mechanisms highlights the same problem, in that countries can make use of the licensing process to achieve a competitive advantage instead of working towards the creation of a level playing field. In the EU context, the harmonization of catch-all controls continues to be on top of the European Commission's agenda, yet as it is even unlikely to be achieved within the EU, pursuing this within ASEAN would be overly optimistic.[56]

Beyond various specific implementation hurdles within the EU, a general challenge is how to deal with the increasing skepticism regarding regional integration and economic cooperation. As these sentiments are also preeminent within ASEAN, it will be interesting to monitor how the EU is dealing with this new trend. Looking, in particular, at the looming Brexit, it is unclear how far the United Kingdom will continue to implement the standards set by the EU in the area of export controls and whether companies might face stricter regulation when exporting to the UK if it leaves the Single Market.[57] Understanding the economic consequences of such a scenario and finding domestic solutions for questions related to STC serves as an interesting lesson for ASEAN when determining the merit of cooperation on STC over individual, domestic solutions.

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54 Highlighting this as a problem for the EU: SIPRI and Ecorys, *Final Report: Data and Information Collection for EU Dual-Use Export Control Policy Review* (Stockholm and Rotterdam, 2015), p. 17.

55 Sybille Bauer and Mark Bromley, "The Dual-Use Export Control Policy Review: Balancing Security, Trade and Academic Freedom in a Changing World," *EU Non-Proliferation Consortium Non-Proliferation Papers* 48 (March 2016), p. 5.

56 Ibid, 5.

57 Mark Bromley, "Brexit and Export Controls: Entering Uncharted Waters," *SIPRI Commentary,* July 1, 2016, <https://www.sipri.org/commentary/topical-backgrounder/2016/brexit-and-export-controls-entering-uncharted-waters>.

Options for Increased Cooperation on Strategic Trade Controls within ASEAN

As previously highlighted, license shopping and regulatory loopholes as well as uncertainty can prove problematic not only for the country's export control initiatives, but also for efforts to intensify regional economic integration. Furthermore, international companies might be reluctant to locate their manufacturing hubs in countries lacking strong trade control systems because of the associated risks as well as heightened compliance costs. Therefore, regional cooperation on STC might enable the AEC to create a level playing field for exporters within the region while also opening up opportunities for strengthened economic cooperation.[58] It also provides investors with the aforementioned greater clarity about the existing regulatory environment and could even serve to strengthen the attractiveness of the AEC as a market and in particular a site for manufacturing facilities.

After a differentiated analysis of the potential takeaways from the EU example, five main areas can be identified for increased coordination on STC to improve regional cooperation:

1) Assisting countries in establishing national STC frameworks which can later be integrated into regional initiatives;
2) Coordinating export control lists;
3) Assessing the potential use of the ASEAN Single Window for STC purposes;
4) Establishing a regional export control network;
5) Cooperating with outside actors such as the EU on capacity building.

While there are many more areas in which deepened regional cooperation is possible, those five areas seem to offer most potential to promote a distinct kind of cooperation that is realistic for ASEAN.

Establishing National Strategic Trade Control Frameworks

As has been previously noted, there is a wide variance among ASEAN states when it comes to implementation of STCs. There are some without an STC system, some with a nascent system, and some with a fully developed system. For those without a system, the initial step is to establish legal frameworks, licensing as well as enforcement authorities.[59] This should be part of a regional capacity-building effort and not a stand-alone task those states need to fulfill. This capacity-building effort can serve to increase regional cooperation as it establishes the trust and culture of information sharing, which is indispensable for a strengthened regional STC regime.

Practical challenges with regards to information sharing among authorities are however existing concerns over secrecy, the protection of industry as well as economic interests of the Member States. A first nascent initiative highlighting the potential to coordinate among regional

58 This argument for the need to establish a level playing field was made concerning EU export control by: Anna Giulia Micara, "Current Features of the European Union Regime for Export Control of Dual-Use Goods," *Journal of Common Market Studies* 50 (2012), p. 579.

59 Stephanie Lieggi, "Dual-Use Technologies in Southeast Asia: Nonproliferation Challenge for the Next Decade," *Strategic Trade Review* 2 (Autumn 2015), p. 88.

authorities is the ASEAN Network of Regulatory Bodies on Atomic Energy (ASEANTOM), which provides opportunities for cooperation with clear national security benefits.[60] Should the Member States make positive experience with this initiative, their willingness to submit to further cooperation might increase.

As was already highlighted in the Council for Security Cooperation in the Asia Pacific (CSCAP) Memorandum on "Guidelines for Managing Trade of Strategic Goods," it is essential that national legislation includes catch-all provisions and that region-wide common licensing standards are established. This will help make the process of acquiring licenses more cost and time efficient throughout ASEAN and help fill loopholes.[61]

Potentially, countries with advanced STC regimes such as Singapore could take on a mentorship role in establishing STC systems throughout ASEAN.[62] There are however significant caveats regarding this mentorship potential. Even though Singapore has welcomed any ASEAN Member State to share experiences on implementing a Strategic Trade Management system, so far only Malaysia, Thailand, and the Philippines have visited Singapore. While there is significant potential for Singapore to play a greater role in mentoring, some experts question the likelihood of this given ASEAN's political history.[63] Other reasons why Singapore in particular might not be thoroughly welcomed as a mentor are seen in its role as a small, advanced economy and city state whose legitimacy as a country is questioned by some of its neighbors and finally the overarching skepticism of regional cooperation.[64] While other countries such as Malaysia might be more accepted as mentors, their export control systems are nascent as well and this mentorship approach might thus offer limited merit. Generally, the potential for mentorship within ASEAN in light of the particular political and historical realities is a topic that warrants further study, both regarding possible approaches as well as their implementation.

Coordination of Export Control Lists

Second, looking beyond necessary initiatives on a national level, a starting point for cooperation on STC within ASEAN could be regional coordination of control lists, bearing in mind differing national capabilities and preferences. In order to save resources, drawing on the model of the EU lists as a baseline might prove valuable, as the list would only need to be adapted according to ASEAN needs.[65] The ASEAN Member States could either jointly decide to use the EU Control Lists as the basis for their national control lists or decide to make adjustments on a regional level to tailor them to needs of ASEAN. Already the national control lists of Thailand, Malaysia, and Singapore are based on the EU Control Lists, and others are expected to follow,

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60 "Background Information," ASEANTOM, <http://www.aseantom.net>.

61 CSCAP, *Guidelines for Managing Trade of Strategic Goods*, Memorandum No. 14 (Kuala Lumpur, Malaysia, 2009), <http://www.cscap.org/uploads/docs/Memorandums/CSCAP%20Memorandum%20No%2014%20--%20Guidelines%20for%20Managing%20Trade%20of%20Strategic%20Goods.pdf>.

62 "Initial Visit in Singapore," News, EU P2P Export Control Programme, <https://export-control.jrc.ec.europa.eu/News/ArtMID/481/ArticleID/3273/Initial-Visit-in-Singapore>.

63 Interview with George Tan, Principal, Global Trade Security Consulting Pte Ltd, September 10, 2016.

64 Interview with Carl Baker, Director or Programs, Pacific Forum CSIS, September 10, 2016.

65 Baker, Santoro and Warden, "Implementing Strategic Trade Controls in Continental Southeast Asia," p. 6.

such as the Philippines.[66,67,68,69] While ASEAN is not yet at a stage where a consolidated control list seems like a feasible option, coordination on national control lists or first attempts to establish parallel lists could greatly improve the regulatory environment in the AEC.

An argument against such cooperation on control lists could be seen in the very different development status of several ASEAN Member States, such as Cambodia and Laos. As nations with limited export volumes, a greater focus on trans-shipment and transit might seem more feasible than having comprehensive control lists. It might thus also be an option for those countries to adopt limited control lists, adapted to their specific needs and capabilities and to expand those in the future. However, despite those varying needs within the region, cooperation on control lists, at least among the more export-oriented ASEAN Member States offers many opportunities both for regional cooperation and for enhanced export controls.

The EU control lists are updated in accordance with the updates of relevant export control regimes, yet several ASEAN countries are not parties to those MECAs. The ASEAN Member States might therefore not want to adopt all changes suggested in those MECAs as they are sometimes skeptical with regards to the role of those agreements.[70] But the EU Control Lists nevertheless serve as a useful foundation for future regional efforts toward establishing their own control lists. Updates to the EU control lists could be adapted based on ASEAN needs through consensus or at least taken as an indicator for the need to study the relevance of newly added items for trade within the region.

It is highly unlikely that ASEAN will work towards consolidated ASEAN control lists in the near future and is not feasible given the current state of regional economic integration as well as the different state of export control regimes in place. For now, having national control lists, which allow for countries to retain a level of sovereignty over export controls while coordinating on the baselines of those lists seems like the more feasible option. A good practice to follow in this context is to base control lists on regulations and not laws, as this allows for easier updates and thus also coordination within the region.[71] Should ASEAN countries decide to base their national control lists on the model lists of the EU, this would certainly enhance its effort to become increasingly integrated into the global economy as companies will find it easier to deal with a system they are already familiar with. Companies venturing into Southeast Asia in search of more competitive marketplaces might therefore perceive this as an additional benefit.

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66 According to: European Parliament Policy Department, Directorate-General for External Policies, *Workshop: Dual Use Export Controls* (Brussels, Belgium, 2015), p. 14, <http://www.europarl.europa.eu/RegData/etudes/STUD/2015/535000/EXPO_STU(2015)535000_EN.pdf>.

67 Mohamed Shahabar Abdul Kareem, "Implementation and Enforcement of Strategic Trade Controls in Malaysia," Strategic Trade Review 2 (Spring 2016), p. 110.

68 Ibid.

69 The expectation is that the National Strategic Goods List of the Philippines, as provided for in the Strategic Trade Management Act, will consist of the EU Control Lists alongside additional nationally controlled goods: Proceedings of the Asia Pacific Trade & Commerce Client Conference, Baker & McKenzie, May 25, 2016, Tokyo, Japan.

70 Rachmianto,"Indonesia's Approach to Strategic Trade Controls: The Perspective of a Developing and Archipelagic Country," *Strategic Trade Review* 2 (Spring 2016), pp. 131-133.

71 Carl Baker, David Santoro, and John K. Warden, "Implementing Strategic Trade Controls in Continental Southeast Asia," *Issues & Insights* 15 (2015), p. 5.

Assessing the Potential of the ASEAN Single Window

Third, the AEC will have to evaluate what existing or planned mechanisms it wants to make use of to strengthen regional cooperation on STC. One option to further cooperation on STC within an existing framework is if the ASEAN Member States were to rely on the ASEAN Single Window (ASW). The ASW connects and integrates National Single Windows in an effort to expedite cargo clearance throughout ASEAN's Member States and could thereby prove helpful for export control purposes.[72] There is however no consensus yet among ASEAN countries in how far STC should be part of ASW. While some argue that it would be overly complicated to extend the scope of the ASW to also include STC, others see great potential in the ASW. It is thus still uncertain how STC cooperation, in the context of the ASW or as a distinct concept, should be integrated into AEC.[73] Thinking about a way in which the ASW can be used to coordinate on STC will be important as trade facilitation endeavors such as ASW otherwise create the risk of increased trade of dual-use items without being accompanied by the necessary stricter controls to avoid the proliferation of WMD. In the EU context, dual-use export control has been under the exclusive competence of the EU since 1995.[74] It was recognized as an essential component to a coordinated trade policy in the process of increasing regional economic integration. While the ASEAN Member States are not reflecting this level of commitment to regional integration, they need to find a way to balance regional economic integration with the growing risk of proliferation.

Establishing an Export Control Network

Regardless of how AEC Member States decide to coordinate their STC systems, they could cooperate on establishing an export control network, potentially even with the long-term goal of having a common IT infrastructure to enable information sharing, a catch-all database and operational cooperation. This network would enable the countries to share information and advice on best practices. The level of information sharing would depend on the level of STC coordination that is envisaged by the AEC and could gradually evolve in the process of strengthened regional economic integration.

When looking at the lessons learned from EU cooperation, the examples of the no-undercut principle as well as the catch-all clause have highlighted that it is important to streamline regional coordination on STC. While national sovereignty remains important and has to be factored into decisions regarding what is regulated on a regional level as opposed to nationally, whenever national regulation is favored over regional coordination, the risk of companies either trying to undercut this regulation or countries facing problems with their economic restrictiveness

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72 "What is the ASEAN Single Window?," ASEAN, last updated April 26, 2013, <http://asw.asean.org/archives/agreements/item/protocol-to-establish-and-implement-asean-single-window>.

73 Carl Baker, David Santoro and Federica Dall'Arche, "Dialogue on Nonproliferation and Nuclear Security Cooperation in Southeast Asia: A Conference Report," *Issues & Insights* 16 (2016), pp. 7-8; Carl Baker, David Santoro, and John K. Warden, "Implementing Strategic Trade Controls in Continental Southeast Asia," *Issues & Insights* 15 (2015), p. 9.

74 "Green Paper: The Dual-use Export Control System of the European Union: Ensuring Security and Competitiveness in a Changing World," DG Trade, European Commission, 2011, <http://trade.ec.europa.eu/doclib/docs/2011/june/tradoc_148020.pdf: 2>.

compared to their neighboring countries will persist. On the other hand, information sharing on catch-all provisions would be useful to ensure that all national authorities have the same information and can ensure that WMD proliferation efforts are not successful.

Cooperation with Outside Actors

Finally, cooperation with outside actors provides the opportunity to learn from best practices and to get the necessary assistance in capacity building. As the EU has found a way to strengthen regional coordination on STC in a phase of increasing economic cooperation while balancing national security and sovereignty concerns, it could assist in the process of establishing a stronger STC regime in the AEC. While cooperation between the EU and Southeast Asian countries has been ongoing for several years, only the last iteration of the program has focused on all ASEAN countries. Through the EU Partner-to-Partner (EU P2P) Export Control Program, the EU now offers technical support to ASEAN countries. In early 2016, the EU P2P Program conducted first visits to most ASEAN Member States to discuss ways in which consistent STC regimes can be established. During those visits, opportunities for cooperation were seen in the field of legal and technical assistance, which would enable ASEAN Member States to draw from the expertise of the EU in implementing comprehensive STC while bearing in mind the implications for regional cooperation.[75] It will be important to remember that the overall goal is not to simply apply the model used in the EU to ASEAN but to adapt it to regional needs and capacities. The potential for cooperation with outside actors also expands beyond the EU. Others active in this area include the United States through the Export Control and Related Border Security (EXBS) Program, which also cooperates with ASEAN.[76]

Conclusion

There is no expectation that the AEC will establish an STC regime that is based on a common regulation and a transfer of competency to the AEC. The model of economic cooperation in ASEAN differs vastly from that of the EU and therefore does not allow this conclusion. Instead, it will be important for the AEC Member States to find ways to coordinate their national STC regimes so that they can avoid legal loopholes that would both enable the proliferation of dual-use items as well as hamper regional economic cooperation. At the same time, ASEAN Member States have shown a preference for quiet consultation and an informal political culture as the basis of their cooperation.[77]

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75 As an example for these EU visits to ASEAN Member States: "Dual-Use: Initial Visit to Vietnam," News, EU P2P Export Control Programme, <https://export-control.jrc.ec.europa.eu/News/ArtMID/481/ArticleID/2664/Dual-Use-Initial-Visit-to-Vietnam>.

76 Jabin Vahora, "The Export Control and Related Border Security (EXBS) Program in ASEAN and ASEAN Single Window (ASW) Initiative," *ASEAN Regional Forum,* March 2012, <http://aseanregionalforum.asean.org/files/Archive/19th/4th%20ARF%20ISM%20on%20NPD,%20Sydney,%208-9March2012/Presentation%20-%20EXBS%20Program%20in%20ASEAN%20and%20ASEAN%20--Single%20Window%20Initiative.pdf>.

77 Tanya Ogilvie-White, "UN Security Council Resolution 1540: Origins, Status, and Future Prospects," in Jeffrey W. Knopf (ed.), *International Cooperation on WMD Nonproliferation* (Athens, Georgia: University of Georgia Press, 2016), pp. 153-154.

As a first step toward establishing a comprehensive export control regime in Southeast Asia, countries will need to establish their own STC systems and will require assistance in the process. Instead of waiting for each country to establish a different system, the nascent state of STC systems in several AEC Member States can be used as an opportunity for coordination. Parallel or possibly coordinated lists instead of consolidated control lists do not offer the same level of clarity. However, if they are based on the same model, such as the EU control lists, it will be easier to coordinate the updating procedure until AEC Member States decide that they are open for more integration and opt for a distinct, consolidated AEC regional control list. This way global concerns about WMD proliferation can be alleviated and countries can cooperate in an area that contributes to each one's national security.

So long as there is no regional consensus on export controls, license shopping will enable companies to opt for the market that allows them most leverage in exporting their products. However, given the overarching need to reduce proliferation risks, this cannot be in the interest of the AEC and could even be counterproductive in light of efforts to strengthen regional economic integration. With the region attempting to attract investments in the high-tech sector, ensuring companies that they will face minimized reputational risks as well as reducing their compliance efforts will be a further benefit.

As laid out, cooperation on STC within the AEC is unavoidable. But it can prove to be more than just another part of the lengthy process ahead for the AEC towards regional economic integration. Instead, it comes with many benefits for the community. Having an area for cooperation in which all Member States have shared interests and similar objectives can serve to establish channels for future cooperation. Furthermore, building comprehensive STC regimes, especially in dynamic regions that aspire to attract more trade, is in the interest of the global community. Therefore, any initiatives by the AEC should be supported by capacity building efforts from countries with advanced STC systems as well as extra-regional players such as the EU. After all, the model of the EU offers many examples of how a region-wide STC regime improved through the process of regional economic integration.

Action and Reaction: Effects of Country-based Trade Sanctions

ILARIA ANNA COLUSSI[1]

Abstract

Trade sanctions consist of export restrictions and embargoes, or import or customs restrictions, and boycotts. Such measures, which can be adopted at the international, regional or national level, are economic tools for achieving foreign policy objectives. The effects that they produce are several, and they cover the political, economic and social spheres. This article analyzes the possible consequences of trade sanctions, in particular embargoes addressing targeted states, in order to evaluate their effectiveness. Two case studies of sanctions, the Iranian and the Russian case, are presented.

