Tilting at windmills? The counterposing policy interests driving the U.S. commercial satellite export control reform debate

by

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ABSTRACT

United States strategic export controls—which treat commercial satellite technologies, related technical data, and defense services as munitions subject to the strictest export control criteria—have been under fire for decades. Critics argue that in attempting to bolster national security by limiting the transfer of space technologies to adversaries and potential adversaries, the U.S. has unintentionally and paradoxically harmed national security by undermining the space industrial base, the academic and research institutions that feed and grow that base, and the international partnerships that drive scientific and technological advancement. There are few, if any, unequivocal supporters of the U.S. export control regime as it stands. As a result, both regulatory and statutory reform initiatives are afoot. Yet this begs the question: if the problems are *and have been* so apparent, why have the regulations and concomitant organic legislation not been subject to reform before now? This thesis will deconstruct the current discourse (keeping in mind its historical underpinnings) and challenge the orthodoxies of the export control reform debate in order to determine, to the extent possible, the merits of individual arguments and claims.

RÉSUMÉ

La stratégie des Etats-Unis quant au contrôle des exportations, qui inclut les technologies des satellites commerciaux, leur données techniques, ainsi que les services de défense en tant qu'armes sujettes à des critères plus stricts de contrôle des exportations, essuie les critiques depuis des années. Ses détracteurs avancent qu'en essayant de renforcer la sécurité nationale par des restrictions au transfert de technologies spatiales à ses ennemis et adversaires potentiels, les Etats-Unis ont, malgré eux et paradoxalement, nui à la sécurité nationale en négligeant les bases de l'industrie spatiale, les centres de recherche et universitaires qui nourrissent et développent celles-ci, ainsi que les partenariats internationaux qui conduisent au progrès scientifique et technologique. Il y a peu, si ce n'est, aucun partisan inconditionnel au régime de contrôle des exportations américain tel qu'il est à l'heure actuelle. Par conséquent, des initiatives de réformes des lois et règlements se préparent. Cela soulève, cependant, la question suivante: si des problèmes sont si évidents, pourquoi les règlements et lois correspondantes n'ont-ils pas été sujets à une réforme plus tôt? La présente thèse a pour but de déconstruire le discours usuel (tout en tenant compte de ses fondements historiques) et remet en question la doctrine traditionnelle sur la réforme, dans le but de déterminer, autant que faire ce peut, le bien-fondé des raisons et revendications individuelles, en démêlant, notamment, le vrai du faux.

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INTRODUCTION

United States (U.S.) strategic export controls—which treat commercial satellite technologies, related technical data, and defense services as munitions subject to the strictest export control criteria—have been under fire for decades.[1] Critics argue that in attempting to bolster national security by limiting the transfer of space technologies to adversaries and potential adversaries, the U.S. has unintentionally and paradoxically harmed national security by undermining the space industrial base, the academic and research institutions that feed and grow that base, and the international partnerships that drive scientific and technological advancement.[2]

"At the most basic level, the export control debate represents the age-old tension between commercial and national security concerns."[3] Ideally, export controls seek to strike the appropriate balance between national security interests and economic interests.[4] These counterposing, though not necessarily mutually exclusive, policy interests are not static and so the balance tends to shift as the primacy of national security ebbs and flows.[5] The national security interests implicated involve keeping space technologies out of the hands of adversaries or potential adversaries; the economic

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[1] See generally U.S. Government Accountability Office, *Export Controls, Vulnerabilities and Inefficiencies Undermine System's Ability to Protect U.S. Interests* (26 July 2007) Report No. GAO-07-1135T, online: Government Accountability Office <http://www.gao.gov/new.items/d071135t.pdf>; John Heinz, *U.S. Strategic Trade: An Export Control System for the 1990s* (Boulder: Westview Press, 1991) (the late Senator Heinz' book includes many of the same complaints levied against the current export control regime—including the failure to recognize that the strength of the U.S. industrial base is inextricably tied with national security).

[2] See generally Committee on Science, Security, and Prosperity *et. al. Beyond "Fortress America" National Security Controls on Science and Technology in a Globalized World* (Washington D.C.: The National Academies Press, 2009) [*Beyond "Fortress America"*]; Margaret Finarelli & Joseph K. Alexander. *Space Science and the International Traffic in Arms Regulations: Summary of a Workshop* (Washington D.C.: The Nationals Academies Press, 2008); George Abbey & Neal Lane "United States Space Policy: Challenges and Opportunities Gone Astray" American Academy of Arts and Sciences (2009), online: American Academy of Arts and Sciences <http://www.amacad.org/publications/spaceUS.aspx>; Guy Ben-Ari *et. al. National Security and the Commercial Space Sector, Initial Analysis and Evaluation of Option for Improving Commercial Access to Space,* A Report of the CSIS Defense-Industrial Initiatives Group, Draft for Comment (30 April 2010), online: Center for Strategic and International Studies <http://csis.org/files/publication/100430_berteau_commercial_space.pdf>.

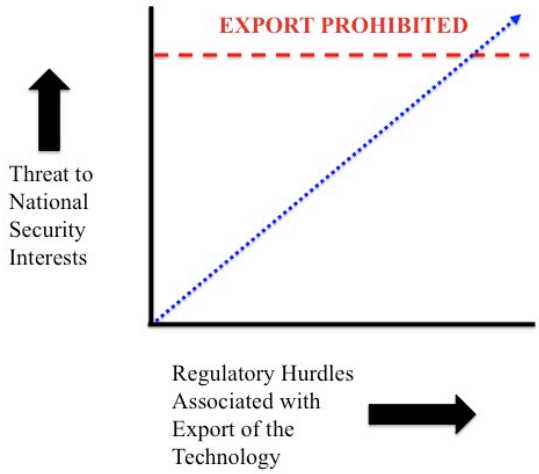
[3] U.S., *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, Hearing Before the Committee on Foreign Affairs of the House of Representatives*, 111th Congress (2010) 10 [*The Impact of U.S. Export Controls on National Security, Science and Technology Leadership*].

[4] See e.g. National Security Presidential Directive (NSPD) 49, *U.S. National Space Policy* (31 August 2006), online: DoC Office of Space Commercialization <http://www.space.commerce.gov/general/nationalspacepolicy/2006-NSP.pdf>.

[5] As one Department of Defense Official testifying before Congress described it, "[s]ometimes there is an inherent tension in them, but we need to do our best job to balance these goals." U.S., *Export Controls: Are We Protecting Security and Facilitating Exports? Hearing Before the Subcommittee on Terrorism, Nonproliferation and Trade of the Committee on Foreign Affairs House of Representatives*, 110th Congress (2007) 13 [*Export Controls: Are We Protecting Security and Facilitating Exports?*]. A Department of State Official, testifying at the same hearing used more pointed language, describing the goals as, "often in opposition." *Ibid.* at 14.

interests implicated involve the health of the indigenous space industrial base.[6] It follows that barring the export of space technologies *in toto* would harm the space industrial base because it would limit sales to U.S. customers only. As one U.S. congressman put it, "[i]f we are not able to sell…products to the broadest possible market, the global market, then our competitors will rise up, meet those needs and suddenly their innovations are outpacing ours."[7] Conversely, in the absence of export controls, space technologies would undoubtedly end up in the hands of adversaries or potential adversaries. While such a policy would inure to the benefit of the space industrial base, at least in the short term, it would clearly be detrimental to national security. Hence the need for a balance.

Figure 1



While the "balancing" analogy is useful for describing the interests at stake, the implementation of export controls are perhaps better understood this way: the greater the national security interest implicated by the export of a given technology, the higher the regulatory hurdles associated with export of that technology (See Figure 1, *supra*). For space technologies, these regulatory hurdles include registration of the exporting entity with the U.S. government (USG) regulator and pre-export licensure of the exported technology by the USG. If the national security threat is sufficiently high, the export is prohibited, irrespective of the potential economic interest at stake.

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[6] *Ibid.* at 2.

[7] U.S., *The Export Administration Act: A Review of Outstanding Policy Considerations, Hearing Before the Subcommittee on Terrorism, Nonproliferation and Trade of the Committee on Foreign Affairs House of Representatives*, 111th Congress (2009) 36 [*The Export Administration Act: A Review of Outstanding Policy Considerations*].

Striking the balance between national security interests and economic interests during the Cold War, which was marked by U.S. and Soviet hegemony in space and nonexistent, then nascent commercial space markets, was fairly straightforward: beat the Soviets at all costs.[8] With the exception of détente in the 1970's, the nation's resolve was solidified by the threat of nuclear holocaust.[9] As a result, national security prerogatives—namely, space and arms superiority—were at the fore, with economic interests playing a minor role.[10] Ronald Reagan's 1988 National Space Policy, which coincided temporally with the Space Shuttle Challenger disaster, the emergence of *Glasnost* and *Perestroika* in the Soviet Union, and the maturation of the relevant space technologies, was the first to not only recognize a distinct commercial space sector, but to offer it support.[11] Despite the collapse of the Soviet Union, that support has not been unfettered in the intervening decades. Globalization and other emerging threats quickly filled the void left by the threat of nuclear holocaust. As the U.S. hegemonic reign in space waned and robust multi-billion-dollar international commercial space markets emerged, striking the balance between national security interests and economic interests proved increasingly difficult for U.S. law- and policy-makers. This difficultly is evident in the retrograde legislation and piecemeal statutory and regulatory reforms made to the export control regime during this time, none of which have squarely addressed the paradigm shift that has occurred. As Brad Sherman, the Chairman of the House Subcommittee on Terrorism, Nonproliferation, and Trade put it, "[o]ur current export control policy was designed decades ago. Since then technologies have changed, the Cold War is over, and yet our export control regime remains pretty much unchanged."[12] Before delving into greater detail about the current export control regime and its evolutionary track, a brief recitation of history is in order to provide context for these points.

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[8] See Roger D. Launius, "Historical Dimensions of the Space Age" in Eligar Sadeh, ed. *Space Politics and Policy, An Evolutionary Perspective* (Dordrecht: Kluwer Academic Publishers, 2002) 3 at 16; Roger Handberg, "Rationales of the Space Program" in Eligar Sadeh, ed. *Space Politics and Policy, An Evolutionary Perspective* (Dordrecht: Kluwer Academic Publishers, 2002) 27 at 34; Christopher J. Bosso & W.D. Kay, "Advocacy Coalitions and Space Policy" in Eligar Sadeh, ed. *Space Politics and Policy, An Evolutionary Perspective* (Dordrecht: Kluwer Academic Publishers, 2002) 43 at 53.

[9] *Handberg, ibid.* at 35.

[10] Indeed, "[o]nly after…the ending of the Cold War and collapse of the Soviet Union, did the original national security rationale for a national civil space program become secondary, allowing for fuller articulations of other rationales. National security has never faded out of the picture, but the emphasis has become less military and more concerned with economic competitiveness." *Handberg, ibid* at 34.

[11] James A. Vedda, "Space Commerce" in Eligar Sadeh, ed. *Space Politics and Policy, An Evolutionary Perspective* (Dordrecht: Kluwer Academic Publishers, 2002) 201 at 213.

[12] *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 2.

The U.S. Department of State (DoS), which assumed responsibility for regulating the munitions trade in 1935, is charged with ensuring that strategic exports support both national security and foreign policy prerogatives.[13] As early space technologies were treated as munitions,[14] the DoS was therefore responsible for controlling the export of those technologies.[15] The DoS maintained this responsibility throughout the Cold War. In 1992, with the Cold War over, responsibility for the export of *some* "dual-use" (technology with both a civil and military application; discussed in section II, *infra)* commercial communication satellites (COMSATs) was transferred from the DoS to the U.S. Department of Commerce (DoC).[16] These COMSATs were placed on the DoC's Commerce Control List (CCL), within the Export Administration Regulations (EAR),[17] promulgated pursuant to the *Export Administration Act* (*EAA*).[18] Then, from 1996 to 1999, all COMSATs were placed on the CCL.[19] The presumption under the EAR was to approve proposed exports of commercial satellites, components, and related services.[20] This presumption aligned with the DoC's charter to promote and regulate U.S. economic interests abroad.[21] It also arguably reflected the policy decision to regulate these items as dual-use commodities rather than as munitions.

The dual-use moniker does not mean the technologies exported are innocuous. A commercial satellite, for example, can be used for non-military purposes such as imaging the

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[13] Department of State Directorate of Defense Trade Controls, *Defense Trade Controls Overview* (2006), online: DDTC <http://www.pmddtc.state.gov/reports/documents/defense_trade_overview_2006.pdf>.

[14] Dennis J. Burnett, "United States of America" in Yann Aubin & Arnaud Idiart, eds. *Export Control Law and Regulations Handbook, A Practical Guide to Military and Dual-Use Goods Trade Restrictions and Compliance* (Alphen aan den Rijn: Kluwer Law International, 2007) 339 at 346.

[15] Ryan J. Zelnio, "Whose jurisdiction over the US Commercial satellite industry? Factors affecting international security and competition" 23 Space Pol'y 221, 222.

[16] Jason A. Crook, "National Insecurity: ITAR and the Technological Impairment of U.S. National Space Policy" (2009) 74 J. Air L. & Com. 505.

[17] *Export Administration Regulations*, 15 C.F.R. § 730 *et. seq*. (2009) [*EAR*].

[18] *Export Administration Act of 1979*, 50 U.S.C. § 2401 *et. seq.* [*EAA*]; *Crook supra* note 16 at 510. The EAA officially expired in 1989, but has been continued through various stopgap measures—most recently by Executive Order 13222, which is renewed yearly, under the International Emergency Economic Powers Act. Ian F. Ferguson, "The Export Administration Act: Evolution, Provisions, and Debate" Congressional Research Service Report for Congress (15 July 2009) 3, online: Federation of American Scientists <http://www.fas.org/sgp/crs/secrecy/RL31832.pdf>.

[19] *Crook ibid.*

[20] U.S. Department of Commerce, *Introduction to U.S. Export Controls for the Commercial Space Industry* (October 2008), online: DoC Office of Space Commercialization <http://www.space.commerce.gov/library/reports/2008-10-intro2exportcontrols.pdf>.

[21] *Zelnio, supra* note 15 at 221.

surface of the earth for Google Maps or for military purposes such as imaging an adversary's military installations for intelligence, surveillance, and reconnaissance (ISR) purposes. It follows that the transfer of certain advanced commercial satellite technology to certain countries may give rise to national security concerns. Such was case in the mid-1990s. At that time, two U.S. firms, Hughes Electronics (Hughes) and Loral Space (Loral), transferred technology to the People's Republic of China (PRC) as part of the launch of U.S. COMSATs without first seeking the appropriate export licenses (i.e. the approval of the USG).[22] The transfers, which may have improved the capabilities of the PRC's intercontinental ballistic missile (ICMB) fleet,[23] occurred as a result of several failed launches of the PRC's Long March Rocket—the vehicle set to deliver the U.S. COMSATs into orbit. In transferring the technology, Hughes and Loral improved the chances of a successful launch of their satellites, but arguably damaged U.S. national security in the process.

As a result of these incidents and the recommendations of the Cox Committee, which produced a report on the activities of Hughes and Loral, Congress passed the *Strom Thurmond National Defense Act for Fiscal Year 1999* (*STNDAA for FY 1999*),[24] which transferred regulatory responsibility for COMSATs and related components back to the DoS. Once again designated as munitions, these items were regulated by the United States Munitions List (USML), under the International Traffic in Arms Regulations (ITAR),[25] promulgated by the DoS pursuant to the *Arms Export Control Act* (*AECA*).[26] And so it remains today. The current statutory and regulatory framework is detailed in figure 2, *infra*.

Unlike the EAR, the presumption under the ITAR is to disapprove proposed exports of commercial satellites, components, and related services[27]—though, as we shall see, this rarely

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[22] See generally Kenneth deGraffenreid ed. *The Cox Report: The Unanimous and Bipartisan Report of the House Select Committee on U.S. National Security and Military Commercial Concerns with the People's Republic of China* (Washington D.C.: Regnery Publishing Inc., 1999) [*The Cox Report*].

[23] A launch vehicle capable of putting a commercial satellite into orbit, is also capable of deploying a nuclear warhead into the territory of an adversary. See generally H. Peter van Fenema. *The International Trade in Launch Services: The effects of U.S. laws, policies and practices on its development* (Leiden: H. Peter van Fenema, 1999).

[24] *Strom Thurmond National Defense Authorization Act for Fiscal Year 1999*, Pub. L. No. 105-261 (1998) 112 Stat. 1920 [*STNDAA for FY 2009*].

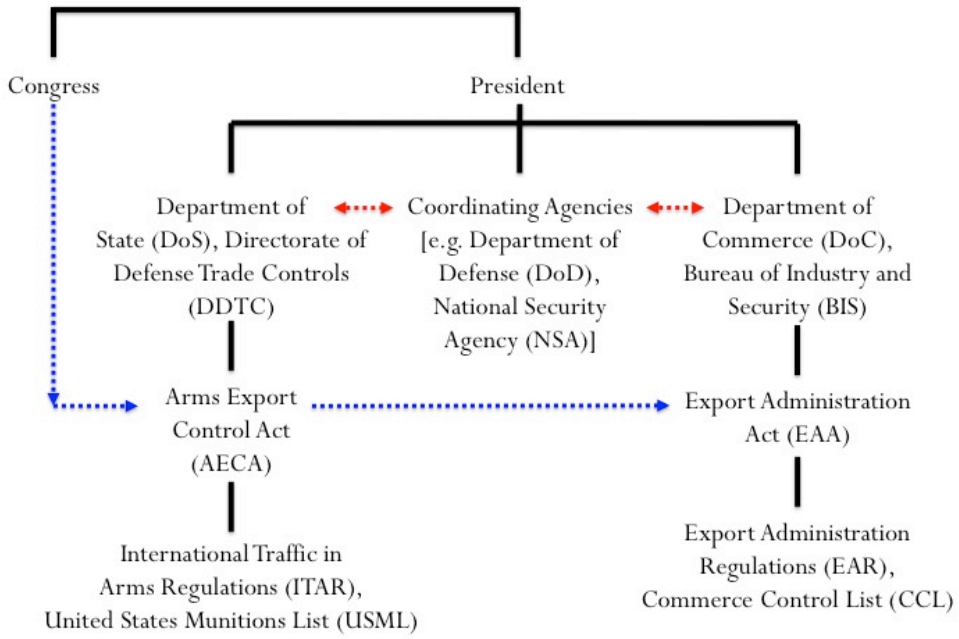
[25] *International Traffic in Arms Regulations*, 22 C.F.R. § 120 *et. seq.* (2009) [*ITAR*].

[26] *Arms Export Control Act,* 22 U.S.C. § 2751 *et. seq*. (2009) [*AECA*].

[27] *Introduction to U.S. Export Controls for the Commercial Space Industry*, *supra* note 20 at 12; see also *U.S. National Space Policy, supra* note 4 at ¶ 12 ("Exports of sensitive or advanced technical data, systems, technologies, and components, shall be approved only rarely, on a case-by-case basis").

occurs in reality. Nearly every transfer of technology related to commercial satellites requires a license from the Directorate of Defense Trade Controls (DDTC) within the DoS.[28] This is true of transfers of tangible items (i.e. export or temporary import), as well as any communication (i.e. oral or written) related to the affected technologies.[29]

Figure 2 – U.S. Export Control Statutory and Regulatory Framework



In addition to being a relic of the Cold War, critics of the current export control regime claim it is overly broad in the satellite technologies it regulates, including items widely available on the commercial market.[30] For example, an oft-repeated anecdote made by proponents of export control reform is that the U.S. is the only country that regulates commercial satellites as munitions—that the controls are *sui generis*.[31] As we shall see, however, this is a demonstrably false notion. It is also argued that the USML and the bureaucratic mechanisms in place to update it are inflexible and therefore unsuited to regulate technologies that are considered "high" today and "low"

[28] *ITAR, supra* note 25 at § 120.20.
[29] *Ibid.* at § 120.10.
[30] See e.g. *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 29-30 (indicating that "Radio Shack"-comparable technologies are currently being controlled by the ITAR).
[31] See e.g. Congresswoman Ellen O. Tauscher, "Commercial Satellites and Export Controls: Are Things Getting Better?" (Speech at the Center for Strategic and International Studies, 19 September 2006) [unpublished].

tomorrow;[32] the DDTC's licensing process is burdensome and, for some companies, cost prohibitive;[33] the regime is not reflective of the realities of globalization or technological advancement;[34] and that the ITAR undermines international cooperation in space by failing to adequately distinguish between allies and adversaries in its application.[35]

As a result of these criticisms, the regime has been called "broken," "anachronistic," "self-defeating," "pernicious," "toxic," "regulation run amok," "obsolete, arrogant, and counterproductive," and a "byzantine amalgam" of bureaucracies."[36] The Government Accountability Office (GAO) has designated export controls as a "high-risk area" that "warrants a strategic re-examination of existing programs to identify needed changes and ensure the advancement of U.S. interests."[37] The Department of Defense's (DoD) 2010 Defense Quadrennial Review Report indicates the current export control regime "poses a national security risk" for being

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[32] See e.g. *Beyond "Fortress America" supra* at note 2.

[33] See e.g. Mike N. Gold, "Lost In Space: A Practitioner's First-Hand Perspective on Reforming the U.S.'s Obsolete, Arrogant, and Counterproductive Export Control Regime for Space-Related Systems and Technologies" (2008) 34 J. Space L. 163.

[34] As John Engler, President of the National Association of Manufacturers, indicated to Congress,

> Our export control system was—and to a large extent still is—based on the philosophy that if the United States won't let countries have our technology, they can't get it anywhere else because no one else has it. To a degree not recognized by our export control system, those days are gone…No longer is the United States the only country able to develop, design and manufacture cutting-edge technology. This is the reality of the globalized world and of the 21st century and these trends will accelerate.

Export Administration Act: A Review of Outstanding Policy Considerations, *supra* note 7 at 13.

[35] See *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 22.

[36] *Beyond "Fortress America" supra* note 2 at vii ("broken"); Broad, William J., "For U.S. Satellite Makers, a No-Cost Bailout Bid" *The New York Times* (2 April 2009) online: The New York Times <http://www.nytimes.com/2009/04/02/science/space/02export.html>; ("anachronistic"); "Washington, We Have a Problem" *The Economist* (21 August 2008), online: The Economist (subscription only) <http://www.economist.com/node/11965279?story_id=11965279>; ("self-defeating"); *Crook supra* note 16 at 505 ("pernicious"); George S. Robinson, "Impact of the U.S. International Traffic in Arms Regulations (ITAR) on International Collaboration Involving Space Research, Exploration, and Commercialization" (2009) 58 Z.L.W 23, 24 ("toxic"); Jeffrey P. Nosanov, "Viewpoint: International Traffic in Arms Regulations—Controversy and Reform" *Astropolitics* 7:3 (2009) 206, 219 ("regulation run amok"); *Gold supra* note 33 at 163 ("obsolete, arrogant, and counterproductive"); Craig Whitlock, "Gates calls for overhaul of export licensing controls" *The Washington Post* (21 April 2010), online: The Washington Post <http://www.washingtonpost.com/wp-dyn/content/article/2010/04/20/AR2010042005104.html>(a "byzantine amalgam" of bureaucracies).

[37] Government Accountability Office, *High Risk Series: An Update* (January 2007) Report No. GAO-07-310, online: GAO <http://www.gao.gov/new.items/d07310.pdf>.

overly complicated, excessively redundant, and attempting to protect too much.[38] By any objective standard, the regime has been pilloried.

Critics of the current export control regime and those calling for reform include: the President and relevant members of his Cabinet,[39] a bipartisan coalition of House Congressional Representatives,[40] the space industrial base,[41] think tanks,[42] and foreign allied space interests.[43] There are few, if any, unequivocal supporters of the regime as it stands. As a result, both legislative and regulatory reform initiatives have recently been introduced. The proposed legislative reforms include, *inter alia*, granting the President the authority to remove COMSATs from the USML.[44] The ambitious reform agenda being pursued by the Obama Administration, which includes both regulatory and legislative reforms, would dismantle the current export control regime and replace it with something quite unlike the statutory and regulatory framework detailed in Figure 2, *supra*.[45]

Yet this begs the question: if the problems are *and have been* so apparent, why have the regulations and concomitant organic legislation not been subject to reform before now? What has been the cause of this decades long paralysis? The probable answer brings to mind a quote by H.L. Mencken, who wrote, "there is always a well-known solution to every human problem: neat, plausible, and wrong."[46] The interests invoked in this reform debate are independently complex and inextricably interconnected—creating a metaphorical three-dimensional geopolitical chess

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[38] Department of Defense, *Quadrennial Defense Review Report* (February 2010), online: DoD <http://www.defense.gov/qdr/images/QDR_as_of_12Feb10_1000.pdf>.
[39] Amy Klamper, "Obama ITAR Reform Could Move Satellites Back to Commerce" *Space News* 20:27 (6 July 2009) 6; Amy Klamper, "Official Reaffirms White House Support for ITAR Reform" *Space News* 20:36 (14 September 2009) 20.
[40] U.S. Bill H.R. 2410, *Foreign Relation Authorization Act, Fiscal Years 2010 and 2011*, 111th Cong., 2009, title VIII, *Export Control Reform and Security Assistance* [*H.R. 2410*] (Bill includes changes to the current ITAR regime, among them, authorization for the President to remove commercial satellites and related components from the USML; it passed in the House of Representatives and was forwarded to the Senate in June 2009 where it has yet to be acted upon).
[41] See e.g. written Testimony of Patricia Cooper, President of the Satellite Industry Association, U.S. *Export Controls on Satellite Technology: Hearing Before the Subcommittee on Terrorism, Nonproliferation and Trade of the Committee on Foreign Affairs House of Representatives*, 111th Congress (2009) 40 [*Export Controls on Satellite Technology*].
[42] See e.g. Center for Strategic and International Studies (CSIS), Briefing of the Working Group on the Health of the U.S. Space Industrial Base and the Impact of Export Controls (February 2008) online: CSIS <http://csis.org/files/media/csis/pubs/021908_csis_spaceindustryitar_final.pdf> [*2008 CSIS Study*].
[43] See e.g. *Export Controls on Satellite Technology supra* note 41.
[44] *H.R. 2410 supra* note 40 at § 826.
[45] White House, Office of the Press Secretary, *Fact Sheet on the President's Export Control Reform Initiative* (20 April 2010), online: White House <http://www.whitehouse.gov/the-press-office/fact-sheet-presidents-export-control-reform-initiative>.
[46] Henry Louis Mencken, *Prejudices: Second Series* (New York: A.A. Knopf, 1921) at 158.

match. Indeed, national security and economic interests necessarily invoke military and strategic imperatives, foreign policy concerns and obligations, industrial and technology base issues, and domestic political considerations. Add to this litany the unknowns—such as the present and future capabilities and intentions of enemies or potential enemies and the unpredictability of second, third and forth-order effects—and the three-dimensional geopolitical chess match suddenly becomes one in which your moves, as well as your opponents, must be divined through a crystal ball. In this light, it is easier to see why reform, meaningful or otherwise, has yet to take shape. An admittedly imperfect status quo may simply be easier to countenance than an uncertain future marked by change. To be sure, "[t]he tendency in a bureaucracy is to play it safe."[47]

Stasis aside, critical to this debate is identifying the parts of the regime that are actually in need of reform. To paraphrase the allegory of the windmills from *Don Quixote*[48]—it is necessary, *before* identifying the appropriate way forward, to distinguish the windmills from the giants. For example, is the U.S. space industrial and technology base really in danger of forfeiting its dominant position in the space arena if reforms are not made or is its Pavlovian response to calls for deregulation wholly predicable of industry in general and minimally related to its future viability? If it is in danger of forfeiting its dominant position, is that wholly or partially attributable to the ITAR? Are the compliance costs and administrative hurdles associated with obtaining a DDTC license to export really that onerous under the current export control regime? If one accepts that the compliance costs and administrative hurdles are sufficiently onerous as to necessitate reform, would the reforms suggested in the current debate make these hurdles discernibly less onerous? And what of the Chinese? What is to be made of their dramatic and, in some respects, ominous advances in space? Is the emergence of a putative near-peer space power, whose intentions are for the most

[47] So said Congressional Representative Edward Royce during a hearing on satellite export controls before the House Subcommittee on Terrorism, Nonproliferation and Trade. *Export Controls on Satellite Technology, supra* note 41 at 4.
[48] To wit: "In the midst of this conversation, they discovered thirty or forty windmills all together on the plain, which the knight no sooner perceived, than he said 'Chance has conducted our affairs even better than we could either wish or hope for: look over there, friend Sancho, and behold thirty or forty outrageous giants with whom I intend to engage in battle, and put every one of them to death, so that we may begin to enrich ourselves with their spoils; for it is a meritorious warfare, and serviceable both to God and man to extirpate such a wicked race from the face of the earth.' —'What giants do you mean?' said Sancho Panza in amaze. 'Those you see over yonder,' replied his master, 'with vast extended arms; some of which are two leagues long.' —'I would your worship would take notice,' replied Sancho, 'that those you see yonder are no giants, but windmills; and what seem arms to you are sails, which being turned with the wind, make the millstone work." Miguel de Cervantes Saavedra, *The History and Adventures of the Renowned Don Quixote*, Vol. I, trans by Dr. Smollett (London, 1799) at 51-2.

part unknown, enough to derail export control reform?[49] Is "ITAR-free" really a long-term strategy the Europeans want to pursue considering the dependence of the European defense industry on DoD contracts? Finally, because satellites without launch services are nothing more than enormously expensive paperweights, how does the provision of launch services play into this calculus?[50]

There has, in recent years, been no shortage of assessments (polemics, really) purporting to separate the windmills from the giants. Nevertheless, questions remain. Are these assessments and the conclusions therein based on hard and attributable empirical data or merely anecdotal evidence? What is being measured and what is the measuring stick? Are the assessors themselves making pure intellectual judgments about the export control regime or are they constituent parts of an "advocacy coalition"[51] pursuing a similar reform agenda? While many of the assessments offer seemingly straightforward fixes to readily identifiable problems, given that this is a "high-risk area", it is necessary to ask whether these are the types of solutions Mencken warned against—neat, plausible and wrong. What are the possible second, third, and forth-order effects of these policy decisions? Is there an echo chamber effect occurring—in that a few potentially unrepresentative examples of the regime producing absurd outcomes are repeated often enough to give the impression of the regime's utter dysfunctionality?[52] In other words, conflating windmills with giants.

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[49] As one Department of Commerce Official put it,

> …our relationship with emerging powers are not as simple or black and white as our relationship was with the Soviet Union. There is no better example of this than China, which is neither our adversary nor our ally. And to reflect this, our export controls on China seek to permit legitimate civilian trade while prudently hedging against the uncertainties of a significant Chinese military expansion.

Export Controls: Are We Protecting Security and Facilitating Exports? supra note 5 at 19.

[50] Issues surrounding the provision of and trade in space launch services are myriad. While this thesis will touch briefly on certain aspects of space launch, its primary focus is on export controls relating to commercial satellite technologies. For an in depth examination of the effects of U.S. laws, polices and practices on the development of space launch services see generally *van Fenema, supra* note 23.

[51] "An advocacy coalition consists of actors from a variety of governmental and private organizations at different levels of government who share a set of policy beliefs and seeks to realize them by influencing the behavior of multiple governmental institutions over time." *Bosso & Kay, supra* note 8 at 46.

[52] See e.g. "Freedom to Fly" *The Economist* (22 April 2009) online: The Economist <http://www.economist.com/node/13525115?story_id=13525115> (discussing an incident involving Bigelow Aerospace; this incident is examined in detail in Chapter 2).

In brief, the strategic export control reform debate has festered for decades, with very few reforms to show for it. With new and sweeping legislative and regulatory reforms currently on the table, the question is whether the bureaucratic inertia against change will stymie reform attempts or whether those attempts will result in meaningful reform. Were legislative or significant regulatory reform to occur, the question must then be asked whether those efforts will adequately address the purported problems identified in the current regime.

In this thesis, I will attempt to deconstruct the current discourse (keeping in mind its historical underpinnings) and challenge the orthodoxies of the export control reform debate in order to determine, to the extent possible, the merits of individual arguments and claims—i.e. distinguishing the windmills from the giants. My primary focus will be on the intersection of law, policy, and politics. To be sure, to understand the law and improve it, it is imperative to examine fully the underlying policies and politics relating thereto.

This thesis is divided into three chapters, each dealing with a specific temporal period. The first chapter addresses the past, examining the progression of the export control regime from its inception to the present. The questions addressed in this chapter relate primarily to the *who*, *what*, *why*, *where*, and *how* of the U.S. export control regime. The second chapter addresses assessments of current regime and the seemingly inexorable march toward reform. The questions addressed in this chapter relate primarily to the current reform debate and the underlying data feeding that debate. The third chapter will address the future. The questions addressed in this chapter relate primarily to the efficacy of the proposed legislative and regulatory reforms currently under consideration.

CHAPTER 1

THE LAW OF UNINTENDED CONSEQUENCES? A BRIEF HISTORY AND EXAMINATION OF THE U.S. COMMERCIAL SATELLITE EXPORT CONTROL REGIME

I. WHY CONTROL STRATEGIC EXPORTS?

A. DO NOT ARM YOUR ENEMIES

> Know the enemy and know yourself; in a hundred battles you will never be in peril. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant both of your enemy and of yourself, you are certain in every battle to be in peril.[53]
>
> - Sun Tzu, *The Art of War*

Strategic export controls exist in large part to advance a simple yet enduring maxim: *do not arm your enemies*.[54] To do otherwise—to grant an enemy a military advantage he might not otherwise have, however slight—would be inimical to self-preservation. For that reason, it is a rare and reckless nation that *knowingly* and *willfully* arms its enemies. More common, is the nation that *unintentionally* arms its enemies. How might this occur?

While the metaphysical side of Sun Tzu's argument for *knowing* your enemy is apparent, the admonition is just as valuable when taken literally. Before you can avoid arming your enemies, you must *know* who your enemies are. In a complex and ever-evolving world, this is often easier said than done. As a result, the *do not arm your enemies* maxim is often difficult for countries to put into practice—particularly for a country like the U.S., which trades in arms and related technologies so aggressively.[55] Nevertheless, that is precisely what export controls, among other trade restrictions and regulations,[56] seek to do. The U.S. certainly is not alone in this endeavor. Many countries

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[53] Samuel B. Griffith, *Sun Tzu: The Art of War* (Oxford: Oxford University Press, 1963) at ¶ 31-3.

[54] See e.g. *van Fenema, supra* note 23 at 110 ("thou shall not arm thy (tomorrow's) enemy!").

[55] "According to the Department of State's fiscal year 2008 budget justification to Congress, commercial export licensed or approved under the AECA exceeded $30,000,000,000"—with over $6,000,000,000 in AECA controlled items going to counties *other than* NATO allies and other major non-NATO allies. (emphasis added) U.S. Bill H.R. 4246, *Defense Trade Controls Performance Act of 2007*, 110th Cong. § 2 ¶ 11 [*H.R. 4246*]. To put that those figures into perspective, in 2008 only eight countries in the world reported military expenditures of more than $30,000,000,000. *Military expenditure: SIPRI Yearbook 2008: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2008), Appendix 5A. As such, the value of U.S. AECA exports exceeded the individual military expenditures of 96.5% of the world's countries.

[56] The DoS has the ability to impose foreign policy export controls, which are separate from national security controls. See generally *Beyond "Fortress America"*, *supra* note 2. Foreign policy export controls might, for example, relate to humanitarian concerns or human rights issues within a certain country.

restrict the trade of arms to one extent or another—sometimes unilaterally and sometimes as part of a bilateral or multilateral agreement.[57] This evokes a related maxim: *neither should your allies arm your enemies*. To achieve this end, allied states must agree not only on a common definition of "enemies," but also come to an understanding as to *who* those enemies are. This too is often easier said than done and will be discussed further in Chapter 2.

Another related consideration is that even when allied states agree to control the export of certain munitions, non-allied states may not. If the non-allied state is a major supplier of those munitions, the entire allied control regime is put in jeopardy. To be sure, "supply-side control measures can be effective only if all major supplier states share broadly similar foreign policy preferences in specific issue-areas."[58]

Recent history is rife with examples of the U.S. arming countries or factions that later turned into enemies. During WWII and immediately thereafter, the Soviet Union was the "principle recipient of arms exports from the U.S."[59] At the dawn of the Cold War, however, a U.S. arms embargo was levied against the Soviet Union that remained in place for the next forty years.[60] A similar embargo was levied against the Islamic Republic of Iran following the ouster of the Shah, but not before the U.S. supplied the Shah's military with advanced weapons systems like the F-14 Tomcat fighter aircraft.[61] In 1985, in contravention of this embargo, the U.S. Central Intelligence Agency (CIA) in conjunction with other executive agencies traded arms for hostages in what later became know as the Iran-Contra affair.[62] Also in the 1980s, the CIA, in conjunction with the Congress and other executive agencies, funneled arms to the Mujahideen fighting the Soviets in Afghanistan.[63] Among those fighters was Osama Bin Laden. While foresight is rarely 20/20, there is a sad irony to the fact that two of the clear and present threats to U.S. national security were

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[57] See generally Yann Aubin & Arnaud Idiart, *Export Control Law and Regulations Handbook, A Practical Guide to Military and Dual-Use Goods Trade Restrictions and Compliance* (Alphen aan den Rijn: Kluwer Law International, 2007).
[58] Jing-Dong Yuan, "The Future of Export Controls: Developing New Strategies for Nonproliferation" *International Politics* 39:2 (June 2002) 131, 139.
[59] *Burnett, supra* note 14 at 350.
[60] *Ibid.* at 350.
[61] "U.S. Halts Sale of F-14 Jet Parts" *BBC News* (31 January 2007), online: BBC <http://news.bbc.co.uk/1/hi/6315957.stm>.
[62] Tim Weiner, *Legacy of Ashes: The History of the CIA* (New York City: Anchor Books, 2008) at 468.
[63] *Ibid.* at 444.

armed by the U.S. within this generation—namely, Iran and Osama Bin Laden and his al Qaeda compatriots.

This sad irony also exposes a fundamental weakness in export controls, namely: the controls are only as good as the policies underlying them. If the polices are not prescient, neither will the controls be prescient. As a result, policy makers may be tempted to impose draconian regulatory measures in order to simulate the affects of 20/20 foresight. In other words, policy makers may "close the gates" and disallow the flow of certain technologies to all but the closest of allies. As we shall soon see, the effectiveness of this approach has been mollified by the realities of increasing foreign capabilities and globalization.

There is also a deeper philosophical dimension to the *do not arm your enemies* maxim. Irrespective of whether there is a market for such a sale; irrespective of the economic benefit to the U.S. manufacturers, parts suppliers, and maintainers; irrespective of the real or perceived strategic advantage of truly *knowing* the technology employed by an enemy (an advantage the U.S. would arguably not have were the technology in question produced outside the U.S.); irrespective of whether similar technology could be procured elsewhere; irrespective of these things, there is something deeply unsettling about the notion of U.S. indigenous technology coming back to harm Americans—whether those Americans are in uniform or otherwise. This point, though often overlooked in the discourse, is worthy of acknowledgement.

Arming your enemy with weapons specifically designed to "kill people" or "blow things up" is clearly reckless. But what about arming your enemy with technologies that may give him an advantage on the battlefield, but which do not fall under the general rubric of munitions? These so-called "dual-use" technologies add yet another layer of complexity to the *do not arm your enemies* maxim and are discussed in section II, *infra*.

B. U.S. Foreign Policy Tool

In addition to the *do no arm your enemies* maxim, there is also a hint of Machiavellian realism in the execution of strategic export controls. Indeed, export controls are among the instruments of foreign policy that "may be used for purposes of persuasion, reward, or punishment in order to

influence the internal politics or foreign actions of another state."[64] These coercive aspects of export controls are discussed in detail in Chapter 2.

II. BLURRING THE LINES: COMMERCIAL SATELLITES AS DUAL-USE TECHNOLOGIES

There is no precise definition for the term "dual-use"—perhaps because the term belies a precise definition. Generally, "[d]ual-use technology consists of products and know how—both tangible and intangible technology—that have potential military use, but that are primarily commercial in design, and are in fact widely traded and used for non-military purposes."[65] Naturally, this encompasses everything from the "tactical" underwear soldiers might wear on the battlefield to the encryption technology on a COMSAT. The lack of precision in this definition arguably lies at the heart of the export control reform debate and stems from the fact that nearly every space technology having a useful commercial application has a concomitantly useful military application and visa versa. Indeed, "[v]irtually any space asset may serve both military and civilian purposes either directly or through the possibility of its being adapted or the technology being analyzed and copied."[66] Such is the nature of technology. Space-based positioning, navigation, and timing (PNT) technology, known more colloquially as global positioning system (GPS) technology, can find the closest grocery store in Kansas City, as well as, "put bombs on target" in Iraq; satellite-enabled communications technology can be employed by a backcountry skier in the Swiss Alps, as well as, a Navy Seal Team calling in an air strike in Afghanistan; remote sensing technologies can be used by a state's agriculture industry to predict crop yields, as well as, by its military to gauge the strength of a potential adversary's forces; the rocket technology necessary to carry "envoys of mankind"[67] into space for peaceful purposes, can also be adapted to carry weapons capable of destroying entire populations.[68] The *key* is determining which of these useful dual-use technologies to protect using export controls. The question is, how does one do that when the commercial and military space sectors share many of the same essential technologies, to include: "sensors,

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[64] *Heinz, supra* note 1 at 8.
[65] Testimony of R. Roger Majak, Assistant Secretary for Export Administration, Department of Commerce, *Before the Subcommittee on International Trade and Finance Committee on Banking, Housing and Urban Affairs, United States Senate* (14 April 1999), online: BIS < http://www.bis.doc.gov/news/archive99/majakdualusetech.html>.
[66] Francis Lyall & Paul B. Larsen. *Space Law: A Treatise* (Burlington: Ashgate, 2009) 458.
[67] Article V, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space Including the Moon and Other Celestial Bodies, London, Moscow, Washington D.C., 27 January 1967.
[68] If the latter sounds somewhat hyperbolic, consider that within 18 months of putting Yuri Gagarin and Alan Shepard into space, the Soviet Union and the U.S. brought the world to the brink of nuclear war during the Cuban missile crisis.

propulsion, guidance, satellite control, space-rated electronics, encrypted communication links, and antenna design?"[69]

Despite the lack of a precise definition, a distinction does need to be drawn between "dual-use" and "simultaneous use". Simultaneous use of a particular space capability indicates that it is being used, concurrently, for both commercial and military purposes. This is an issue of capacity, rather than exploiting a particular function of the space asset for either military or commercial purposes. It should be noted that departments and agencies of the U.S. government, to include the DoD, are obliged to "[u]se U.S. commercial space capabilities and services to the maximum practical extent."[70] Reportedly, ninety-five percent of U.S. military communications "travel over commercial telecommunications networks, including satellite systems."[71] How might military operations be effected if those networks—currently supporting ninety-five percent of military communications—were subject to attack (kinetic, cyber or otherwise) by an adversary? Arguably, it does not take a seasoned military strategist to answer this question. Indeed, degrading the lines of communication between U.S. forces, particularly when those forces have come to rely so heavily upon them, could have a devastating effect on operations. To that end, General James Mattis, head of the U.S. Joint Forces Command has said, "I don't think we've turned off our radios in eight years. What kind of systems are we creating where we depend on this connection to headquarters? While we want the most robust communications, we also want to make sure we can operate with none if it."[72] This acknowledgement does not make General Mattis a luddite, but rather a realist when it comes to the vulnerabilities inherent to current U.S. space-based communications systems. The same has been said of GPS technologies. The Chief of Staff of the Air Force, General Norman Schwartz, has stated, "reliance on GPS could paralyze operations if an enemy blocked the GPS datalink or—even worse—programmed U.S. satellites to send the wrong signal."[73] Both the U.S. National Space Policy and Joint Military Space Doctrine acknowledge that U.S. national security is

[69] *Vedda, supra* note 11 at 216.
[70] *U.S. National Space Policy, supra* note 4 at ¶ 2.
[71] P.W. Singer, *Wired For War: The Robotics Revolution and Conflict in the 21st Century* (New York City: Penguin Books, 2009) at 200.
[72] Christopher C. Cavas, "Mattis: Military should rely less on technology" *The Air Force Times* (13 May 2010), online: Air Force Times <http://www.airforcetimes.com/news/2010/05/military_mattis_technology_051310w/>.
[73] Michael Hoffman, "Schwartz warns against dependence on GPS" *Air Force Times* (23 January 2010) online: Air Force Times <http://www.airforcetimes.com/news/2010/01/airforce_schwartz_012310/>.

critically and increasingly dependent upon space capabilities.[74] The latter, echoing General Schwartz, acknowledges that "this dependence is a potential vulnerability."[75] The U.S. national security infrastructure's dependence on the implements of network-centric warfare is no secret and thus any adversary would naturally seek to exploit this apparent Achilles' heel.

How does the export of technology potentially facilitate this kind of exploitation? A DoD pamphlet from the mid-1980s put it thusly,

> By acquiring our critical technology, the Soviets are able to develop countermeasures to our existing and even anticipated defense systems at a much faster rate and lower cost than would otherwise be possible… Acquisition of U.S. technology significantly shortens their research and development cycle and reduces the risks associated with the design of new weapons and defensive systems.[76]

Though specifically relating to technology acquisition by the Soviet Union, the current imperative to guard against the transfer of technology critical to national security rings true for these same reasons. Firstly, acquisition of technology allows an adversary to reverse engineer the technology in order to indentify weaknesses and vulnerabilities. Secondly, technology acquisition reduces research & development (R&D) time and costs for potential adversaries. In other words, a potential adversary is able to field the same technologies, with few or none of the costs associated with developing that technology. The strategic advantage here is obvious. Most importantly, technology acquisition allows a potential adversary to utilize that technology. In this regard, it is important to recognize that dual-use space technologies are not just the fully-formed systems described above (i.e. various types satellites and rockets), but rather the components, parts, accessories, and attachments that make up those systems—from solar cells, to circuitry, to fuel, to materials, to antennae. Many of these individual components, parts, accessories, and attachments also have terrestrial applications. Look no further than the lithium-ion battery in your cellular phone for an example. While the National Aeronautics and Space Administration (NASA) is famous

[74] *U.S. National Space Policy, supra* note 4 at ¶ 5; Department of Defense, Joint Pub. 3-14, *Space Operations* (6 January 2009) ix, online U.S. Air Force, Air University <http://www.au.af.mil/au/awc/dl/17/SpaceOperations/Lesson%205%20Space%20Launch,%20Satellite%20Operations%20and%20ORS/2.%20JP%203_14%20(Updated).pdf>.
[75] *Joint Pub. 3-14, ibid.* at 1.
[76] DoD 5230.25—PH, *Control of Unclassified Technical Data with Military or Space Application* (May 1985), online: DoD Defense Technical Information Center <http://www.dtic.mil/whs/directives/corres/pdf/523025ph.pdf>.

for commercial "spin-offs", it is increasingly prevalent that technologies "spin-in" to the space technology realm.[77] In this instance, a technology developed for commercial application is adapted to a purpose in a space system. This raises the question: do commercial technologies transform into munitions worthy of the strictest of export controls when a space application is adapted or discovered? This is the dual-use quandary—and the source of much consternation among detractors of the current export control regime.

Given the rapidity of technological development in general over the last several decades, the "spin-in" phenomenon is not at all surprising. It is what revolutionary inventor Ray Kurzweil, describes as "The Law of Accelerating Returns," in which, "the pace of change of our human-created technology is accelerating and that its powers are expanding at an exponential pace."[78] The rate of technological change is exponential, rather than linear—so whereas once a stone wheel has been invented, it need not be reinvented to produce it from wood, vulcanized rubber, synthetics, and so on, *ad infinitum*. There is also a cross-pollination effect occurring, in which advances in one field lead to advances in another—so whereas once the wheel has been invented and attached to a barrow, it need not be reinvented to attach it to a cart, carriage, locomotive, aircraft, and so on, *ad infinitum*. This effect has been described as "riding someone else's exponentials."[79]

Why is this important to a policy discussion about export controls? As then Congresswoman Ellen Tauscher put it in 2006, "[t]he United States has not been able to distinguish between those technologies where there is still [an] advantage…that should be protected and those satellite technologies that are routine, commercial, and available from other sources."[80] Given "The Law of Accelerating Returns" this is not surprising, but it also begs the question: is it possible to create a regulatory bureaucracy capable of matching the exponential pace of technological change? Since Ms. Tauscher is now Under Secretary of State for Arms Control and International Security in charge of the DDTC, she may have an opportunity find out.

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[77] *Yuan, supra* note 58 at 141.
[78] *Singer, supra* note 71 at 97 (*Forbes* magazine has called Mr. Kurzweil the "rightful heir to Thomas Edison;" Microsoft co-founder Bill Gates has called him "a visionary thinker").
[79] *Ibid* at 99.
[80] *Supra* note 31.

III. THE MAKING OF THE COMMERCIAL SATELLITE EXPORT CONTROL REGIME

Given that the arms trade occurs internationally and on a truly global scale, one might reasonably assume that international law or the United Nations would play a large role in regulating the import and export of arms. That assumption would be incorrect.[81] While the export of nuclear, biological, and chemical munitions are *strictly prohibited* by binding international agreements,[82] the export of conventional munitions and dual-use technologies are merely *influenced* by a number of voluntary international agreements.[83] Due to the voluntary nature of these agreements, the export of conventional munitions and dual-use technologies are grounded primarily in the domestic legal regimes of individual states. When multilateral agreements are not seen as adequately protecting the interests of individual states, those states tend to implement unilateral controls that do protect those interests.[84] This is due in part to notions of state sovereignty related to trade,[85] as well as the advancement of the *do not arm your enemies* maxim.

The historical overview that follows is not intended to be, nor should it be viewed as, comprehensive. Rather, the intention here is to offer some context to the current export control regime by tracing some of the major events and milestones that helped to shape it.

A. THE WORLD BEFORE THE COX COMMITTEE REPORT

(1) PRE-COLD WAR ERA AND COLD WAR ERA[86]

Export Controls are as old as the Republic. Indeed, "[t]he first US measure enacted to control foreign commerce for reasons of national security was the embargo of trade with Great

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[81] See Yann Aubin & Arnaud Idiart, "Overall Introduction" in Yann Aubin & Arnaud Idiart, eds. *Export Control Law and Regulations Handbook, A Practical Guide to Military and Dual-Use Goods Trade Restrictions and Compliance* (Alphen aan den Rijn: Kluwer Law International, 2007) 1 at 10.

[82] Art I of the Treaty on the Non-Proliferation of Nuclear Weapons, Washington D.C., London, Moscow, 1 July 1968; Art III of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, Washington D.C., London, Moscow, 10 April 1972; Art I, 1(a) Chemical Weapons Convention, Paris, 13 January 1993.

[83] Missile Technology Control Regime (MTCR), online: MTCR <http://www.mtcr.info>; Hague Code of Conduct Against Ballistic Missile Proliferation (HCOC), online: United Nations <http://www.un.org/News/Press/docs/2004/gadis3286.doc.htm>; The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, online: Wassenaar Arrangement <http://www.wassenaar.org> [*The Wassenaar Arrangement*].

[84] *Lyall & Larsen, supra* note 66 at 462.

[85] *Aubin & Idiart, supra* note 81 at 10.

[86] For purposes of this thesis, the Cold War timeframe is 1947-1991, with the caveat that relations between the Soviet Union and the U.S. began warming several years before the actual collapse of the Soviet Union. This transition period in which the Cold War was ending is 1987-1991.

Britain enacted during the Revolutionary War by the First Continental Congress in 1775."[87] In the WWI era, the *Trading with the Enemy Act of 1917* was enacted to prohibit trade with the German Empire.[88] Distinct from embargos and trade sanctions, though often having the same practical effect, the current U.S. export regime began to take shape during the first half of the 20th century, with dual-use items entering the fold after WWII.[89] The *Neutrality Act of 1934* was enacted to "regulate the fast-growing, multibillion-dollar *commercial* arm export industry."[90] The Act established a National Munitions Control Board (MCB), which was aligned under the DoS and licensed the export of items on a munitions control list.[91] The MCB was the first regulatory body created to license the export of munitions during peacetime and was the historical antecedent to the modern DDTC, the current licensing authority for the export of munitions.[92] For its part, the *Neutrality Act of 1934* was the historical antecedent of the *Mutual Security Act of 1954*, which was thereafter replaced by the *AECA* in 1976.[93]

The Cold War imperative of containment acted to coalesce the strategy of the U.S. and western allies employed against the Soviet Union and other Warsaw Pact countries, as well as the PRC.[94] Domestically, the U.S. formulated a system of strategic export controls designed to "prevent the leakage of military-related goods and technologies, including dual-use goods and technologies that could give military advantages" to the Soviet Bloc.[95] These controls naturally included military and dual-use space technologies as both were seen as vital to U.S. national security. Multilaterally, this unified strategy was epitomized by the Coordinating Committee on Multilateral Export Controls (COCOM) regime, which formed in 1949 and was "largely successful in denying the communist countries goods and technologies that could have contributed directly to their military capabilities."[96] Success was due in part to the fact that, in order to export an item on the COCOM list, "unanimous approval" of the members of the COCOM regime was required.[97]

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[87] *Burnett, supra* note 14 at 344.
[88] Ram Jakhu & Joseph Wilson. "The New United States Export Control Regime: Its Impact on the Communications Satellite Industry" (2000) 25 Ann. Air & Sp. L. 157, 159.
[89] *Burnett, supra* note 14 at 344.
[90] *Heinz, supra* note 1 at 8.
[91] *Ibid* at 8.
[92] See *Nosanov, supra* note 36 at 208.
[93] See *Burnett, supra* note 14 at 344.
[94] *Yuan, supra* note 58 at 133.
[95] *Beyond "Fortress America", supra* note 2 at 1.
[96] *Yuan, supra* note 58 at 134.
[97] *Lyall & Larsen, supra* note 66 at 459.

So while commercial communication satellites (COMSATs) were considered dual-use items under COCOM, the unanimity requirement nonetheless allowed the U.S. to enforce its restrictive view of satellite export controls (i.e. treating the technologies as munitions, rather than dual-use goods) internationally, via the multilateral regime.[98] It could do so through the power of its unilateral veto.

This discussion would not be complete without a brief examination of the nascent U.S. commercial space market during this era. Not surprisingly, the commercial market's development was epitomized by its complete and utter dependence on the policies and politics of the U.S. government and its regulators.[99] This was so because nearly all commercially viable space technologies were borne out of the space race between the U.S and the Soviet Union—communications, data transfer, remote sensing, and navigation. This was true of missile technologies as well. The Intercontinental Ballistic Missiles (ICBMs) developed under Eisenhower's nuclear weapons-centric "New Look" military policy also provided the means of propelling satellites into orbit.[100] As a result, in the late 1950s and1960s, the government controlled both space technologies (i.e. satellites and ground stations) and the means to reach space (i.e. launch services). If the private sector wanted to create a market for space technologies and services, it would need the government's permission in order to do so. Moreover, as the government held the superior negotiating position, it could determine the terms of the public/private partnerships. Two early such partnerships in the satellite communications arena were Comsat (not to be confused with "COMSAT" the abbreviation for commercial communication satellites), which was created by the *Commercial Satellite Act of 1962* and provided domestic telecommunications services, and its spin-off, Intelsat, which provided international telecommunications services.[101] By the 1970s, purely private communications satellites began operating, but purely private launch services did not exist prior to

[98] See *The Cox Report, supra* note 22 at 311.
[99] See Stephen B. Johnson, "Space Business" in Eligar Sadeh, ed. *Space Politics and Policy, An Evolutionary Perspective* (Dordrecht: Kluwer Academic Publishers, 2002) 241 at 279. Even today, dependence is the norm, though it has mollified since the first inklings of commercialism in the early 1960s. The private sector can only act in and through space to the extent the government permits it to do so. Today, "permission" comes in the form of licenses to operate—in a certain orbit, using a certain frequency, and for a certain function.
[100] *Ibid.* at 247.
[101] *Ibid.* at 258.

the late 1990s.[102] As a result, commercial space entities were entirely dependant on government-controlled launch services to gain access to space during the entirety of the Cold War.

In the mid-1980's, expendable rockets (e.g. Delta, Titan) were in the process of being phased-out as the primary U.S. space launch vehicle.[103] In its place, the Space Shuttle was poised to take over as the sole U.S. launch vehicle—to include the launch of commercial satellites.[104] However, following the *Challenger* disaster in 1986 those plans were put on hold and then, in 1988, scrapped altogether.[105] The Shuttle would no longer carry commercial payloads. This policy decision produced a shortage of U.S.-origin COMSAT launch capacity—which, at the time, could only be made up by the PRC.[106] Beginning in 1990 and continuing for next seven years, the PRC launched 27 U.S.-origin COMSATs, though 4 of those launches ended in failure.[107] As discussed in detail below, the *STNDAA for FY 1999* effectively precluded the further use of PRC launch services on its passage on 17 October 1998.

(2) POST-COLD-WAR ERA THROUGH 1998

The end of the Cold War signaled COCOM's demise. Its dissolution in 1994 was due to the lack of a unifying imperative.[108] Indeed, the same post-Cold War malaise that infected the U.S. export control regime also infected the multilateral export control regime. Unified opposition to fascism and communism was arguably in each of the Western allies interests. But what about the diffuse threats and uncommon enemies epitomized by the post-Cold War era? Were the ties that bind Western allies strong enough to coalesce around diffuse threats and uncommon enemies? The answer, as it relates to dual-use space technologies, is arguably no. While the U.S. export control regime—with the exception of the aforementioned stint in the late-1990s during which COMSATs were controlled by the DoC—continues to control commercial space technologies as munitions, its allies, who are also among its primary competitors in space, for the most part do not (exceptions are discussed in Chapter 2). This divergence of policy is epitomized by the Wassenaar Arrangement. The Wassenaar Arrangement, which replaced COCOM in 1996, is a multilateral

[102] *Ibid.* at 264, 280.
[103] *The Cox Report, supra* note 22 at 191.
[104] *Ibid.* at 191.
[105] I*bid* at 191.
[106] *Ibid* at 192.
[107] *Ibid* at 194.
[108] *Lyall &Larsen, supra* note 66 at 459.

agreement governing the export of munitions and dual-use items.[109] Unlike COCOM, the Wassenaar Arrangement contains no unanimity requirement. So, while the Wassenaar Arrangement requires exporting states to regulate the export of munitions and dual-use exports and imposes a notification requirement when such goods and technologies are exported, no state can exercise the unilateral veto power as it could under COCOM. As a result, the U.S. no longer has the unilateral ability to enforce its restrictive view of COMSAT export controls internationally—at least under this multilateral regime.

The immediate post-Cold War commercial space sector, while still subject to significant government regulation, was arguably influenced by the exuberance of the telecommunications boom of the 1990s.[110] Indeed, "the COMSAT market was characterized by a glut of capacity on orbit outstripping demand. This overcapacity resulted from erroneously optimistic demand projections during the 1990s."[111] This exuberance, coupled with the aforementioned dearth of U.S. commercial launch capacity, arguably led to events which continue to influence export control policy to this day. Those events are the subject of the Cox Committee Report.

B. THE WORLD *AFTER* THE COX COMMITTEE REPORT

"[M]aking money through trade can *never* be allowed to supersede our concern for America's national security."[112] This sentiment, as expressed by Casper Weinberger, accurately reflects the mood and tone of the 1999 Cox Committee Report (*The Cox Report*). As mentioned in the Introduction, *The Cox Report* was the product of a congressional investigation following the transfer of ITAR-controlled technical data to the PRC by two U.S. commercial satellite manufacturers following the failure of three PRC launch vehicles in the mid-1990s. A brief recitation of the pertinent facts of these incidents and the conclusions reached by the Cox Committee are warranted, as nearly all are germane to the present reform debate and implicate the counterposing policy interests which are the subject of this thesis.

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[109] *The Wassenaar Arrangement, supra* note 83.
[110] Moreover, "[c]ommercial space-based remote sensing…while originally developed for national security purposes…was eventually released for commercial exploitation in the 1990s due to its economic potential." Edward M. Morris "The Importance of Space Commerce to National Power" *High Frontier* 3:2 (March 2007) 2, 4. That said, the commercial satellite market has been, and continues to be, dominated by COMSATs.
[111] Michael J. Noble, "Export Controls and United States Space Power" *Astropolitics* 6:3 (2008) 259.
[112] *The Cox Report, supra* note 22 at unpaginated Foreword.