Keywords

Sanctions, embargoes, United Nations Security Council Resolutions, European Union restrictive measures, Iran, Russia

Introduction: Different Categories of Sanctions

The flip side of a prescriptive rule is a sanction, triggered when the rule itself is violated. Legally speaking, the terms of the triad "rule-violation-sanction" are inherently linked together. Sanctions are usually characterized by the following elements:

Author/sender: the subject that decides the enactment of a sanction, such as the international community, a regional organization (i.e., the European Union), or an individual state;

Target: the recipient or addressee of a sanction. The target is generally the violator of the rule, but it is not always the case. The target can be the State as a whole (so-called "country-based

1 Ilaria Anna Colussi is a qualified lawyer and holds a Ph.D. in Comparative and European Studies from the University of Trento, Italy. She is currently a Marie Curie BE-IPD Cofund 2014 Post-doctoral Fellow at the European Studies Unit, Department of Political Science, University of Liège (ULg), Belgium.

sanctions"), specific goods ("selective sanctions"), or people/enterprises ("targeted or smart sanctions");[2,3]

Purpose: the aim of the sanction, such as punishment, thus reasoning *ex post* (i.e., after the performance of the violation). The purpose can be also preventive (*ex ante*), as a coercive and deterrent, or with the aim of signaling or rectifying a wrong action, or for the implementation of other rights and obligations;

Nature/feature: the typology of the sanction. It can be positive, such as an incentive to change the behavior, or negative, as a punishment.[4] Moreover, it can have an economic, financial, cultural, travel, military, diplomatic nature, or—notably at the national level—it may belong to the area of administrative, criminal or civil law.[5] More specifically, economic sanctions can be categorized into trade and financial sanctions. The first ones restrict imports and exports to

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2 See, for instance, the cases of sanctions for "strict liability," (i.e., when a person is considered legally responsible for the damage and loss caused by his/her acts and omissions, or acts/omissions committed by another person at his/her dependence, or under his/her control). In these cases, it is not necessary to prove the fault or negligence by the person of reference, but the responsibility is recognized immediately upon him/her, regardless of culpability.

3 Daniel W. Drezner, "Sanctions Sometimes Smart: Targeted Sanctions in Theory and Practice," *International Studies Review* 13 (March 2011), pp. 96–108; Mikael Eriksson, *Targeting Peace: Understanding UN and EU Targeted Sanctions* (Farnham, UK/Burlington, VT: Ashgate, 2011); William H. Kaempfer and Anton D. Lowenberg, "Targeted sanctions: Motivating Policy Change," *Harvard International Review* 29 (Fall 2007), pp. 68-72.

4 David Cortright and George A. Lopez, "Bombs, Carrots, and Sticks: The Use of Incentives and Sanctions," Arms Control Association, March 2005, <www.armscontrol.org/act/2005_03/Cortright>.

5 For the literature on sanctions, see - among the many: David W. Drezner, *The Sanctions Paradox: Economic Statecraft and International Relations* (Cambridge: Cambridge University Press, 1999); James Barber, "Economic Sanctions as a Policy Instrument," *International Affairs* 55 (July 1979), pp. 367-385; Michael P. Leidy, "The Theory of International Economic Sanctions—A Public Choice Approach: Comment," *American Economic Review* 79 (December 1989), pp. 1300-1304; David A. Baldwin and Robert A. Pape, "Evaluating Economic Sanctions," *International Security* 23 (Fall 1998), pp. 189–198; Jean Combacau, "Sanctions," in Rudolf Bernhardt, ed., *Encyclopedia of Public International Law* (Amsterdam: North-Holland, 2000), pp. 311-315; Gary C. Hufbauer, Jeffrey Schott, Kimberly A. Elliott, and Barbara Oegg, *Economic Sanctions Reconsidered* (Washington, DC: Peterson Institute for International Economics, 2007); Jonathan Kirshner, "Economic Sanctions: The State of the Art," *Security Studies* 11 (Summer 2002), pp. 160–179; Alex Vines, "The Effectiveness of UN and EU Sanctions: Lessons for the Twenty-first Century," *International Affairs* 88 (July 2012), pp. 867–77; David Baldwin, "The Sanctions Debate and the Logic of Choice," *International Security* 24 (Winter 1999/2000), pp. 80-107; Fredrik Hoffmann, "The Functions of Economic Sanctions: A Comparative Analysis," *Journal of Peace Research* 4 (June 1967), pp. 140–159; James M. Lindsay, "Trade Sanctions As Policy Instruments: A Re-Examination," *International Studies Quarterly* (June 1986), pp. 153–173; Miroslav Nincic and Peter Wallensteen, "Economic Coercion and Foreign Policy," in Miroslav Nincic and Peter Wallensteen, eds., *Dilemmas of Economic Coercion: Sanctions in World Politics* (New York: Praeger, 1983), p. 3; Margaret P. Doxey, *International Sanctions in Contemporary Perspective* (New York: St. Martin's Press, 1996); Robin Renwick, *Economic Sanctions* (Cambridge: Harvard Studies in International Affairs, 1981); Elizabeth S. Rogers, "Using Economic Sanctions to Control Regional Conflicts," *Security Studies* (Summer 1996), pp. 43-72; Clifton Morgan and Navin A. Bapat, "Imposing Sanctions: States, Firms, and Economic Coercion," *International Studies Review* 5 (December 2003), pp. 65–79; George A. Lopez and David Cortright, "Economic Sanctions in Contemporary Global Relations," in George A. Lopez and David Cortright, eds., *Economic Sanctions: Panacea or Peacebuilding in a Post-Cold War World?,* (Boulder: Westview, 1995), p. 5.

and from the target country,[6] while the second ones address monetary issues and include the blocking of assets held abroad, freezing of assets and development aid, or limiting access to financial markets, restricting loans, credits, or international transfer payments.

In the area of trade sanctions, embargoes represent one type of restrictive measure. This article considers the effectiveness of embargoes proceeds as follows: First, it defines trade sanctions, discusses their history, types, and scope. The second section considers the effects of trade sanctions, in particular embargoes, on targeted States, subdividing the analysis into political, economic, and social effects, and their respective positive and negative aspects. Finally, two concrete examples of the consequences of embargoes will be presented.

Trade Sanctions: History, Typologies and Scope

Historically speaking, the application of trade sanctions is not new, but it was only after World War I that the idea of sanctions appeared as an alternative to conflict.[7,8] In particular, Woodrow Wilson, the American president in office at the time, boosted diplomatic thought rather than military intervention, and proclaimed "a nation that is boycotted is a nation in sight of surrender. Apply this economic, peaceful, silent, deadly remedy and there will be no need for force."[9] After Wilson's declaration, sanctions were adopted as a means of policy enforcement by the League of Nations, followed by the United Nations, and more recently both unilaterally by some States and by regional organizations like the European Union (EU) or the League of Arab States.[10,11]

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6 Arne Tostensen and Beate Bull, "Are Smart Sanctions Feasible?," *World Politics* 54 (April 2002), pp. 373–403.

7 In ancient Greece, for instance, the Megarian Decree was enacted by Athens in 432 BC to prevent the merchants of nearby Megara from frequenting Athens' ports and commercial markets. This measure was adopted by Pericles as a result of the transgressions committed by the inhabitants of Megara towards their neighbors. So, it was a *de facto* trade embargo. See Jona Lendering, "Megarian Decree," *Livius,* August 2015, <www.livius.org/concept/megarian-decree/>.

8 Hossein Alikhani, *In The Claw of the Eagle: A Guide to U.S Sanctions against Libya* (London: Centre for Business Studies, 1995).

9 Quoted in Saul K. Padover, ed., *Wilson's Ideals* (Washington: American Council on Public Affairs, 1942), p. 108.

10 Simon Chesterman and Beatrice Pouligny, "Are Sanctions Meant to Work? The Politics of Creating and Implementing Sanctions Through the United Nations," *Global Governance* 9 (October/December 2003), pp. 503-518. See also Peter Rudolf, "Sanctions in International Relations. On the Current State of Research," *SWP Research Paper,* June 2007, <www.swp-berlin.org/en/publications/swp-research-papers/swp-research-paper-detail/article/sanktionen_in_der_internationalen_politik.html>; Mary E. O'Connell, "Debating the Law of Sanctions," *European Journal of International Law* 13 (2002), pp. 63-79; Vera Gowland-Debbas, ed., *United Nations Sanctions and International Law* (The Hague: Kluwer Law International, 2001); Erika de Wet, *The Chapter VII Powers of the UN Security Council* (Oxford: Hart Publishing, 2004); Andrea Charron, *UN Sanctions and Conflict: Responding to Peace and Security Threats* (London: Routledge, 2011); Peter Wallensteen and Carina Staibano, eds., *International Sanctions: Between Words and Wars in the Global System* (London, Routledge/Frank Cass, 2005); Damien Fruchart, Paul Holtom, Peter Wallensteen, Simon Wezeman, and Daniel Strandow, *United Nations Arms Embargoes. Their Impact on Arms Flows and Target Behavior* (Stockholm and Uppsala: Stockholm International Peace Research Institute (SIPRI) and the Department of Peace and Conflict Research, Uppsala University, 2007).

11 Gary Clyde Hufbauer, Jeffrey J. Schott, Kimberly A. Elliott, and Barbara Oegg, *Economic Sanctions Reconsidered* (Washington, D.C.: Peterson Institute for International Economics, 2007).

The most utilized trade sanctions can be categorized into two groups: First, export restrictions and embargoes, which mean a total suspension or block of exports to a country, and second, import or customs restrictions and boycotts, which are a total suspension or block of imports from the addressed country. These measures can have different objectives and content. They can be general, referring to all the goods imported or exported, thus targeting the State as a whole, or they can address single commodities (oil, fuel, diamonds, and timber, for instance) or specific items like arms, services, or equipment. Their objectives can be to coerce, to produce behavioral change from groups and individuals, to constrain by undermining a target's capacities to achieve their objectives; or to signal disapproval of certain actions.[12]

The International Level

At the international level, trade sanctions can be enacted on the basis of Chapter VII of the United Nations (UN) Charter, entitled "Action with Respect to Threats to the Peace, Breaches of the Peace, and Acts of Aggression." In the case of threats to peace and security, or an act of aggression, the UN Security Council (UNSC) can implement a "complete or partial interruption of economic relations and of rail, sea, air, postal, telegraphic, radio, and other means of communication" (art. 41).

The list of sanctions embedded in this provision is not exhaustive, and the UNSC could broaden the typologies of sanctions on a case-by-case basis according to the specificity of the situation.[13] The recourse to Chapter VII is the *extrema ratio* for the UNSC because it is considered more proper to initiate actions under Chapter VI (Pacific Settlement of Disputes) before resorting to more interventions pursuant to art. 41.

Sanctions must be effective and in accordance with the purposes and principles of the UN (art. 24) and in conformity with the principles of justice and international law (art. 1.1), respecting the principle of equal rights and the self-determination of peoples (art. 1.2), and respecting human rights (art. 55). These measures are compulsory for all UN Member States pursuant to articles 2.5, 25, and 48.1 of the UN Charter. As for UN non-members, art. 2.6 affirms that they shall be required to cooperate.

The adoption of trade sanctions by the UNSC requires a majority of nine of its fifteen members, and no veto by any of the five permanent members.[14] A sanction resolution usually establishes

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12 Miroslav Nincic and Peter Wallensteen, "Economic Coercion and Foreign Policy," in Miroslav Nincic and Peter Wallensteen, eds., *Dilemmas of Economic Coercion: Sanctions in World Politics,* eds. (New York: Praeger, 1983), pp. 6-8. See also Thomas O. Bayard, Joseph Pelzman, and Jorge Perez-Lopez, "Stakes and Risks in Economic Sanctions," *World Economy* 6 (March 1983), p. 74; David Leyton-Brown, "Lessons and Policy Considerations about Economic Sanctions," in David Leyton-Brown, ed., *The Utility of International Economic Sanctions* (New York: St. Martin's Press, 1987), pp. 303-306; Lisa L. Martin, *Coercive Cooperation: Explaining Multilateral Economic Sanctions* (Princeton, New Jersey: Princeton University Press, 1992).

13 Enrico Carisch and Loraine Rickard-Martin, "Global Threats and the Role of United Nations Sanctions," *International Policy Analysis*, December 2011, <library.fes.de/pdf-files/iez/08819.pdf>; See also Kimberly A. Elliott, "The Sanctions Glass: Half Full or Half Empty?," *International Security* 23 (Summer 1998), pp. 50-65.

14 In general terms about sanctions, see UN Security Council Resolution 1732, S/RES/1732, December 21, 2006, UN Security Council Resolution 1730, S/RES/1730, December 19, 2006; UN Security Council Resolution 1699, S/RES/1699, August 8, 2006.

a Sanctions Committee for monitoring the implementation of sanctions, composed of fifteen Members of the Council, and chaired by the Ambassador of an elected Member State of the Council. The Committee usually receives the report from the State about the measures adopted regarding compliance. It can also receive instances of non-compliance by other States. Decisions are taken by consensus and most meetings are informal and held in closed session. Moreover, the Council mandates a Panel of Experts, composed of five to eight members, to assist the Committee in monitoring compliance to the sanctions regime.[15]

To date, the UN has imposed sanctions 32 times on 21 different countries since the Cold War. The reasons have been different: for instance, for cases of nuclear proliferation (Iran and North Korea), civil wars, cross-border conflict (Congo, Sudan) and for humanitarian purposes (Ivory Coast, Sudan, and Libya). Since the 1990s, targeted sanctions addressing specific listed people and groups have been introduced. The most emblematic is the case of the sanctions against Taliban or Al-Qaida groups for terrorism.

The Regional Level: The Case of the European Union

The framework of trade sanctions enacted at the international level is complemented by regional sanctions, viewed as a means to strengthen the international community's response to threats to international peace and security. On the basis of Articles 52-54 of the UN Charter, regional organizations can be called upon to cooperate with UN institutions. However, the UNSC remains ultimately responsible for the maintenance of peace and security. Some regional organizations have imposed trade sanctions on their own territories or outside them, sometimes implementing UN sanctions, or unilaterally, in response to the violation of certain principles.[16] In both the cases, sanctions should be consistent with the "purposes and principles of the United Nations" (art. 52 UN Charter) and, if unilaterally imposed, they should be in conformity with the principles of justice and international law.

With respect to EU policy, the EU has never imposed trade and political sanctions against one of its own Member States.[17] Yet article VII of the Treaty of the European Union (after Lisbon) gives the European Council full discretion to judge when "a serious and persistent breach" of common values (listed in article II, such as the respect for human dignity and human rights, liberty, democracy, equality and the rule of law) has occurred and whether this breach justifies sanctions or not.[18] However, the recourse to sanctions upon Member States is quite rare, and rather than adopting these measures, specific attention is given to conditionality clauses (pre-membership). On the contrary, the EU has adopted sanctions that are defined by the European External Action Service (EEAS) as 'restrictive measures' for non-EU countries. The purpose

15 See "Report of the Informal Working Group of the Security Council on General Issues of Sanctions," S/2006/997, UN Security Council, December 22, 2006.

16 It should be observed that the OSCE, which is an international forum for confidence building measures and security cooperation in Europe, is not formally mandated to adopt sanctions or measures. It has requested its Participating States to adopt embargoes, but it cannot impose them directly (see, for instance, the case of request of arms embargo on Nagorno-Karabakh [Azerbaijan]).

17 Austria has been subject to punitive measures from other EU States during the Haider crisis from February to September 2000, and the European Union as such has intervened through weakening diplomatic relations only.

18 "Promoting and Safeguarding the EU's Values," European Commission, March 10, 2015, <europa.eu/legislation_summaries/human_rights/fundamental_rights_within_european_union/l33500_en.htm>.

of these measures is "to bring about a change in activities or policies such as violations of international law or human rights, or policies that do not respect the rule of law or democratic principles," and to "maintain and restore international peace and security."[19,20] Over time, the EU has adopted export/import restrictions, financial measures and travel bans as sanctions upon countries and listed/targeted individuals and enterprises.

Embargoes are usually implemented on the basis of UN measures because the EU is obliged to implement them under an EU-UN bilateral agreement. Restrictive measures can be decided autonomously and adopted in the framework of the Common Foreign and Security Policy (CFSP), cross-cutting the horizontal (between EU institutions) and vertical (between EU and Member States) division of competences.

Sanctions are always passed through Council Decisions, finding their legal basis in Title V of the Treaty of the European Union, specifically art. 29, 30, and 31.[21] In case the sanction consists of a general embargo, the Council Decision is followed by a Regulation based on article 215. This means it is up to the Council, acting by a qualified majority on a joint proposal from the High Representative of the Union for Foreign Affairs and Security Policy and the Commission, to adopt the measures and to inform the European Parliament. If the Decisions provide for an arms embargo, they are directly implemented by Member States and there is no need of further regulation. So far, the EU has resorted to sanctions for several situations: (i) conflict management (e.g., Afghanistan in 1996, Libya in 2011, Russia in 2014); (ii) democracy and human rights promotion (e.g., Uzbekistan in 2005 and Belarus in 2006); (iii) post-conflict institutional consolidation (e.g., the Federal Republic of Yugoslavia in the 1990s and Guinea in 2009); (iv) nonproliferation (e.g., Libya in 1994 and Iran in 2007); and (v) countering international terrorism (e.g., Libya in 1999 and the EU's list of terrorist organizations).[22]

The National Level

Trade sanctions are also imposed by single states or groups of states. The UN General Assembly has stressed that the imposition of unilateral sanctions especially affects developing countries and human rights, and has prohibited them save exceptional cases, such as in the case of a state's response to a clear violation of universally accepted norms, standards, or obligations.[23] States

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19 "Sanctions Policy," European External Action Service, August 3, 2016, <eeas.europa.eu/topics/sanctions-policy/423/sanctions-policy_en>.

20 "Basic principles on the Use of Restrictive Measures (Sanctions)," 10198/1/04 Rev. 1, Council of the European Union, June 7, 2004, paragraphs 1-6.