The disclosures of ITAR-controlled technical data made to the PRC by Hughes and Loral resulted from the failure of three Long March Rockets. Two Hughes-built COMSATs, the first in 1992 and a second in 1995, were destroyed when the Long March model 2E rockets carrying them exploded before reaching orbit.[113] Hughes' engineers investigated both launch failures and determined the problem lie in the fairing used on the model 2E rocket. The fairing—which not only protects the satellite during launch, but is also critical to successful separation of the payload from the rocket—is considered part of the rocket, rather than part of the satellite.[114] Hughes subsequently disclosed to the PRC technical data relating to the fairing issue without first obtaining the required DDTC license. As the technical data relating to the fairing problem could have assisted the PRC in improving the reliability of the model 2E rocket, as well as other PRC rockets, the license would almost surely have been denied by the DDTC.[115]

The 1992 launch failure predated the aforementioned transfer of some COMSATs from the USML to the CCL. For its part, Hughes claimed the transfer of the technical data relating to the launch failure had been approved by the on-sight Defense Technology Security Administration monitor who accompanied the Hughes' satellite to the PRC.[116] The monitor, a U.S. Air Force Lieutenant Colonel who represented the DoD and whose presence was required under the ITAR (this requirement is discussed below), did not have the authority to authorize such a transfer.[117] Rather, a separate DDTC license, apart from the license Hughes obtained for the initial export of the satellite to the PRC, was required for each subsequent transfer of technical data.[118] Moreover, this transfer of technical data did not relate to the satellite exported, but rather the rocket set to carry it into orbit.[119]

The 1995 launch failure postdated the transfer of some COMSATS from the USML to the CCL. Here, Hughes claimed the transfer of technical data was approved by a DoC licensing officer.[120] Much like the Defense Technology Security Administration monitor in the 1992 case,

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[113] *Ibid.* at 219.
[114] *Ibid.* at 252.
[115] *Ibid.* at 230.
[116] *Ibid.* at 220.
[117] *Ibid.* at 234.
[118] *Ibid.* at 220.
[119] *Ibid.* at 220.
[120] *Ibid.* at 221.

the DoC was not authorized to approve the transfer of technical data relating to the 1995 launch failure, as doing so required a separate DDTC license.[121] The DoC employee, who approved the transfer without consulting the DoS or the DoD, admitted the approval was a mistake.[122]

In both the 1992 and 1995 technical data transfer cases, neither the DoS, the DoC, nor Hughes kept sufficiently detailed records to determine precisely what transpired.[123] The lack of detailed records, in concert with the sketchy memories of witnesses to the incidents, made it impossible for the Cox Committee to substantiate many of the claims made by the involved parties. Nonetheless, *The Cox Report* concluded that Hughes was aware of the DDTC licensing requirement in both instances, but proceeded to transfer the technical data on the authority of two individuals that Hughes knew or should have known were not empowered to do so.[124]

Hughes' incentive to act as it did was twofold: first, the failures of the Long March rockets and the failure to remedy the fairing problem could have made it more difficult or, at the very least, more expensive to obtain insurance for future launches;[125] second, the PRC was slated to launch additional Hughes satellites and continued launch failures were clearly not in the company's best interests. Additionally, Hughes was aware of the fact that had it sought the appropriate DDTC licenses for the transfer of the technical data necessary to address the fairing problems, the license applications would have been denied. By avoiding the DDTC licensing process, the national security interests of the U.S. were therefore subjugated to the economic interests of Hughes. To be sure, improving the reliability of PRC rockets, which included nuclear-tipped ICBMs pointed at the U.S., was decidedly not in the national security interests of the U.S., irrespective of the potential economic gain to Hughes.

The technical data transfer involving Loral occurred under similar circumstances and was motivated by similar economic concerns. In 1996, a PRC Long March 3B rocket carrying a Loral-

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[121] *Ibid.* at 221.
[122] *Ibid.* at 251; A search of the BIS website (<http://www.bis.gov>) on 20 June 2010, revealed the DoC licensing officer in question continued to work for the BIS until at least 2006. Considering the gravity of his mistake and the national security interests implicated, it is somewhat surprising that he was allowed to keep his job.
[123] *Ibid.* at 221.
[124] *Ibid.* at 221.
[125] *See ibid.* at 265.

built COMSAT failed, resulting in the destruction of the COMSAT.[126] The PRC determined the cause of the failure, yet commissioned an Independent Review Committee made up of Loral and Hughes engineers to review its conclusion.[127] The Committee examined the launch failure and produced a preliminary report which it provided to the PRC. The report indicated the cause of the launch failure was not in fact the cause initially identified by the PRC.[128] After examining the report, the PRC was persuaded the Committee's conclusions were correct.[129] The Committee transferred this ITAR-controlled information without obtaining a DDTC license or any prior consultation with a USG authority.[130] As with the earlier incidents, the USG concluded that, "[t]he significant benefits derived by China from these activities are likely to lead to improvements in the overall reliability of [PRC] launch vehicles [rockets]…and in particular their guidance systems."[131] In fact, PRC rocket reliability has significantly improved in the intervening years.[132] However, in the absence of attributable evidence, whether these improvements resulted from the disclosures of Hughes and Loral or organically is a matter of debate.

Interesting, the DDTC licensing officer who first identified the malfeasance of Loral and Hughes in this instance was Robert Kovac.[133] Mr. Kovac is now the Managing Director (i.e. immediately in charge of) of the DDTC. Apart from being an interesting factoid, Mr. Kovac's experience with the Loral incident no doubt informs his views on the current export control reform debate. Moreover, as Managing Director of the DDTC, his views are bound to be influential to policy makers, both in the Congress and within the Executive Branch.

The other relevant issue addressed by the Cox Committee relates to launch site security. *The Cox Report* assailed the ITAR requirement (discussed in detail below) that private security contractors, rather the government monitors, were responsible for securing satellite technology while that technology was physically located in the PRC.[134] It found, for instance, that the private security contractors hired to guard U.S. space technologies were found, *inter alia*: "sleeping on the

[126] *Ibid.* at 270.
[127] *Ibid.* at 266.
[128] *Ibid.* at 266.
[129] *Ibid.* at 267.
[130] *Ibid.* at 272.
[131] *Ibid.* at 279.
[132] See *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3 at 8.
[133] *The Cox Report, supra* note 22 at 272.
[134] See *ibid.* at 289.

job;" "[r]eporting to work under the influence of alcohol;" and taking "routine trips into town to meet prostitutes."[135] *The Cox Report* further concluded that the PRC needed only two hours of access to a U.S. satellite to meaningfully exploit its technologies.[136]

As a result of its investigation the Cox Committee recommended, *inter alia*: (1) DoS should have sole licensing authority over COMSATs; (2) heightened requirements for DoD monitoring of foreign launches; (3) that the DoD, not satellite firms, should be responsible for security at foreign launches; (4) expansion of U.S. launch capacity in the interests of national security; (5) the DoS should ensure the export licensing processed is adequately resourced, both in terms of budget and personnel; and (6) implementation of the *STNDAA for FY 1999*.[137] Each of these recommendations will be specifically referenced and examined in light of the current export control reform debate in the coming sections and chapters.

C. THE *STNDAA FOR FY 1999*

The *STNDAA for FY 1999* represented the congressional response to the incidents underlying *The Cox Report*. First, the Act reaffirmed the notion that the "business interests must not be placed above United States national security interests."[138] Moreover, it indicated that because of the national security interests at stake and the sensitivity of the technologies in question, that satellites and related items should be subject to the same export controls as munitions. In furtherance of these statements of policy, the Act transferred "all satellites and related items that were on the Commerce Control List of dual-use items on the Export Administration Regulations on the date of enactment of this Act"[139] from the USML to the CCL. According to *The Cox Report*, the following space technologies were on the CCL at the time of the Act's passage: (1) COMSATs; (2) technical data provided to the launch provider (other technical data, as well as defense services and technical assistance for satellites and rockets remained on the USML); (3) commercial encryption items; and (4) satellite fuels.[140]

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[135] *Ibid.* at 296.
[136] *Ibid.* at 288.
[137] *Ibid.* at 352-5.
[138] *STNDAA for FY 1999, supra* note 24 at § 1511(1).
[139] *Ibid.* at § 1513.
[140] *The Cox Report, supra* note 22 at 317.

The Act also placed a *de facto* embargo on PRC launch services by making the justifications required for utilizing those services impossibly high.[141] In order to justify the use of PRC launch services the President, in a report submitted to the Congress, must explain, *inter alia*, "[t]he reasons why the proposed satellite launch is in the national security interests of the United States."[142] It is important to note here that there is no outright prohibition against the utilization of PRC launch services, but it is telling that no U.S. President has sought congressional authorization to do so since the passage of the *STNDAA for FY 1999*.

Finally, the Act requires the President to promulgate regulations mandating technology control plans coordinated with the DoD (discussed below); improved monitoring by DoD personnel at foreign launch sites; and mandatory licenses for crash investigations.[143] Two Cox Committee recommendations not addressed by the *STNDAA for FY 1999* relate to the issue of DoD responsibility for foreign launch site security (rather than satellite firms being responsible for providing security) and the expansion of U.S. launch capacity.

IV. A World of Many Sticks and Few Carrots?[144]

The Nuts and Bolts of the Current Commercial Satellite Export Control Regime

The discussions to follow concerning the burdens purportedly imposed by the U.S. export control regime would be empty absent a detailed examination of what the regime actually requires of those subject to it. This section will examine the ITAR and its organic legislation, the *AECA*, to do just that. A logical means of approaching the voluminous statutory and regulatory material that make up the regime is to ask the following questions in relation to it: (1) *what* is subject to the ITAR? (2) *who* is subject to the ITAR? (3) *when* does the ITAR apply? (4) *where* does the ITAR apply?

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[141] See *STNDAA for FY 1999, supra* note 24 at § 1515(a).
[142] *Ibid.* at § 1515(a)(4).
[143] *Ibid.* at § 1514.
[144] *Are We Protecting Security and Facilitating Exports? supra* note 5 at 22 (comment relates to the notion that allies and adversaries are similarly treated under the current U.S. export control regime and, as a result of that, allies are not incentivized to demonstrate what the U.S. considers to be good export control behavior; the carrots in this metaphor are validate end-user programs—whereby allies are rewarded for good export control behavior through the imposition of fewer controls).

(4) *how* is the ITAR implemented and enforced?[145] Each question, as it relates to space technologies, is addressed in detail below.[146]

Before delving into the details of the statute and regulations, it bears some mention the authority by which the Congress regulates foreign commerce, namely: the Commerce Clause of the U.S. Constitution.[147] Engaging in foreign commerce "is viewed as a privilege, not a right" in the U.S.[148] As such, the Congress is authorized by the Constitution to place any restrictions it sees fit on U.S. commercial intercourse with foreign concerns. In this instance, the Congress has delegated that authority to the President who, in turn, has delegated it to the DoS. The Congress did so through the *AECA*.

A. THE *AECA*

(1) POLICY PREROGATIVES OF THE *AECA*

Section 2778 of the *AECA*, *Control of Arms Exports and Imports,* prescribes the policy prerogatives of the Congress with regard to the export of defense articles and services, to wit:

> In furtherance of world peace and the security and foreign policy of the United States, the President is authorized to control the import and the export of defense articles and defense services and to provide foreign policy guidance to persons of the United States involved in the export and import of such articles and services.[149]

Arguably, it is what is *not* said in this paragraph that lies at the heart of the instant export control reform debate. Under the *AECA*, the President is authorized to control exports in furtherance of (1) world peace; (2) the security policy of the U.S.; and (3) the foreign policy of the U.S. The President is *not* authorized to control exports under the *AECA* in furtherance of the economic interests of the U.S. companies. As discussed above, this tack makes sense as it relates to traditionally defined munitions. No matter the economic benefit of the sale of such items, national

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[145] The structure of this section is based loosely on Dennis J. Burnett's examination of U.S. export controls. *Supra* note 14 at 357.
[146] Absent from this litany is the *why* question. *Why* these regulations exist was addressed in Section I, *supra* (i.e. *do not arm your enemies*).
[147] Article I, § 8, Clause 2 of the U.S. Constitution authorizes the Congress to, *inter alia*, "regulate Commerce with foreign Nations."
[148] *Burnett, supra* note 14 at 343.
[149] *AECA, supra* note 26 at § 2778.

security and foreign policy interests (e.g. regional security) are *and should be* the sole considerations. As the current head of the DDTC, Robert Kovac, told Congress in December 2009, "[t]he State Department is not in the trade advocacy business."[150] But what about dual-use items, such as COMSATs, which currently fall under the AECA and, by extension, the ITAR? Should the same policy prerogatives apply to those items? These questions are particularly difficult considering the purported paradoxical effects of controlling such items as munitions, namely: (1) that doing so acts to drive technological innovation offshore; and (2) that national security is actually harmed because the manufacturers of dual-use space technologies are not able to compete on a level playing field in the global marketplace.[151] Notably, at the same December 2009 congressional hearing, Mr. Kovac's counterpart at the DoC's Bureau of Industry and Security (BIS) indicated, "on the dual-use side the economic impact of a proposed transaction is always part of the equation."[152] Were dual-use space technologies, such as COMSATs, controlled under the *EAA* as opposed to the *AECA*, the economic impact of the export would therefore be considered. That economic impact would undoubtedly include the effect of license denial or delay on the space industrial base.

(2) Regulatory Discretion Under the *AECA*

It is often said that *as the law goes, so goes the regulations*. However, the *AECA* affords the President a tremendous amount of discretion in shaping the ITAR, as well as in granting licenses thereunder. It could be said, with regard to the *AECA*, that *as the President's policy prerogatives go, so go the regulations*. As discussed in greater detail below, the President determines the makeup of the USML and, in so doing, determines what technologies are regulated under the ITAR. Regarding regulatory discretion to grant licenses to exporters, Congress has only provided these general guidelines:

> Decisions on issuing export licenses under this section *shall take into account* whether the export of an article would contribute to an arms race, aid in the development of weapons of mass destruction, support international terrorism, increase the possibility of outbreak or escalation of conflict, or prejudice the development of bilateral or multilateral arms control or nonproliferation agreements

[150] U.S., *A Strategic and Economic Review of Aerospace Exports, Hearing Before the Subcommittee on Terrorism, Nonproliferation and Trade of the Committee on Foreign Affairs House of Representatives*, 111th Congress (2009) 24 [*A Strategic and Economic Review of Aerospace Exports*].
[151] The latter orthodoxy is examined in detail in Chapter 2.
[152] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 24.

or other arrangements.[153] [emphasis added]

Congress only asks that these issues—including terrorism and WMD proliferation—be taken "into account," and does not specifically prohibit the granting of a license *even if* these issues are present. As such, the President's regulatory discretion is nearly absolute under the *AECA* (the qualifier "nearly" is necessary because the *STNDAA for FY 1999* does impose ten national security controls on the ITAR, one of which is discussed in detail below). All of this to say, the President has an opportunity to effectuate a transformational reform of the strategic export control regime simply by implementing regulatory changes. Indeed, Congress has placed very few barriers in his way should he choose to do so.

(3) *AECA* AUTHORIZATIONS AND REQUIREMENTS

"The President is authorized to designate those items which shall be considered as defense articles and defense services…the items so designated shall constitute the [USML]."[154] In addition, the President is authorized to promulgate regulations for the import and export of items on the USML.[155] These concomitant authorizations allow the President to determine not only what to regulate, but also how to regulate it. However, the *AECA* does establish the basic regulatory framework within which the President must operate.

First, the *AECA* requires that the promulgated regulation establish a registration regime under which non-government manufacturers, exporters, importers and brokers[156] register with the regulator (in this instance the DDTC) and pay a registration fee.[157] Second, the *AECA* requires that the promulgated regulation establish a process by which all USML items to be imported or exported by a non-government agency acting in a official capacity be licensed for import or export.[158] Third, the *AECA* established criminal penalties for violations of its provisions—the maximum being a fine of $1,000,000 or imprisonment for 10 years, or both.[159] Fourth, the *AECA* authorizes the President

[153] *AECA, supra* note 26 at § 2778(a)(1).
[154] *Ibid.*
[155] I*bid.*
[156] Those engaged in the "financing, transportation, freight forwarding, or taking of any other action that facilitates the manufacture, export, or import of a defense article or defense service." *Ibid.* at § 129.2(b) Brokers must be licensed by the DDTC. *Ibid.* at § 129.6(a).
[157] *Ibid.* at § 2778(b).
[158] *Ibid.*
[159] *Ibid.* at § 2778(c).

to enforce the provisions of the Act by imposing civil penalties not to exceed $500,000 per violation.[160] Fifth, the *AECA* requires the President to "periodically review the items on the [USML] to determine what items, if any, no longer warrant export controls under [the Act]."[161] Should the President elect to remove an item from the USML, he may only effect the removal 30 days after he has notified the relevant congressional committees of his intention to do so.[162] Sixth, the *AECA* prohibits the President from granting country exemptions from the aforementioned licensing requirements unless the President provides notice to the relevant congressional committees 30 days in advance of the inception date of any such exemption.[163] The notice must describe the details of the proposed exemption and include a determination by the Attorney General that the bilateral agreement accompanying the exemption will facilitate, rather than hinder, law enforcement under the Act.[164] The Act further requires, prior to the formation of a bilateral agreement that the exempted country "establish an export control regime that is at least comparable" to the U.S. regime.[165] To date, no country has been granted an exemption under this provision—although Canada is specifically exempted from this section of the Act.[166] Seventh, the *AECA* requires the President to establish mechanisms capable of identifying those indicted or convicted under the Act, as well as other related acts and statutes for purposes of avoiding further violations.[167] This includes not only the licensee, but also any consignee or freight forwarder who might be involved in a given export.[168] Eighth, the *AECA* prohibits the President from granting a license to export USML items to foreign persons, excepting foreign governments (i.e. only U.S. persons and foreign governments can be granted licenses to export).[169] Ninth, the *AECA* authorizes the President to require a license for the sale or transfer of USML items to a person acting on behalf of a foreign person.[170] This is an interesting provision, in that under the circumstances described, no "export" has occurred. It bears mention that neither the *AECA* nor the ITAR otherwise regulate the sale of USML items to citizens

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[160] *Ibid.* at § 2778(e).
[161] *Ibid.* at §2778 (f).
[162] *Ibid.*
[163] *Ibid.*
[164] *Ibid.*
[165] *Ibid.*
[166] The ITAR, as promulgated, reflects this exemption. As discussed below, Canada is exempted from licensing requirement of the ITAR for, among others things, the export and temporary import of COMSATs. *ITAR, supra* note 25 at § 126.5.
[167] *AECA, supra* note 26 at § 2778(g).
[168] *Ibid.*
[169] *Ibid.*
[170] *Ibid.*

or nationals of the U.S. or permanent residents of the U.S. For example, if a U.S. citizen had the means to do so, he or she could purchase an advanced COMSAT from the Boeing Corporation without a license from the USG. In reality, that COMSAT would be nothing more than a very expensive paperweight absent the myriad licenses and approvals necessary to launch and operate it. Nevertheless, the point here is that the *AECA* and the ITAR do not proscribe purchases of USML items by citizens, nationals, and permanent residents of the U.S.[171] This particular provision of the *AECA*, which authorizes the President to require an export license for U.S. citizens, nationals, and permanent residents acting on behalf of a foreign person, would appear to close a potential loophole whereby the licensing process is avoided by means of a U.S. front. Tenth, the *AECA* requires the President to establish end-use verification procedures for high-risk exports.[172] This requirement obliges the President to ensure high-risk exports are, in fact, being used for the purpose indicated in the export license. The details and frequency of these verification procedures are left to the discretion of the President. Eleventh, the *AECA* requires the DoD and Treasury Department to provide the DoS personnel with appropriate expertise and on a non-reimbursable basis, to assist the DoS in the export license application process.[173] Twelfth, the *AECA* precludes judicial review of decisions made by the DDTC under the Act.[174] Thirteenth, the *AECA* requires those granted licenses pursuant to the Act to, within 15 days of the export, submit a report to the DoS "containing all shipment information, including a description of the item and the quantity, value, port of exit, and end-user and country of destination of the item."[175] Finally, the *AECA* requires the DoS to notify the Congress (called a "certification") prior to the granting of an export or temporary import license application when the export or temporary import involves certain sensitive technologies.[176] The certification requirement is triggered by the dollar value of the export or temporary import, with a higher dollar value required for NATO countries, Australia, Japan, New Zealand, and South Korea than for all other countries.[177] These authorizations and requirements represent the congressionally mandated framework for the ITAR. The ITAR, as promulgated by the President, builds upon that framework.

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[171] Such purchases may be proscribed by other statutes (federal, state, or municipal) or regulations. This is particularly true in relation to some conventional munitions (e.g. assault rifles with certain characteristics).
[172] *AECA, supra* note 26 at § 2778(g).
[173] *Ibid*.
[174] *Ibid.* at § 2778(h).
[175] *Ibid.* at § 2778(i).
[176] *Ibid.* at § 2776.
[177] *Ibid.*

B. THE ITAR

Generally speaking, the ITAR prescribes the means by which a person may seek permission from the USG to export or temporarily import defense articles and services listed on the USML. The ITAR does not, however, prescribe the means by which the DDTC makes licensing decisions. So while the policy prerogatives for licensing decisions are described in broad terms by the AECA, the ITAR sheds no further light on how these decisions are actually made. This is important in the sense that the means of obtaining a license to export or temporarily import are transparent, yet the decisions made in furtherance of the ends those means seek to protect (i.e. national security) are not. The questions underlying the DDTC's licensing officers decisions are surely more nuanced than, for example, *will this export contribute to an arms race?* Yet those nuanced questions are not made public.[178] That said, this apparent lack of transparency in the U.S. export control regime is arguably nothing more than a tempest in a teapot considering the DDTC's license denial rate is apparently around one percent.[179] Were the DDTC denying licenses in droves, this would clearly be a bigger issue.

A second somewhat surprising aspect to the ITAR licensing process is its near total dependence on industry to regulate itself. The requirements to register and seek licenses under the ITAR detailed below are instigated by the regulatees.[180] The incidents involving Hughes and Loral in the 1990s epitomize the inherent conflicts with industry self-regulation. Indeed, "U.S. satellite manufacturers are on the honor system, to a large extent…in ensuring that no licensable technical data is exchanged in the absence of a Defense Department monitor."[181] When faced with a scenario which pits the company's interests against the national security interests of the U.S., can these companies be trusted to prioritize the latter? In the case of Hughes and Loral, the answer to that question is an unequivocal no. There is little reason to believe the answer would be any different for companies today.

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[178] The ITAR does include a provision indicating that the DDTC may apprise applicants of the reason(s) for denial of a license, "stated as specifically as security and foreign policy considerations permit." *ITAR, supra* note 25 at § 126.7(b).
[179] *Defense Trade Controls Overview, supra* note 13.
[180] *The Cox Report, supra* note 22 at 25.
[181] *Ibid.* at 294.

Pursuant to Executive Order 11958, the President has delegated his authority under the AECA to the Secretary of State.[182] Within the DoS, the DDTC is responsible for controlling the export and temporary import of USML items.[183]

(1) WHAT IS SUBJECT TO THE ITAR?

Defense articles and defense services on the USML are subject to ITAR controls. Pursuant to the authority delegated by the President, the DoS determines the make up of the USML in coordination with the DoD.[184] The determination to place defense articles or defense services on the USML is based on whether the article or service is: (1) "specifically designed, developed, configured, adapted, or modified for a military application;" and (2) "does not have predominant civil applications;" and (3) "does not have performance equivalent (defined by form, fit, and function) to those of an article or service used for civil application;" or (4) "is specifically designed, developed, configured, adapted, or modified for a military application, and has significant military or intelligence applicability such that control under this subchapter is necessary."[185] Whether the item or service to be exported is intended for military or civilian use is irrelevant—if an item or service is on the USML, it is treated as munitions.[186] Based on these policy parameters, the question becomes: but for the *STNDAA for FY 1999*, would COMSATs be on the USML? This is an open question.

Defense articles are defined under the ITAR as any item or technical data on the USML.[187] Technical data are defined as information required for the "design, development, production, manufacture, assembly, operation, repair, testing, maintenance or modification of defense articles."[188] Examples include: blueprints, drawings, photographs, plans, instructions, or documentation.[189] Technical data also include: classified information relating to defense articles and defense services, information covered by an invention secrecy order, and certain software relating

[182] *ITAR, supra* note 25 at §120.1(a).
[183] See DDTC Homepage, online: DDTC <http://www.pmddtc.state.gov> (last visited on 20 June 2010).
[184] *ITAR, supra* note 25 at § 120.2(a).
[185] *Ibid.* at § 120.3.
[186] *Ibid.*
[187] *Ibid.* at § 120.6.
[188] *Ibid.* at § 120.10.
[189] *Ibid.*

to defense articles.[190] It does not include: (1) "information concerning general scientific, mathematical or engineering principles commonly taught in school, colleges, and universities or information in the public domain;" or (2) "basic marketing information on function or purpose or general system descriptions of defense articles."[191] To the former, information in the public domain includes "fundamental research" which is defined as, "basic and applied research in science and engineering where the resulting information is ordinarily published and shared broadly within the scientific community, as distinguished from research the results of which are restricted for proprietary reasons or specific U.S. Government access and dissemination controls."[192] University research is not considered fundamental research when: (1) the University or researchers impose restrictions on the publication of scientific and technical information; and (2) the research is funded by the USG and controls are placed on access and control of the research data.[193]

Defense services are defined under the ITAR as, *inter alia*: (1) "[t]he furnishing of assistance (including training) to foreign persons, whether in the United States or abroad in the design, development, engineering, manufacture, production, assembly, testing, repair, maintenance, modification, operation, demilitarization, destruction, processing or use of defense articles;" or "[t]he furnishing to foreign persons of any technical data…whether in the United States or abroad."[194]

Section 121.1 of the ITAR constitutes the USML.[195] Category XV of the USML relates to "Spacecraft Systems and Associated Equipment." Included in Category XV are, *inter alia*:

> (a) Spacecraft, including communications satellites, remote sensing satellites, scientific satellites, research satellites, navigations satellites, experimental and multi-mission satellites.
>
> (b) Ground control stations for telemetry, tracking and control of spacecraft or satellites…
>
> …
>
> (d) Radiation-hardened microelectric circuits that meet or exceed [certain characteristics].

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[190] *Ibid.*
[191] *Ibid.*
[192] *Ibid.* at § 120.11.
[193] *Ibid.*
[194] *Ibid.* at § 120.9.
[195] *Ibid.* at § 121.1.

> (e) All specifically designed or modified systems or subsystems, components, parts, accessories, attachments, and associated equipment for the articles in this category[196], including the articles identified in section 1516 of Public Law 105-261 [i.e. *STNDAA for FY 1999*]…
> (f) Technical data…and defense services…directly related to the articles enumerated in paragraphs (a) through (e) of this category, as well as detailed design, development, manufacturing or production data for a spacecraft and specifically designed or modified components for all spacecraft systems.[197]

Some of these enumerated items are singled out for special designation as Significant Military Equipment (SME). The SME designation means that the items have the "capacity for substantial military utility or capability" and are, therefore, subject to "special export controls."[198] The ITAR does not further define what these "special export controls" might entail, but it is fair to assume that license applications for these items receive an increased level of scrutiny and perhaps require the approval, or at least concurrence, at or above the DDTC Managing Director level. Category XV SME include the litany of items in paragraph (a) above, excepting those COMSATs, scientific satellites, research satellites, and experimental satellites that are not intended for use by the armed forces of any foreign country.[199] So, for example, remote sensing satellites and navigation satellites are, without exception, considered SME. Also designated as SME are: "[t]echnical data directly related to the manufacture or production" of any paragraph (a) item designated as SME.[200] As a result, a blueprint for a U.S. origin commercial communications satellite employed by the Japanese Self-Defense Forces would be considered SME under the ITAR.

Of note here are the expansive definitions given to space technologies covered by the USML. Rather than specific technologies being listed (e.g. antennae with certain characteristics), categorical language is employed instead. This catch-all approach, which does not distinguish between those technologies which the U.S. is the sole producer and which have a clear military function and those which are commercially available in the international market, exposes one of the primary criticisms of the current ITAR regime. As Defense Secretary Gates pointed out in the

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[196] The USML includes a list of nine very specific items excepted by this rule. *Ibid.* at § 221.1, Category XV (e)(1)-(9). The excepted items, which include several "space qualified" items, are instead controlled under the CCL. *Ibid.*
[197] *ITAR, supra* note 25 at § 121.1, Category XV.
[198] *Ibid.* at § 120.7.
[199] *Ibid* at § 121.1, Cat. XV(a).
[200] *Ibid* at § 121.1, Cat. XV(f).

speech unveiling the Obama Administration's new export control reform agenda, "he who defends everything, defends nothing."[201]

When doubt exists as to whether an item to be exported is regulated by the USML, the prospective exporter can request a Commodity Jurisdiction (CJ) determination and the DDTC will provide a definitive answer regarding the item to be exported.[202] The DDTC does not offer statistics or data on the number or content of the CJ requests submitted to it. However, given the expansive definitions of space technologies falling under the USML, there would appear to be little need for CJ in this realm. To be sure, if a defense article or service relates to a space technology and is not covered by the fundamental research exception, it is more than likely subject to the ITAR.

(2) WHO IS SUBJECT TO THE ITAR?