21 The list of EU sanctions can be found at <eeas.europa.eu/cfsp/sanctions/docs/measures_en.pdf>. As regards EU sanctions, see Iana Dreyer and José Luengo-Cabrera, eds., "On Target? EU Sanctions as Security Policy Tools," *EU Institute for Security Studies*, Report No. 25 (September 2015); Charlotte Beaucillon, "Comment Choisir ses Mesures Restrictives? Guide Pratique des sanctions de l'UE," *EUISS,* Occasional Paper, No. 100 (December 2012); Francesco Giumelli, "How EU Sanctions Work: A New Narrative," *EUISS,* Chaillot Paper, No. 129 (May 2013).

22 See Francesco Giumelli and Paul Ivan, "The effectiveness of EU sanctions. An analysis of Iran, Belarus, Syria and Myanmar (Burma)," *EPC Issue Paper*, No. 76 (November 2013), p. 6; Francesco Giumelli, *The Success of Sanctions. The case of the European Union* (Farnham: Ashgate, 2013); Makio Miyagawa, *Do Economic Sanctions Work?* (New York: St. Martin's Press, 1992); Johan Galtung, "On the Effects of International Economic Sanctions," *World Politics* 19 (October 1966-July 1967), pp. 378-416.

23 See UN General Assembly 50, A/Res/50/96, February 2, 1996.

can also unilaterally impose sanctions in the presumption of proportional countermeasures for a prior injury.

Such embargoes are usually based on article XXI of the General Agreement of Tariffs and Trade (GATT) which allows states to take "action which it considers necessary for the protection of its essential security interests taken in time of war or other emergency in international relations." U.S sanctions against Cuba starting from 1960, and further the bans such as the 1992 Cuban Democracy Act, the 1996 Helms-Burton Act, and other legislative and executive acts, represent use of this GATT article.[24,25]

National trade sanctions can also occur when UN Resolutions impose embargoes, such as the transposition of UN measures into national law or the opting for case-by-case legislation for each type of sanction. Moreover, EU Member States are called upon to implement EU Council Decisions. Even in cases when these decisions are followed by regulations (general embargoes), further domestic legislation is needed in order to determine the penalties to be imposed for the violation of the sanctions by private individuals. Such penalties should follow the criteria indicated by the Regulations or Council Decisions. Member States also have an important role in the monitoring phase of the application of sanctions and for the enforcement of sanctions violations.[26]

The Effects of Embargoes

Embargoes can produce positive or negative economic, political, and social effects. The analysis of these effects helps to understand their effectiveness.[27]

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24 The Cuban Democracy Act bars from the United States market for six months any merchant ship that stops at a Cuban port and prohibits trade between Cuba and the foreign subsidiaries of United States companies.

25 The Helms-Burton Act allows for financial sanctions and lawsuits against foreign firms who use "formerly American property" in Cuba, it requires United States representatives in all international financial institutions to categorically oppose loans to Cuba and bars from entry to the United States any foreign nationals involved in the "confiscation" of the property of United States citizens.

26 Clara Portela, "National implementation of United Nations sanctions: Towards Fragmentation," *International Journal of the Canadian International Council* 65 (Winter 2009-2010), pp. 13-30; Carina Staibano, "Trends in UN Sanctions and State Capacity: Towards a framework for National Level Implementation," in Peter Wallensteen and Carina Staibano, eds., *International Sanctions. Between Words and Wars in the Global System* (Taylor and Francis ebook), p. 31; Vera Gowlland-Debbas ed., *National Implementation of United Nations Sanctions: A Comparative Study* (The Hague: Martinus Nijhoff Publishers, 2004).

27 About the effectiveness of sanctions, see: Robert Pape, "Why Economic Sanctions Do Not Work," *International Security* 22 (Autumn 1997), pp. 90–136; Alastair Smith, "The Success and Use of Economic Sanctions," *International Interactions* 21 (1996), pp. 229-245; Robert J. Carbaugh, "Are Economic Sanctions Useful in Discouraging the Proliferation of Weapons of Mass Destruction?," *World Economics* 9 (December 2008); Navin A. Bapat and Bo Ram Kwon, "When are Sanctions Effective? A Bargaining and Enforcement Framework," *International Organization* 69 (January 2015), pp. 131–162; George A. Lopez, "Effective Sanctions," *Harvard International Review* 29 (Fall 2007), pp. 50-54; Shen Dingli, "Can Sanctions Stop Proliferation?," *The Washington Quarterly* 31 (Summer 2008), pp. 89-100; Arya Neil, "Economic Sanctions: The Kinder, Gentler Alternative?," *Medicine, Conflict and Survival* 24 (January 2008), pp. 25-41.

Economic Effects

Favorable Economic Effects

Considering the sanctioned state, one of the favorable economic effects consists in the change of economic choice of trade. If the export of some goods is blocked, the country can feel obliged to change policy and substitute those goods with others that are not subject to the embargo. For example, in Rhodesia the embargo imposed upon its tobacco exports, which represented around a third of the value of exports, pushed farmers to switch to other crops such as corn, wheat, and cotton.[28] Moreover, an embargo on one state can positively favor other States that are not the sanctioning ones by allowing for the creation of new markets and channels for other suppliers.

Unfavorable Economic Effects[29]

Taking the perspective of the sanctioned State, trade sanctions lead to the slowing down of the economic growth and technological development, and to worse economic relationships with other countries. International isolation and the recourse to autarchy may occur, provided that there are no alternative markets and suppliers. Trade sanctions may provoke a diminution of goods, a reduction of overall production and an increase of prices. If there is low production, this generates unemployment and industry collapse, which is related to the collapse of the transport chain and telecommunication systems. Directly connected there is the decline in Gross National Product (GDP) and the loss of earnings, per capita income and access to foreign currency: a general sense of economic frustration, recession and inflation usually pervades the sanctioned countries, together with fiscal destabilization and higher external debt. Since foreign currency reserves decrease as well as capital investments, economic recovery through foreign direct investments and currency transfers is impeded. Moreover, as some goods are banned from entering the country, a black market may develop.

From the perspective of the sanctioning state, sanctions can produce unexpected effects: indeed, there is the risk that they lose important markets for their internal enterprises and businesses, thus being obliged to look for alternatives and leaving open space to foreign (non sanctioning) competitors that can do business in the targeted countries. The companies in the sanctioning countries can suffer from regulatory burden and be forced to think of themselves as tied to their home governments. Such loss of markets can also entail a reduction of investments.

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28 William Minter and Elizabeth Schmidt, "When Sanctions Worked: The Case of Rhodesia Reexamined," *African Affairs* 87 (April 1988), pp. 207-237.

29 Literature on the effects of trade sanctions includes: Marc Bossuyt, "The Adverse Consequences of Economic Sanctions," Review of Further Developments in Fields with Which the Subcommission Has Been or May Be Concerned, The Bossuyt Report for the Economic and Social Council, E/CN.4/Sub.2/2000/33, June 21, 2000; Carl Bildt, "Assessing the Efficacy of Sanctions for Nonproliferation," Speech at Carnegie International Nuclear Policy Conference, Washington, DC, April 9, 2013, <carnegieendowment.org/2013/04/09/assessing-efficacy-of-sanctions-for-nonproliferation/fv9s>; Sue Eckert and Thomas Biersteker, "The Impacts and Effectiveness of UN Nonproliferation Sanctions: A Provisional Report on Iran and North Korea," Prepared for the International Security Research and Outreach Program International Security and Intelligence Bureau, 2012, <www.international.gc.ca/arms-armes/assets/pdfs/Report-CCDP_Sanctions.pdf>.

Political Effects

Favorable political effects

If the purpose of sanctions is political change, then the most positive effect is that the sanctioned state is pushed towards compliance with the rules that it has violated. Sometimes sanctions have the effect of inducing a country to change its political structure if such a goal was at the origin of the imposition of sanctions: for instance, in the case of Iran, it has been affirmed that the election of Hassan Rouhani as new President was due to his promise of working to lift sanctions. In this sense, the imposition of sanctions, even if related to suspected nuclear activities and not to the existence of a particular political regime, induced voting trends towards a candidate who could lift restrictive measures.[30]

In the sanctioning country, sanctions are sometimes imposed for reasons of reinforcement of democracy or power, or for sending a message of authority to the international community, not only to the offenders. Finally, in terms of other States, sanctions can produce not only the opening of new market possibilities but also determine changes of political alignments.

Unfavorable Political Effects[31]

In terms of embargoes' negative political effects, for the target country, sanctions may result in the empowerment of the authoritarian force in power, in the growth of nationalism and patriotism, and hate towards the sanctioning community. The authoritarian power may become a dictatorship and start, or boost, a policy of suppression of minorities and opponents to the governmental position. This may human rights and the protection of fundamental liberties. Political elites impose themselves as the warrants against aggressors and invaders and may impose greater control over lucrative black markets, of the press, and of basic civil and social rights.

In other cases, the imposition of sanctions can create political instability that leads to a political vacuum. In any case, sanctions confer a bad image to the target country in the eyes of the international community, leading to the state's international political isolation and the weakening of its diplomatic efforts.

In the face of nationalistic and authoritarian reactions in the target country, public opinion in sanctioning states can be that they are implemented to satiate public pressure for action in a time of crisis, or for political calculations rather than global security imperatives. This can lead to a loss of authority, unity, and credibility in the politics of the sanctioning state or community.

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30 Dan Joyner, "Mark Fitzpatrick on the Influence of Western Sanctions on the Iranian Election," *Arms Control Law*, June 17, 2013, <armscontrollaw.com/2013/06/17/mark-fitzpatrick-on-the-influence-of-western-sanctions-on-the-iranian-election/>; Dina Esfandiary, "Assessing the European Union's Sanctions Policy: Iran as a Case Study," *EU Non-Proliferation Consortium, Non-Proliferation Papers*, No. 34 (December 2013); Dina Esfandiary and Mark Fitzpatrick, "Sanctions on Iran: Defining and Enabling 'Success'," *Survival: Global Politics and Strategy,* 53 (October/November 2011), pp. 143–156; Nikolay Marinov, "Do Economic Sanctions Destabilize Country Leaders," *American Journal of Political Science* 49 (July 2005), pp. 564–576; Katerina Oskarsson, "Economic Sanctions On Authoritarian States: Lessons Learned," *Middle East Policy* 19 (December 2012), pp. 88-102.

31 See William H. Kaempfer and Anton D. Lowenberg, "The Political Economy of Economic Sanctions," Todd Sandler and Keith Hartley, ed., *Handbook of Defense Economics*, Vol. 2 (Amsterdam: Elsevier, 2007), pp. 867-911.

Social Effects

Sanctions generally produce only negative social effects. Civilians are ultimately the most affected by comprehensive trade measures. Indeed, trade sanctions always have humanitarian costs and make civilians vulnerable. A decrease of human resources in many sectors of the country such as education and health may occur, as well as an erosion of purchasing power whereby families are not able to buy food, medicine and other necessities anymore. This increases poverty, illness and inequality. Many people may migrate from the country or make recourse to violence because of economic frustration and pessimism.

Two Case studies

Two case studies, Iran and Russia, demonstrate the applicability of the aforementioned considerations.

Iran

Iran is a country that has been under international attention since August 2002 due to revelations concerning its nuclear program.[32] Since 2006, due to the International Atomic Energy Agency (IAEA)'s referral of the nuclear issue to the United Nations Security Council, the first set of sanctions were imposed on Iran at the UN level, followed by EU and U.S sanctions.[33,34,35,36] UN resolutions created a ban on the supply of nuclear-related materials and technology, froze assets of key individuals and companies related to the program, banned Iran from participating in any activities related to ballistic missiles, imposed an arms embargo, and recommended that states inspect Iranian cargoes and prevent the provision of financial services. The EU restricted cooperation with Iran in foreign trade, financial services, energy sectors and technologies, and imposed an oil embargo on Iran, froze the assets of Iran's central bank and disconnected it from the SWIFT, the world's hub of electronic financial transaction.

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32 Oliver Meier, "European Efforts to Solve the Conflict over Iran's Nuclear Programme: How has the European Union Performed?," *EU Non-Proliferation Consortium, Non-Proliferation Papers* 27 (February 2013), pp. 1-22; Orde F. Kittrie, "Emboldened by Impunity: The History and Consequences of Failure to Enforce Iranian Violations of International Law," *Syracuse Law Review* 57 (June 2007), pp. 519- 549.

33 See Kenneth, Katzman, "Iran Sanctions, Congressional Research Service," *CRS Report*, September 21, 2016 <www.fas.org/sgp/crs/mideast/RS20871.pdf>, p. 2; Eskandar Sadeghi-Boroujerdi, "Sanctioning Iran: Implications and Consequences," *Oxford Research Group*, October 9, 2012, <www.oxfordresearchgroup.org.uk/publications/briefing_papers_and_reports/sanctioning_iran_implications_and_consequences>.

34 UN Security Council Resolutions 1696, S/Res/1696, July 31, 2006; Res. 1737, S/Res/1737, December 27, 2006; Res. 1747, S/Res/1747, March 24, 2007; Res. 1803, S/Res/1803, March 3, 2008; Res. 1929, S/Res/1929, June 9, 2010.

35 See Council Decision 2012/35/CFSP amending Decision 2010/413/CFSP concerning restrictive measures against Iran, January 23, 2012; Council Regulation 267/2012 concerning restrictive measures against Iran, March 23, 2012; Council Decision 2012/635/CFSP amending Decision 2010/413/CFSP concerning restrictive measures against Iran, October 15, 2012.

36 See U.S 2010 Comprehensive Iran Sanctions, Accountability and Divestment Act, Public Law, 111-195, July 1, 2010; Iran Sanctions Act; National Defense Authorization Act for 2012; Iran Freedom and Counter-Proliferation Act; and Iran Threat Reduction Act.

After many years of negotiations and dialogue, a definitive deal, the Joint Comprehensive Plan of Action (JCPOA) created a plan for lifting the sanctions.[37,38] However, since sanctions have "accompanied" Iranian history for years and the current deal does not lift all the sanctions at once, Iran remains a significant example to be analyzed in order to check the effects of sanctions.

Effects on the Target State

Considering the effects on Iran from the economic perspective: the embargoes led to a decline of Iranian exports of oil products, a reduction in oil sales, and changes in the type of goods being exported, especially favoring non-oil exports. This produced an increase in the privatization of enterprises and the reallocation of investments funds, even if they have been destined to the urban *élite* only.[39,40] In particular, the privatization occurred in favor of the Revolutionary Guard, i.e., the Praetorian guard of the Supreme Leader Khamenei, which is considered the main operator in the oil industry and the leader of the nuclear program. The arms embargo also reduced Iran's military capabilities because of its dependence on Russian and Chinese military assistance.[41]

Beyond this, Iran has experienced a strong GDP decline, a fall in its crude oil exports from about 2.5 million barrels per day in 2011 to about 1.1 million barrels per day by mid-2013, a fall in oil prices in 2014, currency decline and inflation, and the difficulties or impossibilities of access to currency reserves held in foreign banks. Due to this situation, industrial production has rapidly decreased and Iran has been pushed to reduce its expenses and the price of its products in order to boost its exports. Moreover, for the collection of money, new taxes have been imposed. Iran also adopted autarchic countermeasures, such as the fact of providing its own insurance, reflagging its ships, blending its crude oil with other fuels, and accepting monetary values other than the Euro and Dollar.[42,43]

From the political perspective, sanctions firstly strengthened the former president, as Ahmadinejad tried to empower his role by manipulating the issue of sanctions to the regime's advantage. He moved Iranian foreign policy towards the East, asserting that the sanctions regime was the

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37 The text of the JCPOA is available at <eeas.europa.eu/statements-eeas/docs/iran_agreement/iran_joint-comprehensive-plan-of-action_en.pdf>. The JCPOA has been endorsed by the Security Council Resolution 2231/2015. In the European Union it has been formally approved via a vote of the EU Foreign Affairs Council on July 20, 2015, in the United States it has been approved by the Congress on September 10 and 11, 2015, while in Iran the Majlis (Parliament) has also agreed on it in October 2015.

38 As for the critical content of the JCPOA, see Gary Samore, ed., *The Iran Nuclear Deal: A Definitive Guide Report*, Belfer Center for Science and International Affairs, Harvard Kennedy School, August 3, 2015, <belfercenter.ksg.harvard.edu/publication/25599/iran_nuclear_deal.html>.

39 See Sabrina M. Peterson, "Iran's Deteriorating Economy: An Analysis of the Economic Impact of Western Sanctions," *International Affairs Review* September 10, 2012, <www.iar-gwu.org/node/428>; Steve H. Hanke, "On the Failure of the Iranian Sanctions," *Cato Institute*, May 9, 2013, <www.cato.org/publications/commentary/failure-iranian-sanctions>.

40 Iranian National Bank, "Economic Trends," No. 62, Third Quarter 1389 (2010/2011), Balance of Payments, p.16.

41 Arms Control Association, "The UN Sanctions' Impact on Iran's Military," *Issue Brief* 1 (June 2010), <www.armscontrol.org/issuebriefs/iransanctionseffectonmilitary>.

42 Farideh Farhi, "Sanctions and the Shaping of Iran's Resistance Economy," June 27, 2012, <lobelog.com/sanctions-and-the-shaping-of-iran%E2%80%99s-%E2%80%9Cresistance-economy%E2%80%9D/>.

43 "Iran's Rial Hits an All-time-Low against the U.S dollar," *BBC News*, October 1, 2012.

price to be paid for conducting its anti-hegemonic foreign policy; furthermore, he considered the Iranian nuclear program a symbol of national progress and of resistance to the arrogance of external powers.[44,45]

Sanctions influenced the election as president of Hassan Rouhani, a relatively moderate mid-ranking cleric, who promised the easing of restrictions and the end of Iranian isolation. As mentioned, this effect was unexpected as the political change was not, at least formally, the purpose of the sanctions.

Sanctions led to Iran's international isolation for years, with the fear of being considered a "pariah State" or as a State in a "*nuclear apartheid*."[46] This has determined the loss of its role of 'fortress' in other conflict situations, such as against jihadist groups and the Islamic State. However, it should be recognized that Iran has kept up its military assistance to the Assad government in Syria, to the Iraqi government, to Lebanese Hezbollah, Hamas, and to Houthi rebels in Yemen, even if it has been less able to provide military equipment because of arms embargoes.