"Any person who engages in the United States in the business of either manufacturing or exporting defense articles or furnishing defense services is required to register with the [DDTC]."[203] Registration occurs annually.[204] There is no *de minimis* exception to this rule and, therefore, one occasion of engaging in the prescribed behavior will subject a manufacturer or exporter to the registration requirement.[205] There are several exceptions to the rule including, *inter alia*, those who "engage only in the fabrication of articles for experimental or scientific purpose, including research and development."[206] The purpose of this registration requirement is to afford the USG situational awareness as it relates to persons or entities involved in the manufacture or export of ITAR-controlled items or services.[207] The requirement applies equally to U.S. and foreign-owned or controlled manufacturers alike.[208] Registration is typically a prerequisite for the granting of a license to export by the DDTC.[209] The ITAR employs a tiered annual registration fee system

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[201] "A Good Start" *Defense News* (26 April 2010), online: Defense News <http://www.defensenews.com/story.php?i=4597779>.
[202] *ITAR, supra* note 25 at § 120.4.
[203] *Ibid.* at § 122.1.
[204] *Ibid.* at § 122.3.
[205] *Ibid.* at § 122.1.
[206] *Ibid.*
[207] *Ibid.*
[208] *Ibid.* at § 122.2.
[209] *Ibid.* at § 122.1.

whereby those who apply for the most licenses pay the highest registration fee.[210] Fees start at $2,250 for those with no license applications submitted to the DDTC during a given 12-month period; fees increase to $2,750 for those who submitted between 1 and 10 license applications during a given 12-months period; finally, a fee of $2,750 plus $250 per license application above 10 is imposed for those submitting more than 10 license application during a given 12-month period.[211] Under certain circumstances, fees for a given registrant are capped at 3% of the total value of applications processed by the DDTC during a given 12-month period.[212] This cap would appear to apply, if at all, only to those submitting large numbers of applications—which would most likely be prime contractors (e.g. Boeing).

Aside from the registration requirement, "any person who intends to export or to import temporarily a defense article must obtain the approval of the [DDTC] prior to the export or temporary import…"[213] Approval is obtained via an application process and the granting of a license.[214] Absent the granting of a license, the export or temporary import of an ITAR-controlled item is prohibited. The one exception to this rule, as applied to space technologies, allows accredited institutions of higher learning to export articles fabricated for fundamental research, though otherwise controlled by Category XV of the USML, without a license under a closely prescribed set of circumstances.[215] Among the circumstances prescribed are that the export may only involve a NATO country, a major non-NATO ally, or a member of the European Space Agency or the European Union and involve exclusively the nationals of those countries.[216]

Similarly, the approval of the DDTC must be obtained before any defense services, as described above, may be provided.[217] Approval requires the U.S. person to submit a proposed agreement (typically a manufacturing license agreement or technical assistance agreement) to the

[210] *Ibid.* at § 122.3.
[211] *Ibid.*
[212] *Ibid.*
[213] *Ibid.* at § 123.1.
[214] *Ibid.*
[215] *Ibid.* at § 123.16.
[216] *Ibid.* at § 123.10.
[217] *Ibid.* at § 124.1.

DDTC.[218] The transfer of technical data, which is subsumed within the definition of defense services, also requires a license prior to export.[219]

Under certain circumstances, a U.S. person may be required to garner approval from or notify the DDTC of proposals or presentations "designed to constitute a basis for a decision on the part of any foreign person to purchase [SME] on the [USML]."[220]

Finally, "persons engaged in the business of brokering activities shall register and pay a registration fee as prescribed in the regulations, and that no person may engage in the business of brokering activities without a license issued in accordance with the [*AECA*]."[221] A broker is defined as "any person who acts as an agent for others in negotiating or arranging contracts, purchases, sales or transfers of defense articles or defense services in return for a fee, commission, or other consideration."[222] Brokering activities are defined as, "[a]cting as a broker…[which] includes the financing, transportation, freight forwarding, or taking any other action that facilitates the manufacture, export, or import [of] a defense article or defense service, irrespective of its origin."[223]

(3) When do the ITAR Apply?

When are the requirements of the ITAR triggered? Generally speaking, the requirements of the ITAR are triggered when a defense article or service is either exported from or temporarily imported into the U.S. When examining the definition given the term "export," the analysis of when the ITAR are triggered becomes more complex. An "export" for purposes of the ITAR is defined as:

> (1) Sending or taking a defense article out of the United States in any manner, except by mere travel outside of the United States by a person whose personal knowledge includes technical data; or
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> (2) Transferring registration, control or ownership to a foreign person of any…satellite covered by

[218] *Ibid*.
[219] *Ibid.* at § 120.9, § 125.1.
[220] *Ibid.* at § 126.8.
[221] *Ibid.* at § 129.1.
[222] *Ibid.* at § 129.2.
[223] *Ibid*.

> the U.S. Munitions List, whether in the United States or abroad; or
> (3) Disclosing (including oral or visual disclosure) or transferring in the United States any defense article to an embassy, any agency or subdivision of a foreign government (e.g., diplomatic missions); or
> (4) Disclosing (including oral or visual disclosure) or transferring technical data to a foreign person, whether in the United States or abroad; or
> (5) Performing a defense service on behalf of, or for the benefit of, a foreign person, whether in the United States or abroad.
> (6) A launch vehicle or payload shall not, by reason of the launching of such vehicle, be considered an export for purposes of this subchapter. However, for certain limited purposes [prohibited exports and sales to certain countries], the controls of this subchapter may apply to any sale, transfer or proposal to sell or transfer defense articles or defense services.[224]

In addition, "[t]he registration in a foreign country of any aircraft, vessel or satellite covered by the U.S. Munitions List which is not registered in the United States but which is located in the United States constitutes an export. A license or written approval from the DDTC is therefore required."[225]

The breadth of this definition should give pause to those involved in the design, production, sale, or export of space technologies. For instance, if an engineer for a U.S. satellite manufacturer collaborates with a U.S. subcontractor that employs foreign engineers on an ITAR-controlled item, either a metaphorical "Chinese Wall" must be constructed between the foreign engineers and the technical data to be disclosed or a DDTC license must be sought prior to the collaboration occurring. In this example, an "export" as defined by the ITAR could potentially occur without any technical data ever leaving the U.S. What is equally clear, though the effects are difficult to quantify or measure, are the inefficiencies inherent in either sequestering foreign persons employed by U.S. manufactures (i.e. reducing the personnel dedicated to working on a particular project) or seeking a DDTC license prior to the occurrence of any collaborative effort (i.e. potentially delaying the collaboration for purposes of obtaining a license) involving an ITAR-controlled item. At the same time and to the extent that this is a problem, it could also be argued that U.S. industry has largely brought this upon itself by moving U.S. aerospace jobs overseas—i.e. offshoring. Indeed, one congressman lamented in a December 2009 House hearing on export controls, "[s]o many

[224] *Ibid.* at § 120.17.
[225] *Ibid.* at § 123.8.

American companies are now American in name only, having sent their manufacturing facilities, along with millions of American jobs, overseas."[226] Several congressmen at this hearing identified the offshoring of high technology jobs and manufacturing capabilities overseas as a threat to U.S. national security.[227] It follows that if export control reforms include the loosening of restrictions on communications between U.S. and foreign employees of U.S. manufacturers of space technologies, then those reforms will arguably facilitate further outsourcing.

This is but one of myriad examples in which ITAR *could* adversely effect the interests of the industry. At the same time, under this scenario, the ITAR has either protected the technical data by denying it to the U.S. subcontractor's foreign engineers (in the case of a license being denied or the foreign engineers being sequestered from the collaboration), the DDTC has determined the "export" of the technical data is not contrary to the national security interests of the U.S. (in the case of a license being issued), or the ITAR has not facilitated the offshoring of U.S. high technology jobs and manufacturing capabilities. Of course, whether the ITAR has succeeded or failed in this scenario is almost entirely dependant on one's perspective and the relative importance placed on the interest implicated—and thus the counterposing interests of the export control reform debate are exposed. However, this scenario is just an anecdote. As will be discussed in the following chapters, the export control reform debate is rife with anecdotes and short on actual examples of the ITAR's effects, adverse or otherwise, on industry.

"Temporary import" under the ITAR is defined as "bringing into the United States from a foreign country any defense article that is to be returned to the country from which it was shipped or taken, or any defense article that is in transit to another foreign destination."[228] These temporary imports require the issuance of a DDTC license.[229] In essence, foreign technology, if deemed a defense article under the ITAR and temporarily imported into the U.S., is controlled in the same manner as U.S. technology deemed a defense article under the ITAR. For technologies in which the exporting country and the U.S. agree on the classification of the item, this requirement is arguably none too onerous (e.g. traditionally defined munitions). However, where there is

[226] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 6.
[227] *Ibid.*
[228] *ITAR, supra* note 25 at § 120.18.
[229] *Ibid.* at § 123.3.

disagreement—for example in the case of COMSATs—ITAR compliance may lead foreign temporary exporters to avoid the U.S. altogether. Under this scenario the concept of *contamination by U.S. technology* comes to the fore.[230] The ITAR's definition of temporary import presumes the defense article to be temporarily imported into the U.S. is going to be added to, improved or otherwise modified while in the U.S. When that modification occurs, for example by adding a U.S. component or subsystem to a temporarily imported European COMSAT, the entire COMSAT then becomes subject to the ITAR. As the Europeans do not control COMSATs as munitions, the *contamination by U.S. technology* subjects the European COMSAT to a stricter set of controls than might otherwise be imposed—to include precluding PRC launch services pursuant to the strictures of the *STNDAA for FY 1999*.[231] The same is true if the U.S. component or subsystem is exported and added to the European COMSAT in, for example, France. The only way for foreign manufacturers to avoid this so-called "contamination" was to produce COMSATs free of U.S. technology. From this the ITAR-free movement was born (discussed in Chapter 2).

"Contamination" is also an issue when U.S. manufacturers seek to integrate foreign technologies into U.S. satellites. There have been instances in which the Europeans would not export a particular technology to the U.S. for fear that once they did, it would then become subject to the ITAR.[232] In these instances, "the U.S. export control policy stance has the perverse effect of actually impeding U.S. access to foreign technologies" which may, in fact, be superior to the equivalent U.S. technology.[233]

There are several other scenarios contemplated by the ITAR which determine when the regulations apply, to wit: the reexport or retransfer of a defense article or service and the entering into of a manufacturing licensing agreement, technical service agreement, or a distribution agreement. Reexport or retransfer means "the transfer of defense articles or defense services to an end-use, end user or destination not previously authorized."[234] A manufacturing licensing agreement is defined as:

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[230] See Sutherland, Benjamin. "Why America is Lost in Space" *Newsweek* (31 January 2009), online: Newsweek <http://www.newsweek.com/2009/01/30/why-america-is-lost-in-space.html>.
[231] See generally *Aubin &Idiart, supra* note 57.
[232] *Export Controls on Satellite Technology, supra* note 41 at 64.
[233] *Noble, supra* note 111 at 276.
[234] *ITAR, supra* note 25 at § 120.19.

> [A]n agreement (e.g., contract) whereby a U.S. person grants a foreign person an authorization to manufacture defense articles abroad and which involves or contemplates: (a) The export of technical data…or defense articles or the performance of a defense service; or (b) The use by the foreign person of technical data or defense articles previously exported by the U.S. person.[235]

A technical assistance agreement is defined as "an agreement (e.g., contract) for the performance of a defense service(s) or the disclosure of technical data, as opposed to an agreement granting a right or license to manufacture defense articles."[236] For example, an agreement relating to assembly of a given technology might constitute a technical assistance agreement. A distribution agreement is defined as "an agreement (e.g., a contract) to establish a warehouse or distribution point abroad for defense articles exported from the United States for subsequent distribution to entities in an approved sales territory."[237]

(4) WHERE DO THE ITAR APPLY?

While the issue of jurisdiction is nowhere mentioned in either the ITAR or its organic legislation, the *AECA*, a plain reading of the regulatory language indicates the ITAR contemplates extraterritorial application. For example, defense services include: "[t]he furnishing of assistance (including training) to foreign persons, *whether in the United States or abroad* in the design, development, engineering, manufacture, production, assembly, testing, repair, maintenance, modification, operation, demilitarization, destruction, processing or use of defense articles;" or "[t]he furnishing to foreign persons of any technical data…*whether in the United States or abroad*."[238] [emphasis added] It follows that a U.S. person who furnishes technical data to a foreign person abroad without first obtaining either a license or authority from the DDTC as required by § 125.2(a) or § 125.3(a), has violated the ITAR.[239] The U.S. person would furthermore be subject to prosecution under the enforcement provisions of the *AECA* and ITAR should that person either return to the U.S. or be extradited from a foreign country to the U.S. The "whether in the United

[235] *Ibid.* at § 120.21.
[236] *Ibid.* at § 120.22.
[237] *Ibid.* at § 120.23.
[238] *Ibid.* at § 120.9.
[239] *Ibid.* at § 127.1.

States of abroad" extraterritorial language also applies to defense services,[240] as well as actual exports of ITAR-controlled technologies.[241]

Germane to this jurisdictional discussion is the issue of to whom the ITAR applies. The ITAR employs three identifiers when describing persons and juridical persons: U.S. person, foreign person, and person. A "U.S. person" includes, *inter alia*, those who are lawful permanent residents, juridical persons incorporated in the U.S., and U.S. government entities.[242] "Foreign persons" are all persons, juridical persons, and government entities who are not U.S. persons.[243] The ITAR defines "person" as both U.S. persons and foreign persons.[244] In other words, when the term "person" is employed by the regulation, it applies to both U.S. and foreign persons. For example, the enforcement section of the ITAR indicates, "[n]o person may knowingly or willfully cause, or aid, abet, counsel, demand, induce, or permit the commission of any act prohibited by [the *AECA*], or by any license, approval or order issued thereunder."[245] By definition, this enforcement provision would encompass foreign persons. Moreover, there is no geographic limitation to this provision, meaning it is also meant to apply extraterritorially. Enforcement under these circumstances likely turns on whether a given country is amenable to extraditing the alleged violator to the U.S. for purposes of prosecution under the *AECA* for an ITAR violation.[246] This will in turn depend on whether that country has an extradition treaty with the U.S. and/or enjoys good diplomatic relations with the U.S.

(5) How Are the ITAR Implemented and Enforced?

a. Licenses and Other Authorizations

In general, no defense article or defense service may be exported from or temporarily imported into the U.S. without prior approval by the DoS. Approval is obtained via a licensing

[240] *Ibid.* at § 120.9.
[241] *Ibid.* at § 120.17.
[242] *Ibid.* at § 120.15.
[243] *Ibid.* at § 120.6.
[244] *Ibid.* at § 120.14.
[245] *Ibid.* at § 127.1.
[246] See e.g. Jason Ryan, "Busted Iranian Arms Agent Tells of Iran War Preparations" *ABC News* (2 December 2009), online: ABC News <http://abcnews.go.com/Politics/irans-ardebili-speaks-iran-war-preparations/story?id=9229861> (Iranian arms agent pleads guilty to violating the AECA following extradition from Central Asia).

process.[247] Applications for licenses are submitted on prescribed forms.[248] For example, Form DSP-5 *Application/License for Permanent Export of Unclassified Defense Articles and Related Unclassified Technical Data*, requires the applicant to provide information relevant to the export or temporary import, to include, *inter alia*: the defense article or technical data to be exported or temporarily imported; quantity; value; and end-users and end-use.[249] For exports and temporary imports deemed unclassified by the USG, applications are submitted electronically to the DDTC through a service called D-Trade; for exports and temporary imports deemed classified by the USG, hardcopy applications must be submitted to the DDTC.[250] Licenses are valid for up to four years and expire when either the value or quantity authorized has been shipped, or at the expiration of four years, whichever occurs first.[251] In all instances, DDTC licenses are provided to the U.S. Customs and Border Protection in advance of the export or temporary import. How far in advance depends on the sensitivity of the export or temporary import and the mode of transport—but is never more that 24 hours prior to departure.[252] This U.S. Customs and Border Protection requirement does not apply to technical data or defense services.[253]

Previously approved licenses may be amended if the proposed amendments are minor and are approved by the DDTC. Major amendments, to include, *inter alia*, changes in quantity, end-user or end-use, require a new license.[254] Any change of end-user and end-use which relates to a previously approved license requires DDTC approval.[255] Changes in either end-user or end-use are described as "reexport" or "retransfer."[256] For SME, the foreign consignee, the foreign end-user, and the applicant must sign a non-transfer and use certificate, which provides assurances that the end-user or end-use will not change absent approval from the DDTC.[257] Licenses and other approvals may be denied, revoked, suspended, or amended for a variety of reasons, to include when

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[247] *ITAR, supra* note 25 at § 120.20.
[248] *Ibid.* at § 120.28.
[249] *DDTC Homepage*, *supra* note 183 at <http://www.pmddtc.state.gov/DTRADE/documents/DTrade_DSP_5_Instructions.pdf> (last visited 20 June 2010)
[250] *Ibid.* at <http://www.pmddtc.state.gov/DTRADE/index.html> (last visited 20 June 2010).
[251] *ITAR, supra* note 124 at § 123.21.
[252] *Ibid.* at § 123.22.
[253] *Ibid.*
[254] *Ibid.* at § 123.25.
[255] *Ibid.* at § 123.9.
[256] *Ibid.* at § 120.19.
[257] *Ibid.* at § 123.10, § 124.10

the DoS "deems such an action to be in furtherance of world peace, the national security or the foreign policy of the [U.S.], or is otherwise advisable."[258]

The ITAR includes a number of exemptions of general applicability whereby certain exports do not require a DDTC license prior to export.[259] The only exemption for Category XV space technologies relates to articles fabricated for fundamental research purposes by accredited U.S. institutions of higher learning—and only then when the export involves NATO or major non-NATO allies or member countries of the European Space Agency or European Union and involves exclusively nationals of these countries.[260]

In addition to exports and temporary imports, "certain proposals to foreign persons for the sale or manufacture abroad of [SME] require either the prior approval of, or prior notification to, the [DDTC]"[261] As all commercial satellites, with the exception of COMSATs *not* intended for use by the armed forces of a foreign military, are designated as SME, this requirement is one that likely affects some U.S. satellite manufactures foreign sales presentations.

b. Maintenance of Records

The ITAR imposes a records requirement on those registered with the DDTC.[262] Records must be kept for five years or more concerning "the manufacture, acquisition and disposition…of defense articles; of technical data; the provision of defense services; [and] brokering services…"[263] These records must be available at all times for inspection by DDTC officials and Customs officers, among others.[264] This requirement arguably seeks to counter the types of problems encountered by the Cox Committee regarding the shoddy records keeping practices of Hughes in relation to the two Long March rocket failures that were the subject of *The Cox Report*.

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[258] *Ibid.* at § 126.7.
[259] *Ibid.* at § 123.16.
[260] *Ibid.* at § 123.16(b)(10).
[261] *Ibid.* at § 126.8.
[262] *Ibid.* at § 122.5.
[263] *Ibid.*
[264] *Ibid.* at § 122.5(b).

c. Manufacturing Licensing Agreements and Technical Assistance Agreements

Defense services, as defined by the ITAR, are generally characterized as manufacturing licensing agreements or technical assistance agreements, among others.[265] DDTC approval is required before any such agreement may enter into force.[266] Once approved, no further licensing is generally required—even in cases involving the export of technical data in furtherance of the agreement.[267] The concluded agreement must include certain information relating to the item to be manufactured or the assistance to be furnished and be filed with the DDTC.[268] The ITAR prescribes specific language that must be included in all manufacturing licensing agreements and technical assistance agreements, to include, *inter alia*, "this agreement shall not enter into force, and shall not be amended or extended, without the prior written approval of the Department of State of the U.S. Government."[269]

d. Congressional Certification

The congressional certification requirements within the *AECA* are promulgated in the ITAR.[270] Prior to the granting of a license or other approval for the export of defense articles or defense services valued above certain dollar thresholds, a certification must be provided to the Congress. The dollar thresholds are reduced for NATO member countries, Australia, Japan, New Zealand and South Korea.[271] Irrespective of dollar value, manufacturing licensing agreements and technical assistance agreements involving SME also require congressional certification.[272] Should the Congress determine pursuant to a joint resolution that the export, manufacturing licensing agreement or technical service agreement to be certified should be prohibited, the DDTC may not issue a license or otherwise approve the transaction.[273]

e. Space-specific Provisions in the ITAR

The ITAR includes several provisions specific to the export or temporary import of ITAR-controlled space technologies. The first of these provides DDTC-registered U.S. persons engaged

[265] *Ibid.* at § 124.1.
[266] *Ibid.*
[267] *Ibid.* at § 124.3.
[268] *Ibid.* at § 124.7, § 124.4.
[269] *Ibid.* at § 124.8.
[270] *Ibid.* at § 123.15.
[271] *Ibid.*
[272] *Ibid.*
[273] *Ibid.*

in the business of exporting or temporarily importing COMSATs, as well as associated equipments and technical data, the ability to submit multiple DDTC applications without meeting many of the ITAR's documentary requirements, under certain closely prescribed circumstances.[274] Among these is the requirement that the transaction involve only NATO and major non-NATO ally countries and that the foreign government or foreign company involved is approved by the USG for purposes of this exception.[275] This exception—which appears to provide a "blanket license" for certain transactions among allied nations—arguably reflects the national security interest model reflected in Figure 1, *supra*. Indeed, as the national security interests implicated are relatively low, particularly given the closely prescribed circumstances under which the exception is available, so too are the regulatory hurdles associated with the export. What is not known, is the extent to which U.S. companies take advantage of this exception, as such statistics are not made available by the DDTC.

A second space-specific provision in the ITAR relates to the "special export controls" required when a given export involves the launch in, or foreign nationals of, a non-NATO member country or non-NATO ally of the U.S.[276] These controls require a DoD-approved Technology Transfer Control Plan (TTCP) and a National Security Agency-approved (NSA) Encryption Technology Control Plan. As mandated by the *STNDAA for FY 1999* and promulgated by the ITAR, the presence of a DoD monitor is required at all technical discussions and activities, satellite processing and launch activities, activities related to launch failure, delay or cancellation, as well as all other aspects of the launch.[277] The costs of these monitoring services are borne by the U.S. exporter.[278] These special controls also require mandatory licenses for both launch failure investigations or analysis and exports (e.g. technical data) to insurance providers and underwriters.[279]

[274] *Ibid.* at § 123.27.
[275] *Ibid.*
[276] *Ibid.* at § 124.15.
[277] *Ibid.*
[278] *Ibid.*
[279] *Ibid.*

The congressional certification provisions of the ITAR also include a space-specific provision.[280] It imposes a 15-day certification window (during which the DDTC may not approve the license application) for all exports and temporary imports involving NATO member countries, Australia, Japan, New Zealand, and South Korea *and* for COMSAT launches involving the Russian Federation, Ukraine, or Kazakhstan or its nationals. A 30-day certification window is imposed for all other exports.

The ITAR also includes a space-specific provision in relation to *what* constitutes an export. Namely, a satellite registered in a foreign country but which is physically located in the U.S., is still considered an export for purposes of the ITAR.[281] For example, if a foreign government purchases a U.S.-built satellite and also utilizes U.S. launch services, the satellite would presumably not leave the U.S. prior to launch (launch, in and of itself, is not considered an export). This provision therefore appears to close a potential loophole in the ITAR—notwithstanding the other provisions requiring licenses for the transfer of technical data and the like to foreign purchasers.

Finally, the ITAR includes specific exemptions for exports and temporary imports involving Canada.[282] Canada also happens to be the U.S.'s largest trading partner.[283] Interestingly, the exemptions are so extensive that rather than listing the defense articles subject to the exemption, the defense articles *not* subject to the exemption are listed. Among the defense articles exempt from the licensing requirements of the ITAR are COMSATs.[284] Certain defense services and technical data related to space technologies are also exempt from the licensing requirements of the ITAR.[285]

f. ENFORCEMENT

The enforcement provisions of the ITAR prescribe unlawful acts under the regulations and the various punishments associated therewith.[286] Engaging in activities covered by the ITAR

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[280] *Ibid.* at § 123.15.
[281] *Ibid.* at § 123.8.
[282] *Ibid.* at § 126.5.
[283] Government Accountability Office, *Defense Trade: Lessons to Be Learned for the Country Export Exemption* (March 2002), Report No. GAO-02-63, online: GAO <http://www.gao.gov/new.items/d0263.pdf>.
[284] *ITAR, supra* note 25 at § 126.
[285] *Ibid.*
[286] *Ibid.* at § 127.1.

without first registering with the DDTC or obtaining a license or other authorization are among the activities proscribed. Acts in contravention to approved licenses or authorizes are similarly proscribed.[287] Conspiracy, vicarious liability and accessory liability are countenanced by the ITAR.[288] Criminal and civil penalties for violations are established by the AECA, while various adverse administrative actions are prescribed by both the AECA and ITAR.[289] Adverse administrative actions include debarment and interim suspension.[290] The ITAR incentivizes voluntary disclosure of violations by indicating such disclosures are a "mitigating factor in determining the administrative penalties, if any, that should be imposed."[291] Absent this incentive, a violator may instead be incentivized *not* to disclose potential violations for fear of the negative repercussions. Moreover, potential compromises to U.S. national security might not be immediately identified or mitigated.

(6) MISCELLANY

As detailed above, the ITAR includes a number of provisions, which distinguish NATO[292] and major non-NATO allies,[293] as well as EU and ESA member countries[294] from the rest of the world. These countries are, without exception, singled out within the ITAR for preferred treatment. In other words, the regulatory hurdles associated with the specific ITAR provisions are lower for these favored countries. Conversely, the ITAR also includes a blacklist—whereby certain countries are presumed to be ineligible to receive U.S. defense articles or defense services.[295] These countries include, *inter alia*: Belarus, Cuba, Eritrea, Iran, North Korea, Syria, Venezuela,

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[287] *Ibid.*
[288] *Ibid.*
[289] *Ibid.* at § 127.3.
[290] *Ibid.* at § 127.8, § 127.7.
[291] *Ibid.* at § 127.12.
[292] NATO allies include: Belgium, Bulgaria, Canada, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Turkey, and The United Kingdom. *Ibid.* at § 120.31.
[293] Major non-NATO allies include: Argentina, Australia, Bahrain, Egypt, Israel, Japan, Jordan, Kuwait, Morocco, New Zealand, Pakistan, the Philippines, Thailand, and Republic of Korea and Taiwan. *Ibid.* at § 120.32.
[294] EU member countries are: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom. See online: Official Website of the European Union <http://europa.eu/abc/european_countries/eu_members/index_en.htm> (Last visited on 20 June 2010). ESA member countries are: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Norway, Portugal Spain, Sweden, Switzerland and the United Kingdom. See online: Website of the European Space Agency <http://www.esa.int/esaMI/About_ESA/SEMP936LARE_0.html> (Last visited on 20 June 2010).
[295] *ITAR, supra* note 25 at § 126.1.

Burma, China, Liberia, and Sudan.[296] As such, a license application submitted to the DDTC for a proposed export or temporary import of a USML-controlled defense article or service would almost certainly be denied.

The purpose of this brief synopsis of the ITAR and its organic statute, the AECA, has not been to offer a practitioner's guide to the scope and workings of the ITAR, but rather to provide a framework for identifying many of the ways in which the ITAR defies the rhetoric of the export control reform debate. To view that debate, one might come to believe that *all* technologies and *all* countries are treated the equally under the ITAR. As detailed above and in the coming chapters, that is a demonstrably false notion. This is not to say the export control regime is not in need of reform, because it is. Once again, however, before determining how best to reform the regime, it is necessary to distinguish the windmills from the giants. The debate must be honest and based in reality, else the reforms resulting therefrom might fail to meet the national security ends of the U.S.

[296] *Ibid.*

CHAPTER 2

ON THE BATHWATER WE AGREE, BUT WHAT OF THE BABY?

THE CURRENT DEBATE OVER U.S. COMMERCIAL SATELLITE EXPORT CONTROL REFORM

I. INTRODUCING THE REFORM DEBATE

In 1991, a book written by the late Senator John Heinz entitled *U.S Strategic Trade: An Export Control System for the 1990s* was published.[297] In it, Senator Heinz called for the wholesale reform[298] of the U.S. export control regime claiming, "[t]his country can no longer afford the *status quo*."[299] Calling on assessments from both inside and outside the USG, Senator Heinz concluded that the U.S. national security export control system, developed in response to the hegemonic struggle between the U.S. and the Soviet Union, was ill-suited for the challenges of the future—specifically, the 1990s.[300] The following considerations are among those which led the Senator to this conclusion: the loss of U.S. dominance in the high technology marketplace;[301] globalization, commoditization, and foreign availability of advanced technologies;[302] the paradoxical national security threat posed by export controls which do not take into consideration the health of the technology and industrial bases (which Senator Heinz called "economic security");[303] the "designing out" of U.S. parts and components (a foreshadowing of today's ITAR-free movement); the need to reduce unilateral controls, while strengthening multilateral controls;[304] the failure of the export control regime to keep pace with ever-evolving technological developments;[305] export licensing delays and an unpredictable interagency review process;[306] the more favorable export control policies of foreign governments;[307] the notion that the U.S. export control system is the most restrictive in the world;[308] and the fact that, due to U.S. export controls, the U.S. is seen as an

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[297] *Heinz, supra* note 1.
[298] As will be discussed in Chapter 3, Senator Heinz' proposals for wholesale reform of the export control system are remarkably similar to the wholesale reform effort currently being offered by the Obama Administration.
[299] *Heinz, supra* note 1 at x.
[300] *Ibid.* at 1, 45.
[301] *Ibid.* at 103.
[302] *Ibid.* at 3.
[303] *Ibid.* at 37, 104.
[304] *Ibid.* at 36.
[305] *Ibid.* at 37.
[306] *Ibid.* at 26, 27, 32.
[307] *Ibid.* at 105.
[308] *Ibid.* at 113.

"unreliable exporter."[309] These conditions, Senator Heinz opined, rendered obsolete the U.S. export control regime and portended the need for reform.

This rather lengthy recitation of a 20-year-old book on the topic of U.S. export controls is offered to foreshadow the fact that very little about the export control reform debate has changed in the last two decades. Neither were Senator Heinz' views unique at the time. Indeed, the National Academy of Science, in a 1987 book entitled, *Balancing the National Interest: U.S. National Security Export Controls and Global Economic Competition*, reached many of the same conclusions.[310] As will become clear in the coming pages, the export control reform debate is rhetorically frozen in time. None of this is to suggest that Senator Heinz' conclusions, or the assessments underlying those conclusions, have been proven erroneous simply by the passage of time. But what of the Senator's assertion, "this country can no longer afford the *status quo*?" The *status quo* of 1991, by and large, remains the *status quo* today. This begs the question: is there evidence to suggest that the U.S. paid a price during the last 20 years as a result of the *status quo*? For example, have ITAR-controlled space technologies fallen into the hands of enemies or potential enemies as a result of the export control regime? Has the capacity of the U.S. to produce cutting-edge space technologies diminished? How has the space sector of the technologic and industrial base fared during this time? How have U.S. competitors in space fared during this time?