The effects of sanctions on the population are demonstrated by the sense of frustration, psychological pain, distress, fear, and pessimism caused by the decreases in purchasing power, access to money, and employment. Moreover, many fundamental rights have been affected, such as the freedom of thought and speech, demonstrated by the censorship of media and the internet; limitations to the right to health, due to the shortage of medicines and food, and worse health care conditions; and the right to education due to less available resource.[47]

Effects on the Targeting States

The effects of sanctions on the targeting actors shows that, for example in the European Union where more than the 80% of oil production came from Iran, some Member States were risked a precarious situation for oil supply. In 2012, Iran symbolically preempted the embargo by ceasing sales to Britain and France so as to oblige Europe to look for alternative sources and markets.[48]

In the Unites States, trade embargo had the effect to prohibit all U.S persons, business and banks from dealing with Iranian companies, including investing in Iran or facilitating third-country trade with Iran, with the exception of foods and medicines and the civil aviation industry.[49]

In addition, as a secondary effect of the imposition of the embargo on Iran, the United States (U.S) pushed to introduce so-called "secondary sanctions" meant to impede non-U.S citizens

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44 Adam Tarock, "Iran's Nuclear Programme and the West," *Third World Quarterly* 27 (May 2006), pp. 645-664.

45 Clara Portela, "The EU's Use of "Targeted" Sanctions Evaluating Effectiveness," *CEPS Working Documents,* No. 391 (March 2014), p. 24.

46 Jaswanth Singh, "Against Nuclear Apartheid," *Foreign Affairs* 77 (September/October 1998), <www.foreignaffairs.com/articles/asia/1998-09-01/against-nuclear-apartheid>.

47 Julian Borger, and Saeed Kamali Dehghan, "Iran Unable to get Life-saving Drugs due to International Sanctions," *The Guardian*, January 13, 2013.

48 Javier Blas and Bozorgmehr Najmeh, "Iran Struggles to Find New Oil Customers," *The Financial Times,* February 20, 2012.

49 See John Ydstie, "What Lifting Iran's Sanctions Means for U.S Businesses," July 19, 2015, <www.npr.org/2015/07/17/423643361/what-lifting-irans-sanctions-means-for-u-s-businesses>.

and companies abroad from doing business with a target of the primary U.S sanction. This is a typical case of extraterritoriality and provoked a strong dispute with the European Union and with other U.S allies. Over time, many EU enterprises doing business with Iran have been affected by sanctions stemming from the United States.[50]

Effects on Other States

Sanctions on Iran had effects on other States as well. Gulf States engaged in transactions with other states such as India and China, in order to find alternative revenue sources.[51] On the other hand, India and China have not accepted Western sanctions and have increased their trade with Iran as energy suppliers. India, in particular, has benefited from the closure of European markets to Iran and the lower competition at stake, and has continued to import oil from Iran and to export automobile components, tools, motors, and chemicals to Iran.[52] India also signed in 2003 a deal with Iran to develop the Chabahar port in southern Iran, which is an important "door" to commerce between the Arabian Peninsula and Asia, and also Iran's closest and best access point to Asia. China has grown its commercial activity with Iran, accessing Iranian oil and exporting machinery, equipment, textiles, chemical products and consumer goods to Iran, thus demonstrating themselves to be a strategic trade partner for Iran.[53]

Russia

The genesis for the imposition of sanctions upon Russia can be found in the illegal annexation of Crimea, a Russian-speaking region in the Eastern part of the country and autonomous republic within Ukraine; and the destabilizing action in Ukraine by the Russian Federation. The EU considered such action as a breach of international law and a violation of Ukraine's sovereignty, thus deciding a first set of "symbolic" sanctions against some individuals and entities linked to the situation in Ukraine: asset freezes, travel bans and a ban on doing business with listed subjects.[54] More severe restrictive measures on Russian exports and on exports from Crimea and Sevastopol were enacted later.[55] The U.S also imposed sanctions on four members

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50 See Jeffrey A. Meyer, "Second Thoughts on Secondary Sanctions," *University of Pennsylvania Journal of International Law* 30 (March 2009), pp. 905-968; Nicholas Davidson, "U.S Secondary Sanctions: The UK and EU Response," *Stetson Law Review* 27 (1998), pp. 1425-1435. The EU has reacted to extraterritoriality with the adoption of Council Regulation No. 2271/96, *Official Journal* L 309, 1996.

51 Harsh V. Pant, "Iran-India Relations Weighted in Favour of Gulf Arab States," *The National,* January 29, 2012, <www.thenational.ae/thenationalconversation/comment/iran-india-relations-weighted-in-favour-of-gulf-arab-states#page1>.

52 Dilasha Seth, "Iran to Source Vehicles, Medicines from India," *The Economic Times,* May 17, 2013, <articles.economictimes.indiatimes.com/2013-05-17/news/39336799_1_iran-auto-exports-pharma-exports>; Manoj Kumar, and Nindi Verma, "Iran, India Meet to Discuss Oil Exports, Payments," *Reuters,* December 10, 2013, <in.reuters.com/article/india-iran-oil-idINDEE9B906S20131210>.

53 John S. Park, "Iran and China," *United States Institute for Peace,* 2010, <iranprimer.usip.org/sites/iranprimer.usip.org/files/Iran%20and%20China.pdf>.

54 Council Regulation No. 208/2014 of 5 March 2014 Concerning Restrictive Measures Directed against Certain Persons, Entities and Bodies in View of the Situation in Ukraine, *Official Journal* L 66, 2014; followed by Executive Regulation No. 381/2014 of 14 April 2014, *Official Journal* L 111, 2014.

55 Council Regulation No. 269/2014 of 17 March 2014 concerning restrictive measures in respect of actions undermining or threatening the territorial integrity, sovereignty and independence of Ukraine, *Official Journal* L 78, 2014.

of Putin's inner circle and prevented the Russian National Bank from conducting transactions with U.S credit institutions.[56]

After the downing of Malaysia Airlines flight MH17 in the rebel-held territory, and after the downing of several Ukrainian military aircraft in separatist-controlled areas, the EU hardened its sanctions.[57] The Minsk agreement for the cessation of hostilities was enacted in 2014, followed by a decision in February 2015 to adopt a package of measures to alleviate the ongoing war. Sanctions nevertheless remain in place.

EU sanctions can be divided into three groups: (a) travel bans and asset freezes; (b) economic sanctions against Crimea constituting a ban on the import of goods originating in Crimea and Sevastopol; (c) economic sanctions against Russia, targeting (1) capital markets (restrictions on issuance of and trade in certain 'bonds, equity or similar financial instruments'), (2) defense sector (arms embargo), (3) dual-use goods (embargo on dual-use goods and technology), (4) oil industry (embargo on certain technologies related to deep water, Arctic and shale oil).[58] The U.S also imposed trade sanctions against any "U.S person" trading with oil and gas drillers in Russia, as well as travel bans and asset freezes on listed people.[59] Australia, Canada, Japan, Norway, Switzerland, Albania, Montenegro, Iceland, Moldova, and Ukraine have followed the other states' example of sanctions against Russia.[60]

Effects on the Target State

Regarding the economic effects of sanctions on Russia, a high level of inflation occurred and food prices increased while oil prices fell due to the collapse in the currency value.[61] Russia entered a period of economic stagnation and recession with a GDP change of -2.2% for the first

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56 Council Regulation No. 692/2014 of 23 June 2014 Concerning Restrictions on the Import into the Union of Goods Originating in Crimea or Sevastopol, in Response to the Illegal Annexation of Crimea and Sevastopol, *Official Journal* L 183, 2014.

57 Council Decision 2014/512/CFSP of 31 July 2014 Concerning Restrictive Measures in View of Russia's Actions Destabilizing the Situation in Ukraine, *Official Journal* L 229, 2014. Council Regulation No. 833/2014 of 31 July 2014 Concerning Restrictive Measures in View of Russia's Actions Destabilizing the Situation in Ukraine, *Official Journal* L 229, 2014. Council Decision 2014/508/CFSP of 30 July 2014 Amending Decision 2014/145/CFSP Concerning Restrictive Measures in Respect of Actions Undermining or Threatening the Territorial Integrity, Sovereignty and Independence of Ukraine, *Official Journal* L 226, 2014.

58 The list of EU, U.S and other Western sanctions against Russia is contained in Jarosław Ćwiek-Karpowicz and Stanislav Secrieru, *Sanctions and Russia* (Warsaw: PISM, The Polish Institute of International Affairs, 2015).

59 U.S Government, U.S Executive Order, "Blocking Property of Certain Persons Contributing to the Situation in Ukraine," March 6, 2014.

60 Council of the European Union. Declaration by the High Representative on behalf of the European Union on the Alignment of Certain Third Countries with the Council Decision 2014/145/CFSP Concerning Restrictive Measures in Respect of Actions Undermining or Threatening the Territorial Integrity, Sovereignty and Independence of Ukraine, April 11, 2014.

61 See Ian Bond, Christian Odendahl, and Jennifer Rankin, "*Frozen: The Politics and Economics of Sanctions against Russia* (London: Centre for European Reform, 2015).

quarter of 2015.[62,63] Russia's deteriorating economic situation led to several losses of capital resources and to lower access to international capital markets, together with the increase of foreign debt and higher bank interest rates. Moreover, Russian banks started providing loans selectively only to companies close to the government via state-owned or state-controlled banks. There was a cut in assets destined to infrastructure, health and education, with a related crisis for manufacturers and a delay in the modernization of Russian industry. In response to the asset freezes, Russia decided to develop an alternative to the money transfer system SWIFT.[64]

Russia responded to the sanctions with retaliatory countermeasures adopted with Decrees n. 830, n. 656, n. 791, and n. 826/2014.[65] They provided for restrictions to imports in Russia of agro food and raw materials coming from the U.S, EU, Canada, Australia, and Norway (Decree 830); bans to import metal mechanic goods coming from listed countries (Decree 656); bans to acquire tissues, clothes, shoes, leather products, and bans to export semi-manufactured leather from Russia (Decree 826). Russia also introduced punitive sanctions against the three Eastern European States—Ukraine, Moldova, and Georgia—that signed with Association Agreements (AA) with the EU.

Politically speaking, Russia promoted a nationalistic message that it could handle the sanctions alone and that they were not affecting its development. There was a consolidation and strengthening of the authoritarian regime and an emphasis put on nationalism and patriotism. Vladimir Putin made recourse to the "Great Patriotic War" motto and to Soviet myths for justifying and empowering his role, insisting on his belief that the goal of Western sanctions was, in reality, to change the regime. He has repeatedly spread the image of Russia as surrounded by hostile countries seeking to destroy it.

Taking into account the effects on civilians, it is evident that the number of Russians with incomes below the poverty line increased in the last years, and in the first quarter of 2015 almost twenty-three million Russians were poor according to the Federal State Statistics Service Rosstat, thus seeing a decrease on their living standards.[66]

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62 "Russia's Rouble Crisis Poses Threat to Nine Countries Relying on Remittances," *The Guardian*, January 18, 2015.

63 "Sanctions after Crimea: Have they Worked?," *Nato Review Magazine,* 2015, <www.nato.int/docu/review/2015/Also-in-2015/sanctions-after-crimea-have-they-worked/EN/>.

64 "Russia to Launch Alternative to SWIFT," *Financial Tribune,* November 13, 2014, <financialtribune.com/archive/2015/08/20/articles/world-economy/4527/russia-launch-alternative-swift>.

65 For the analysis of Russian countermeasures, see Elena Siagrovets, "Breve Analisi delle Norme che Definiscono il Divieto di Esportazioni e Importazioni di Alcuni Prodotti dalla Federazione Russa," in Fabrizio Marrella, ed., *Le Sanzioni Economiche e la Russia* (Venezia: Università Ca' Foscari, December 2014), <www.unive.it/pag/fileadmin/user_upload/scuole/challenge/master/fiscalita_finanza_contrattualistica/IBATAX/attivita-formative/Le_sanzioni_economiche_e_la_Russia_Dossier_IBATAX.pdf>, pp. 29-56.

66 See the Russian Federal State Statistics Service, <www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/en/figures/living/tion>; and "Poverty Rate in Russia Jumps to 16%," *Russia Insider*, June 12, 2015, <russia-insider.com/en/business/poverty-rate-russia-jumps-16/ri7961>.

Effects on the Targeting States

The EU sees the Russian case as a test for its sanctions policy adopted in order to protect its security, economic interests and normative goals.[67] As a result of the sanctions, the EU interrupted trade with Russia and many companies suspended joint ventures with Russian companies.

If the sanctions could be an opportunity for the EU to open new markets to local products and to boost the creation of an independent EU Common Defense and Security policy, in reality the EU demonstrated little coherency in its policy: indeed, some Member States, especially the ones more dependent on Russian oil, advanced the proposal to lift the sanctions.[68] This does not give a solid image of Europe in the eyes of the Russian population and in front of the international community.

Moreover, due to Russian counter-sanctions, there has been a lower demand for European goods and services. Many European farmers, fishing crews and manufacturing firms, as well as countries depending on Russian gas oil, have experienced economic losses.[69] The calculated losses for the EU are €100 billion, with Italy losing over €1.25 billion.[70]

The impacts on the EU have been higher than in the U.S because the EU is the first trading partner of Russia and Russia represents the third trading partner of the EU, while the U.S does not have as significant economic links with Russia.

Effects on Other States

The sanctions on Russia created the effect that Russia and China agreed on a $400 billion gas deal in May 2014. This deal has risked making the sanctions ineffective.[71] Indeed, Gazprom, the world's biggest gas exporter, expressed its availability to conclude a contract to supply China from fields in Western Siberia by 2016. In this way, China is meant to become Gazprom's largest customer in a short time. Novatek OJSC, Russia's second-biggest gas producer, also agreed to sell gas to China's state-owned Silk Road Fund.

China and Russia have also decided to strengthen the development of cross-border online trade, the delivery of mail by railway, investments in networking, and telecommunications equipment and services.

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67 Kristi Raik, Niklas Helwig, and Juha Jokel, "EU Sanctions Against Russia Europe Brings a Hard Edge To its Economic Power," *The Finnish Institute of International Affairs, FIIA Briefing Paper* 162 (October 2014), p. 3.

68 Especially Greece, Italy, Czech Republic, Cyprus, Bulgaria and Luxembourg were split on sanctions. See Robin Emmott and Pavel Polityuk,"EU Wins Greek Backing to Extend Russia Sanctions, Delays Decision on New Steps," *Reuters,* January 29, 2015, <uk.reuters.com/article/uk-ukraine-crisis-idUKKBN0L22AZ20150129>.

69 "Russian Sanctions to Cost Europe €100bn," *Newsweek*, June 19, 2015.

70 "Russians Live Without Parmesan as Italy Pays Sanctions Price," *Bloomberg*, June 19, 2015.

71 "Energy Goes East as Russia and China Seal Multibillion Dollar Deals in Beijing," September 3, 2015, <www.rt.com/business/314236-Russia-China-cooperation-agreements/>.

Conclusions

Trade sanctions are economic measures used as a foreign policy tool. As seen, they can address specific States, be enacted at several levels (international, regional, national), and produce wide-ranging effects, often unexpected. The analysis of the consequences that they can give origin to—in relation to their objective—is useful to conclude several observations and recommendations regarding how they have been more effective:

A holistic strategic approach: Experience has demonstrated that sanctions cannot unilaterally solve foreign policy problems, but they must be integrated with other tools of national power into a broader approach including diplomacy and financial assistance. For instance, the Iranian case shows that the EU and U.S's decision to pursue a 'dual-track strategy' allowed for the conclusion of the JCPOA. In other words, a mixed policy of carrots and sticks, dialogue and pressure, imposition of sanctions without forgetting to boost diplomatic debate has reached some results that the sanctions *per se* on their own could not reach. Therefore, sanctions are not an alternative to diplomacy, but complementary to it;

C*lear ex ante objectives*: In order to be effective, sanctions should have a clear purpose *ex ante,* and the objectives should be agreed upon among the whole community in order not to incur incoherence or lack of credibility, such as in the case of EU sanctions towards Russia. The objectives should be established keeping in mind that sanctions may be ineffective in the short-term but successful given a longer-term perspective. For example, in the case of Russia, if the goal for sanctions is a coercive one (i.e., to change Russia's behavior towards Ukraine and deter further similar behavior of invasion of territorial states) as well as a constraining one (i.e., to stop military action), the EU could fail in short-term in the light of the fact that the Ukrainian war is ongoing and that Russian military intervention continues. However, sanctions could lead to a victory in long-term;

No space for alternatives for the target State: For sanctions to work, they cannot leave space for alternative markets to the targeted State. The costs of sanctions should fall primarily on the state being sanctioned. The deal between China and Russia shows how sanctions risk favoring the opening of other markets and business if the target State has alternatives; and

A*ttention to human rights:* Sanctions should take into account the indiscriminate effects on civilians and whenever possible, it is desirable to opt for "smart" or "targeted" sanctions on individuals and enterprises, although they can still be susceptible of violating individual rights.[72, 73]

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72 The discussion on targeted sanctions starts in 1998/1999 at the Interlaken Process, which focused on the issue of targeted financial sanctions; then, it continues at the Bonn-Berlin Process, focused on travel and air traffic related sanctions as well as on arms embargoes; and at the Stockholm Process dealing with the practical feasibility of implementing and monitoring targeted sanctions. See José W. Fernandez, "Smart Sanctions: Confronting Security Threats with Economic Statecraft," July 25, 2012, <www.state.gov/e/eb/rls/rm/2012/196875.htm>.

73 See the interventions by the European Court of Justice in this sense. For instance, case T-380/14, May 30, 2014, against the lack of motivation and evidence as for the involvement of the target person in the pillage of Ukrainian funds; case T-12/11, September 6, 2013 and case T-262/12, September 18, 2014, on the violation of individual rights and the infringement of the principle of legal certainty because of insufficient evidence, in the listing of Iranian people, whose assets had been frozen.

Final Conclusions

This paper has shown that such "country-based sanctions" targeting import and export of the State as a whole, and not specific groups or people, have been criticized for causing pain on the general population, or for determining the loss of markets and the crisis of credibility upon sanctioning States, as well as for inducing the enactment of countermeasures by target States and the increase of authoritarian regimes within them. Despite these negative consequences, sanctions still remain attractive in the international sphere as an alternative to military intervention. However, it is evident that they need improvements. The recommendations proposed can be taken as a step in this direction, even if a one-size-fits-all solution for achieving such a purpose does not exist. Therefore, the current challenge consists of looking for the best, or the least worst, options for dealing with foreign policy issues, in order to ensure global peace and security. Further research on the effectiveness of sanctions and on how to balance their costs and benefits is needed in this regard.