This Chapter will examine the present day export control reform debate and those involved in it. When present day claims reminiscent of Senator Heinz' are made, such as, "the committee's findings confirm the urgent need for fundamental policy change to counteract the harm that is being done to national security and economic prosperity by national security controls adopted in the 1960s and 1970s that reflect Cold War-era policies,"[311] the urgency of the claims must be weighed against the reality that the *status quo* has faced the same attacks for more than two decades.

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[309] *Ibid.* at 114.
[310] See Committee on Science, Engineering, and Public Policy *et. al. Balancing the National Interest: U.S. National Security Export Controls and Global Economic Competition* (Washington D.C.: The National Academy Press, 1987).
[311] *Beyond "Fortress America", supra* note 2 at viii.

A. THE PLAYERS

The export control reform debate is perhaps best summed up by the following headline, which appeared in the online journal *The Space Review*: "Boring but important policy developments."[312] Indeed, "…export controls are not issues that provoke the attention of the nation's citizens, and for that reason, have a seemingly 'quiet' impact."[313] As a result, those involved in the debate are a relatively small group (as compared to health care or immigration reform which affect the U.S. populous as a whole) of interested and affected parties, including: the Congress, the Administration (including the national security and foreign policy infrastructure), affected industry, think-tanks, and national security and space commentators. The confluence of several of these groups has resulted in the formation of an advocacy coalition. The role of each of these groups is discussed in turn below.

(1) THE CONGRESS

Since July 2007, the U.S. House of Representatives has held no fewer than six hearings on the topic of export controls—contributing over 400 pages of transcribed testimony to the discourse on the subject.[314] Five of those hearings were held by the Subcommittee on Terrorism, Nonproliferation and Trade, which falls under the Committee on Foreign Affairs; the remaining hearing was held before the full Committee on Foreign Affairs. Foreshadowing one of the many political aspects of this debate, the emphasis placed on this subject by the Committee on Foreign Affairs is likely due in part to the fact that its Chairman, Representative Howard Berman, is both a staunch advocate of export control reform and also represents a congressional district in California, a state home to "61,000 exporting firms and an increasing number of…academic and research establishments [with] significant compliance responsibilities."[315] The Chairman of the Subcommittee of Terrorism, Nonproliferation and Trade, Representative Brad Sherman of

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[312] Jeff Foust, "Boring but important policy developments" *The Space Review* (2 November 2009), online: The Space Review < http://www.thespacereview.com/article/1503/1>.

[313] *Beyond "Fortress America", supra* note 2 at 81.

[314] *Are We Protecting Security and Facilitating Exports? supra* note 5; *A Strategic and Economic Review of Aerospace Exports, supra* note 150; *Export Controls on Satellite Technology, supra* note 41; *The Export Administration Act: A Review of Outstanding Policy Considerations, supra* note 7; *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3; U.S., *Export Compliance: Ensuring Safety, Increasing Efficiency, Hearing Before the Subcommittee on Terrorism, Nonproliferation and Trade of the Committee on Foreign Affairs House of Representatives*, 110th Congress (2008).

[315] Howard L. Berman, Editorial, "U.S. Export Control Policy in Dire Need of an Update", *The San Jose Mercury News* (15 January 2010), online: U.S. House Committee on Foreign Affairs <http://www.hcfa.house.gov/111/press_011510.pdf>.

California, is also a staunch supporter of export control reform and an adherent to the notion a robust space industrial base that is competitive in the international marketplace is critical to U.S. national security.[316] For its part, the U.S. Senate appears content to allow the House to lead the debate on these issues. However, the Senate did recently hold a hearing on two as yet ratified export control treaties with the U.K. and Australia which, if ratified by the Senate, would ease U.S. export control controls with these two countries.[317] These treaties are discussed in Chapter 3.

Congress' role in export control reform is obviously not limited to debate. Comprehensive reform, like that being called for by the Obama Administration, would require legislative changes to both the *AECA* and the *EAA*. It should also be noted that the GAO, the watchdog of the Congress, has weighed in on the issue of exports control on a number of occasions over the past decade.[318]

(2) THE ADMINISTRATION

President Obama has made clear his intention to reform strategic export controls relating to space technologies. Even before his election, Candidate Obama identified ITAR reform as one of his stated policy goals, indicating that "[o]utdated restrictions have cost billons of dollars to American satellite and space hardware manufacturers as customers have decided to purchase equipment from European suppliers."[319] In his 2010 State of the Union Speech, the President announced a National Export Initiative that will, among other things, increase exports through the reform of export controls consistent with national security.[320] The President's appointment of Ellen Tauscher, a long-time and vocal critic of the ITAR regime, as Undersecretary of State for Arms Control and International Security (under which the DDTC falls), is also a good indication of

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[316] See e.g. *Export Controls on Satellite Technology, supra* note 41 at 3-4 (this is what Senator Heinz dubbed "economic security").
[317] Office of Senate Foreign Relations Committee Chairman John Kerry, Press Release, "Chairman Kerry Opening Statement For U.S. Defense Trade Treaties Hearing" (10 December 2009), online: <http://kerry.senate.gov/press/release/?id=ffdde81f-51c7-4b87-97f5-8b741801b153>.
[318] *Export Controls, Vulnerabilities and Inefficiencies Undermine System's Ability to Protect U.S. Interests, supra* note 1; *High Risk Series: An Update, supra* note 37; Government Accountability Office, *Defense Trade: Analysis of Support for Recent Initiatives* (August 2000) Report No. GAO/NSIAD-00-191, online: GAO < http://www.gao.gov/archive/2000/ns00191.pdf >; U.S. Government Accountability Office, *Defense Trade: Arms Export Control System in the Post- 9/11 Environment* (February 2005), Report No. GAO-05-234, online: GAO <http://www.gao.gov/new.items/d05234.pdf>; *Defense Trade: Lessons to Be Learned for the Country Export Exemption*, *supra* note 283.
[319] Candidate Barack Obama, Space Policy Statement, "Advancing the Frontiers of Space Exploration" (2008), online: Organizing for America <http://www.barackobama.com/pdf/policy/Space_Fact_Sheet_FINAL.pdf>.
[320] White House, Office of the Press Secretary, *Remarks by the President in the State of the Union Address* (27 January 2010), online: White House <http://www.whitehouse.gov/the-press-office/remarks-president-state-union-address>.

his policy aims.[321] In yet another foreshadowing of the politics of this debate, the lead spokesperson for reform within the Administration is Defense Secretary Robert Gates. Indeed, Secretary Gates announced the Administration's ambitious export control reform agenda on 20 April 2010—deriding the current regime as a "byzantine amalgam" of bureaucracies.[322] Defense Secretary Gates, at first blush, seems an odd choice to fill this role in light of the fact that DoS and DoC are the lead USG agencies for export controls. However, if the intention of the Administration is to head off the inevitable criticism by national security hawks about the loosening of export controls offense through fundamental reform,[323] what better spokesperson to have out in front on the issue than Secretary Gates, who has led the DoD under both the Bush and Obama Administrations? In this respect, the selection of Secretary Gates appears to be a wise political choice.[324]

(3) THE U.S. INDUSTRIAL BASE

Accurately defining the U.S. industrial base for purposes of the export control reform debate is somewhat analogous to defining the term dual-use—the moniker may simply belie a precise definition. The difficulty in defining this group is due in part to the changing makeup of its members. For example, one of the assessments detailed below describes the merger over the past few decades of the military technology base and the commercial technology base into one

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[321] See e.g. *Tauscher, supra* note 31.

[322] *Fact Sheet on the President's Export Control Reform Initiative*, *supra* note 45; *Whitlock, supra* note 36.

[323] For example, some Republicans are reportedly concerned that "the Obama administration may be preparing to loosen export control regulations, which they see as a dangerous concession to part of the business sector that increases risks of technology and innovation losses to countries such as China." Josh Rogin, "Team Obama convenes major secret meeting on export controls" *Foreign Policy* (27 January 2010), online: Foreign Policy <http://thecable.foreignpolicy.com/posts/2010/01/27/team_obama_convenes_major_secret_meeting_on_export_controls>.

[324] It is also helpful that Secretary Gates is supported in his views by the uniform component of the DoD, with the Commander of U.S. Strategic Command, General Kevin P. Chilton, indicating before the House Committee on Armed Services in April 2009,

> I remain concerned that our own civil and commercial space enterprise, which is essential to the military industrial base, may be unnecessarily constrained by export control legislation and regulation. Clearly, legitimate national security concerns must continue to underlie the need to restrict the export of certain space-related technologies, equipment, and services. However, appropriate flexibility to permit relevant technology transfers when commercially availability renders their control no longer necessary should be considered to help ensure our space industrial base for the future.

Statement of General Kevin P. Chilton, online: U.S. House Armed Services Committee <http://armedservices.house.gov/pdfs/SF031709/Chilton_Testimony031709.pdf>.

monolithic technology base.[325] This merger reflects the new paradigm of dual-use technologies—that militarily useful technologies are increasingly "spinning in" from the commercial sector. Absent a precise definition, however, there is a risk that affected space interests—for example the COMSAT sector, an oligopoly of several prime contractors and sundry tier-2 subcontractors and tier-3 commodity suppliers—are conflated with non-space interests within the larger reform debate.[326] Arguably, the danger with conflation is that the relative health of one facet of U.S. industry is imputed on another, when in fact those two facets might bear little relation to one another. For example, the interoperability problems the U.S. and its allies have encountered with regard to terrestrial weapons systems[327] may in fact harm the foreign sales of those terrestrial weapons systems and, by extension, the economic viability of its manufactures. Nevertheless, this harm is not necessarily attributable, absent some evidentiary link, to the export of commercial space technologies or the health of manufactures of space technologies. The interoperability problems of terrestrial weapons systems are nonetheless cited as a reason to reform the current export control system as a whole, which necessarily include controls related to commercial space technologies.

Accurately defining the U.S. space industrial base as it exists within the larger U.S. industrial base is apparently no easy feat either. For purposes of its *Defense Industrial Base Assessment* of the U.S. space industry, the DoD, using data collected by the BIS, sent surveys to 274 companies that ran the gamut of products and services, from spacecraft, to ground equipment, to others.[328] Why these particular companies were selected for the survey is entirely not evident from the report. More importantly, the Assessment offers no indication as to whether the surveyed group constituted a statistically representative sample of the U.S. space industry. It is noteworthy, and

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[325] *Beyond "Fortress America", supra* note 2 at 20.

[326] See generally, Industrial College of the Armed Forces, *Space Industry Study 2007*, online: U.S. National Defense University <http://www.ndu.edu/icaf/programs/academic/industry/reports/2007/pdf/icaf-is-report-space-2007.pdf>.

[327] In his speech announcing the Obama administrations export control reform agenda, Secretary Gates related the following, "Not too long ago, a British C-17 [a U.S.-manufactured military transport aircraft] aircraft spent hours disabled on the ground in Australia—not because the needed part was unavailable, but because U.S. law required the Australians to seek U.S. permission before doing the repair…These are two of our strongest allies for God's sake!" *Whitlock, supra* note 36.

[328] Department of Defense, *Defense Industrial Base Assessment: U.S. Space Industry, Final Report* (31 August 2007) 1, online: BIS <http://www.bis.doc.gov/defenseindustrialbaseprograms/osies/defmarketresearchrpts/exportcontrolfinalreport08-31-07master___3---bis-net-link-version---101707-receipt-from-afrl.pdf> [*Defense Industrial Base Assessment*].

somewhat ironic, that the DoD did not posit a definition for the "space industrial base" in a report ostensibly created to gauge the health of that base. Similarly, the Space Foundation conducted a survey in 2007 in order to gauge the impact of ITAR on the "U.S. Space Industry."[329] While the makeup of that industry was nowhere defined in the resultant report, the Space Foundation nonetheless acknowledged, "because the survey invitees were not selected randomly from the population of U.S. space industry members, the quantitative results cannot be generalized to that population and inferential statistical tests are unsupported. The survey results should be interpreted as intuitive, non-statistical evidence."[330] The *Defense Industrial Base Assessment* included no such caveat to its reported findings—despite having neglected to define the U.S. space industry or randomly select companies from its membership for purposes of its survey. Like the Space Foundation survey, the results of the *Defense Industrial Base Assessment* should be viewed as "intuitive, non-statistical evidence." As we shall see, however, the various assessments citing the *Defense Industrial Base Assessment* do not appear to make this distinction—effectively turning "intuitive, non-statistical evidence" into evidence.

The effects of this failure to distinguish various types of evidence—and the relative certitude of the conclusions to be drawn therefrom—are not innocuous, but pernicious. For example, Ms. Patricia Cooper, President of the Satellite Industry Association (SIA), speaking on behalf of her constituents in industry before the Subcommittee on Terrorism, Nonproliferation and Trade on the issue of export controls reform, testified that ITAR compliance cost the space industrial base $50 million per year and that licensing issues cost as much as $600 million per year in lost revenues.[331] The source Ms. Cooper cited for these figures was a 2008 Center for Strategic & International Studies (CSIS) study entitled, *Health of the U.S. Space Industrial Base and the Impact of Export Controls* (*2008 CSIS Study*).[332] The figures cited in the *2008 CSIS Study* originated in the *Defense Industrial Base Assessment* which, as has been shown, produced "intuitive, non-statistical evidence."[333] This scenario brings to mind a quote from the Lewis Carroll's poem *The Hunting of the*

[329] Space Foundation, *ITAR and the U.S. Space Industry* (2008) online: Space Foundation <http://www.spacefoundation.org/docs/SpaceFoundation_ITAR.pdf>.
[330] *Ibid.* at 15.
[331] *Export Controls on Satellite Technology, supra* note 41 at 45.
[332] *Ibid; 2008 CSIS Study, supra* note 42.
[333] *2008 CSIS Study, ibid.* at 33.

Snark, namely: "I have said it thrice: What I tell you three times is true."[334] The fallacy of this logic is evident, as the simple act of repeating something does not make what is said true. However, in practical effect, the veracity of Ms. Cooper's claims were likely buoyed by the multiple sourcing.[335] In the end, the Congress was undoubtedly left with the impression that the $50 million and $600 million figures cited were more than mere intuitive non-statistical evidence. To be sure, one congressman cited the same $600 million figure in his opening statement at that very hearing.[336]

All of this to say that the difficulty in defining and distinguishing affected industry within the export control debate and the failure to distinguish anecdotal evidence from non-anecdotal evidence adds yet another layer of complexity and uncertainty to it.[337]

(4) THINK-TANKS, NATIONAL SECURITY AND SPACE COMMENTATORS

There are no shortage of assessments relating to the current export control regime. There is also no shortage of criticism. That is not to say that all of the criticism is as hyperbolic as the litany offered in the Introduction. Rather, by and large, the assessments deliver a sober set of findings and recommendations for improving the regime. The sphere of influence of at least two such assessments includes policy makers both within the Congress and the Administration.

a. *2008 CSIS STUDY*

The first of these assessments is the above mentioned *2008 CSIS Study*.[338] On 2 April 2009, Mr. Pierre Chao, a former senior associate at CSIS was called to testify before the Subcommittee on

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[334] Lewis Carroll, *The Hunting of the Snark: An Agony in Eight Fits* (New York: MacMillan and Co. 1891) 46.
[335] The $50 million in compliance cost figure is also cited in *Beyond "Fortress America." Supra* note 2 at 27.
[336] *Export Controls on Satellite Technology, supra* note 41 at 11.
[337] Again, this is nothing new. In a 1993 book entitled *United States Technology Export Control: An Assessment*, Douglas McDaniel, in attempting to determine whether the economic costs of export controls were adversely affecting industry, concluded:

> …based on admittedly sketchy macroeconomic and microeconomic data, high technology trade and market share data, and government data on licensing patterns and the regulatory process, the economic cost of controls is not excessive. *Much contrary anecdotal evidence is available from the private sector concerning the damage controls cause U.S. high-technology producers*. However, unless concrete and quantifiable data showing an exclusive and causal link between controls and lost sales over a sustained period is publically released by exporters, their claims remain suspect. (emphasis added)

Douglas E. McDaniel, *United States Technology Export Control: An Assessment* (Westport: Praeger Publishers, 1993) at xv.
[338] *Supra* note 42.

Terrorism, Nonproliferation and Trade, concerning the Study's findings. The chairman of that subcommittee, Representative Berman, sat on a CSIS commission in 2002 that produced a report which also called for the reform of the export control regime.[339] Then Representative Tauscher, now Undersecretary of State Tauscher, was also a member of that commission.[340]

In its 2008 Study, the CSIS found that the overall heath of the space industry was good, but that assessment was accompanied by several caveats, including: (1) industry's dependence on national security-related USG contracts for 60% (95% if civil government contracts are included) of its revenue—which the CSIS described as "arsenalizing" the industry; and (2) 2nd and 3rd tier manufactures (i.e. smaller companies, as opposed to the major prime contractors like Boeing) are losing global market share due to the "friction" created by U.S. export controls.[341] The latter caveat is supported by the fact that smaller companies typically do not have the resources to maintain an ITAR compliance staff, as do the prime contractors. As Representative Berman lamented in an editorial to *The San Jose Mercury News*, "[y]ou practically have to have a law degree or Ph.D to keep from running afoul of the increasingly complex export control regime."[342] The assumption, therefore, is that smaller companies are less able to navigate the complexities of U.S. export controls in a manner that satisfies foreign customers and are losing global market share as a result. The follow-on argument, which is also the primary contention of The National Academies' *Beyond "Fortress America"* (discussed below), is that a drop in global market share means less revenue for the 2nd and 3rd tier companies; less revenue, in turn, threatens innovation—the 2nd and 3rd tier being "the source of much innovation;" innovation is a strategic imperative for the U.S. national security; *ipso facto*: reduced revenue for 2nd and 3rd tier companies threatens national security.[343]

b. *BEYOND "FORTRESS AMERICA"*

The second such assessment, is a 2009 National Research Council (NRC) of the National Academies book entitled, *Beyond "Fortress America": National Security Controls on Science and Technology*

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[339] Center for Strategic and International Studies (CSIS), *Preserving America's Strength in Satellite Technology* (April 2002) 39, online: CSIS <http://csis.org/files/media/csis/pubs/081023_lewis_satellitetech.pdf >.
[340] *Ibid.*
[341] *Export Controls on Satellite Technology, supra* note 41 at 21-3. (Study's author explaining its findings before a House Subcommittee hearing)
[342] *Berman, supra* note 315.
[343] *2008 CSIS Study, supra* note 42 at 10.

in a Globalized World (*Beyond "Fortress America"*).[344] The influence of this work is also evident from the congressional record. Not only did Dr. John Hennessy, the co-chair of the committee that produced the book, testify before the Committee on Foreign Affairs with regard to ITAR reform, but Chairman Berman indicated the book was in part responsible for the Committee's reform initiatives.[345] In addition, Brent Scowcroft, Dr. Hennessy's co-chair on the committee, was invited to a "secret meeting" in January 2010 on the topic of export control reform.[346] The meeting was reportedly organized by Chairman Berman and attended by, among others, Defense Secretary Gates, Commerce Secretary John Locke, National Security Advisor Jim Jones, Undersecretary of State Tauscher, and Mr. Scrowcroft.[347] It is noteworthy that Mr. Scrowcroft appears to be the only attendee at this meeting of principles not currently affiliated with either the Congress or the Administration.

The NRC's thesis is that the "national security controls that regulate access to and export of science and technology are broken."[348] The controls are broken not because of the ends the controls seek to achieve, rather because the current unilateral means of achieving those ends does not reflect the "world is flat" reality of modern geopolitics.[349] In short, the "system was designed for a world that no longer exists."[350] The current export control regime was developed during the cold war, when U.S. hegemony in science and technology was at its peak.[351] Post-Cold War globalization has changed that reality. "While the United States remains a world leader in advanced science and technology; it is now *among* the leaders."[352] The "Fortress America" approach, which tightly restricts and regulates the cross-flow of technologies and information relating to those technologies is harming national security interests, rather than furthering those interests. The NRC claims this is due in part to outdated export controls.[353]

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[344] *Beyond "Fortress America", supra* note 2.
[345] *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3 at 25.
[346] *Rogin, supra* note 323.
[347] *Ibid.*
[348] *Beyond "Fortress America", supra* note 2 at Vii.
[349] *Ibid.* at 61.
[350] *Ibid.* at 13.
[351] *Ibid.* at 1.
[352] *Ibid.* at 2.
[353] *Ibid.*

According to the NRC, the new approach to export controls must recognize the interdependence of national security and economic competitiveness—or what the late Senator Heinz called "economic security."[354] Again, the argument here is that industry prosperity spurs innovation; innovation is a key to developing technologies more advanced than your enemy or potential enemy, *ipso facto*, industry prosperity is essential to national security. In other words, the race to develop advanced technologies is akin to an arms race—with the prize going to who can "run faster."[355] In order to accomplish this, economic interests should begin to weigh more heavily in determining what should be subject to export controls.[356] The question that should be asked in determining *what* should be controlled is: "do security interests outweigh the harm?"[357] In application, this would result in the control of "a very narrow and limited set of goods, technology, and know-how."[358]

The NRC does not argue that the U.S. export control regime should be scrapped. Rather, it argues that the reform should result in more exacting regulation (fewer controls over fewer items) and that this can be achieved immediately via Executive Order.[359] The Executive Order route is preferred by the NRC, due to the seeming inability of the Congress to act.[360] One unique feature of *Beyond "Fortress America"* is the recommendation to add an additional layer of bureaucracy to the current bureaucracy, namely: a Coordinating Center for Export Controls, which makes the initial determination whether the license application goes to the DoS or Doc; it also recommends creating an Export License Appeals Panel, although given the DDTC's license denial rate this latter proposal hardly seems necessary.[361]

The National Academies (under which the NRC falls), as alluded to above, have been involved in the export control reform debate since at least 1987. And in fact, *Balancing the National Interests: U.S. National Security Export Controls and Global Economic Competition*, published by the organization that year, shares much in common with *Beyond "Fortress America"*, published by it some

[354] *Ibid.* at 59; *Heinz, supra* note 1 at 37, 104.
[355] *Beyond "Fortress America", ibid.* at 130.
[356] *Ibid.* at 61.
[357] *Ibid.* at 62.
[358] *Ibid.* at 81.
[359] *Ibid.* at 20.
[360] *Ibid.* at 28.
[361] *Ibid.* at 59.

22 years later. Most notably, the books juxtapose the U.S. export control regime with the new realities imposed by globalization, as well as the deleterious effects on national security when economically deprived companies fail to innovate technologically.[362] Interestingly, the 1987 book offers a caveat in its preface, to wit: "…we determined that reliable quantitative data regarding the effectiveness of controls—and the impact of controls on economic development and trade—continue to be very difficult to obtain."[363] *Beyond "Fortress America"* includes no such caveat. Whether the National Academies profess a higher degree of certitude with regard to its more recent findings is unclear, but that can certainly be implied by the decision, whether conscious or unconscious, *no*t to include a caveat to those findings.

(5) THE ADVOCACY COALITION

Marion Blakely, president and chief executive of the Aerospace Industries Association, in response to the announcement of the Obama Administration's export control reform initiative, indicated, "I think it's actually unprecedented that we have this top-down commitment to an issue that is often pushed to the periphery."[364] Indeed, it would appear that the "stars have aligned"[365] and that all of the stakeholders—including the President and relevant members of his Cabinet,[366] a bipartisan coalition of House Congressional Representatives,[367] and the space industrial base[368]—in the current reform debate are critics of the current regime. Arguably, these stakeholders have formed an advocacy coalition which "consists of actors from a variety of governmental and private organizations at different levels of government who share a set of policy beliefs and seeks to realize them by influencing the behavior of multiple governmental institutions over time."[369] Advocacy coalitions are critical to progressing political agendas from conception to policy—whether that policy is implemented via regulation or statute.[370] Moreover, "[p]olicy change over time is a function of three sets of factors: the interaction of competing advocacy coalitions within a policy

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[362] *Balancing the National Interest: U.S. National Security Export Controls and Global Economic Competition, supra* note 310 at 9.
[363] *Ibid.* at viii.
[364] *Whitlock, supra* note 36.
[365] *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3 at 45.
[366] *Klamper,* "Obama ITAR Reform Could Move Satellites Back to Commerce" *supra* note 39; *Klamper,* "Official Reaffirms White House Support for ITAR Reform" *supra* note 39.
[367] *H.R. 2410, supra* note 40.
[368] See e.g. Written Testimony of Patricia Cooper, President of the Satellite Industry Association, *supra* note 41 at 40.
[369] *Bosso & Kay, supra* note 8 at 46.
[370] Eligar Sadeh & Brenda Vallance, "The policy process" in Damon Coletta & Fances T. Pilch eds. *Space and Defense Policy* (New York City: Routledge, 2009) 125 at 128.

subsystem; changes external to the subsystem (socioeconomic conditions, system wide governing coalitions); and effects of stabile system parameters (basic social structure, constitutional rules) that act as constraints."[371] Applying these three factors to the current debate would seem to portend the policy change to come.

First, the present advocacy coalition pushing for reform has clearly won the day, to the extent that there was any competition to begin with. Critics of the export control regime have been trumpeting its flaws for decades, yet those critics did not include and/or influence policy makers to do more than implement incremental changes to the regime. Bureaucratic stasis, rather than a competing coalition, was arguably responsible for the lack of reform. For his part, Senator Heinz, who was in a position to affect fundamental reform, died in a plane crash shortly after the publication of his book in 1991.[372] As is evident from Mr. Blakely's "top down commitment" comment, the critics of the export control regime now include policy makers who are both empowered and motivated to affect change.

Second, changes external to the subsystem include the temporal distance between the reform debate and the policy galvanizing events which led to the enactment of the *STNDAA for FY 1999*—namely, disclosure made by Hughes and Loral to the PRC which may have improved the reliability of Chinese ICBMs. Arguably, the more time passes the less those events drive the debate. That is not to say that everyone involved in the current debate has forgotten those events or intends to let others forget. Congressman Dana Rohrabacher of the Committee on Foreign Affairs, indicated during a hearing in January 2010,

> [O]ne of the issues that confronts us today is whether or not we are going to make our satellite companies more competitive by legislation that will permit them to launch on Chinese rockets. We should have learned our lesson 15 years ago when our national security was severely compromised by this very same policy.[373]

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[371] *Bosso & Kay, supra* note 8 at 46.
[372] John Cushman Jr. "Senator Heinz and 6 Others Killed In Midair Crash Near Philadelphia" *The New York Times (5 April 1991)*, online: The New York Times <http://www.nytimes.com/1991/04/05/us/senator-heinz-and-6-others-killed-in-midair-crash-near-philadelphia.html?sec=&spon=?pagewanted=1>.
[373] *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3 at 8.

Although no such legislation had been proposed—and in fact the reform legislation which passed the House of Representatives in July 2009 specifically maintained the proscriptions of the *STNDAA for FY 1999* with regard to PRC launch services[374]—the point is that events of the mid-1990s are still fresh in the minds of some policy makers.

An additional change external to the subsystem is the appearance in recent years of both ITAR-free satellites and the apparent decline in U.S. market share relating to COMSAT sales abroad.[375] Arguably, these changes breathe new life into the reform arguments of Senator Heinz, specifically those relating to the "designing out" of U.S. parts and components in foreign technologies and the paradoxical national security threat posed by export controls which do not take into consideration the health of the technology and industrial bases.[376] The latter connection might not be immediately apparent, but suffice it to say for now that an export regime that stymies foreign sales runs the risk of harming industry by limiting the commercial market available to that industry to domestic purchasers. In any event, both of these arguments are repeated in the *2008 CSIS Study* and in *Beyond "Fortress America"*, and will be discussed in detail below. So while these particular reform arguments have not changed for several decades, circumstances appear to have changed (or deteriorated, depending on one's perspective) in such a way as to lend some credence to those reform arguments. It must be pointed out, however, that the alignment of these arguments with current circumstances does not necessarily implicate export controls as the *cause* of the change in circumstances. This goes to the heart of the reform debate—the mere occurrence of ITAR-free satellites in Europe and declining sales of U.S. COMSATs abroad does not necessarily mean that export controls are to blame, absent evidence to the contrary. In the coming pages we shall see whether the current debate has produced this type of evidence or whether assumptions and anecdotes alone will suffice to affect reform.

Third, the effects of stabile system parameters that might otherwise act as constraints are not present in the current debate. There are no impediments to reform—such as constitutional challenges—if those intent on carrying it out choose to do so.

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[374] *H.R. 2410, supra* note 40 at § 826(b) (while the bill authorizes the President to remove COMSATs and related components from the USML, "the authority may not be exercised with respect to any satellite or related component that may, directly or indirectly, be transferred to, or launched into outer space by, the People's Republic of China").
[375] See generally *Export Controls on Satellite Technology, supra* note 41.
[376] *Heinz, supra* note 1 at 37, 104.

B. THE GAME: POLITICS & POLICY

"Public Policies by definition involve politics, and analyses that fail to incorporate such insights remain incomplete."[377] Some of the politics involved in the export control reform debate, were foreshadowed above. Among these, Representative Berman's personal interest in advancing an export control reform agenda and his concomitant ability to do so as Chairman of the Committee on Foreign Relations, as well as the selection of Defense Secretary Gates as the Obama Administration's spokesperson on export control reform. However, these are arguably not the politics most critical to the export control reform debate or the reform agenda announced by the Administration. Rather the biggest obstacle to fundamental reform may in fact be the parochial interests of the current committees of jurisdiction within both houses of the Congress. These interests and the reform agenda of the Administration will be discussed in Chapter 3, but suffice it to say for now the reforms proposed by the Administration, chief among them, the creation of a single licensing agency, might require the House Committee on Foreign Affairs, the Senate Foreign Relations Committee and the Senate Banking Committee to agree to their own emasculation. To be sure, pursuant to committee rules, the House Committee on Foreign Affairs is currently "responsible for oversight and legislation relating to…activities and policies of the State, Commerce and Defense Departments and other agencies related to the [*AECA*]" and has "jurisdiction over legislation with respect to the administration of the [*EAA*], including the export and licensing of dual-use equipment and technology and other matters related to international economic policy and trade."[378] The creation of a single licensing agency would require new legislation to replace both the *AECA* and the *EAA*. Were the single licensing agency proposed by the Administration to fall under the DoD, rather than the DoS or DoC, the committee of jurisdiction might then become the House Committee on Armed Services, rather than the Committee on Foreign Affairs. For any of this to occur, the Committee on Foreign Affairs—where any new legislation would likely originate—would have to agree to cede jurisdiction to the Committee on Armed Services. In other words, agree to its emasculation.

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[377] *Handberg, supra* note 8 at 40.

[378] U.S. House of Representatives Committee on Foreign Affairs, *Jurisdiction of the Committee for the 111th Congress*, online: Foreign Affairs Committee <http://www.internationalrelations.house.gov/about.asp?sec=jurisdiction>.

The situation in the Senate is slightly different, as the jurisdiction over export controls are currently split between two committees. The jurisdiction of the Senate Foreign Relations Committee "shall extend to all proposed legislation, messages, petitions, memorials, and other matters relating to…[m]easures to foster commercial intercourse with foreign nations and to safeguard American business interests abroad."[379] The Senate Banking Committee has jurisdiction over "all proposed legislation, messages, petitions, memorials and other matters relating to…export controls."[380] The practical effect of these two rules is that the Senate Foreign Relations Committee has jurisdiction over the activities of the DoS; the Senate Banking Committee the activities of the DoC. As in the House, were the single licensing agency proposed by the Administration to fall under the DoD rather than the DoS or DoC, these committees would cede jurisdiction to the Senate Armed Services Committee.

One final point on politics before moving on: perhaps as a result of its insularity, the export control reform debate is decidedly less partisan than those directly affecting large portions of the U.S. populace. This observation is not based on any quantifiable measure, but rather the tenor and tone of the aforementioned 400-plus pages of congressional hearing transcripts. This is likely attributable to the fact that export controls have a "quiet impact" and do not necessarily provoke the interests of the nation's citizens.[381] As a result, the elected officials involved in the debate are not required to pander to various constituent groups, as they might otherwise be compelled to do in a debate that has the full attention of the nation's citizens.[382] Why is this apparent lowering of the partisan divide important to the export control reform debate? Because ideally, law should flow from policy, not politics. If policy rather than politics are allowed to drive this debate, the statutory or regulatory reforms resulting therefrom arguably stand to benefit.

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[379] U.S. Senate Committee on Foreign Relations, *Rules of the Committee on Foreign Relations, 111th Congress* (February 2009) Rule 1, online: Senate Committee on Foreign Relations <http://foreign.senate.gov/about/jurisdiction/>.
[380] U.S. Senate Committee on Banking, Housing, and Urban Affairs, *Extracts From the Standing Rules of the Senate, Rule XXV, Standing Committees,* online: Senate Committee on Banking, Housing, and Urban Affairs <http://banking.senate.gov/public/index.cfm?FuseAction=CommitteeInformation.Jurisdiction>.
[381] *Beyond "Fortress America", supra* note 2 at 81.
[382] Recent examples of debates involving the full (or at the least, fuller) attention of the nation's citizens include health care reform and immigration reform.

II. ON THIS WE AGREE: COMMON GROUND IN THE REFORM DEBATE

A. THE NEED FOR REFORM

The criticisms levied thus far should not lead the reader to believe the current export control regime is above reproach. To the contrary, these criticisms and those to follow are simply efforts to keep the reform debate honest—to distinguish the windmills from the giants. As will become clear in the coming pages, the export control regime in relation to space technologies is indeed in need of reform. The real issue relates to the extent of the reform and the form taken by it.

(1) GLOBALIZATION

The stated goal of the Obama Administration's export control reform effort is "'to build high walls around a smaller yard' by focusing our enforcement efforts on our 'crown jewels.'"[383] These metaphors, however, do not capture entirely the complexity of the modern export control environment. Given the exponential rate of technological advancement—described above as "the law of accelerating returns"[384]—it has become increasingly difficult to distinguish the crown jewels from the proverbial costume jewelry. For example, the resolution of commercial imaging satellites has gone from 1 kilometer in 1997 (Orbview-2), to .05 meter in 2008 (GeoEye)—with .25 meter projected for 2011 (GeoEye-2).[385] Will today's crown jewel, GeoEye, become costume jewelry when GeoEye-2 comes online? Undersecretary of State Tauscher framed the issue thusly: "you cannot protect everything for its life cycle. You can only protect it while it is important to national security."[386] This begs the question: when does a technology transition from important to national security to no longer important to national security? The current export control regime does not reach questions this nuanced—at least with regard to its regulatory reach. Instead, high walls are built around <u>all</u> space technologies. This "fortress" approach to controlling exports, in which virtual walls (i.e. export controls) are constructed in order to prevent others from gaining access to those technologies, is only effective as long as the state constructing the walls has a monopoly on the

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[383] *Fact Sheet on the President's Export Control Reform Initiative*, *supra* note 45. The issue has also been framed thusly: "[i]f you guard your toothbrushes and diamonds with equal zeal, you'll probably lose fewer toothbrushes and more diamonds." Quote by McGeorge Bundy, National Security Advisor to Presidents Kennedy and Johnson. *Noble, supra* note 111 at 298.

[384] Whereby "the pace of change of our human-created technology is accelerating and that its powers are expanding at an exponential pace." *Singer, supra* note 71 at 97-9.

[385] *Noble, supra* note 111 at 268.

[386] *Klamper,* "Obama ITAR Reform Could Move Satellites Back to Commerce", *supra* note 39.

technologies and the know-how to produce those technologies.[387] During much of the Cold War, the U.S. held such a monopoly. As the U.S. was largely self-sufficient in developing technologies, it was therefore able to tightly control those technologies for national security reasons.[388] U.S. export controls reflected this fact. U.S. export controls also reflected the business model of the day, namely "that a company designed the product, made the product, and sold the product to one end user."[389] However, "over the past 30 years, this model has evolved into a global supply chain, including engineering collaboration over the Internet and distribution partners located in countries close to…customers."[390] This evolution is indicative of globalization.

Like so many other aspects of this debate, the term "globalization" belies a precise definition. Indeed, "[t]here is no universally accepted definition of what constitutes globalization, which many observers see as primarily an economic phenomenon. But it is more than that—it involves the diffusion (some would say "democratization") of technology, information, economic power, and international influence."[391] In spite of this trend towards globalization, until very recently, the U.S. was still able to effectuate its restrictive export control policies on other space competitors. Much like the unilateral veto the U.S. could exercise under COCOM, the U.S. possessed a *de facto* export veto due to the fact that virtually every satellite launched contained a U.S. component or subsystem—thereby subjecting the entire satellite to U.S. export controls (there is no *de minimis* exception in the ITAR based on minimal U.S. content). For example, a European-built satellite utilizing a ITAR-controlled U.S. antennae could not launch on a Long March rocket, because the U.S. has effectively embargoed PRC space launch since the passage of the *STNDAA for FY 1999*. Again, the Europeans viewed this "contamination by American technology" as running counter to their policy interests and thus set about to bust the U.S. space technology monopoly by developing ITAR-free products and satellites.[392]

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[387] *Beyond "Fortress America", supra* note 2 at 41.
[388] *2010 Quadrennial Defense Review Report, supra* note 38 at 83.
[389] *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3 at 43.
[390] *Ibid*. It bears repeating that some in the Congress have identified offshoring of U.S. technology jobs and manufacturing capabilities as a threat to U.S. national security. See *A Strategic and Economic Review of Aerospace Exports, supra* note 150.
[391] David A. Turner & James Vedda, "The impact of foreign space development on US defense policy" " in Damon Coletta & Fances T. Pilch eds. *Space and Defense Policy* (New York City: Routledge, 2009) 312 at 324.
[392] *Sutherland, supra* note 230.

Currently, European manufacturers EADS Astrium and Thales Alenia both offer ITAR-free space products—with Thales Alenia offering ITAR-free satellites.[393] Perhaps seeing this as a harbinger of things to come, Congressman Michael E. McMahon of New York indicated, "I am concerned that if other countries, our allies even, were to develop ITAR-free satellites and become as competitive [as] the United States in this market we would most certainly reach a whole new frontier in global terrorism."[394] One commentator has predicted that by 2020, "[n]o matter what the United States does, multipolar space [described as "several global players shaping core space capabilities"] will create new policy realities."[395] He continues, "[a]nd as states such as Iran add access to or engagements in mutipolar space capabilities, one gets the sense of how the world will be different a decade out."[396] The ITAR-free movement and the prospect of the new policy realities resulting therefrom have clearly made an impact politically. Indeed, a senior staffer for the House Committee on Foreign Affairs told a satellite conference in March 2010 that the ITAR-free movement, "has changed the environment…significantly."[397] This significantly changed environment may, in fact, lead to the export control reform discussed in Chapter 3. Any such reform will likely begin with the make-up of the USML. To be sure, the current head of the DDTC, Robert Kovac, indicates that "separating the wheat from the chaff" on the USML is the key to improving the U.S. export control regime.[398]

(2) THE USML

One of the chief complaints about the way space exports and temporary imports are currently regulated is that the ITAR is a blunt instrument that "fails to distinguish between militarily sensitive hardware that should be controlled and widely available commercial technologies, such as lithium-ion batteries and solar cells."[399] Indeed, the USML indicates that "spacecraft, including communications satellites, remote sensing satellites, scientific satellites, research satellites, navigations satellites, experimental and multi-mission satellites," as well as "[a]ll specifically designed or modified systems or subsystems, components, parts, accessories, attachments, and

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[393] *Noble, supra* note 111 at 279.
[394] *The Export Administration Act: A Review of Outstanding Policy Considerations, supra* note 7 at 7.
[395] Robin F. Laird & Alain Dupas, "U.S. Strategy 2020: Facing a Multipolar Future" *Space News* 21:9 (1 March 2010) 19.
[396] *Ibid.* at 21.
[397] Jeff Foust, "Prospects and concerns for export control reform" *The Space Review* (29 March 2010), online: The Space Review <www.thespacereview.com/article/1595/1>.
[398] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 29.
[399] "Earthbound" *The Economist* (21 August 2008) online: The Economist (subscription only) <http://www.economist.com/node/11965352?story_id=11965352 >.

associated equipment" and "all technical data and defense services" related thereto, are all regulated as munitions.[400] There is no real distinction, for example, between military-grade components and commercially available components (recall that while SME are subject to "special controls" under the ITAR, all space-technologies are subject to ITAR controls). As a result, when the manufacturer of a space qualified lithium-ion battery seeks to export that product to a foreign buyer, the manufacturer must first go through the ITAR registration and licensing process. During this administrative process, license examiners at the DDTC determine whether the item to be exported is, in essence, a "crown jewel" or "costume jewelry". Critics of the ITAR argue this registration and licensing process is hurting portions of the U.S. space industrial base by adding expense and delay to what might otherwise be a simple transaction involving an internationally available commodity.[401] The fact that many space technologies *are* available internationally is a testament to the fact that "R&D and technological innovation are now global in nature."[402] A nimble and narrowly tailored regulatory regime would reflect this reality and, in so doing, continue to protect those technologies that need to be protected, while not unduly hampering U.S. manufacturers with superfluous administrative processes.

Is it possible to create a regulatory bureaucracy capable of matching the exponential pace of technological change? The answer to this question will depend almost entirely on the form taken by the USML. It must be acknowledged that while lists are "poorly suited to controlling exports of knowledge or complex systems of vastly different levels of sophistication…lists are also an efficient way—indeed the only way—to keep track of items."[403] The identification and removal of those technologies from the USML that pose a *de minimis* threat to national security—i.e. the costume jewelry—would appear to be a good starting point for reform. This veritable low-hanging fruit might include items like the aforementioned lithium-ion batteries, solar cells and other items that are widely available on foreign commercial markets. It should come as little surprise, however, that even the low-hanging fruit in this debate offer no simple solutions.

[400] *ITAR, supra* note 25 at § 121.1, Category XV.
[401] See e.g. *2008 CSIS Study, supra* note 42.
[402] *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3 at 43.
[403] *Beyond "Fortress America", supra* note 2 at 37.

As indicated above, the current language of Category XV of the USML is sufficiently broad so as to capture virtually all space-related technologies.[404] As a result, exporters and temporary importers of these articles know or should know that a license is required prior to export or temporary import in nearly all instances. This knowledge is critical, given the fact that the effectiveness of U.S. export controls is largely dependent on industry self-regulation. Any attempt to carve out certain technologies from that broad language, whether it is a lithium-ion battery or something else, would require a list that either specifically inventories items covered under the USML or specifically inventories items *not* covered by the USML. If the aim of the export control regime is to protect only the crown jewels one might presume the list would include only those items covered under the ITAR, rather than excepting items *not* covered under the ITAR. The former would also arguably result in a shorter list. However, this again raises the issue of "the law of accelerating returns" and the concomitant notion of whether a regulatory bureaucracy could ever keep up with rapidly developing technologies. An inclusive list would arguably require constant updating. As the primary mechanism by which industry self regulates is the USML (i.e. checking the list to see if the item or service to be exported or temporarily imported is included on the list), the accuracy of the list is of paramount importance. If the bureaucracy failed to keep up and a new technology not included on the USML was exported without a license or approval by the DDTC, the USG would have little recourse against the exporter or temporary importer. More importantly, the U.S. will have potentially lost a valuable piece of technology that could be employed by its enemies or potential enemies. On the other hand, the broad language currently employed by Category XV of the USML "catches" new technologies by virtue of that broad language—no responsive regulatory bureaucracy required. As such, the USML could employ broad language and specifically exclude those items *not* covered by the ITAR. The length of such a list would depend entirely on the breadth and detail of the exclusionary policy. For example, specific items could be listed (e.g. antennae array with certain characteristics); or categories of items could be listed (e.g. mature technologies widely available on foreign commercial markets). The clear problem with categories is their inherent vagueness. Exporters and temporary importers of space technologies would arguably be less certain as to the applicability of the ITAR under a given set of circumstances if categorical language was employed. As the GAO has pointed out, the effectiveness of export controls "depends on the exporters making the right decisions when interpreting the

[404] *ITAR, supra* note 25 at § 121.1, Category XV.

regulations."[405] All of this leads to the conclusion that if carve-outs are to be made for certain technologies that do not need to be protected, the most workable solution for accomplishing that goal is to employ broad language that acts to "catch" new technologies and specifically catalogue all items to be excluded from the USML. The problem with this approach is that the list will simply grow as more and more items are excluded. This "fix" would therefore exacerbate another identified problem with the ITAR, namely its length and by extension, its complexity.[406]

This does not appear to be the approach favored by the *2008 CSIS Study*. Indeed, the CSIS recommends that, "critical space technologies should be identified and should remain on the Munitions List…"[407] It further recommends removing "commercial communications satellite systems, dedicated subsystems, and components specifically designed for commercial use."[408] Finally, it calls for an annual review of the USML based on both the "criticality of items and on their availability outside the U.S."[409] These recommendations would appear to create an amalgamated list which is both inclusive of the technologies to be protected and exclusive of those *not* to be protected and which is updated annually. How this amalgamated list might work in practice, given the analysis above is not known. For example, such an inclusive list might fail to "catch" new technologies in advance of the annual update. Would the DDTC then issue an interim list to "catch" these technologies pending that update? Would this not result in a more complex export control regime, rather than one that is less complex? These unknowns highlight two things: first, it is simple, in the rhetorical sense, to say the USML needs to be reformed; second, creating a USML that, in actual practice, is both workable and serves the national security ends of the U.S. is decidedly more difficult.

The NCR's recommendation in *Beyond "Fortress America"* regarding the reform of the USML is less detailed, but at the same time more radical. Indeed, "[t]he committee recommends a 'sunset' rule under which every item [on the USML] will be taken off the list at a specified time during each calendar year unless a justification can be presented…for maintaining the particular item or

[405] *Defense Trade: Lessons to be Learned for the Country Export Exemption, supra* note 283 at 7.
[406] See e.g. *Berman, supra* note 315.
[407] *2008 CSIS Study, supra* note 42 at 11.
[408] *Ibid.*
[409] *Ibid.*

category on the list."[410] Although no further details are offered with regard to actual implementation, this approach would appear to suffer from the same problem as the CSIS approach, namely: what happens between annual updates when new technologies are introduced? Suffice it to say that proposed reforms must be workable in practice and not just ring true rhetorically.

(3) With a Little Help From My Friends: Multilateralism, Coercion, and Concession

> As one contemplates reforms for the U.S. export control system, one must be aware of the liabilities that result from divergent international practices and priorities as well as the shortcomings of existing international export regimes.[411]

Unilateral export controls are only effective as long as the state controlling those exports has a monopoly on the technologies and the know-how to produce them.[412] If the technologies and/or know-how are available and uncontrolled elsewhere, then unilateral export controls are not an effective nonproliferation tool. Multilateral export controls, on the other hand, are only effective as long the countries possessing those technologies and/or the know-how to produce them agree that the technologies and know-how should be controlled. The stronger the degree of consensus among these countries, the greater the legitimacy of the multilateral export control regime.[413] Currently, there is a lack of consensus among the parties to the Wassenaar Arrangement with regard to certain commercial satellites and related technologies. The Wassenaar Arrangement is a multilateral agreement governing the export of munitions and dual-use items.[414] Forty countries are party to the Arrangement, among them, a majority of NATO and major non-NATO allies of the U.S.[415] The Wassenaar Arrangement Dual-Use List includes COMSATs and some

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[410] *Beyond "Fortress America", supra* note 2 at 64.
[411] *The Impact of U.S. Export Controls on National Security, supra* note 3 at 29.
[412] See *Beyond "Fortress America", supra* note 2 at 41.
[413] *Yuan, supra* note 58 at 144 (the Nuclear Non-Proliferation Treaty, the Biological and Toxin Weapons Convention, and the Chemical Weapons Convention are examples of multilateral export control regimes which enjoy a high degree of consensus).
[414] *The Wassenaar Arrangement, supra* note 83.
[415] Wassenaar Arrangement members are (countries appearing in bold are not considered NATO or major non-NATO allies of the U.S.): Argentina, Australia, **Austria**, Belgium, Bulgaria, Canada, **Croatia,** Czech Republic, Denmark, Estonia, **Finland**, France, Germany, Greece, Hungary, **Ireland**, Italy, Japan, Latvia, Lithuania, Luxembourg, **Malta**, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Romania, **Russian Federation**, Slovakia, Slovenia, **South Africa**, Spain, **Sweden**, **Switzerland**, Turkey, **Ukraine**, United Kingdom and United States. NATO and major non-NATO allies of the U.S. not party to the Wassenaar Arrangement are: Bahrain, Egypt, Iceland, Israel, Jordan, Kuwait, Morocco, Pakistan, the Philippines, Thailand, and Taiwan. *Ibid.*

remote sensing satellites (below certain thresholds, remote sensing technologies are controlled as dual-use commodities; above a certain threshold, as munitions).[416] The U.S., although a party to the Wassenaar Arrangement, controls all of these technologies as munitions. The lack of consensus regarding these technologies has only recently become an issue for the U.S. As mentioned above, even after the demise of COCOM, the U.S. had a *de facto* veto of the export of space technologies—to include COMSATs—because virtually all satellites contained U.S. components or subsystems. With the advent of ITAR-free COMSATs, the ability of the U.S. to impose its restrictive view on Europe and others—particularly the embargo on the use of PRC launch services—diminished.[417] That does not mean the U.S. is without options. Indeed, "[t]he radical concentration of the world's defense industrial sector…allows the United States a powerful role within the larger international system."[418] This concentration affords the U.S., the most prodigious defense spender in the world, a tremendously large carrot with which to dangle before potential antagonists to U.S. export control policy. For example, both EADS and Thales, whose subsidiary companies EADS Astrium and Thales Alenia produce ITAR-free products, bid for DoD contracts. EADS has bid on the U.S. Air Force's aerial refueling tanker contract (Airbus is a subsidiary of EADS), said to be the largest U.S. defense contract of the next several years with a projected value of at least $35 billion.[419] If EADS won the contract, the initial order would include 179 Airbus A330 aerial tanker aircraft. For its part, Thales Communication, a subsidiary of Thales, "makes military communications equipment at its plant in Maryland, including radios for US troops in Iraq and Afghanistan."[420] The U.S could therefore leverage its defense spending to coerce these companies into acting in accordance with U.S. policy ends by threatening to deny them future DoD contracts. Contracts could be denied on the grounds that the parent company and/or its subsidiaries, by defying U.S. export control policy, contravene U.S. national security interests. In fact, this has already occurred. In 2008, the Congress included a proviso in a defense spending

[416] *Ibid.* at *Dual-Use Goods Control List*, Categories 5, 6, and 9.
[417] That is not to say the U.S.' *de facto* veto is no longer viable in all instances. To the contrary, as the vice president of EADS North America puts it, "[y]ou cannot build a big sophisticated satellite without US parts and components, you just cannot do it…[Those components might comprise no more than five percent of the satellite], but it's a very important five percent." Jeff Foust, "The uphill battle for export control reform" *The Space Review* (1 December 2008), online: The Space Review <http://www.thespacereview.com/article/1259/1>.
[418] Stephanie G. Neuman, "Power, Influence, and Hierarchy: Defense Industries in a Unipolar World", *Defence and Peace Economics* 21:1 (2010) 105, 127.
[419] Christopher Drew, "Airbus's Parent Gambles on Tanker Contract" *The New York Times* (20 April 2010), online: The New York Times <http://www.nytimes.com/2010/04/21/business/21tanker.html>.
[420] *Newman, supra* note 418 at 124.

bill[421] that could effectively punish European ITAR-free manufactures who side step the U.S. embargo on the use of PRC launch services, by allowing the Secretary of Defense to deny future or suspend current U.S. defense contracts to those manufactures.[422] While it does not appear this proviso has affected any DoD contracts to date, coercive measures such as this may be a harbinger.[423] In the near-term, this type of measure is seemingly the only arrow remaining in the U.S. quiver when it comes to controlling space technologies that are not monopolized by it. It would appear, therefore, that multipolar space has *already* created new policy realities.[424]

A long-term solution is more elusive. What is apparent is that the U.S. must attempt to forge consensus in this realm by another means. Why? Because "[h]istory has proven that hostile regimes have managed to penetrate U.S. export controls network due to the fact that the international community has yet to follow suit with similar export controls of their own"[425] It would appear the U.S. is, at least with regard to COMSATs, opting for an *if you can't beat'em, join'em* approach—in other words, forging consensus through concession. Rather than attempting to impose its restrictive view of export controls on a recalcitrant Europe, the U.S. appears poised to comport its export control regime to the European standard (which also largely happens to be the Wassenaar Arrangement standard). One need look no further than *H.R. 2410*, specifically the provision granting the President the authority to remove commercial satellites from the USML, for evidence of this.[426] It remains to be seen whether the President or Congress will propose further

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[421] *Duncan Hunter National Defense Authorization Act of 2009,* Pub.L. No. 110-417, §1233, 122 Stat. 4639 (14 October 2008).

[422] Michael C. Mineiro, New Paradigms of Export Control: A Case Study of the U.S. Commercial Communication Satellite Export Control Regime (McGill University, D.C.L. Thesis, Pre-publication Version; 2010) Draft Chapter 7.

[423] There is a question as to whether coercive measures such as this might violate the World Trade Organization (WTO) plurilateral Agreement on Government Procurement (GPA), to which the U.S. is a party. WTO, *Parties and Observers to the GPA*, online: WTO <http://www.wto.org/english/tratop_e/gproc_e/memobs_e.htm>. The GPA is, in essence, an anti-discriminatory trade agreement between its parties. See GPA Preambular Language, online: WTO <http://www.wto.org/english/docs_e/legal_e/gpr-94_01_e.htm>. However, the GPA includes a specific carve out for national security issues, namely: "[n]othing in this Agreement shall be construed to prevent any Party from taking any action or not disclosing any information which it considers necessary for the protection of its essential security interests relating to the procurement of arms, ammunition or war materials, or to procurement indispensable for national security or for national defence purposes." *Ibid.* at Article XXIII Exceptions to the Agreement, online <http://www.wto.org/english/docs_e/legal_e/gpr-94_02_e.htm>. As such, and if carefully drafted and narrowly applied, such coercive actions arguably would not violate the GPA.

[424] *Laird & Dupas, supra* note 395 at 19.

[425] *The Export Administration Act: A Review of Outstanding Policy Considerations, supra* note 7 at 6; see also *Noble, supra* note 111 at 300 ("By harmonizing export controls with other potential suppliers…a 'unified front' may be presented thereby avoiding a U.S. export 'Maginot line.'").

[426] *H.R. 2410, supra* note 25 at § 826.

steps to bring the U.S. and European export control regimes in line. It also remains to be seen whether this apparent shift will improve U.S. national security or lead to another breach of national security, as occurred with the PRC in the 1990s.

The Canadian *ITAR* exemption offers a counterpoint to this conciliatory approach. As noted in Chapter 1, some ITAR-controlled items—to include COMSATs—are exempt from the licensing process when the export or temporary import involves Canada. "The Canadian exemption is the only country-specific exemption to the [ITAR] licensing requirement."[427] The exemption, which has existed in various forms since 1954, grew out of the special relationship between the U.S. and Canada, which are not only each other's largest trading partner, but also share a common interest in the defense of North America.[428] While the relationship with Canada is geographically unique, it is not ideologically unique. In that regard, the U.S. and the U.K. also share a special relationship—a notion first advanced by Winston Churchill following WWII. The same could be said for many other countries, to include, *inter alia*: Australia, New Zealand, Japan and South Korea. This begs the question: why is Canada the only U.S. ally afforded such an exemption? Canada is certainly not the only country singled out by the ITAR. Indeed, NATO and major non-NATO countries receive preferred treatment under various circumstances. However, these countries have not been exempted from the ITAR because of the AECA requirement that their respective export control regimes be brought in line with the ITAR.[429] The need for an alignment of export control regimes was highlighted in the late 1990s when multiple instances of "re-export" and diversion occurred under the Canadian exemption.[430] This occurred when items exported under the Canadian exemption were subsequently re-exported or diverted to countries like China, Iran, and Pakistan, because doing so was not proscribed by Canadian law.[431] Clearly, U.S. policy was subverted in those instances. Canada subsequently aligned its export controls with those of the U.S. and the exemption was allowed to stand.[432]

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[427] *Defense Trade: Lessons to be Learned for the Country Export Exemption, supra* note 283 at 1.
[428] *Ibid.* at 3.
[429] *Ibid.*
[430] *Ibid.* at 4.
[431] *Ibid.* The following is an example offered by the GAO: a Chinese national established a Canadian company and used the Canadian exemption to acquire a focal plane array-long-range infrared camera. The camera was shipped to China from Canada without [DoS] approval. The same individual subsequently ordered an additional 400 cameras. As in the first instance, the Chinese national specified that the Canadian exemption could be used. *Ibid.* at 21.
[432] *Ibid.* at 5.

Absent a unifying imperative—akin to the Cold War—it is difficult to imagine a repeat of the type of consensus the U.S. and its allies were able to achieve under the COCOM regime. The U.S. should nevertheless continue to pursue consensus in the realm of export controls through diplomatic and other means. The Congress, in recognition of this fact has indicated, "[i]t is the sense of Congress that the President should redouble United States diplomatic efforts to strengthen national and international arms export controls be establishing a senior-level initiative to ensure that those arms export controls are comparable to and supportive of United States arms export controls, particularly with respect to countries of concern to the United States."[433] To say that this is a heavy diplomatic lift is an understatement. It is, nonetheless, vitally important.

B. Too Much of a Good Thing: Absurd Outcomes Make an Ass of the Law

One reason the U.S. export control regime is so easily criticized is as a result of the truly absurd outcomes it can sometimes produce. Because absurd outcomes are interesting simply by virtue of being absurd, they are often repeated. This repetition can in turn produce the impression of the regime's utter dysfunctionality. An utterly dysfunctional regime is more likely to be deemed in need of fundamental reform, when in fact, it may only be in need of minor reforms. Indeed, absurdities make for particularly compelling strawman arguments. For example, in the 1980s, U.S. public opinion concerning defense spending was galvanized by the revelation that the DoD procured individual toilet seats and hammers for $640 and $435, respectively.[434] The absurdity of these figures painted a picture of excess and waste that no $2 billion B-2 bomber procurement could. To be sure, putting a dollar value on a B-2 is beyond most people, but everyone knows that a hammer costs no more than a few dollars at any hardware store. As no one inside or outside of the USG could defend the procurement of a $640 toilet seat or a $430 hammer, it became the perfect strawman argument for those advocating across the board cuts in defense spending. For this reason absurd outcomes can become rallying cries for those with a reform agenda. That was true in the 1980s with regard to defense spending and it is also true today with regard to export controls.

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[433] *H.R. 2410, supra* note 25 at § 823.

[434] Opinion, "The Candidates and the World: II; The Military Consensus, Undone" *The New York Times* (23 October 1988), online: The New York Times <http://www.nytimes.com/1988/10/23/opinion/the-candidates-and-the-world-ii-the-military-consensus-undone.html>.

(1) ITAR's $640 Toilet Seat

…U.S. Regulation Requires Spacecraft Stand, Indistinguishable From Common Coffee Table, to be Placed Under Armed Guard in Russia… While this headline is fictitious, it reflects actual events, and is an example of the absurd outcomes the ITAR can produce. The events involved Bigelow Aerospace, a U.S. manufacturer of inflatable spacecraft. Bigelow's attorney, in response to this requirement, responded sarcastically, "[o]ne can only imagine the repercussions of Russian agents gaining access to the [spacecraft stand]. Its secrets could have easily been sold to Iran or North Korea, where America's enemies could someday use such technology to serve sandwiches *or even tea on*."[435] The story was subsequently picked up by *The Economist* (on multiple occasions) and *Newsweek*—and has since been repeated in academic journals.[436] Indeed, it is arguably ITAR's version of the $640 toilet seat—in that the outcome produced is indefensible from both a policy perspective and a logical perspective. The question must therefore be asked: why did this occur?