Authorized Economic Operators: Costs and Benefits of Certified Supply Chain Safety and Security

ROSA ROSANELLI[1]

Abstract

The status of Authorized Economic Operator (AEO) was originally adopted in the framework of the Customs-to-Business Partnership introduced by the World Customs Organization (WCO) as part of the Strategy for Customs for the twenty-first century. Introduced in the European Union by Regulation (EC) 648/2005, it attracted growing interest from businesses when the new Union Customs Code made compliance with AEO-C standards a precondition to benefit from Customs simplification and self-assessment procedures.

The purpose of this paper is to investigate the roots and benefits of trusted trader status. As Customs' role becomes growingly complex, a risk-assessment strategy with targeted controls seems inevitable. Part of it includes identifying compliant operators and delegating part of the control to them while simplifying administrative requirements and facilitating trade. In this context, AEOs are expected to play a key role as they should actively partner with national authorities to allow resources to be focused on more sensitive transactions.

After laying out the history of the AEO label, the paper discusses the criteria and challenges of certification, with a particular focus on AEO in the European Union. It concludes by identifying challenges related to the growing responsibilization of private actors in the international supply chain and the expected long-term impact on industry, including potential opportunities to leverage AEO status for strategic trade controls.

Keywords

AEO, Customs, WCO, European Union

1 Rosa Rosanelli is International Trade Compliance Manager for Belgium Engine Center SPRL, responsible for BEC's trade compliance program as part of BEC's Senior Management Team. She obtained a Master of Law degree from Paris Sud University, France, and a Master in International Relations at University La Sapienza of Rome, Italy, and is author of several publications on strategic trade controls.

Introduction

As the new European Union Customs Code celebrates its first months since entry into force, invitations from Customs authorities to private operators to apply for Authorized Economic Operator (AEO) status have multiplied in the European Union. However, the idea of certified safe traders is neither a new concept nor a European-specific initiative.[2] AEO in the European Union, C-TPAT in the United States, or TradeFirst in Singapore are only a few of the partnerships between economic operators and Customs administrations, created as part of a Customs modernization strategy for the twenty-first century which has been at the center of World Customs Organization's (WCO) discussions since the 1990s.

The revised Kyoto Convention, adopted by the WCO in June 1999, had already highlighted how, in a growingly globalized trade environment, the role of Customs administrations would naturally become more difficult. Higher volumes of shipments, evolving dynamics of the international supply chain, but also more sophisticated threats would require additional resources that public administrations could not always commit to. For those reasons, predictability, transparency, and efficiency should be the main pillars of Customs' long-term strategy.

Customs-Business Partnership in the Twenty-First Century

The role and powers of Customs administrations are unique and often critical to the implementation of strategic policies and international engagements of a government. In particular, in the realm of international peace, security, and nonproliferation, Customs are key enforcement agencies. The authority to inspect cargo imported, exported or in transit; the ability to seize goods or refuse entry or exit; and to gather detailed information about shipments makes Customs an inevitably central actor in a globalized world that is shaped by intense international trade, but also by new and more sophisticated security threats.

In the 1990s, the WCO anticipated a discussion over the modern challenges for Customs administrations. It highlighted, with surprising foresight, the need to respond to a growing demand for trade simplification without compromising it with growing responsibilities in terms of security, enforcement, and revenue collection.

The revised Kyoto Convention provided an answer to these questions already in 1999, advocating for a "standardization and simplification of the goods declaration and supporting documents," "maximum use of information technology," "minimum necessary Customs control to ensure compliance with regulations," and "simplified procedures for authorized persons." It created a strategy for the future based on simplifications, transparency, improved use of resources, and a partnership with private actors based on "use of risk management and audit based controls" to identify compliant operators and facilitate trade for them, while focusing attention on more important areas of risk.[3] Two criteria were referenced to elect authorized persons: having an appropriate record of compliance with Customs requirements and a satisfactory system for commercial records management.

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2 "Regulation No 952/2013 of the European Parliament and of the Council Laying Down the European Customs Code," No 952/2013, European Union, October 10, 2013.

3 Revised Kyoto Convention, World Customs Organization, February 3, 2006.

In the same line, in 2005, the WCO adopted the SAFE Framework of Standards to Secure and Facilitate Global Trade (WCO SAFE). This document was the result of years of discussions within the WCO on the Customs blueprint for the future. After the terrorist attacks of September 11, 2001, the role of Customs itself had witnessed a shift towards guaranteeing safe trade while preserving national security, with enhanced responsibilities in the fight against terrorism, trans-national crime, commercial fraud, counterfeiting, and piracy.[4]

WCO SAFE brought forward the idea of a Customs-Business partnership whereby economic operators would be reliable allies of Customs, engaged in a program of voluntary compliance that would reinforce constructive and mutually beneficial alliance and allow more selective focus on transfers presenting a higher risk level.

A new revision of the SAFE Framework was issued in 2007 specifically to integrate a detailed guidance on AEO status, which had been developed in a separate informal document and now included more detailed requirements and expected benefits. Building on input from the Private Sector Consultative Group (PSCG), the WCO compiled a SAFE Package which details operational guidelines, focusing on the main criteria and general planning for implementation but also benefits for private operators.[5] AEO was set to become an integral part of the long-term Customs administration strategy.

Incentives and Challenges for Safe Traders

Although accompanied by growing enthusiasm within the WCO, the operational guidelines did not lead to uniform implementation: not all countries have implemented AEO status in the same way or have foreseen the same incentives for private operators. Also, overall the number of entities that were certified under an AEO label worldwide has generally remained relatively low.[6] In this sense, it may be questioned whether the "safe trader" label presents interesting advantages for economic operators, and whether these outweigh the challenges and costs of a certification process.

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4 The American Customs and Border Protection (CBP) experienced this shift in the first place: in the United States, Customs was created to enforce tariffs and calculate import taxes. And while Customs' role expanded to combat drug trafficking in the 1980s, regulating trade was the department's primary job until September 11, 2001. Robert Bonner, former commissioner of United States Customs and Border Protection had shifted CBP's priority mission to national security. For more information, see Ben Worthen, "Security Compliance: Customs Rattles the Supply Chain," CIO, March 1, 2006, <http://www.cio.com/article/2447478/supply-chain-management/security-compliance---Customs-rattles-the-supply-chain.html>. See also: "WCO Revised Kyoto Convention: Your Questions Answered," World Customs Organization, <http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/conventions/~/media/WCO/Public/Global/PDF/Topics/Facilitation/Instruments%20and%20Tools/Conventions/Kyoto%20Convention/Brochures/kyoto_yourquestionsanswered.ashx>.

5 "WCO Safe Package," World Customs Organization, <http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/tools/safe_package.aspx>.

6 In 2014, the biggest number of certified entities was to be found in the European Union, including all twenty-seven member states, with a total of about 13,000 certified companies, against 10,000 in the United States and about 2,000 in China. Mariya Polner, *Compendium of Authorized Economic Operator Programs*, World Customs Organization Research Paper No. 25 (Brussels, World Customs Organization, 2012).

An AEO is by definition an actor of the international supply chain that has been proven (by or on behalf of a national Customs administration) to be adherent to certain minimal standards including:

- Demonstrated compliance with Customs requirements;
- Satisfactory system for management of commercial records;
- Financial viability;
- Mutually beneficial working relationships with the Customs administration;
- Cargo, premises and personnel security;
- Trading partner security;
- Contingency planning for crisis management and incident recovery;
- Measurement, analysis, and continuous improvement.[7]

Over time, the standard set of criteria for operators to be recognized as compliant partners and allies of Customs administrations has been evolving to include factors such as financial viability, IT security and physical security, notably as concerns the warehouse/shipping area of a company and the protection of related records.

In May 2016, sixty-nine countries had implemented operational AEO programs and sixteen AEO programs were in the process of being launched.[8] The way AEO-type programs have been implemented differs, sometimes significantly, from one country to another. Yet a common denominator can be identified in self-assessment checklists or questionnaires that aim to recognize a lower level of risk by highlighting the operator's ability to implement effective internal controls encompassing physical and IT aspects, identify anomalies, and promote continuous improvement.

Particular focus is generally placed on the presence of well-established internal physical protection measures for the receiving area, as well as robust internal audit systems and other mechanisms of self-verification, together with internal written procedures accompanied by provisions that require immediate communication of any anomaly to the Customs authorities.

While many points are specific to Customs compliance, the AEO certification process resembles, in many respects, any quality certification procedure.

The benefits associated with this status may also vary, but generally will include fewer physical inspections and fast track Customs processing, reduced data requirements (i.e., when filing periodic declarations, for centralized clearance) but may also take the form of technical training of operators or enhanced relations with Customs via client coordinators. For example, Singapore offers tailored services to companies as they help them identify Customs simplifications that are better adapted to their operations and role in the supply chain.

WCO prescribes that benefits associated to AEO should be "meaningful, measurable and reportable"—in other words, they should always produce measurable benefits that outweigh

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7 "Safe Framework of Standards to Secure and Facilitate Global Trade," World Customs Organization, June 2015, <http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/tools/~/media/2B9F7D493314432BA42BC8498D3B73CB.ashx>.

8 *Compendium of Authorized Economic Operator Programs*, (Brussels, World Customs Organization, 2012).

the costs that operators will have to incur in order to meet the standards identified in the questionnaire, but also allow quantifiable facilitation profit. In addition, these should be directly linked to AEO status and not attainable otherwise.

AEO in the European Union

Regulation (EC) 648/2005 entered into force on January 1, 2008 and created the legal basis for granting AEO status in the European Union. Valid throughout the territory of the Union, and equally recognized by each Member State, AEO status (in its three versions, Customs simplification (AEO-C), and security and safety (AEO-S), or a combination of the two), was described as part of an effort for the "establishment of a risk management framework common to all Member States."[9]

On May 1, 2016, when the new Union Customs Code (UCC) entered into force, AEO became a central topic of discussion in all information sessions organized by Customs authorities. Until then, the voluntary status had been granted to about 12,000 entities on the territory of the twenty-eight EU Member States. However, more than 40% were located in Germany and about 10% in the Netherlands.[10]

It has been argued that many companies have been hesitating to become certified and that the number of applications since 2008 has generally remained low because the general perception was that there would be no particular benefit associated to AEO and that certified entities had experienced an increase in inspections by the Customs administrations rather than a decrease.[11]

While the operators' expectations can be summarized in more predictability, better logistics and less administrative paperwork, with more streamlined processes and cost-effective controls, it needs to be taken into account that in many EU Member States, facilitation efforts similar to those foreseen for AEO have been promoted by Customs authorities independently from the certification, such as local clearance procedure or reduced warranty in certain instances. While this may have been a key element in perceiving the benefits of AEO as minimal, AEO certification process resembles, in many respects, any quality certification procedure.[12]

In this sense, companies will inevitably look for apparent incentives and immediate gains to justify the certification effort, including competitive difference with other operators and important cost savings outweighing direct and indirect costs associated to aligning the internal compliance program to the criteria set by the questionnaire.

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9 "Regulation (EC) No 648/2005 of the European Parliament and of the Council of 13 April 2005 Amending Council Regulation (EEC) No 2913/92 Establishing the Community Customs Code," European Union, April 13, 2005, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:117:0013:0019:en:PDF>.

10 Hans-Joachim Schramm, "Who Benefits Most from AEO Certification?: An Austrian Perspective," *World Customs Journal* 9:1 (March/April 2015), pp. 59-68.

11 Deloitte Netherlands, "The Authorized Economic Operator (AEO) Concept: Blessing or Curse?," *Customs and Global Trade Newsletter* 1:4 (August 2013), <http://www2.deloitte.com/content/dam/Deloitte/nl/Documents/tax/deloitte-nl-the-aeo-blessing-or-curse.pdf>.

12 Ibid.

The changes introduced by the UCC and its implementation and delegated regulations, together with the outreach efforts that have followed, seem to have played an important role in raising awareness about the benefits attached to this status.[13] In particular, in a context where the new code introduces new rules for centralized clearance, self-assessment, valuation, and guarantees (susceptible to increase costs associated to Customs operations), obtaining an AEO-C status becomes an interesting element of facilitation, as it affects the economic operators' eligibility for guarantee reductions and waivers, and compliance with AEO-C standards becomes a precondition for benefiting from Customs simplification and self-assessment.

On the basis of Article XXXIX of the UCC, all supply chain actors involved in Customs-related operations may apply for AEO status, provided that the applicant is an economic operator involved in activities covered by the Customs legislation and established on the Customs territory of the Union.[14] A self-assessment questionnaire contains a list of criteria that help the companies demonstrate that they are in control of their business, have in place appropriate internal measures including well-established internal audit systems, IT and physical security, mechanisms of self-verification, and internal written standard works accompanied by provisions that require immediate communication of any anomaly to the Customs authorities.

Although this may seem intuitive, in practice the questionnaire (adapted by certain states, and generally accompanied by specific national guidance) may contain questions that are not always easy to answer—the objective being to establish a standard of internal controls similar to the checks performed by Customs. In addition to a robust quality system, with documented internal processes, proof of absence of criminal offenses related to the economic activity as well as financial solvency will also be necessary to have this status recognized.

Under the new code, applicants for AEO status will also need to provide evidence of their ability to keep records of compliance with Customs legislation and taxation rules, together with proven practical standards of competence or professional qualifications in the domain of Customs and duties (which may not always be easy to prove), and eventually the existence of appropriate security and safety measures.[15]

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13 According to WCO, since 2014, in the European Union there have been 2,000 additional certified operators, with 17,402 applications and 15,116 certificates granted. *Compendium of Authorized Economic Operator Programs*, (Brussels, World Customs Organization, 2012).

14 In consistency with Article 5 (5) UCC "economic operator" means *a person who, in the course of his or her business, is involved in activities covered by the Customs legislation*. A "person" can be defined as *either a natural person or a legal person, and any association of persons recognized under Union or national law as having the capacity to perform legal acts, provided that its habitual residence or registered office, central headquarters or a permanent business establishment is established in the Customs territory of the Union*. Article 5 (32) UCC defines "permanent business establishment" as a *fixed place of business where both the necessary human and technical resources are permanently present and through which a person's Customs-related operations are wholly or partly carried out*. The other aspect that has to be considered when establishing whether a particular applicant is an economic operator is whether his or her economic activity is covered by Customs legislation, which leads to excluding certain categories, such as consultants that are only consulting/providing opinion in Customs matters. "Authorized Economic Operator Guidelines," TAXUD/2006/1450, DG TAXUD, European Commission, July 29, 2007, <http://ec.europa.eu/ecip/documents/who_is/aeo_guidelines_en.pdf>.

15 Depending on the type of AEO status the economic operator applies for.

AEO may be beneficial under the new Customs code because of available guarantee reductions and because audits and re-verifications will be necessary in any case to continue to benefit from certain simplifications.

Importers and exporters using, or intending to use, simplified Customs procedures, such as inward processing relief (IPR), Customs warehousing, or temporary storage, will have to either fulfill AEO criteria or provide financial guarantees to cover duties suspended under those schemes. AEO-C status holders can indeed benefit from a comprehensive guarantee with reduced amounts for existing Customs debts and other charges that may be incurred, based on Article 95 (3) UCC. In addition, consistent with Article 38 (5) UCC, if the person requesting a particular simplification is the holder of an AEO-C authorization, Customs authorities shall not re-examine those conditions that have already been examined when granting the AEO status. Therefore, Customs authorities will simply focus on new or additional elements and requirements related to the simplification.

Additional benefits may include:

- Reduced physical and document-based Customs controls according to the type of authorization granted;
- Priority treatment and prior notification in case of selection for Customs control. This may have also a logistic advantage for the operator, which will be able to plan and optimize transport and logistics and minimize delays, eventually reducing transport costs;
- Prior notification for security and safety related Customs controls in addition to Customs controls, for which notification is foreseen for entities having acquired AEO-C status;
- The possibility to request a specific place other than the competent Customs office for such control;
- Centralized clearance (where an authorization is required) and entry into declarant's records with a waiver of the obligation for the goods to be presented;
- Other authorizations, including simplified Customs declaration, entry in declarant's records, or simplifications related to transit.

Where AEOs operate as Customs agent, AEO status may also be positively taken into account.

AEO: Trade Facilitation or Growing Responsibilization?

The European Commission's Guidelines highlight that AEO status should be based on "mutual transparency, correctness, fairness, and responsibility." Established as a "trade facilitation measure," AEO is set to be a quality recognition to reliable operators that should foster mutual cooperation with Customs and recognize compliance, but also stimulate best practice in the segments of the international supply chain.[16]

16 Regulation (EC) No 648/2005 of the European Parliament and of the Council of 13 April 2005 Amending Council Regulation (EEC) No 2913/92 Establishing the Community Customs Code," European Union, April 13, 2005, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:117:0013:0019:en:PDF>.

A general shift in focus from the traditional *a priori* control can be recognized, from clearly identified roles of "controller" (Customs authorities) and entities "subject to control" before shipments, to a scheme characterized by "self-controlled" operators that self-monitor their process, control it and improve it, and request Customs' assistance only when issues potentially arise, and generally *a posteriori*.

More autonomous and better trained actors in the international supply chain mean fewer burdens for Customs authorities, as the larger part of the control measures tend to be shifted from the administrations to the economic operators. As the latter have control over their operations and robust internal controls, in principle they should be better placed to identify anomalies.

Yet, this should be balanced by simplifications offered to supply chain actors. Benefits are important since it is difficult to dispute that this modern scheme inevitably entails a loss of a safety net for private operators, and their growing responsibilization. At stake, a potential for higher penalties in case of violations and the possibility to see their status suspended with immediate changes to be adopted, for instance, in terms of warranty coverage.

One may argue that AEO application does not entail a specific cost since Customs do not charge any direct fees on applications or for issuing an AEO certificate. However, indirect costs and resource allocation must be budgeted by any entity that is planning to self-assess its quality and compliance system based on the very specific criteria and language included in the self-assessment questionnaire, and measures will need to be adopted to reach that standard, including a better documented and "trustworthy" internal processes.