The Bigelow spacecraft, along with the spacecraft stand, was exported to Russia for launch by ISC Kosmotras, a commercial space launch venture.[437] The requirement to guard the spacecraft stand stemmed from the fact that it was specifically designed to hold Bigelow's inflatable spacecraft in a vertical position.[438] As a result of the broad language of USML Category XV(e), namely "[a]ll specifically designed or modified systems or subsystems, components, parts, accessories, attachments, and associated equipment" the spacecraft stand/tea table became a munitions regulated under the ITAR.[439] Moreover, the technical assistance agreement associated with the export of the spacecraft stand required that it be placed under armed guard around the clock. The expense associated with the armed guards was borne by Bigelow Aerospace. Perhaps the only thing that might have made matters worse, was if those hired by Bigelow to guard the spacecraft stand were found, "sleeping on the job," "[r]eporting to work under the influence of alcohol," and taking "routine trips into town to meet prostitutes," as those in the Hughes case of the 1990s were.[440] While Bigelow was ultimately granted a waiver by the DDTC regarding the requirement to guard

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[435] *Gold, supra* note 33 at 172.
[436] "Freedom to Fly", *supra* note 52 (*The Economist*); "Earthbound", *supra* note 399 (*The* Economist); *Sutherland, supra* note 230 (*Newsweek*); see e.g. *Gold, ibid.* (J. Space L.).
[437] *Gold, ibid* at 168.
[438] *Ibid.* at 172.
[439] *ITAR, supra* note 25 at § 121.1, Category XV.
[440] *The Cox Report, supra* note 22 at 296.

the spacecraft stand,[441] the case nevertheless brings to life Defense Secretary Gates' admonition, "he who defends everything, defends nothing."[442] Inverted coffee tables are certainly not among the "crown jewels" the U.S. should seek to protect via export controls. At the same time, this absurd outcome does not, without more, necessitate the wholesale reformation of the export control regime. Instead, excluding items like Bigelow's spacecraft stand from the USML would arguably be sufficient to remedy this absurdity.

(2) ABSURDITY'S EFFECT ON POLICY MAKERS

The scenario involving Bigelow Aerospace is not unique. The following excerpt from a 26 March 2007 hearing before the Subcommittee on Terrorism, Nonproliferation and Trade is illustrative:

> Mr. MANZULLO (Congressman from Illinois): …Let me give you an example of the problems. This connecting cable is ITAR regulated [holding up a cable]. This one is not [holding up another cable]…the bad guy is 1 inch shorter. There has to be a way to export these things without going for a license. These are two fasteners, the one on the right is ITAR regulated the one on the left is not even on the CCL list. This is absurd. This is why you have so many licenses. *This is why there has to be a complete reorganization and restructuring of the system by which American manufacturers can be competitive, because if our guys have to go through all the licensing to sell this, foreign buyers will say I can get this somewhere else.*[443] [emphasis added]

Though effective rhetorically, the logic of Congressman Manzullo's argument is faulty on two counts. First, the claim that "a complete reorganization and restructuring" of the ITAR is required does not logically flow from the evidence presented (i.e. two similar connecting cables and two similar fasteners). Indeed, the apparent absurdity of having two similar items treated differently could be remedied by a USML that either treats both items similarly or simply excludes both items. Updating the USML would not require a complete reorganization and restructuring of the ITAR, but would arguably achieve the same ends. Second, the leap from licensing to the resulting lack of competitiveness of U.S. manufacturers is made without any supporting evidence. This is common in the export control reform debate—claims about the adverse effects of ITAR are made, without

[441] *Gold, supra* note 33 at 173.
[442] "A Good Start", *supra* note 201.
[443] *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 10.

evidence being offered to support those claims.[444] Alternatively, when evidence is presented, it often turns out to be anecdotal—as in the case of the DoD's *Defense Industrial Base Assessment*.[445]

Later in the same congressional hearing the actual complexity of the debate was revealed in an exchange between Congressman Manzullo and Ambassador Stephen Mull, then Acting Assistant Secretary of the DoC's Bureau of Political-Military Affairs:

> Mr. MANZULLO. Another question is when you have something as simple as this fiber optic cable, which is really a wiring harness, which has many applications, how does something like this end up being on the ITAR list in the first place? Anybody know?
>
> …
>
> Ambassador MULL. I will try to answer it. Of course, the examples that you showed are very, very compelling [i.e. the two similar connecting cables and two similar fasteners]. And it does suggest that maybe these on the surface appear that these decisions might be made capriciously or without very much thought. But, in fact, the ITAR is very much driven by parts, by things, and so when something goes on the ITAR list, it is because it is useful in a particular part, so that I am not dealing with that particular piece of equipment, but one could imagine a situation where that specific wire fits exactly on an F–14—
>
> Mr. MANZULLO. But do you know what—
>
> Ambassador MULL [continuing]. Which are only used by Iran.
>
> Mr. MANZULLO [continuing]. If you put the longer version on it also, it will still fit with just a little slack.
>
> Ambassador MULL. But if a piece of equipment is designed for an airplane, a fighter plane, that in today's world only Iran is using, we have an obligation according to our interpretation of the law to restrict that.
>
> Mr. MANZULLO. But that is the problem. I mean, this is bread- and-butter stuff. I mean, this is Radio Shack stuff. I mean, this is the stuff that is made in America, and these manufacturers really don't know how to sell this. I can't defend what you just said; I really can't, because this is not controlled at all [holding up a connector cable]. This is—take out 1 inch, and it fits [holding up a connector cable]. Can you explain that?
>
> Ambassador MULL. But the one that is shorter…is designed only for use in sensitive military

[444] See Institute for Defense Analysis, *Export Controls and the U.S. Defense Industrial Base* (January 2007) 30, online: DoD Defense Technical Information Center <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA465592&Location=U2&doc=GetTRDoc.pdf> (a USG contracted export control study in which an "emphasis was placed on employing quantitative metrics of [impacts on the space industrial base], getting 'beyond anecdotes'" determined that quantifiable data on business health and trends "did not reveal major impacts of export controls.") [*2007 IDA Study*].

[445] *Defense Industrial Base Assessment, supra* note 328.

technology that our enemies could use.

Mr. MANZULLO. No, it is just the length of it. I mean, this is the same thing. You measure it off, and you put it in there. If you want to, you know, you could just snip off an inch here and just move it up. I mean, this is the problem. I mean, this is why there is so much angst. I can't see how you can defend this, Ambassador. For the life of me it is the same thing. What happens if it is on a spool that is 100 feet long; what do you do in that case?

Ambassador MULL. Again, sir, we look at the item. If it is designed specifically for use in sensitive equipment, we believe the law requires us to regulate that.[446]

This exchange highlights several key facets of the export control reform debate. First, it highlights the complexity of controlling dual-use technologies when the distinction between the military version of the technology and the commercial version of the technology is, by all appearances, a distinction without a difference. From a common sense perspective it is difficult to disagree with Congressman Manzullo's point. From a philosophical perspective, the issue is less clear. Is the U.S., as part of its foreign policy, prepared to countenance the arming of its enemies or potential enemies simply by virtue of the fact that a similar piece of technology is available on the commercial market—whether foreign or domestic? For example, would the actions of Hughes and Loral in the 1990s, which potentially improved the reliability of the Chinese ICBMs, have been acceptable if the information they provided to the PRC had, at the time, been available *sans* license from France? As indicated in Chapter 1, there is something deeply unsettling about the notion of U.S. indigenous technology coming back to harm Americans. This notion should not be far from the minds of policy makers when decisions are made concerning the makeup of the USML.

Second, the exchange highlights how effectively absurdity can obfuscate the important issues at stake. For someone not cognizant of those issues, the demonstrative aids employed by Congressman Manzullo were likely effective at driving home his point. Indeed, much like the $640 toilet seat that everyone knows represents little more than a fleecing of taxpayers, anyone could look at the two connecting cables and see that there was only a one-inch difference between them. At the same time, much like the valuation of a B-2 bomber, which very few people are able to pinpoint, most people do not have the expertise to determine whether the tolerances of U.S.-built

[446] *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 29-30.

Iranian F-14s are such that both wires would function similarly in the aircraft. It is unlikely Congressman Manzullo does either—but that expertise is not a prerequisite for rhetorical victory.

C. Space Capabilities Are Developing Elsewhere—Why?

There is no disputing the fact that other nations are making significant advances in the realm of space technologies. Indeed, "there are at least 43 states that possess their own satellites and 12 spacefaring states with the indigenous capacity to launch their own satellites."[447] The relevant question, for purposes of the export control reform debate, is the degree to which ITAR is responsible for this turn of events. Several arguments have been advanced in support of the notion that the ITAR is partially responsible.

During a hearing before the House Subcommittee on Terrorism, Nonproliferation and Trade, Congressman Gerald Connolly put the following question to the panel of witnesses called to testify on the effect of export controls on U.S. satellite technology: "…in 1997, U.S. companies controlled 65.1 percent of the world satellite manufacturing market. By 2007 that was down to 41.4 percent. To what do you attribute the decline?"[448] In response to Congressman Connolly's query, Pierre Chao, former Senior Associate for the CSIS, posited, "[t]here are a lot of factors and people will just push back and just say you can't blame export controls, and that is a true statement… But if we didn't find the smoking gun [in the *2008 CSIS Study*[449]], we at least got a whiff of gun powder…to the extent that in specific cases you saw customers saying that I will not buy from America now because of ITAR."[450] The ITAR-free movement in Europe would seem to lend support to this contention.[451] The Prime Minister of India has also indicated that the ITAR's

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[447] *Noble, supra* note 111 at 253.

[448] *Export Controls on Satellite Technology, supra* note 41 at 54. As a brief aside, imprecision in the defining of quantitative data and the comparison of differing temporal periods leads to different statistics being bandied about. For example, Futron reports that between 1999-2008, the U.S. manufacturers produced 47% (461) of the world's satellites (the 1999-2008 time-period actually covers more of the post-*STNDAA for FY 1999* than the 1997-2007 time-period quoted by Congressman Connolly and yet the U.S. gained market share, rather than lost it); Russia, a distant second, produced 21% (212). See Futron Corporation, *Futron's 2009 Space Competitiveness Index: A Comparative Analysis of How Countries Invest In and Benefit from Space Industry* (June 2009) 10, online: Futron Corporation <http://www1.futron.com/resource_center/store/Space_Competitiveness_Index/Futron's%202009%20SCI%20-%20Executive%20Summary.pdf>.

[449] *2008 CSIS Study, supra* note 42.

[450] *Export Controls on Satellite Technology, supra* note 41 at 54.

[451] See *Noble, supra* note 111 at 279.

"anachronistic restrictions" has spurred his country's space industry to new heights.[452] The analysis should not rest on these anecdotes, however. Rather, it is necessary to examine what some of the other reasons countries might have for developing indigenous space capabilities, and for that matter, the reasons some countries might have for perpetuating the notion that ITAR is "toxic."[453]

(1) MARKET CHANGES

The change in U.S. policy towards COMSAT exports, epitomized by the *STNDAA for FY 1999*, coincided temporally with several major changes in the global COMSAT market. Prior to the bursting of the telecom bubble in the late-1990s, there was an expectation that advances in space technology would increasingly be fueled by the commercial space sector, thereby allowing the USG to scale-back its investment in this realm.[454] When the bubble burst those expectations were dashed. Somewhat paradoxically, while the reliance on commercial technologies enabled by space has continued to increase, the industry has nonetheless been plagued by overcapacity across all sectors.[455] Overly optimistic predictions of future bandwidth requirements as well as a nine-fold improvement on the capabilities of new satellites over those launched in the mid-1990s (e.g. law of accelerating returns), led to this overcapacity.[456] Other market changes occurring during this time period include: (1) the spin off of COMSAT operators from COMSAT manufacturers around the year 2000 (manufactures now compete for contracts from those operators, rather than having a "captured customer"); (2) privatization and consolidation of satellite operators, also occurring around the year 2000 (orders have been scaled back or cancelled and contracts are not "spread around" as when they were "captured customers"); (3) an increase in the number of foreign COMSAT customers; (4) an increasing number of states with indigenous COMSAT manufacturing capabilities (i.e. more foreign competitors);[457] and (5) a downturn in the global economy resulting in the COMSAT market "hitting rock bottom" in 2002, when only nine contracts were awarded.[458]

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[452] *Broad, supra* note 36.
[453] *Robinson, supra* note 36 at 24.
[454] Bruce Linster, "Space and the economy", in Damon Coletta & Fances T. Pilch eds. *Space and Defense Policy* (New York City: Routledge, 2009) 51 at 52-3.
[455] *Ibid.* at 53.
[456] *Ibid.* at 53, 60.
[457] Put simply, customers now have more options. Those who want to avoid the issues associated with ITAR, whether real or perceived, or have unstable relations with the U.S., can go elsewhere to fulfill their COMSAT needs. For example, the PRC built and launched Venezuela's first satellite in 2008. See U.S. Federal Aviation Administration, *2008 Commercial Space Transportation Year in Review*, 14, online: Federal Aviation Administration <http://www.faa.gov/about/office_org/headquarters_offices/ast/media/2008%20Year%20in%20Review.pdf>
[458] See *Zelnio, supra* note 15 at 228-9.

Prior to 1999, the U.S. won an average of 80% of the 15-25 competitive[459] COMSAT contracts awarded per year; that number dropped to around 60% by 2006.[460] Because this drop coincided temporally with the change in U.S. policy toward COMSAT exports, ITAR has shared a portion of the blame.[461] However, a 2007 USG-commissioned study of the impact of export controls on the U.S. space industry determined that an analysis of the quantitative data on the industry revealed that "a compelling case could not be made that differential application [as compared to foreign competitors] of US export controls account for loss in US market share."[462] Instead, the study pointed toward rising foreign competency and natural market cyclicality as the likely cause of the loss.[463]

Given the complexity of the market factors at play, as well as the other factors discussed below, an accurate apportionment of blame for the drop in U.S. market share remains elusive. This, in turn, perpetuates the argument that the ITAR is toxic as such an argument is difficult to rebut. Indeed, to do so requires an opponent to engage in a counterfactual debate (i.e. what would the market look like in the absence of the ITAR?).[464] Putting that aside, the U.S. is still the competitive leader in commercial space by a wide margin—this "despite perceived export control burdens" and major market changes.[465]

(2) INDEPENDENCE FROM THE U.S.

"Commitment toward independence from the U.S. in space is a common thread across all sectors."[466] The Galileo project—Europe's answer to GPS—exemplifies this commitment.[467] At

[459] Zelnio distinguishes between "contracts awarded to bidders existing within their own countries' borders by their national governments…and those considered intra-company sales" (i.e. non-competitive) and those that are open to foreign competition on the open market (i.e. competitive). *Ibid.* at 223-4.
[460] See *ibid.* at 227.
[461] See generally *ibid.*
[462] *2007 IDA Study, supra* note 444 at 3.
[463] *Ibid at 3.* The *2007 IDA Study* also cited the following as potential contributors to the market drop: "firm-specific issues such as R&D investment, manufacturing efficiency, and market strategies, as well as macroeconomic issues such as skilled labor availability and cost, exchange rate policy, tariffs and legal barriers. *Ibid* at 2.
[464] The debate is not entirely counterfactual. For example, a 2009 Futron analysis found that, "European commercial competitiveness remained largely unchanged between 2008 and 2009, providing a statistical counterpoint to perceptions that the European market has gained dramatically from efforts to develop alternatives to satellites and equipment controlled by U.S. export regulations." *Futron's 2009 Space Competitiveness Index*, *supra* note 448 at 6.
[465] Futron Corporation, *Futron's 2008 Space Competitiveness Index: A Comparative Analysis of How Countries Invest In and Benefit from Space Industry* (February 2008) 3-5 [on file with the author].
[466] *Noble, supra* note 111 at 274.
[467] See Xavier Pasco, "Toward a European military space architecture" in Damon Coletta & Fances T. Pilch eds. *Space*

stake is strategic independence from the U.S., both economically and militarily.[468] Indeed, the fielding of the Galileo constellation will quell long-held European fears that the U.S. might restrict or otherwise disrupt GPS services should the strategic interests of the U.S. compel that result. The desire for independence, whether in Europe or elsewhere, should come as no surprise to the U.S. In fact, the U.S. is currently embroiled in a debate about its own lack of independence from foreign sources of space technologies. For example, the Atlas V rocket—the only U.S. commercial launch vehicle in its class—is powered by a Russian RD-180 engine.[469] Similarly, with the pending retirement of the Space Shuttle, it appears the U.S. will for a time be reliant on Russian space launch to send U.S. astronauts to the International Space Station (ISS).[470] In the event Russia determined that it no longer wished to supply engines for the Atlas V rocket or seats for U.S. astronauts, the capacity of the U.S. to operate in the strategic medium of space would be diminished. That diminished capacity could, in turn, easily be characterized as a national security threat. If U.S. reliance on foreign providers of space technologies and services could be deemed a national security threat, why would the same not be true of other countries? To be sure, the development and maintenance of indigenous space capabilities is not solely a strategic imperative of the U.S.[471]

(3) PRIDE AND PROFIT

On 25 May 1961, President John F. Kennedy declared, "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth."[472] This was an exceedingly bold declaration given the fact that the Mercury capsule carrying Alan Sheppard, the first American in space, had successfully returned to Earth less than three weeks prior. President Kennedy continued, "[n]o single space project in

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and Defense Policy (New York City: Routledge, 2009) 294.

[468] See *Ibid*. at 294.

[469] See *Noble, supra* note 111 at 255; *Beyond "Fortress America", supra* note 2 at 25.

[470] See "Feathering the Falcon's nest" *The Economist* (5 June 2010), online: The Economist <http://www.economist.com/blogs/babbage/2010/06/space_flight >.

[471] See *Noble, supra* note 111 at 278; *Space Industry Study 2007, supra* note 326 at 1 ("The U.S. and other spacefaring nations clearly understand the security advantages that accrue from the ability to exploit the space domain and, accordingly, have created national polices that emphasize the development and preservation of such abilities…often independent of cost.")

[472] President John F. Kennedy, Special Message to the Congress on Urgent National Needs, delivered before a joint session of Congress (25 May 1961), online: JFK Library <http://www.jfklibrary.org/Historical+Resources/Archives/Reference+Desk/Speeches/JFK/003POF03NationalNeeds05251961.htm>.

this period will be more impressive to mankind…"[473] When Neil Armstrong uttered the immortal words, "[t]hat's one small step for a man, one giant leap for mankind" on 20 July 1969, President Kennedy's sentiment was realized. Indeed, putting a man on the moon is without question one of the greatest accomplishments in the history of mankind—and a tremendous source of pride for the U.S. as a nation. No less a sense of national pride is experienced by other nations' forays into space.[474] This is arguably true of the PRC becoming only the third country, behind the former Soviet Union and the U.S., to place an astronaut into orbit;[475] India sending a unmanned spacecraft to orbit the moon;[476] and the indigenous launch capacity developed by Japan and Israel,[477] to name but a few. In addition to pride, becoming a spacefaring nation signals a nation's arrival on the world scene—technologically, economically, and militarily—in a way that few other things can. Put simply, entry into the realm of space signals legitimacy. Even 53 years removed from the launch of *Sputnik*, the allure of space is in no danger of becoming passé. It is little wonder then that rogue nations like Iran and North Korea have also attempted to become spacefaring nations—the former recently meeting with some success.[478] In this regard, is there any doubt that these rogue nations, as well as others, might have made greater or earlier gains in space had the U.S. not controlled the export of space technologies so closely for the last 53 years?

The allure of profits can also lead to the development of indigenous space capabilities. This profit motive, in turn, leads one to question the motives of foreign space concerns that disparage the ITAR regime. Are European criticisms about the ITAR pretext for garnering a larger share of the commercial space market through the sale of its ITAR-free products? Is ITAR simply a scapegoat for increased European protectionism? Moreover, are European criticisms about the

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[473] *Ibid.*

[474] See *Futron's 2008 Space Competitiveness Index*, *supra* note 465 at 1 ("Nations invest in space partly for the pride associated with the technological advances that participation in space requires").

[475] Jim Yardley, "China Sends a Man Into Orbit, Entering the U.S.-Russian Club" *The New York Times* (15 October 2003), online: The New York Times <http://www.nytimes.com/2003/10/15/world/china-sends-a-man-into-orbit-entering-the-us-russian-club.html >.

[476] Somini Sengupta, "India Launches Unmanned Orbiter to Moon" *The New York Times* (21 October 2008), online: The New York Times <http://www.nytimes.com/2008/10/22/world/asia/22indiamoon.html?8br >.

[477] *Noble, supra* note 111 at 256.

[478] See *ibid.* at 258. In 2009, "Iran conducted its first successful orbital launch… The payload was a small scientific satellite called Omid, the Farsi word for 'hope'. The launch vehicle was a Safir three-stage orbital rocket. The non-commercial flight reached orbit and successfully deployed its small payload into LEO." U.S. Federal Aviation Administration, *2009 Commercial Space Transportation Year in Review*, 17, online: Federal Aviation Administration <http://www.faa.gov/about/office_org/headquarters_offices/ast/media/year_in_review_2009.pdf >.

ITAR pretext for employing inexpensive PRC launch services for those ITAR-free products without giving the appearance of open defiance of the *de facto* U.S. embargo on those services? These scenarios are not beyond the realm of possibilities—and yet some advocates of ITAR reform appear to take European criticisms at face value without examining the vested interests of those critics. There is no doubt, the more of a pariah U.S. export controls become in the eyes of international customers, the more effective the ITAR-free advertising campaign becomes. To that point, it is curious that ITAR's U.S. critics—which include some of those purportedly acting in the best economic interests of the U.S. space industry—are so hyperbolic in their criticisms of the regime. In attempting to achieve reform, these critics may in fact be doing little more than driving potential customers of U.S. space technologies into the arms of its competitors.

As indicated in Mr. Chao's testimony, there are any number of factors contributing to the decline in U.S. market share for satellite sales worldwide. Among these factors are changing markets, foreign purchasers' perceptions about the ITAR, independence from the U.S., the national security concerns of other nations, the national pride associated with becoming a spacefaring nation, and the potential for profit as a result of the development of indigenous space technologies. The common thread with these factors is that all, with the exception of the ITAR, are effectively outside the control of the U.S. Indeed, while the U.S. might be able to exert soft power and influence the decisions or direction of some nations, the ITAR is the only factor that is immediately within the control of the U.S. Therefore, the urge might be to reform it in the hope that doing so turns out to be the proverbial silver bullet. This issue, however, is clearly larger than just U.S. export controls.

III. Points of Contention: They Might be Windmills, They Might be Giants

A. Export Control Reform: Deregulation Wrapped in the Flag

"Virtually all current reform efforts start with the premise that this is a national security issue—versus primarily an economic problem."[479] In terms of the balancing of commercial and national security interests described in the Introduction, this singular focus on national security gives one the distinct impression that there is no balancing occurring at all—and, indeed, that there is a thumb on the national security side of the scale. But is this accurate or simply an unchallenged

[479] *2008 CSIS Study, supra* note 42 at 7.

orthodoxy? One recent commentator on the export control reform debate opened his discussion on the topic with the following excerpt from *The Prince*:

> It must be remembered that there is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage, than the creation of a new system. For the initiator has the enmity of all who would profit by the preservation of the old institutions and merely lukewarm defenders in those who may do well under the new.[480]

The impression given is that entrenched and/or moneyed interests stand to lose under a reformed export control regime. However, the application of this Machiavellian notion to the export control reform debate misses the mark by fundamentally mischaracterizing the interests of those involved in it. This mischaracterization is arguably a testament to how successfully the narrative associated with the debate has been framed in terms of national security. The enactment of the export control reform initiatives described in Chapter 3 will result in deregulation—i.e. the opening of heretofore closed or otherwise obstructed markets to U.S. manufacturers. U.S. manufactures stand to benefit, not from the preservation of the "old institution," but from the creation of a new one, which has fewer controls over fewer items and services. The advocacy coalition (which includes industry) pushing for reform for the last two decades has successfully wrapped export control reform in the flag by tying reform to the advancement of national security imperatives—i.e. the economic health of the industrial base. The narrative advanced by the advocacy coalition therefore aligns with the end industry seeks to achieve (i.e. deregulation), without ever actually mentioning deregulation. As Bill Reinsch, president of the National Foreign Trade Council, an industry trade organization with the goal of opening markets,[481] told *The Space Review*, "[y]ou can't win an export control reform fight talking about jobs and exports…[t]he only way you can win an export control fight is talking about national security."[482] In introducing the President's export control reform initiative, a senior DoD official echoed this sentiment, "…by casting [export control reform] appropriately as a national security issue, where change…is important to our national security…rather than this being

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[480] *Noble, supra* note 111 at 251.
[481] National Foreign Trade Counsil Mission Statement (adopted February 2001), 2010 Priorities, online: National Foreign Trade Council <http://www.nftc.org/default/general%20information/2010NFTCgoalsandprioritiesWV.pdf>.
[482] *Foust, supra* note 397.

about increasing exports…I think that the politics are a little bit different."[483] Despite the national security-centric rhetoric, industry "is strongly committed to the ideal of free market capitalism, and regards government involvement in space as a constraint to the commercial development of space."[484] So while other industries are facing new regulations under the Obama Administration and others are facing additional scrutiny (e.g. oil, mining, health care, finance) the ITAR-affected industrial base is in the rather enviable position of having their industry deregulated.[485]

This is not to suggest that export control reform is simply pretext for deregulation. Rather, it is only to shed light on the fact that reform will inure to the benefit of industry's bottom line. That fact is otherwise hidden in the current debate by the manner in which the debate has been framed. Why is it important to expose the fact that ITAR-affected industry stands to benefit from reform? Because, as described below, much of the evidence cited by proponents of reform is garnered from industry itself. Certainly, one need not be a skeptic to be skeptical of industry responses to questions relating to government regulation and oversight.

B. The Space Industrial Base: Burdened, Opportunistic, or Both?

(1) "Arsenalizing" an Industry?

As indicated above, the U.S. space industrial base is supported in large part by U.S. defense and national security budgets.[486] As a result, the CSIS argues that, "the national security community 'owns' the U.S. space industrial base, and must either provide for the health of the industry ('arsenal strategy') or encourage it (and enable it) to participate more in the global market place to broaden its economic base."[487] This contention raises an array of issues. First, it would appear to present a false choice by making this an "either/or" proposition. Clearly, the industry can be, and in fact *is*, supported by both the USG and the commercial market (foreign and domestic) simultaneously. That the ratio of government contract to commercial contract revenue is so high is arguably due to the fact the U.S. spends several times more on military space than all other nations

[483] Department of Defense, Office of the Assistant Secretary of Defense (Public Affairs), *DoD Background Briefing with Senior Defense Officials from the Pentagon* (19 April 2010), online: Department of Defense <http://www.defense.gov/Transcripts/Transcript.aspx?TranscriptID=4610>.
[484] *Bosso & Kay, supra* note 8 at 55.
[485] Eric Lipton, "With Obama, Regulations Are Back in Fashion" *The New York Times* (12 May 2010), online: New York Times <http://www.nytimes.com/2010/05/13/us/politics/13rules.html>.
[486] *2008 CSIS Study, supra* note 42 at 16.
[487] *Ibid.* at 17.

combined.[488] Second, the contention presupposes that export control reform (i.e. opening markets) will allow U.S. companies greater participation in the global marketplace. Considering the myriad factors affecting foreign buyers decisions discussed above, this is certainly no guarantee. Third, the CSIS study does not posit a guess as to what the appropriate ratio of government contract to commercial contract revenue might be. Indeed, this is the first of several areas in which benchmarking might provide some baseline for determining whether U.S. "ownership" of its space industrial base is unique or whether it is in line with that of other countries. For example, is industry's dependence on national security-related USG contracts for 60% of its revenue (95% if civil government contracts are included), in line with the ratio of government contract to commercial contract revenue in other countries? Considering the U.S. is still the competitive leader in commercial space by a wide margin,[489] it follows that other countries' forays into space are likely even more heavily subsidized by their respective governments.[490] This begs the question, is industry's reliance on USG contracts for revenue such a bad thing? There are two elements to this inquiry.

First, there is the issue of national priorities. The 2006 U.S. National Space Policy states, "[t]he United States considers space capabilities…vital to its national interests."[491] As such, the USG should be prepared to support the space industrial base, irrespective of its ability to compete in the global marketplace. To be sure, U.S. advances in space during the Cold War were not dependant on the opening of global markets to the space industrial base—and yet the U.S. still managed to outpace its rivals. Moreover, despite the continued existence and application of the purportedly anachronistic export controls, the U.S. is still the leader in commercial space competitiveness. So why the continued doomsaying? Here we return to the idea expressed by Senator Heinz in 1991 that the U.S. can "no longer afford the *status quo*" (i.e. the current export control regime). Regarding the health of the defense industrial and technology base, Senator Heinz offered the following as evidence of the need for reform:

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[488] Jared L. Fortune & Joshua A. Merrill. "Identifying Space Industrial Base Issues" (Paper presented to the AIAA Space 2007 Conference & Exposition, Long Beach, California, 18-20 September 2007) Published by AIAA, online: American Institute of Aeronautics and Astronautics <http://www/aiaa.org>. The U.S. also spends more on civil space than any other country. *Futron's 2008 Space Competitiveness Index*, *supra* note 465 at 3. This is important as well in the sense that USG civil space expenditures feed than same space industrial base as military and national security space expenditures.
[489] Futron's 2008 Space Competitiveness Index, *ibid.* at 3.
[490] See e.g. *ibid.* at 5 (Russia and China are ranked third and fifth respectively in the ability to deliver space products and services despite that fact that "the government sector dominates their national space industries.").
[491] *U.S. National Space Policy*, *supra* note 4 ¶ 2.

> Four recent assessments of the U.S. defense industrial and technology base project a grim picture of the ability of the U.S. economy to support a war effort under current conditions. The Air Force Association concluded that the U.S. and its allies were not prepared to sustain a conventional war much beyond thirty days and that the U.S. industry today could not meet wartime mobilization requirements in less than eighteen months.[492]

As borne out by history, these assessments had all the prescience of Neville Chamberlain's "peace for our time" pronouncement in advance of Hitler's 1939 invasion of Poland.[493] Indeed, on 17 January 1991 (the same year Senator Heinz' book was published), the U.S. and its allies commenced OPERATION DESERT STORM in response to Iraq's invasion of Kuwait. The U.S. has been involved in sustained military and peacekeeping operations in the Middle East and elsewhere ever since (i.e. nearly 20 years). While a number of the policies and strategies employed in those successive military operations have been called into question, there is no disputing the military superiority displayed by the U.S. in the prosecution of those operations. The grim picture painted by the various assessments cited by Senator Heinz have not only been proved false by history, but also reflect the tendency in Western thought to portend the worst. As Thomas B. Macaulay, a British poet, historian and politician of the mid-1800s wrote, "[w]e cannot absolutely prove that those are in error who tell us that society has reached a turning point, that we have seen our best days. But so said all who came before us, and with just as much apparent reason."[494] So, when the NRC in *Beyond "Fortress America"* now claims that "[o]ver time, the harm to the U.S. military capability caused by export controls has expanded and has now reached substantial proportions,"[495] that claim must be viewed in light of the similar doomsaying assessments that came before it. While the claim cannot be absolutely disproven, neither should it be viewed as the final word on the matter.