In this sense, Small and Medium Enterprises (SMEs) are potentially set to experience specific challenges in this regard. Demonstrating tangible benefits may be even more important to justify the effort to analyze the criteria, understand the requirements, and address gaps when resources are limited.

Ultimately, the relevance of exports in the overall business profile of companies, including SMEs, may be a key factor to determine how beneficial AEO status may be, also taking into consideration the existence of mutual recognition agreements.

AEO as Quality Certification in the European Union

In many respects AEO resembles any quality certification process. The Questionnaire contains risk indicators that should help identify a company's risks and how to mitigate or control them. Yet, these will not be limited exclusively to Customs procedures or to the good management of a warehouse; a more comprehensive analysis of the reliability of a company's procedures in general will be necessary, through the complete supply chain process. In this sense, cooperation from all departments, divisions and disciplines within a company is indispensable.

Another element of the quality certification profile of AEO is identifiable in the consideration of additional certificates when their content corresponds to the AEO criteria and other points of Customs legislation, including additional status such as the Recognized Airfreight Agent but also more general quality certifications, which may be adapted to a certain domain of operations. The quality labelization perspective is supported by the fact that certification comes with permission to use the AEO logo and be listed on the ad-hoc European Commission website.

One question is whether the status of AEO will be progressively integrated as a quality label in other European initiatives in order to ensure that companies are given a competitive advantage, as they must provide evidence of sufficient standards of reliability and a commitment to managing risks related to imports and exports. In this sense, AEO may play an important role in the future as the following synergies with export licensing considerations may be established:

- By considering AEO status as evidence of the existence of a robust internal compliance program and a partnership with Customs authorities which should significantly reduce the risk profile of a company;
- By opening access to AEO for specific elective (open/general) license types;
- By facilitating access to certain export licenses, via simplified procedures.[17]

While this remains to be seen, it is already clear that the expectation is that additional measurable benefits will counterbalance the costs of maintaining the AEO certificate. Indeed, AEO status must not only be acquired, but also maintained. Certified operators are expected to ensure continuous improvement processes that allow a proven ability to monitor, evaluate and strengthen their internal compliance policies and procedures, including appropriate training of personnel and internal audits.

Self re-assessment will need to be carried out periodically and the results will need to be recorded for Customs periodic verification. Important changes affecting the company and its way of functioning will also need to be promptly reported to Customs; should these changes imply that an AEO Customs certified entity no longer meets the criteria, Customs will temporarily suspend the certificate while the company implements adequate measures to rectify and fill the gap.

The risk is that this is susceptible to entail a waiting period when the company cannot make use of the simplifications related to AEO status, including for instance, reduction or exemptions in terms of guarantee.

Certificate withdrawal is also a possible option, for instance, in cases where the company does not implement the measures required to obviate to status suspension, or if a fraudulent act is recognized. The expected waiting period may in this case be even prolonged as the company will not be able to re-apply for AEO status for three years.

Conclusion

While the idea of certified trustworthy traders is neither a new concept nor a European-specific initiative, AEO status has been adopted worldwide as a measure of trade facilitation and quality labelization and seems set to become more and more relevant in the European Union, especially after the entry into force of the UCC.

In 2016, Customs authorities are faced with challenging tasks as they are charged with multiple objectives such as international security, compliance and trade facilitation, but also enforcement,

17 See also Ian J. Stewart, "Linking AEO and ICP at the EU Level," Project Alpha, Centre for Science and International Security, King's College London, July 14, 2014, <https://projectalpha.eu/news/item/332-linking-aeo-and-icp-at-the-eu-level>.

including a key role in the fight against terrorism and international organized crime. In the European Union, the new Customs code bears the ambitious project of establishing the basis for a paperless, single-window type of administration, with modernization efforts and a significant increase in use of information technology by 2020. This will probably mean fewer resources available for Customs and an important need to rely on trusted traders.

A better risk-assessment strategy, distinguishing lower and higher risk actors in the international supply chain, is indispensable to Customs' long-term strategy and in the context of an extremely dynamic internal flow of goods. Reduced inspectional resources will inevitably need to be better targeted and allocated to more questionable shipments and in order to do so, it is indispensable to identify reliable and trustworthy partner companies, making business more autonomous and self-controlled.

Benefits of AEO for Customs administrations are evident, yet, from the standpoint of the European economic operator, it is important to strengthen and make the benefits of certification more apparent.

Importers, exporters, border-crossing carriers, rail, air and sea carriers, and Customs brokers are requested to estimate and prove their reliability and level of compliance with Customs and general risk-assessment requirements against a list of very detailed criteria set by a questionnaire that has been drafted to be adapted for all types of actors in the international supply chain and is not always easy to decrypt. Yet the standards set are not basic and in most cases require adaptation for companies to meet the requirements. Understanding the questionnaire, making sure internal formalized policies and procedures exist and are updated and auditable, providing evidence of their ability to keep records of compliance with Customs legislation and taxation rules, as well as the existence of appropriate security and safety measures, will require time and resources, including frequent exchanges with local Customs administrations and a consistent project management approach.

This challenging process nevertheless presents important potential benefits. The process of preparation for AEO certification itself requires a mapping and in-depth scrutiny of the company operations and processes end-to-end. This should not be underestimated, as it provides an opportunity to identify strengths and weaknesses and adopt measures to increase its efficiency in terms of measurement, analysis, and continuous improvement. Because it is not limited to Customs-related processes, it also provides a unique opportunity to connect, involve and commit several divisions or departments within a company to identify potential gaps and improve overall efficiency.

It may also constitute an opportunity to benchmark and compare to other companies in the same domain or group, as well as to establish contacts and mutually beneficial working relationships with Customs administrations, better understanding Customs administrations' expectations and fostering deeper knowledge of the specific roles, peculiarities and challenges of applicants involved in a specific segment of the international supply chain.

Benefits such as reduced examination rates and fast lanes may be very appealing, especially in light of mutual recognition agreements (MRA) between compliant trader programs, which may allow facilitations for European companies trading with countries such as the United States or China, and bear an important potential to generate significant time and cost savings.

MRAs can constitute real added value to AEO certified entities, yet issues such as compatibility of standards and IT platforms need to be addressed and harmonization will also need to advance progressively to the sub-regional and regional level.

In this sense, MRAs should be strengthened and remain a top priority within the WCO. As one of the main goals of SAFE, they will be key in the long-term to achieving the global objectives of the WCO: ensuring global supply chain security and avoiding duplication of efforts and costs for authorities and economic operators.

At the EU level, AEO has the potential for additional simplifications in related areas such as aviation security or export controls. Avoiding duplication of administrative burdens and leveraging the success of AEO can be a tool to implement facilitations in associated areas such as intra-EU transfer of defense-related goods, where similar certification efforts under Directive 2009/43 have attracted only a reduced number of entities and have led to similar concerns. Granting discretionary license types (open/general) to AEOs or simplifying their application procedure for export licenses in general could be an exceptional way to achieve the objectives set in the Directive on intra-community transfers by leveraging other sets of measures.[18]

Customs-to-Customs cooperation and information sharing between administrations as well as with other authorities within the European Union may lead to additional inter-agency coordination and even allow information gathered through AEO to support the establishment of single enforcement effort at the European level.

In conclusion, AEO presents today an important potential for win-win partnerships between Customs and economic operators as well as between Customs administrations within the European Union in the framework of global cooperation and standardization efforts in all domains where an aligned internal compliance program is required.

To make AEO effective, adjusting and extending benefits, and working towards outreach and mutual understanding initiatives is important in a time when companies assess whether or not the new Union Customs Code is the right opportunity to be certified, and if its benefits overweigh its costs.

18 Integrating additional requirements in the questionnaire may allow adapting AEO status for both Customs safety and security and the verification of internal compliance programs adapted to export control requirements and nonproliferation purposes.

Benchmarking and Professional Associations: An Immersive Exploration of Non-Traditional Channels for Industry Outreach

ROBERT SHAW AND CATHERINE DILL[1]

Abstract

Industry outreach is well established as an international best practice in the implementation of strategic trade controls. Through a discussion of past benchmarking activities and a professional association case study, this article will argue that industry benchmarking activities and the work of professional associations represent genuine opportunities to augment more traditional government-to-industry outreach efforts. Benchmarking and professional associations' activities may become independent and self-sustaining within industry, allowing national authorities to focus traditional outreach and enforcement resources more efficiently, and ultimately resulting in a tangible benefit of social responsibility for companies, enhanced national strategic trade control implementation, and heightened international security and WMD nonproliferation.

Keywords

Industry outreach, Benchmarking, Professional associations, Compliance best practices, Strategic trade controls implementation, Silicon Valley

1 Mr. Robert Shaw is the Director of the Export Control and Nonproliferation Program for the Middlebury Institute of International Studies (MIIS) at Monterey's James Martin Center for Nonproliferation Studies (CNS). His research interests include strategic trade controls and their relationship with emerging dual-use technologies, the role of industry in efforts to counter illicit WMD-related trafficking and supply chain networks, and the fostering of nonproliferation awareness within organizations. Prior to joining CNS in 2010, Mr. Shaw worked for over a decade in the private-sector, specializing in export control and international supply chain management. This included tenure as a senior manager with Toshiba America, Inc.'s Procurement & Export Division, where he was responsible for the development, implementation and oversight of the division's internal export compliance program. Mr. Shaw also serves as an adjunct professor for the Middlebury Institute, teaching a graduate-level course on strategic trade controls and nonproliferation. Catherine B. Dill is a research associate at the James Martin Center for Nonproliferation Studies, Middlebury Institute of International Studies at Monterey.

Introduction

Industry outreach is well established as an international best practice for the implementation of strategic trade controls. In this context, outreach refers to a national authority's efforts to educate private companies on laws and regulations governing trade in sensitive goods and technologies. The channel of communication is from government to industry. In the jurisdiction of some national strategic trade control systems, a quasi-governmental institution or even an NGO may take the lead on such education, but at the direction of, or at least with tacit endorsement by the government. United Nations Security Council Resolution 1540 reinforces the government-to-industry channel in Operational Paragraph VIII, which calls upon states to "develop appropriate ways to work with and inform industry and the public regarding their obligations under such laws."[2]

However, private companies learn about their obligations under strategic trade control laws and regulations through other channels as well. Briefings by for-profit law firms and consultancies are an obvious example, and the structure of this training is similar to what is used by governments: a workshop or seminar, often featuring panel discussions and Q&A. Less visible, but perhaps equally if not more influential, are company-to-company communications. These can take many forms but feature one or more companies communicating information—in effect, outreach—to other companies. One variant of this is readily found on the Internet: a company's website communicating information about strategic trade controls and the export control classifications and requirements associated with its products.[3] Although corporate social responsibility is a motivation here, there is a business rationale for posting such information, as it efficiently supports the firm's customers and end-users with queries regarding the export control of a company's products.

Other modes of intra-industry outreach-related communication are less passive than a webpage, and this article explores two of them: a) benchmarking among companies on export and sanctions compliance topics; and b) the activity of professional associations. Both are examined here as case studies, utilizing an "immersive" methodology, as each of the authors participated substantively in at least one of the activities across the past year. The authors, although primarily researchers for NGOs, were invited by industry to participate actively and provide substantive contributions in organizing communications among the other participants. Already having attended industry professional association events as well as observing one benchmarking event, the authors recognized these venues as opportunities to explore first-hand how companies share information on strategic trade controls and engage cooperatively in improving compliance best practices, as well as the profession itself. Moreover, participating in the activities promised to stimulate thinking with regards to their relationship with other modes of industry outreach and how they might be advanced. Indeed, through this immersive participation, the authors gained insights into this intra-industry channel of communication by which private companies access export compliance information—and the potential by which it can augment the more traditional channel of government-to-industry outreach.

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2 United Nations Security Council 1540, S/RES/1540, New York, April 2004.

3 The company websites of Microsoft and Cisco are illustrative examples of this, see: <https://www.microsoft.com/en-us/exporting/exporting-information.aspx> and <http://www.cisco.com/c/en/us/about/legal/global-export-trade.html>.

Benchmarking

The authors, through their work at the James Martin Center for Nonproliferation Studies (CNS) at the Middlebury Institute of International Studies at Monterey (MIIS), worked with industry partners in co-organizing benchmarking events from 2014–2016. In an industry context, the term "benchmarking" refers to efforts by companies—who may or may not be competitors—to share information on practices in areas deemed non-competitive, evaluate them, and ideally, come to a shared consensus on the 'best' practices and how they might be improved. Participants—mainly private companies—are generally motivated by the possibility that practices might be improved, usually related to reducing risk of regulatory non-compliance that could harm an industry sector overall and/or improving corporate social responsibility efforts.

The focus of the benchmarking in this case was the exchange of information on export control and sanctions regulatory developments and strategies to optimize compliance. The incentive for industry participation was reducing the risk of a major export control or sanctions violation that might, if severe enough, result in legislative action adding constraints on an entire industry sector's international trade activity—even if only one company perpetrated the violation.[4] CNS' efforts over this time frame supported the co-organization of biannual benchmarking sessions in multiple locations in the United States. During these events, the authors served as 'embedded' participants in industry benchmarking activities in which they were truly active contributors rather than just observers.[5]

Organization of Benchmarking Events

In 2014, industry practitioners reached out to CNS for support in co-organizing benchmarking events. Together with the industry partners, the authors chose to leverage established professional networks in the early planning stages. When choosing where to host benchmarking events, geographical location played a role in the selection process. In this case, the authors and their industry partners chose two locations where the topic of compliance with strategic trade controls has particular salience: Silicon Valley, the broader San Francisco Bay region, and Washington, DC.

Initially, benchmarking events were organized to be a full day to allow for adequate discussion time, but after feedback from participants, subsequent benchmarking sessions were shortened in order to accommodate the busy schedules of participants. The benchmarking events typically consisted of three to four substantive discussions led by a main presenter from industry or academia. The topics will be described in a subsequent section. In order to ensure topical relevance, the authors sought guest speakers with *de jure* expertise or specialized professional

4 An example of this is the U.S legislative response to a distinct set of export control violations (involving an equally limited number of aerospace companies) in the mid-to-late 1990s, resulting in all U.S satellites and related items being classified as purely Munitions Items (as defined by the U.S International Traffic in Arms Regulations), even if they were commercial in nature. Such action resulted in new export licensing requirements that impacted the entire U.S satellite industry and its international customers (due to stringent re-export controls related to Munitions Items).

5 While the authors coordinated and co-led activities, industry representatives played equal roles. The authors never solely led the activities and ensured that efforts were always in conjunction with industry representatives.

experience. To further incentivize participation and facilitate information sharing, the authors arranged for one speaker to come from a regulatory or law enforcement body to discuss recent developments.[6]

With regards to participants, the authors designed the events for experienced company export compliance professionals at all levels in the IT and high tech industries, including legal counsel and compliance experts. In addition to interactive discussions, the sessions typically featured a benchmarking exercise—usually involving polling questions—on key challenges facing the export compliance field.

Role of NGOs (CNS)

Engagement with these events confirmed that NGOs can play a substantive role in the industry benchmarking process, namely through the independence that such organizations may bring. NGOs can contribute an academic perspective to benchmarking events as well as leverage relationships with regulatory and law enforcement communities to bring relevant information to industry representatives. Perhaps most importantly, NGOs can serve as effective facilitators through both their academic independence and specific expertise on strategic trade control issues.

Role of Industry

Sufficient industry participation is the most crucial element to the success of benchmarking events. The authors collaborated with key industry sponsors to organize events and invite relevant compliance participants.[7] In order to foster a broad discussion, the authors and their industry-based co-organizers invited a range of industry participants, including those from both large and small companies and from a diverse set of companies ranging from traditional manufacturing firms to those dealing exclusively with intangible technologies.

Topic Selection

The program was structured as a benchmarking roundtable, with a focus on U.S export controls and sanctions generally, and red flag detection, due diligence research, watch list screening, and technology controls related to cloud computing as specific discussion topics. This structure enabled the facilitators and the participants to go into more depth discussing industry perspectives and understanding of illicit procurement and diversion activity. Additionally, this structure allowed a safe space for participants to vent any frustrations and share advice for establishing and maintaining an efficient compliance program.

Topic selection depended on both completed surveys submitted by participants and current events at the time of the benchmarking sessions. For example, during the negotiations leading up to the Iran Joint Comprehensive Plan of Action, many topics surrounded the implications of the Iran nuclear deal on sanctions and compliance efforts. Similarly, U.S and EU Crimea-related sanctions on Russian entities and industry sectors became an important topic around which industry representatives could share their own best practices.

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6 The lunchtime keynote speaker would not participate in the full event in order to allow for a safe and open environment for discussion amongst industry participants.

7 The authors would like to thank General Electric Corporation and O'Melveny & Myers, LLP for their efforts throughout the benchmarking planning process.

Discussions at early benchmarking sessions naturally led to future topic selection. Most significantly, discussions on Iran and Russia—and on denied parties more generally—often precipitated fruitful dialogue on screening procedures, which became its own topic at later benchmarking sessions.

Polling

In the benchmarking sessions the authors polled industry participants to query them on what they saw as the most pressing issues in the compliance field and then framed the events around the issues most important to participants. This methodology for planning the events was intended to incentivize participation as well as stimulate and enrich discussion amongst the participants.

Nature of Discussion and Results

The discussions were conducted under Chatham House rules, which the authors deemed crucial for fostering an open discussion, both with regards to managing proprietary concerns among industry representatives as well as enabling frank discourse on regulatory developments and compliance practices. The authors then prepared brief summaries of the discussion for participants after the conclusion of the events, but statements were not attributed to any specific individual or institution. The authors tried to act mainly as facilitators in order to encourage frank discussion amongst participants and not bias the discussion.

Discussion at the particular benchmarking events supported by the authors ranged from encryption-related export controls to sanctions on Iran and Russia. However, dominant themes included how the Crimea-related sanctions differed from other U.S Office of Foreign Assets Control (OFAC) sanctions programs and, related to all sanctions programs as well as WMD nonproliferation 'catch-all' controls the specific due diligence practices and research methods used to vet customers and end-users. Although no common set of due diligence research procedures resulted, the authors observed that the level of detail shared on research strategies was impressive and pointed to the potential for the emergence of updated best practices, at least on how customer/end-user screening should be approached (even if specific research methods vary from company-to-company).

Limitations and Advantages of Benchmarking

The experience of co-organizing the events illuminated for the authors both limitations and advantages to the structured benchmarking vehicle of intra-industry outreach. In terms of limitations, participants were often reluctant to share some sensitive data that may have enriched the discussions. Additionally, even though benchmarking generally facilitates rich dialogue, the events do not necessarily effect change to the procedures of compliance professionals on a day-to-day basis. An inherent capacity issue also exists—even large multinational companies have relatively small compliance teams, and consequently most representatives were from those companies with particularly robust compliance programs. Although some participants joined from Small- and Medium-size Enterprises (SMEs), they were few in number. Ideally, increasing SME participation should be a target of industry benchmarking efforts in future iterations.

With regards to advantages, most significantly, benchmarking facilitates company-to-company information sharing of best practices and can contribute to overall security goals, such as detection of illicit WMD-procurement and diversion. The benchmarking events discussed in

this article are informing the development of a set of transaction-vetting best practices that can be shared with compliance teams throughout industry.

Through this effort, the authors and participants learned of the existence of other informal industry benchmarking groups focused on export compliance. These range from relatively structured activities, organized with legal counsel assistance, for specific industry sectors in Washington DC to a monthly informal lunch among industry compliance practitioners in the Dallas-Ft. Worth area. This type of exposure to follow-on venues to further the discussion amongst participants is one of the main advantages of benchmarking events. The benchmarking vehicle also appears to be well suited to enable a deep dive on a particular compliance-related topic or topics in-depth, as opposed to more traditional training seminars, which may only cover key developments across a broad swath of issues.

Professional Associations

The authors' experience with benchmarking underscored that in order for such activities to occur, existing networks to facilitate them had already been created through professional associations.[8] This section discusses professional associations as another key vector of intra-industry outreach.

The Growth of Trade Compliance as a Profession

Once a largely clerical activity in exporting companies, typically positioned as a sub-unit within an outgoing shipping department, trade compliance positions today are positioned at all levels of a company, inclusive of the managerial, senior managerial and executive level. Recruitment agencies dedicated to the trade compliance profession are also promoting and competing for talent. Related to this, professional networking sites such as LinkedIn include discussion groups dedicated to export controls and related disciplines. Beyond the recruiting domain, professional associations have emerged around trade compliance as a distinct discipline and career field. At the global level, the International Compliance Professionals Association (ICPA) conducts educational programming and offers resources for its members.[9] In addition to ICPA, regional and local professional associations have also emerged, including our case example, WIT-NC.

The Case Example of WIT-NC

Organizing the Silicon Valley-based benchmarking events in particular utilized networks oriented around an association dedicated to professionals working in international trade: WIT-NC.[10] Formerly Women-in-International Trade Northern California, WIT-NC now supports trade compliance professionals in the San Francisco Bay Area, with a particular focus on Silicon Valley. The organization holds monthly dinner seminars for members, provides career development and mentoring services, and enables professionals working in the trade compliance

8 In the American case, in Northern California and to a lesser extent in Washington, DC, these professional networks included WIT-NC and the National Council on International Trade Development, <http://ncitd.org/>.

9 For more information on ICPA, see the association's website at <http://www.icpainc.org>.

10 For more information on WIT-NC, see the association's website at <http://wit-nc.com>.

field to periodically network and exchange information about developments. In late 2013, one of the authors was invited—without solicitation from the author—to participate on the WIT-NC "Speakers Bureau" which at the time determined the programming for the association's evening seminar series for the following year. The WIT-NC board was interested in having an NGO/academic perspective on the panel, along with access to the networks of potential guest speakers from this domain. In late 2014, the author was nominated to serve as co-leader of the Speakers Bureau as its activities transitioned from an annual to a monthly support role. Each month, the Speakers Bureau organized teleconferences to identify topics for the evening seminars and prospective speakers for the next three months of programming. Additional teleconferences were arranged with the speakers themselves to discuss the specifics of their presentations and align them with the professional interests of the WIT-NC membership.

These Bureau-organized discussions offered significant insight into which topics most interested industry compliance professionals and how they were discussed. For instance, strategies for due diligence research of end-use and end-users were highlighted as a "hot topic" in 2014 and seemed to motivate the professional association's engagement with the author. In effect, the teleconference discussions served as informal benchmarking activities, in which the participants—mostly trade compliance professionals working in Silicon Valley—shared their opinions on best practices and news of regulatory developments. Driving this was the care taken by the WIT-NC events planning team and its senior leadership to ensure that each speaker's planned presentation covered topics both truly current and of interest to the association's membership based on surveys and feedback. Indeed, after each monthly evening program, the WIT-NC board emailed feedback surveys to members who had registered and attended the event, asking for feedback. Annual surveys distributed to WIT-NC members supplemented this collection of attendee input.

In this context, "outreach" between companies—informing one another on strategic trade control laws and regulations—occurred along two paths: 1) the small group discussions by teleconference, and then 2) the monthly evening seminars themselves, organized in a format not unlike events found in the government-to-industry channel of outreach. Each monthly seminar featured one or more speakers, with the audience consisting of 50 to 60 professionals—mostly trade compliance specialists, well versed in strategic trade control concepts.[11] The topics centered on "bread-and-butter" regulatory and best practices information such as new or updated compliance requirements, strategies for meeting such requirements, and case examples of export violations, red flags, compliance checklists, and company internal compliance programs.[12] The ensuing question-and-answer sessions generated substantive discussion and occasionally lively debate over interpretation of trade control regulations.

Although similar in structure to government outreach, one notable difference is that the evening seminar program—as all WIT-NC activities—was organized by industry-based practitioners for industry-based practitioners: a true company-to-company communication channel—or, perhaps more accurately, a *professional*-to-*professional* channel. The nuance here is non-trivial and informs our concluding observations.

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11 WIT-NC, "About Us," available at <http://wit-nc.com/about/about.asp>.

12 For a detailed list of past events, see WIT-NC, "Past Events," available at <http://wit-nc.com/events/past.asp>.

Concluding Observations: Augmenting Traditional Modes of Industry Outreach

Industry benchmarking activities and the work of professional associations represent genuine opportunities to augment more traditional government-to-industry outreach efforts. "Augment" is the operative term here, as this article by no means intends to diminish the essential role of government-to-industry outreach efforts. Silicon Valley, home to *multiple* trade compliance professional associations (in addition to WIT-NC, the Professional Association of Exporters-Importers or PAEI supports the trade compliance professional community in the San Francisco-San Jose area), hosts regular and well-attended U.S Department of Commerce Bureau of Industry and Security (BIS) export compliance seminars, and in 2016, served as the location for BIS' major West Coast-oriented Export Control Forum.[13] Benchmarking activity springs up around such events, where networking is extensive. BIS' Annual Update Conference on Export Control Policy—a networking hub for the U.S national-level trade compliance community—drove scheduling of the Washington DC benchmarking events mentioned previously in this article.

At the same time, these non-traditional vehicles for outreach can truly amplify and sustain the efforts of the traditional channel. Based on the authors' foray into the operations of these intra-industry activities, the following observations are noted with an eye toward informing the future of industry outreach strategies, whether at international, regional, national or local levels.

The Importance of Community

These non-traditional vehicles for outreach cultivate something difficult to realize through annually organized workshops: a sense of community within industry. By operating at the professional-to-professional level, through frequent discussion-oriented events—both formal and informal—benchmarking roundtables and professional associations like WIT-NC enable sustained communication between industry practitioners on substantive topics. The result is not only an increased awareness of strategic trade control developments and new thinking in the field, but a shared sense among the participants that they belong to a *profession*, a community with common goals and challenges.

Within this community, 'champions' may emerge who proactively take on leadership roles in the associations, or guide discussion at benchmarking events. Such champions can shape the direction of the strategic trade control community within industry and offer conduits for more sustained government-to-industry communication as well.

Such a community appears to be thriving at a local level in Silicon Valley and extends nationally in the U.S environment based on our observation of industry interaction at events such as the BIS Update and the benchmarking events specific to Washington DC. A caveat, though, needs to be mentioned here, which is that some aspects of the U.S national export control environment may have influenced the depth and shape of this particular community. Specifically, the U.S national export control environment includes a well-developed legal support sector, consisting of multiple law firms and a wide range of consultancies (both firms and sole proprietor businesses), which aid exporters with compliance requirements (namely item classification and interpreting regulations) and, frequently, communication with national

13 For more information on the Professional Association of Exporters-Importers, see the association's website at <http://www.paei.org>.

authorities. That said, industry practitioners participating in CISTEC (Center for Information on Security Trade Controls) in Japan and the industry engagement work of Project Alpha at King's College London in the United Kingdom are examples of community formation outside of the U.S geography, although many of the practitioners are likely well-versed in U.S extra-territorial re-export controls.

However, the CISTEC and Project Alpha examples suggest that NGOs or even quasi-governmental organizations may fill a 'community-reinforcing' role characteristic of the one played by law firms in the U.S As per the case studies featured in this article, the authors' affiliation with a research institution was beneficial in the co-organizing of benchmarking roundtables. For emerging strategic trade control systems where intra-industry strategic trade control communities are still nascent, NGOs—working in conjunction with national authorities—may be able to help foster or accelerate their development.

A Way to Engage Small and Medium Size Enterprises?

The authors observed that specialists from Small- and Medium-Sized Enterprises (SME)s attend both the benchmarking events as well as WIT-NC's monthly seminar events. However, the participants from SMEs were definitely fewer in number when compared with those from Fortune 500 companies, illustrating that the challenge of connecting with smaller firms extends to non-traditional modes of industry outreach. Nonetheless, the potential for these intra-industry outreach vehicles to engage SMEs should not be underestimated. Professional associations in particular may appeal to an SME-based specialist who wishes to learn more about strategic trade controls and compliance strategies efficiently and at a reasonable cost. Most likely, trade compliance will comprise only a portion of the specialist's portfolio of responsibilities, as his or her employer may not have enough resources to employ a full-time trade or export compliance manager. Annual membership and monthly event fees for professional associations like WIT-NC are economical when compared with many workshops.[14] Additionally, professional associations' emphasis on mentoring and welcoming new arrivals in the field may make them more appealing to prospective members from SMEs.[15]

A Future Opportunity for Measuring the Impact of Outreach?

Polling and annual membership survey components of benchmarking and professional associations also suggest that an opportunity exists for more quantitative assessments of industry compliance—and, by extension, effectiveness of industry outreach strategies. In theory, regular benchmarking events combined with polling—perhaps sustained by involvement of professional associations and/or NGOs—if conducted on a year-by-year basis, for example, may allow advances in industry compliance to become visible and supported by data.

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14 As of this writing, the conference-only registration costs for American Conference Institute's 9th National Export Controls Forum on International Technology Transfers, Cloud Computing & Deemed Exports is USD $2,095, see: <https://www.americanconference.com/international-technology-transfers-cloud-computing-deemed-exports-883l17-was/pricing/>, whereas the typical cost for attending a WIT-NC monthly event is USD $45 for members and USD $65 for non-members; in May 2016, WIT-NC held an event titled "Cloud Computing in a Complex Regulatory Environment," see: <http://wit-nc.com/events/event.asp> and <http://wit-nc.com/events/past.asp>.

15 "Mentor," WIT-NC, <http://wit-nc.com/membership/mentor.asp>.

Technologies available to support both in-meeting and "virtual meeting" polling—for instance, consoles and/or software that allow meeting participants to respond to yes/no or multiple choice questions anonymously, with the results tabulated immediately—could augment such an effort. Here, though, the advantages of professional associations' membership being relatively stable despite members moving from company to company could pose a challenge, in that for a specific company, sustained connection with the benchmarking activity and/or the professional association is not a given. Still, some of these above variances could be mitigated if efforts were made through a large organization, spanning multiple localities or even countries. The possibility of these intra-industry modes of outreach supporting metrics-based assessment may therefore warrant further study.

A Role to Play for National Authorities?: Striking the Right Balance

When developing multilateral or national-level strategies for industry outreach, regimes and national governments should consider the education and information sharing that might already be occurring within benchmarking and professional associations. It may be possible to engage in such activities directly by offering guest speakers and special briefings. At the same time, keeping a certain 'distance' from the activity may support its authenticity as a truly self-organized activity within industry and an opportunity to share information freely without the caution associated with regulators being "in the room." Striking the right balance is important, but however realized, a steady flow of communication between national authorities and professional associations in particular introduces some unique advantages for outreach strategies. Specifically, trade compliance professionals, including 'champions' who lead industry-based communities, may move from company to company, as mentioned above, but stay with the association over the course of their careers. Accordingly, government-to-industry outreach that includes professional associations can withstand a sometimes volatile industry environment that may feature mergers and acquisitions, division closures, mass layoffs, and even economic booms driving increased "job hopping" within certain industry sectors.

In sum, the vibrancy of the non-traditional modes of industry outreach considered here suggests a possible delineation of multilateral and/or national outreach strategies into "company-focused" education and "professional-focused" education. Also—and perhaps more significantly—the non-traditional, intra-industry modes of communication here carry with them the possibility of becoming truly self-sustaining. Benchmarking and professional associations' activities are being self-organized by industry, independent of national authorities, and if sustained, then national authorities may be able to focus traditional outreach and enforcement resources more efficiently, targeting critical need areas such as sectors producing the most sensitive goods and technologies. The result can be beneficial for socially responsible companies, national strategic trade control authorities, and ultimately, the focus of these efforts: international security and WMD nonproliferation.

Engaging the Private Sector in Nonproliferation: Reflections from Practitioners

IAN STEWART AND JONATHAN BREWER[1]

Abstract

This paper examines the role of the private sector and its efforts to facilitate continued engagement to support nonproliferation. This includes examining the efforts of one academically-based group established by the authors and international regimes such as the Nuclear Suppliers Group. The paper also explores what further measures are required for the private sector to more robustly contribute to nonproliferation. These further measures focus on supply chain issues. The paper concludes that while much progress has been made in engaging the private sector in nonproliferation, much work remains if future proliferation episodes are to be prevented.

Keywords

Strategic trade, industry outreach, nonproliferation, compliance, supply chain

1 Dr. Jonathan Brewer is a Visiting Professor at the Department of War Studies, an Adjunct Senior Fellow at the Center for New American Security, Washington DC, and an Associate Fellow at the Royal United Service's Institute, London. From 2010 to 2015 he worked as financial expert on the UN Panel on Iran created pursuant to resolution 1929 (2010), based in New York. From 1983-2010 he was a member of HM Diplomatic Service and served in British Embassies in Luanda, Mexico City and Moscow. He was Head of Counter-Proliferation (2005-2010). Ian J. Stewart is a Senior Researcher in the Department of War Studies at King's College London where he heads Project Alpha. He is also the training advisor for the consortium implementing the European Union's Partner-to-Partner program on dual-use goods. He is a specialist on issues related to export controls, sanctions, and non-proliferation more generally. Ian, an engineer by training, has many years of experience in government and working with companies and international organizations in relation to non-proliferation matters. He was also a research fellow at Harvard's Belfer Center for Science and International Affairs.

Introduction

Since the later 1970s, there has been an increasing recognition of the role that industry plays as the 'first line of defense' in countering proliferation of goods and materials related to weapons of mass destruction (WMD). At least two of the export control regimes have adopted measures intended to facilitate the adoption of good practices in industry. At least two industry-led movements are also underway.[2] Numerous companies have also adopted internal compliance programs (ICPs). Despite this progress, the potential for companies to be involved in proliferation persists. Looking to the future, it is not clear that past involvement of companies ranging in type from small and medium-sized to state-owned enterprises in proliferation will not continue. Looking to the future, therefore, it is necessary to consider what is expected of the private sector and what further steps must be undertaken to prevent private sector involvement in proliferation.

The purpose of this paper is to examine these issues. The paper begins by exploring what expectations exist around the role of the private sector in countering proliferation. This includes looking at the nature and content of good practice guidelines as presented by numerous organizations, including governments and certain export control regimes. The paper then considers efforts to engage the private sector in countering proliferation. This includes efforts of governments, civil society, and industry itself. Third, the paper examines the gaps in private sector implementation of nonproliferation controls. These are identified as a) issues related to compliance and b) issues related to the supply chain.

The Role of the Private Sector

Identifying proliferation-related procurement can be a hard task for private sector entities. Iran, for example, developed sophisticated methods to evade United Nations and unilateral sanctions on its nuclear and ballistic missile programs, including changing names of companies in the procurement networks, using front companies in states bordering Iran and further afield, mislabeling equipment, procuring sub-optimal but non-sanctioned substitute equipment, and trading through third countries. Nevertheless, there is plenty of information about Iran's and DPRK's illicit procurement activities available from a variety of public sources, including reports of UN Sanctions Panels and studies published by Project Alpha, the International for Science and International Security (ISIS), and other organizations.[3]

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2 Sandro Zero, "Towards Smarter Export Control," World Nuclear News, October 6, 2015, <http://www.world-nuclear-news.org/v-towards-smarter-nuclear-export-controls-0610151.html> and "Nuclear Power Plant and Reactor Exporters' Principles of Conduct," October 22, 2014, <http://nuclearprinciples.org/the-principles/>.

3 Reports of the UN Panel on Iran can be found on the UN website <www.un.org> (S/2012/395, S/2013/331, S/2014/394, and S/2015/401); Reports of the UN Panel on the DPRK can be found at: <https://www.un.org/sc/suborg/en/sanctions/1718/panel_experts/reports>; Ian Stewart and Nick Gillard, "Iran's Illicit Procurement: Past, Present and Future," Project Alpha, July 24, 2015, <http://www.projectalpha.eu/proliferation/item/428-iran-s-illicit-procurement-past-present-and-future> and David Albright, Andrea Stricker and Houston Wood, "Future World of Illicit Nuclear Trade: Mitigating the Threat," Institute for Science and International Security," ISIS, July 29, 2013, <http://isis-online.org/uploads/isis-reports/documents/Full_Report_DTRA-PASCC_29July2013-FINAL.pdf>.

The private sector's role in countering proliferation that goes beyond the legal obligations of states to comply with international sanctions or other controls that began in the late 1970s have been exemplified in many cases. One example is in 1979 when the European company Emerson realized that its inverters were likely destined for a nuclear end use in Pakistan, halted exports to Pakistan, and brought the fact to the attention of British authorities. The UK, in turn, reached out to other states that were potential suppliers of inverters. The purpose was to dissuade another state from supplying the goods that the British firm had opted not to supply (i.e., to prevent 'undercutting' as it is recognized today).[4] Pakistan thus began to utilize covert procurement techniques in the late 1970s.

Proliferation has continued through this modality ever since.[5] Pakistan, Iraq, Iran, North Korea, and others have all utilized covert procurement of dual-use goods through non-state actors to further their nuclear and missile programs.

Defining the role of the private sector in nonproliferation is nonetheless not straightforward. Under the international system as it exists today, for example, the basic role of the private sector is to be compliant with the laws of the jurisdictions in which they operate. It is, according to international law, the responsibility of the state to decide how to implement its commitments, including with regards to nonproliferation. It is with this in mind that United Nations Security Council Resolution 1540 calls upon states to adopt and enforce appropriate and effective laws and to find ways to 'work with and inform the private sector.'[6]

From another perspective, companies might be expected to act within their own self-interest even if this differs positively or negatively from the laws of the jurisdictions in which they operate. It is in this context that factors such as reputation become key. Factors beyond laws can influence the actions of companies.

A third perspective is that broader factors might act upon the behavior of companies. It could be, for example, that moral considerations affect the decision-making calculus of companies—perhaps principally through the actions and decisions of specific employees.

Engaging the Private Sector

The authors of this paper, when formerly working as UK Government counter-proliferation practitioners, independently concluded that the Government could make better use of the capabilities of and information held by the private sector. Although several UK Government Departments and Agencies implemented outreach programs to manufacturers and other relevant companies, these tended to focus more on export control legislation and good implementation practices. However, companies that manufacture or transport goods and materials required by illicit proliferation programs may possess actionable information about clandestine procurement networks, and effective mechanisms need to be set up to ensure that such information is shared with law enforcement or other relevant agencies so that action can be taken to combat proliferation.

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4 On the Emerson episode, see Gordon Corera, *Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A.Q. Khan Network* (Oxford: Oxford University Press, 2006), p. 26.

5 See for example, Glenn Anderson, "Points of Deception: Exploring How Proliferators Evade Controls to Obtain Dual-use Goods," *Strategic Trade Review* 2 (Spring 2016).

6 United Nations Security Council 1540, S/RES/1540, New York, April 2004.

Project Alpha within the Centre for Science and Security Studies, King's College, London, in 2011, was set up in order to encourage and support private sector efforts to detect and deter proliferation, and thus support the Government's strategic goal to reduce the threat to the UK from proliferation of WMD.[7] The Project sought to improve the implementation by the private sector of controls to counter illicit trade by conducting industry outreach in the UK in partnership with the Government's Export Control Organization and other relevant Departments, by providing services such as free e-learning, training and consultancy, and in particular in China by conducting industry engagement in partnership with Chinese authorities. Project Alpha maintains a 'Partners Initiative' linked to the Nuclear Suppliers Group (NSG) good practice guidance to encourage companies to be proactive in preventing proliferation-related trade.[8] In order to expand knowledge within Government and the private sector of the practices and methods used by proliferation networks, Project Alpha also researches and publishes examples of illicit trade, partly based on information provided by the private sector in the UK and elsewhere.

While it is undoubtedly true that no respectable private sector entity would wish to be involved in proliferation procurement, because such procurement is hard to detect, and because the risks might seem to be low, companies may be resistant to investing necessary resources in adequate compliance programs. It is the responsibility of governments to build the narrative to encourage them to do so. Efforts to engage the private sector ideally should build upon one or more of the several factors that can be used to induce companies to act in specific ways, but typically, the approaches taken by many governments mainly relate to the adoption and enforcement of laws, combined with awareness raising and training with the aim of inducing compliance. For example, many, or perhaps most governments that implement export controls are thought to have some form of outreach program in place.

In recent years, there have also been a variety of efforts to encourage and foster companies to incorporate export control provisions into their corporate social responsibility programs. For example, all members except Russia of the Nuclear Suppliers Group endorsed the "Good Practice Guidelines for Corporate Social Responsibility" adopted in 2013. These Guidelines, reproduced in Annex 1, build upon recommendations for private sector implementation of counter-proliferation standards earlier proposed by one of the authors of the present paper.[9]

There has perhaps been a less systematic effort to build upon the expanded idea that individual employees can be champions for nonproliferation within a company—at least as instigated by governments. In a number of countries, bottom-up and civil society-led efforts have created communities of compliance individuals that meet to discuss export control and nonproliferation issues. Examples known to the authors include, in addition to the Project Alpha 'partners' initiative, the network created by the James Martin Center for Nonproliferation Studies, Middlesbury

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7 Project Alpha was conceived by Dr. Jonathan Brewer following his retirement from government service. Dr Brewer then joined the UN Panel on Iran in New York, and Ian Stewart was seconded from the British Ministry of Defense to King's College London to set up and run the project.

8 "Good practices for Corporate Standards to Support the Efforts of the International Community in the Nonproliferation of Weapons of Mass Destruction," Nuclear Suppliers Group, <http://www.nuclearsuppliersgroup.org/images/Files/National_Practices/NSG_Measures_for_industry_update_revised_v3.0.pdf>.

9 Jonathan Brewer, "The Private Sector Plays an Important Role in Delaying the Development of the Iranian Nuclear Program," The Bulletin of the Atomic Scientists, November 30, 2010, <http://thebulletin.org/iran-and-west-next-steps/private-sector-plays-important-role-delaying-development-iranian-nuclear>.

Institute for International Studies at Monterrey, (CNS), and the networks of individuals certified by the Center for Information on Security Trade Controls (CISTEC), in Japan. In this context, it can be considered that there is an overlap between professionalization of compliance officials and the creation of industry champions. This overlap is not necessarily complete, however. The authors are aware of suggestions that a mechanism be created for whistle blowers to alert appropriate parties over concerns about a company's actions with regards to nonproliferation, for example. Evidently, potential whistle blowers might not be limited to compliance officials.

A variety of requirements exist that are important in the context of the implementation of each of these measures in practice. They include the preparation and publication of guidance on export controls, internal compliance programs, product rating programs and so on. They also include the provision of training by governments, academia, and commercial service providers.

Unfulfilled Potential

Despite the variety of tools and levers that are available to engage private enterprises in nonproliferation, there are a variety of limitations to the approaches, which mean that the private sector is not yet fully functioning in its potential role as the front line of defense in countering proliferation. The principal reason for this relates to the nature of proliferation and commerce. While proliferators might still submit inquiries to manufacturers of sensitive goods directly, improving implementation of export controls in major firms has resulted in an offset activity. Proliferators instead often use either front companies or middlemen when seeking to acquire sensitive goods. A variety of cases highlight this point, including networks set up by the procurement agent Li Fang Wei in support of Iran's illicit programs, separate Iranian procurement networks detected by Rakon, and networks described by the UN Sanctions Panel on the DPRK.[10]

Another trend is for proliferators to import parts, materials and components that are not listed in control regimes such as the NSG or Missile Technology Control Regime (MTCR) and thus are not automatically subject to export controls. Investigations carried out by the UN Sanctions Panel on Iran at one point demonstrate this pattern: of thirty cases of goods or materials interdicted on the basis of information that they were intended for programs prohibited under UN sanctions on Iran, only ten percent were of controlled items.[11] There are likely a number of reasons for this: with the constant improvement of technology globally, the number of items which can realistically be controlled by export control authorities, and thus included in the NSG or MTCR control lists, is decreasing; the manufacturing base for most controlled items is very small, whereas the manufacturing base for materials and equipment might be larger, or that illicit proliferation programs may be content to build a low-quality facility rather than a facility that meets Western industrial standards. Companies producing non-controlled items will generally be less sensitized to export control issues.

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10 On Karl Lee, see Ian Stewart and Daniel Salisbury, "Wanted: Karl Lee," The Diplomat, May 22, 2014, <http://thediplomat.com/2014/05/wanted-karl-lee/>. On DPRK, see "UN Panel on DPRK Created Pursuant to Resolution 1874 Final Report," S/2016/157, February 2016, pp. 62-65, <http://www.un.org/ga/search/view_doc.asp?symbol=S/2016/157>.

11 "Final Report of the UN Panel of Experts Established Pursuant to Resolution 1929 (2010)," S/2014/394, Annex II, June 2014, < http://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/S_2014_394.pdf>.

The problem is that the current levers, as described in the previous section, are so far still proving insufficient to compel companies to address the supply-chain proliferation risk. It is helpful to examine each in turn.

National Compliance Requirements

A basic feature of the international system as it exists today is that it is for each government to implement and enforce controls within its own jurisdiction. For example, the authors' impression is that Chinese authorities have tended to focus efforts on State Owned Enterprises while acknowledging the need for better engagement with Small and Medium-sized Enterprises.[12] Furthermore, although bodies such as the World Customs Organization have emphasized the need for enhanced implementation of export controls, there are as yet no internationally recognized standards for implementation.[13] Procurement networks are able to exploit such weaknesses.[14]

With few exceptions, although governments may require their exporters to carry out end-user checks in some form, generally they do not have an ability to conduct extraterritorial enforcement. The effect of this is that governments focus on controls at the point of export. Some countries such as the U.S do conduct some pre- and post-shipment verification to validate the *bona fides* of the end user. These measures can prevent transfers to front companies. However, they are poorly suited to ensuring that goods are not later diverted. Substantial onward transfers of proliferation-sensitive goods have taken place as a result of these limitations.

Corporate Social Responsibility and Industry Champions

In principle, corporate social responsibility and internal compliance programs could allow companies to go beyond the limitations of export compliance as set out above. However, there are few signs that nonproliferation principles are being systematically embedded into CSR in a widespread way. Similarly, beyond appointment of export compliance officials, there are few signs that compliance champions are emerging to address supply chain issues other than in a handful of cases. For example, U.S firm MKS instruments put in place a supply-chain compliance system for vacuum equipment that appears to be relatively robust.[15] The 'controlled delivery model' as introduced by MKS was suited to the nature of the vacuum gauge market. However, it is a model that might not be well-suited to other sectors as it required the elimination of distributors from the supply chain.

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12 Conclusions reached following Project Alpha/China Arms Control and Disarmament Association Industry Outreach workshops in Qingdao, China in February 2012 and Dalian, China in November 2012.

13 See for example, "Conventions and Programs Concerning Export Controls," World Customs Organization, <http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/conventions/export-controls.aspx>.

14 "Final Report of Panel of Experts Created Pursuant to Resolution 1929 (2010)," S/2013/331, Paragraph 119, June 2013, < http://www.iranwatch.org/sites/default/files/un-panel-of-experts-report-june-2013.pdf>.

15 Ian Stewart, and John McGovern, "Beyond Compliance: Preventing the Diversion of Sensitive Vacuum Measuring Equipment-The 'Controlled Delivery Model'," *CSSS Occasional Paper Series* 3 (September 2013).

Towards a Supply Chain Approach to Nonproliferation

If the limitations of the current approach to export controls are apparent, perhaps so too is the main remedy. There is a need to address proliferation risks in the supply chain. A satisfactory supply chain solution might be considered to start with adoption by companies involved with corporate best practices or a variation of them. In practice, this would involve an expanded use of measures such as pre- and post-shipment verification. Development of this concept requires engagement with, amongst other bodies, trade and professional associations, many of which are already grappling with issues relating to harmonization of standards and documentation within the supply chain.

However, it might also require additional measures. One such measure is the concept of import notification, where exporters (or exporting states) inform the authorities of recipient countries that goods have been or will be exported to a company so that the receiving authority can conduct industry outreach or end use/end-user checks.

Another important supply-chain lever relates to the service sectors, such as the finance, freight and shipping industry. Companies operating in service sectors have access to a variety of information that could be used for supply chain compliance and due diligence activities. The Secretary General of the international freight-forwarders association, FIATA, noted in November 2014, "Diligence exercised by logistics companies can significantly reduce the burden on governments that are already stretched thin."[16]

However, presently, the compliance approaches of such firms are generally limited to ensuring that transactions to a party are not on a sanctioned entity list. Going beyond this will require in particular adequate information from national authorities about prohibited WMD activities. But new tools are also becoming available, for example, Project Alpha has recently created a key word list linked to the control lists of the export control regimes so that such firms can screen transactions for the keywords actually used by industry- as opposed to the terms used in the control list, which are generally of low value for transaction screening purposes. Commercial organizations also offer vessel tracking tools that integrate entity screening systems.[17] It appears that such tools are increasingly being used by the financial services sector to track the movement of vessels. The authors are also aware of companies that are working to make it possible for shipping firms and banks to know whether items being transacted are subject to control or prohibition.

There are also more straightforward measures that can be taken. For example, all companies should ensure that their business partners have in place a trade compliance program. Furthermore, as pointed out by the UN Sanctions Panel on Iran following its investigations, multi-national companies should ensure that compliance standards enforced in their domestic jurisdiction

16 Marco Sorgetti, "Statement on Nonproliferation Risks," Governance and Compliance Management Dialogue with Industry in Support of UN Security Council Resolution 1540, Frankfurt, Germany, November 21, 2014. <http://fiata.com/fileadmin/user_upload/documents/Position_Papers/Non_Proliferation_UN_1540_RESO_speech_21_11_2014.pdf>.

17 For example, see Polestar: PurpleTRAC website, <http://purpletrac.polestarglobal.com/overview>.

are equally well-implemented by subsidiaries overseas.[18] There is presently no internationally recognized standard for an internal compliance program in the trade compliance field, but in the European Union, some consideration has been given to the question of linking trade compliance to the Authorized Economic Operator (AEO) framework.[19]

More generally, and as set out above, there is a need to integrate supply chain considerations into both national and company levels' implementation of export control measures. In terms of national implementation, governments must take supply chain issues into account both at the time of considering a license and during dialogue with companies. This might also be an issue that could be taken up systematically by the UNSCR 1540 committee as well as the export control regimes.

The fact that illicit trade involving non-state actors continues to be a problem nearly four decades after the first cases were detected might suggest that the current system of export control governance is poorly suited to bringing about such supply-chain approaches. In this context, it is perhaps non-governmental efforts that are best placed to conceptualize and develop solutions.

Conclusions

The general structure of international law and the nonproliferation regime places primacy upon the state. The state is held to account for its own actions and for the actions of actors upon its territory. Nonetheless, the nature of proliferation today often means that it is the private sector or enterprise that is the source of proliferation rather than the state itself. It is for this reason that states are required under resolution 1540 to find appropriate ways to work with and inform industry. Indeed, for proliferation to be countered, it is not sufficient for industry to be aware of its legal obligations. Partnerships between government and industry are required so that both may leverage each other's respective information and resources.

Governments tend to have a greater appreciation of the problem of proliferation. Governments will have a view about which states pose a proliferation concern. Governments might also have intelligence information about specific entities or activities that could be proliferation-related. Industry, on the other hand, tends to have less of an appreciation of the nature of proliferation. Nonetheless, the technical and business information held by industry can often be essential in nonproliferation efforts.

More needs to be done to leverage the support that the private sector can provide to governments' counter-proliferation efforts. One reason that Project Alpha was created was to facilitate this. As other organizations including CNS, CISTEC, and the Chinese Academy of International Trade and Economic Cooperation (CAITEC), have demonstrated, non-governmental organizations can be important facilitators in this regard. In order to detect and counter the next proliferator as well as to deal with current proliferators, a key priority for the nonproliferation community should be to encourage and foster the activities of the non-governmental sector.

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18 Final Report of Panel of Experts Created Pursuant to Resolution 1929 (2010)," S/2013/331, Paragraph 152, June 2013, < http://www.iranwatch.org/sites/default/files/un-panel-of-experts-report-june-2013.pdf>.

19 The authorized economic framework is principally a Customs compliance standard. Many governments have created AEO Programs under the WCO's SAFE framework. There is mutual recognition of the standard between some governments.

Annex 1: Good Practices for Corporate Standards to Support the Efforts of the International Community in the Nonproliferation of Weapons of Mass Destruction

The following practices are authored by the Government of the United Kingdom of Great Britain and Northern Ireland with the help and support of the Governments of Australia, Canada, Finland, Germany, Japan and the United States of America. These practices recognize that proliferation of Weapons of Mass Destruction has the potential to seriously threaten international peace and security and undermine economic, commercial and social development; and recognize the important role that the diverse commercial sector (exporters, shippers, freight-forwarders, brokers and indeed all those involved in commercial or financial transactions) can play in assisting multilateral efforts in nonproliferation of Weapons of Mass Destruction. These practices are not legally binding—they are intended to provide a platform from which individual companies may adopt internal practices and are not exhaustive. These practices complement existing legal obligations to comply with national law.

Practices

It is suggested that companies should seek to:

1.0 implement internal systems to ensure due-diligence checks are carried out on potential customers and business partners and the goods, software and technology that they wish to acquire, utilizing public information such as early warning lists, red-flag checklists and questionnaires provided by the United Nations, States and other parties with an interest in supporting the multilateral nonproliferation effort, and to consult with the relevant government authorities as necessary;

2.0 monitor, collate and vet inquiries within the scope of due diligence, relating to the acquisition of proliferation sensitive goods, software and technology;

3.0 consult government export control authorities before having any dealings with entities identified as being of proliferation concern either from public sources, from corporate monitoring systems or from contact with relevant competent authorities in states themselves;

4.0 implement best efforts to share information about illicit attempts to procure items for Weapons of Mass Destruction programs with security and other relevant agencies in the State where they are established and with business partners and others in instances where the State judges that broader publicity would be appropriate;

5.0 promote the adoption of due diligence and information sharing within the supply chain and with other business partners within the boundaries of legitimate protection of business and company information;

6.0 incorporate nonproliferation measures and export control compliance into existing Corporate Social responsibility statements;

7.0 encourage relevant industry-wide trade and professional bodies to recognize the importance of supporting and encouraging the nonproliferation effort and the measures set out herein; and

8.0 foster an open and transparent relationship with appropriate government and regulatory authorities.

Adoption and promotion of these practices will enhance active commercial sector support for nonproliferation by reducing the risk of inadvertent supply of items to illicit programs.