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[492] *Heinz, supra* note 1 at 104.
[493] See Historic Figures, Neville Chamberlain (1869-1940), online: BBC <http://www.bbc.co.uk/history/historic_figures/chamberlain_arthur_neville.shtml>.
[494] John Tierney, "Doomsayers Beware, A Bright Future Beckons" *The New York Times* (17 May 2010), online: New York Times <http://www.nytimes.com/2010/05/18/science/18tier.html>.
[495] *Beyond "Fortress America", supra* note 2 at 23.

Second, the *2008 CSIS Study* ties innovation to the revenue increases that will purportedly result in the opening of foreign commercial markets.[496] In this regard, the "arsenalization" argument is internally inconsistent with other claims made within the Study. For example, the Study highlights the PRC's strides in space over the last decade, to include: the fielding of an indigenous navigation system (Beidou); the launch of a three meter resolution imaging satellite; manned spaceflight; the successful test of an anti-satellite (ASAT) weapons system; the sale of a Chinese-built satellite to a foreign buyer; and the launch of its first lunar probe.[497] These strides were made despite the fact that the PRC is a relatively minor player in commercial space. For example, between 2005-2009, two Chinese-built commercial satellites were launched.[498] During that same time period, seventy-three U.S.-built commercial satellites were launched.[499] All this to say that China has managed to innovate without being a major player in commercial space (i.e. China's space program is effectively "aresenalized"[500]). Why then is the future so bleak for U.S. innovation despite the fact that, in the commercial satellite sector, it outpaced the PRC by 3,650 percent over the past five years? Put differently, how much better does the U.S. have to be in the commercial realm in order to outpace its rivals—to say nothing of its prodigious defense and national security spending? None of the assessments reviewed for this thesis posit an answer to this question.

This analysis highlights that where the evidence supporting a claim is difficult to attain and equally difficult to assess, the analysis and conclusions resulting therefrom should be viewed with some skepticism. Indeed, this is the epitome of the aforementioned metaphorical three-dimensional geopolitical chess match in which your moves, as well as your opponents, must be divined through a crystal ball. The "best guess"[501] aspect of such assessments does not obviate the need for such assessments to be made, it simply means that policy makers should view the

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[496] *Supra* note 42.
[497] *Ibid.* at 22. Since the study was issued, the PRC has also conducted a successful spacewalk. David Barboza, "Chinese Astronaut Takes Nation's First Spacewalk" *The New York Times* (27 September 2008), online: New York Times <http://www.nytimes.com/2008/09/28/world/asia/28china.html?scp=1&sq=chinese%20spacewalk&st=cse>.
[498] U.S. Federal Aviation Administration, Commercial Space Transportation Years in Review (2005-2009), online: Federal Aviation Administration <http://www.faa.gov/about/office_org/headquarters_offices/ast/reports_studies/year_review/>.
[499] *Ibid.*
[500] *Futron's 2008 Space Competitiveness Index*, *supra* note 465 at 5 (In Russia and China "the government sector dominates their national space industries.")
[501] Put differently, "[t]he best economic studies satisfy themselves with 'sizing up' the problem as opposed to making definitive quantitative statements." *2007 IDA Study, supra* note 444 at 3.

assessments in light of the quality of the evidence underlying the assessments. To that end, we now turn to an analysis of the evidence in the current export control reform debate.

(2) WHERE'S THE BEEF? EXAMINING THE "EVIDENCE" IN THE REFORM DEBATE

a. THE DOD'S *DEFENSE INDUSTRIAL BASE ASSESSMENT*

> I have been in this business for 23 years and can speak from first-hand experience—ITAR is not at the root of any levels of competition in our industry, especially for launchers and spacecraft…I would state that in only a small percentage of cases ITAR has had any significant impact on the numbers of spacecraft units or revenue figures. ITAR just does not have a significant impact…I don't see that compliance is bad at all. At Sea Launch we have learned to work with ITAR as we operate in so many cultures and foreign nations. We all work together in a seamless manner.[502]
>
> - Rob Peckam, Former President and General Manager of Sea Launch

This account—a rare non-condemnation of the ITAR—stands in contrast to the claims of industry with regard to the adverse effects of the ITAR on the international sales of space technologies. Or does it? Indeed, in the DoD's *Defense Industrial Base Assessment* export controls were cited by those surveyed as the number one barrier to foreign markets.[503] These survey result were, in turn, cited in the *2008 CSIS Study*[504] and then offered to the Congress as evidence of the need for reform.[505] However, as pointed out above, the DoD's *Defense Industrial Base Assessment* offers intuitive, non-statistical evidence. While it is indeed intuitive that the companies surveyed would not be keen on government regulation and oversight, without statistically sound evidence, the findings are just that: intuitive. This is true as well of the other findings in the DoD's *Defense Industrial Base Assessment*—including the purported $50 million in ITAR compliance costs and $600 million lost revenue figures, as well as the overall financial health of 2nd and 3rd tier companies.[506] Why is this important? In all of discourse reviewed for this thesis—to include the congressional record—the DoD's *Defense Industrial Base Assessment* is the only current study cited which ostensibly seeks to gauge the health of the U.S. space industrial base. As the health of the U.S. space industrial base is cited by two of the leading studies on export control reform (i.e. the *2008 CSIS Study* and the

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[502] Richard Kusiolek, "ITAR: Balancing the Global Playing Field?" *VIA Satellite* 23:8 (1 August 2008) 7 at 9.
[503] *Defense Industrial Base Assessment, supra* note 328 at 14.
[504] *2008 CSIS Study, supra* note 42 at 53.
[505] See Testimony of Pierre Chao, *Export Controls on Satellite Technology, supra* note 41 at 20.
[506] *Defense Industrial Base Assessment, supra* note 328 at 34, 48; *2008 CSIS Study, supra* note 42 at 54.

NRC's *Beyond "Fortress America"*) as evidence of the need to move the current regime toward one that is more profitable for industry, the veracity of the data underlying the DoD's *Defense Industrial Base Assessment* is critically important. This begs the question: why is intuitive, non-statistic evidence deemed sufficient for purposes of this debate? If between 1997 and 2007 U.S. market share in the world satellite manufacturing market dropped from 65.1 percent to 41.4 percent, the "why" question associated with that drop appears important enough to prompt something more than a non-statistical survey of industry.[507] The answer may lie in the aforementioned caveat offered in the National Academy's 1987 book, *Balancing the National Interest: U.S. National Security Export Controls and Global Economic Competition*, namely: "…we determined that reliable quantitative data regarding the effectiveness of controls—and the impact of controls on economic development and trade—continue to be very difficult to obtain."[508] There are no indications this caveat is less true today than it was in 1987. The primary difference appears to be that today no such caveats are being offered in connection with the data presented.

b. UNANSWERED QUESTIONS, UNTAPPED RESOURCES

What is particularly curious about the current reform debate in relation to space technologies is that the assessments advocating for reform appear to have garnered little or no empirical data from the DDTC (specifically the Space and Missile Technologies Division of the DDTC), the organization in charge of licensing decisions for virtually every U.S. transaction involving a space technology and a foreign entity. Presumably, information garnered from the Space and Missile Technologies Division could inform the debate in a number of areas, as the following eleven questions demonstrate:

> (1) What is the average processing time for license applications processed by the Space and Missile Technologies Division?
>
> (2) What percentage of applications processed by the Space and Missile Technologies division are referred out to other agencies (e.g. DoD, NSA) before an authorization decision is made?
>
> (3) What is the average processing time for license applications that are referred out to other agencies for review?

[507] *Export Controls on Satellite Technology, supra* note 41 at 54.
[508] *Supra* note 310 at viii.

This information could inform the debate on the procedural efficiency of the DDTC with regard to space technologies. One major criticism of the ITAR is that U.S. competitors, "are not subject to the cumbersome multi-agency review process and conditions of approval the U.S. exporters are," theirs is "kind of a one-stop shop."[509] One satellite industry spokesperson claims that as a result,

> U.S. export policy has joined price, quality and technical capabilities as a factor when customers consider buying U.S.-made satellites. Whether for real or perceived reasons, many prospective international satellite customers maintain the belief that U.S. export controls are unpredictable, excessively stringent and time consuming[510]

The marketplace for space technologies is highly competitive. To be sure, "[t]he world market for satellites and satellite-related components is a tight and highly contested marketplace. In each of the past two years, just 21 satellites were ordered, with prices ranging from $200-500 million, depending on their technical complexity."[511] In a competitive international marketplace, these regulatory hurdles can drive buyers to foreign suppliers whose export control regimes are *perceived* to be less onerous—particularly when there is parity or near parity in price and quality of the technologies.

Currently, the DDTC makes available on its website the average processing times for all applications it receives, but does not provide breakouts for particular DDTC divisions or for applications that are referred out to other agencies for review.[512] This information could be used as a benchmark for comparison to the export control regimes of U.S competitors. Currently no benchmarking in this area has been accomplished. Instead, anecdotal evidence, like the "one stop shop" example offered above, is employed against the ITAR regime. What if the "one stop shop" of the U.S. competitor actually takes longer to process export license applications than the U.S.? Simply by virtue of being a "one stop shop" does not mean that it is necessarily more efficient. In any event, a comprehensive quantitative comparative study of the export control regimes of U.S. competitors could potentially accomplish two things: (1) if the export control regime of

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[509] *The Impact of U.S. Export Controls on National Security, Science and Technology, supra* note 3 at 44.
[510] *Export Controls on Satellite Technology, supra* note 41 at 38.
[511] *Ibid*.
[512] DoS Directorate of Defense Trade Controls, License Processing Times, online: DDTC <http://www.pmddtc.state.gov/metrics/index.html>.

competitors are in fact more efficient than the export control regime of the U.S., the processing times of those countries could be used as a aspirational benchmark for the DDTC—i.e. the DDTC could set a goal to match or beat the processing times of competitor nations, while still ensuring the national security standards of the *AECA* are met; and (2) if the export control regimes of competitors are not more efficient than the export control regime of the U.S., that fact could be advertised as a rebuttal to the notion that the U.S. export control regime is fraught will delay. As yet, no such study has been conducted.

> (4) How many license applications per year does the Space and Missile Technologies Division of the DDTC process?
>
> (5) Are these application numbers increasing, decreasing, or flat?

Again, the DDTC makes available on its website the total number of license applications processed per year, but does not provide breakouts for particular DDTC divisions. All else being equal, one would assume that if the ITAR is truly affecting the ability of U.S. companies to compete in the global marketplace—"imposing excessive burdens for businesses and therefore imped[ing] the flow of legitimate trade and technology transfers"[513]—license applications would be decreasing. While the overall number of licenses applications processed by the DDTC increased from 70,000 in 2006 to 84,000 in 2008, that fact cannot necessarily be imputed to the Space and Missile Technologies Division.[514]

> (6) Of the license applications processed by the Space and Missile Technologies Division annually, what percentage are denied on substantive grounds?
>
> (7) What percentage of license applications processed by the Space and Missile Technologies Division annually are for the export of space technologies to NATO and major non-NATO allies?

The importance of the answer to these questions for purposes of the export control reform debate cannot be understated. In 2006 for example, the DDTC license denial rate was around one percent.[515] During that same time period, it was reported that the denial rate for exports to the

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[513] *Yuan, supra* note 58 at 145.
[514] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 16.
[515] See *Defense Trade Controls Overview, supra* note 13 at 5.

U.K. was just .01%.[516] If denial rates are this low for licenses relating to space technologies, then the debate is not about the USG denying U.S. manufacturers the ability to export or temporarily import those technologies, but rather the regulatory processes and procedures under which those technologies are exported.[517] In this respect, the efficiency of those processes and procedures—particularly as compared to U.S. competitors—is of paramount importance. However, without any benchmarking how can one say how much improvement in this area is needed, if any?

> (8) What percentage of license applications processed by the Space and Missile Technologies Division annually are submitted by non-prime contractors? (i.e. tier-2 subcontractors and tier-3 commodity suppliers)
>
> (9) Have the percentages of license applications for tier-2 subcontractors and tier-3 commodity suppliers increased, decreased or remained flat over the years?

Similar to the questions relating to the overall number of license applications processed by the Space and Missile Technologies Division, these questions go to the health of tier-2 and tier-3 companies. Currently, the health of these companies is being gleaned from the DoD's *Defense Industrial Base Assessment* and repeated in the *2008 CSIS Study*.[518] If the tier-2 and tier-3 companies are in fact being adversely affected by the ITAR, as claimed by the CSIS, then one would presume license applications from these companies would be decreasing.

> (10) Of the license applications the Space and Missile Technologies Division processes, what percentage is for hardware and what percentage is for defense services?
>
> (11) What are the respective dollar values of the hardware exported and services provided?

These are examples of questions that could either confirm or rebut the DoD's *Defense Industrial Base Assessment*. Indeed, based on the industry survey, the DoD determined that for the years 2003-2006

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[516] *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 17 ("In the past two years the [DDTC] has processed roughly 14,000 license applications for the United Kingdom, with only 18 licenses denied, none of which were exports for the U.K. government.")

[517] It is also possible that some companies are simply not applying for export applications either because: (1) the companies believe the application will be denied; (2) the costs associated with the registration and license processing are too high; or (3) the real or perceived problems with the ITAR licensing process dissuade the companies from applying, irrespective of the high probability of the application being approved. This fact must be kept in mind when extrapolations are made based on DDTC denial rates.

[518] *2008 CSIS Study, supra* note 42.

defense services represented 76% of foreign sales and that hardware (spacecraft and components) accounted for 13% of foreign sales.[519] In this instance and others, there is no need to rely on an industry survey to garner this information, as it should be readily available from the DDTC. That no one has tapped the DDTC wellspring is surprising, to say the least.[520]

Arguably, the current data is not sufficient to support the wholesale reform of the U.S. export control regime. As indicated above, it is necessary, *before* identifying the appropriate way forward, to identify and distinguish the windmills from the giants. In order to do so—intelligently—more data is needed. More questions need to be asked and at least one industry-independent, statistically sound study needs to be conducted in order to determine the ITAR's effects on the health of the space industrial base—and, by extension, the extent to which the export control regime needs to be reformed. The interest at stake, namely the national security of the U.S., is too great to effectuate wholesale reform without better data.

C. PROCEDURAL EFFICIENCY AT THE DDTC

The desire for empirical evidence should not be carried to the extreme or preclude smaller-scale reform initiatives. For example, if the DDTC's processes and procedures were such that industry's ability to operate in the global marketplace was obviously and needlessly impaired, then the need for empirical evidence on the health of the space industrial base would be less critical. Inefficiencies in the DDTC's processes and procedures likely came close to crossing this threshold just four years ago.[521] To be sure, Deputy Assistant Secretary Kovac indicated to the House Subcommittee on Terrorism, Nonproliferation and Trade in December 2009 that,

> Several years ago, and not without justification, the [DDTC] had a less than stellar reputation for its processing of license applications. In Calendar Year 2006, the [DDTC] processed 70,000 license applications with an average processing time of 43 calendar days. This does not tell the whole story, however. At one point in September 2006, the [DDTC] had over ten thousand license applications open and awaiting final action. Also during that year, over fifteen thousand applications took over 60 days to be resolved.[522]

[519] *Defense Industrial Base Assessment, supra* note 328 at 24.
[520] The author posed many of these questions to the DDTC, but as of this writing, has not received a response.
[521] See *Export Controls, Vulnerabilities and Inefficiencies Undermine System's Ability to Protect U.S. Interests, supra* note 1 at 7.
[522] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 16.

Since 2006, the DDTC has significantly improved its metrics. Indeed, the DDTC processed 84,000 license applications in 2008, with an average processing time of 16 calendar days.[523] However, this initial two-week licensure process does not tell the entire story. Depending on the value and sensitivity of the item, technical data or defense service to be exported, authorization to export may require a multi-agency review of the application, including, *inter alia*, review by the DoD and NSA; congressional certification;[524] an approved technical assistance agreement for the provision of defense services or technical data;[525] an approved technology transfer control plan and encryption technology control plan for the transfer of space technologies to countries other than NATO allies or major non-NATO allies.[526] Licensing in these more complex cases takes longer than 16 calendar days. In 2008, for example, the DDTC processed 1100 applications that took more than 60 days to resolve.[527] Even so, these 1100 applications accounted for just over 1 percent of the total number of applications processed in 2008. It follows that 99 percent of license applications are processed within 60 days.

This begs the question: are the administrative hurdles associated with obtaining a DDTC license to export really that onerous under the ITAR? In other words, how much process is too much process? This would appear to be a question with no one answer, but again some benchmarking with U.S. competitors would at least provide a reference point to begin the discussion. For the sake of argument, if one accepts that the administrative hurdles are sufficiently onerous as to necessitate reform, would the reforms suggested in the current debate make these hurdles discernibly less onerous? It is here that one of the great ironies of the debate is exposed—where rhetoric meets reality. For example, if COMSATs and related equipment are removed from the ITAR's USML and returned to the EAR's CCL, the BIS would be responsible for processing export licenses. In Fiscal Year 2008, the BIS took an average of 27 days to process export license applications—11 days *longer* than the DDTC in Calendar Year 2008.[528] There is no indication how long the BIS took to process complex applications, which would undoubtedly include those relating

[523] *Ibid*.
[524] *ITAR, supra* note 25 at § 123.15.
[525] *Ibid.* at § 120.22.
[526] *Ibid.* at §124.15(a)(1).
[527] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 16.
[528] Department of Commerce, Bureau of Industry and Security, *Annual Report to the Congress for Fiscal Year 2008*, 8, online: BIS <http://www.bis.doc.gov/news/2009/bis_annual_report_2008.pdf>.

to satellites.[529] For this reason, John Ordway, a U.S. attorney specializing in export licensing, has said that a move from the ITAR to the EAR would simply not make much of a difference for companies seeking licenses.[530] The biggest difference the move would make, in Mr. Ordway's opinion, "might be in the culture in the Commerce licensing office which…would be more willing to be advocates for the companies than the current system."[531] The obvious risk here is that advocating for companies and protecting national security are not necessarily well matched, as evidence by Hughes' interactions with the DoC in the 1990s. Even before the Hughes' debacle, Senator Heinz described this as "mutually incompatible missions within the principle agencies responsible for carrying out export control policies rendering them unable to balance—much less manage—the natural tension between national and economic security interests."[532] He further indicated that, "[t]he Department of Commerce is commercially unable to balance trade promotion and trade controls."[533] Putting that argument aside, if there is near parity in processing metrics between the DDTC and the BIS, then it cannot be said that moving COMSATs from the USML to the CCL would make the regulatory hurdles associated with obtaining a license discernibly less onerous.

D. Overstatements in the Export Control Reform Debate

(1) One Size Fits All

An additional complaint about the ITAR centers on the fact that allies and non-allies are similarly treated, thereby creating a world of "many sticks and few carrots."[534] The implication is that the ITAR is a "one size fits all" regulatory regime that fails to treat allies as allies should be treated.[535] In other words, the U.S. should offer its allies more carrots. As indicated above, dissimilarities in the export control regimes of the U.S. and its allies can lead to the reexport or diversion of ITAR-controlled technologies. In this regard, and with the exception of Canada, allies

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[529] In FY 2009, the highest value items processed by the BIS—aero gas turbine engines, valued at approximately $281 million—enjoyed an average license application processing time of 43 days. *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 11. However, value and complexity are not necessarily synonymous.
[530] *Foust, supra* note 397.
[531] *Ibid.*
[532] *Heinz, supra* note 1 at 39.
[533] *Ibid.*
[534] *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 22.
[535] Indeed, at a House hearing on the impact of export controls, Representative Dana Rohrabacher indicated, "I think we had better start discriminating about which countries we treat as our friends because we treat our friends that same way we treat our enemies." *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3 at 58.

and non-allies *are* treated similarly in that DDTC licenses prohibiting the reexport or diversion must be obtained prior to the export or temporary import of ITAR-controlled technologies.[536] This is necessary to achieve the nonproliferation policy aims of the *AECA* and the *STNDAA for FY 1999*.[537] Beyond this reality, there is an additional aspect of the "one size fits all" argument that bears further examination. Even a cursory reading of the ITAR reveals the extent to which allies of the U.S. are advantaged above non-allies in the ITAR licensing process, both in terms of licensing metrics and otherwise.[538] Indeed, among the advantages discussed in Chapter 1 is the "blanket exception" the ITAR affords for COMSAT exports to NATO and major non-NATO allies.[539] As should be clear by this point, COMSATs are a major driver of the export control reform debate. Even so, the discourse reviewed for this thesis—to include the congressional record—does not reveal the extent to which U.S. COMSAT manufactures are taking advantage of this "blanket exception" or the extent to which it affects the licensing process overall. In fact, this exception is never mentioned. Taking just this one example, how can it be said that the export control regime is a world of "many sticks and few carrots" if it has not been determined the extent to which the existing carrots are being utilized? Arguably, this type of overstatement is a rhetorically effective means of promoting a reform agenda, but that does not necessarily make it true.

A similar "one size fits all" argument is made with regard to strictures the ITAR imposes on research institutions and universities. For example, a 2008 NRC Report entitled, *Space Science and the International Traffic in Arms Regulations: Summary of a Workshop*, indicated that, "[b]ecause of uncertainty as to what research efforts are ITAR-controlled, many university researchers are now working only with students who are U.S. citizens."[540] Moreover, the argument has been advanced that globalization has affected university research, with its "geographically distributed research community," in much the same manner as it has affected the private sector.[541] The implication is that the ITAR is as intractable for and damaging to researchers as it is for exporters. However, a 2007 USG-contracted study concluded:

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[536] See e.g. *ITAR, supra* note 25 at § 123.10, §124.10.
[537] For example, U.S. policy with regard to the use of PRC launch services could easily be subverted if COMSATs were exported to allies without a license prohibiting or limiting reexport. Indeed, once a license-free COMSAT is exported, the U.S. would have little recourse against the allied country if it elected to employ PRC launch services.
[538] See e.g. *ITAR, supra* note 25 at § 123.15 (expedited congressional certification for U.S. allies).
[539] *Ibid.* at § 123.27.
[540] *Finarelli & Alexander, supra* note 2 at 6.
[541] *The Impact of U.S. Export Controls on National Security, Science and Technology Leadership, supra* note 3 at 13.

> Universities have claimed that export controls make US graduate school less attractive to their foreign competition, inhibit their foreign faculty in their research, interfere with cooperative research with foreign nationals, and force universities to decline certain grants. Analysis of the data did not confirm any of these effects, though data specific to the satellite industry was not readily available.[542]

These findings are likely due to the fact that the fundamental research exception—which allows technical data to be disseminated without a DDTC license—is the proverbial exception that swallowed the rule. As indicated in Chapter 1, fundamental research is defined as,

> basic and applied research in science and engineering where the resulting information is ordinarily published and shared broadly within the scientific community, as distinguished from research the results of which are restricted for proprietary reasons or specific U.S. Government access and dissemination controls.[543]

In those instances in which university research does not fall within this broad exception, a DDTC license is required prior to dissemination of the technical data. As we have seen, however, license applications are rarely denied.[544] Given these realities, the apparent reticence of university researchers to work with non-U.S. citizens makes little sense.

In the space technology realm, the ITAR allows accredited institutions of higher learning to export articles fabricated for fundamental research, though otherwise controlled by Category XV of the USML, without a license when the export involves a NATO country, a major non-NATO ally, or a member of the European Space Agency or the European Union and involve exclusively the nationals of those countries.[545] This exception, like the "blanket" COMSAT exception discussed above, is nowhere discussed in the reviewed discourse on export controls. Therefore, it is unclear how often the exception is employed by university researchers and to what end. Again, how can it be said that the ITAR is stifling international cooperation within the geographically distributed

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[542] *2007 IDA Study, supra* note 444 at 14.
[543] *ITAR, supra* note 25 at § 120.11.
[544] Anecdotal cases to the contrary often involve a Chinese graduate student who is prohibited from participating in a research project due to the ITAR. See e.g. *Crook, supra* note 16 at 517.
[545] *ITAR, supra* note 25 at § 123.10.

research community, if there are no indications on the extent to which the provisions facilitating international cooperation are being utilized?

The ITAR is not a "one size fits all" regime. There are numerous carve-outs for both allies, as wells as research institutions and universities. At the same time, there is also a lack of evidence to indicate the extent to which these carve-outs are being utilized.

(2) AMERICAN EXCEPTIONALISM

Representative Brad Sherman, the aforementioned Chairman of the House Subcommittee of Terrorism, Nonproliferation and Trade recently opened a hearing on the topic of export controls for satellite technology by saying, "we are the only country that controls satellite exports as if they were armaments."[546] This is a rhetorically powerful claim. It connotes that the U.S. approach to satellite exports is *sui generis*—and presumably out-of-touch with the way the rest of the world is operating. Ellen Tauscher, who is now Undersecretary of State for Arms Control and International Security, similarly indicated, "[u]nlike other nations, the US controls commercial satellites as defense articles."[547] As mentioned above, the DDTC is currently in Undersecretary Tauscher's charge. Despite their bona fides in the realm of export controls, both Representative Sherman and Undersecretary Tauscher have advanced a notion that is demonstrably false—that is, the notion that the U.S. is the only nation that controls satellite (qualified as "commercial satellites" in Undersecretary Tauscher's case) exports as munitions. First, it bears mentioning that since the DDTC appears to deny only around one percent of the license applications it receives, regulating commercial satellites and related technologies as munitions as opposed to commodities is, in reality, a distinction without a difference. While the process for obtaining the license may be different, the result is the same—i.e. approval.[548] Putting that fact aside, the French, for example, control commercial remote sensing satellites as munitions.[549] Remote sensing satellites constituted 8 percent of the total worldwide commercial payloads launched between 2005-2009.[550] While

[546] *Export Controls on Satellite Technology, supra* note 41 at 1.
[547] *Supra* note 31.
[548] The exception being the handful of countries subject to an absolute arms embargo under the ITAR—and China, which is subject to a *de facto* embargo as a result of the *STNDAA for FY 1999*.
[549] See Arnaud Idiart & Virgile Delaboudiniere, "France" in Yann Aubin & Arnaud Idiart, eds. *Export Control Law and Regulations Handbook, A Practical Guide to Military and Dual-Use Goods Trade Restrictions and Compliance* (Alphen aan den Rijn: Kluwer Law International, 2007) 127 at 152.
[550] Commercial Space Transportation Years in Review 2005–2009, *supra* note 498.

COMSATs have been the proverbial cash cow in the commercial space sector since its inception, "[t]here is a significant increase of commercial interest in Earth Observation…"[551] To the extent that U.S. companies are disadvantaged by the "munitions yoke" being placed around remote sensing satellites, so too are the French (Thales Alenia is based in France). Notably, U.S. manufacturers built 4 of the 12 commercial remote sensing satellites launched between 2005-2009; French manufacturers built none.[552] The European Community Regulation governing the export of dual-use goods allows the export of space-qualified remote sensing technologies to certain thresholds, above which the technologies are considered munitions.[553] Again, to the extent that U.S. companies are disadvantaged by the "munitions yoke," so too are European companies for remote sensing technologies exceeding certain thresholds (EADS Astrium is based in the Netherlands).

Where Representative Sherman and Undersecretary Tauscher are correct—at least with regard to Europe—is that the U.S. controls COMSATs as munitions, whereas the Europeans do not.[554] COMSATs constituted 88 percent of the total commercial payloads launched between 2005-2009.[555] Of the 122 COMSATs launched during that period, 65 were manufactured by U.S. companies (47 percent) and 41 were manufactured by European companies (29 percent).[556] The remaining country's COMSAT percentages were in the single digits—to include the Russian Federation, Canada, Israel, India, Japan, and the PRC.[557]

With regard to the export control regimes of the Russian Federation and the PRC, it is not clear whether COMSATs—or other space technologies for that matter—are controlled as munitions or as dual-use commodities. This is due to the fact that the respective export control regimes of these two countries are not entirely transparent. Within the Russian Federation, the export of space technologies is the purview of the Federal Space Agency, in coordination with the

[551] *Futron's 2008 Space Competitiveness Index*, *supra* note 465 at 5.
[552] Commercial Space Transportation Years in Review 2005–2009, *supra* note 498.
[553] Council Regulation (EC) No. 428/2009, *Setting up a Community Regime for the Control of Exports, Transfer, Brokering and Transit of Dual-Use Items* (5 May 2009), online: Official Journal of the European Union <http://trade.ec.europa.eu/doclib/docs/2009/june/tradoc_143390.pdf>.
[554] See generally *Aubin & Idiart, supra* note 57.
[555] Commercial Space Transportation Years in Review 2005–2009, *supra* note 498.
[556] *Ibid.*
[557] *Ibid.*

Federal Service on Military Technical Cooperation with Foreign States (FSMTC).[558] The involvement of the FSMTC, which also regulates trade under a 1998 federal law entitled *Military-Technical Cooperation with Foreign States*, leads one to believe the Russians view space technologies along the same lines as the U.S. (i.e. munitions) and treat the export of those technologies accordingly. In any event, export of space technologies are reportedly subject to a "special license" issued on a case-by-case basis following an investigation.[559]

In the PRC, the State Control Commission for Military Goods Trade of the PRC is responsible for providing licenses for exporters of military goods under a law entitled *Regulations Governing Export Control of Military Goods*, dated 22 October 1997.[560] Under this law, trade in military goods must not be to the detriment of national interests or security.[561] Unlike the ITAR, there is nothing in the measures akin to a USML of controlled items. Rather, like the Russian Federation, export determinations appear to be made on a case-by-case basis. This is evident from the manner in which a "military good" is defined, namely as: "equipment, special-purpose production equipment and other materiel, technologies and related services to be used for military purposes."[562] By definition, the item need not be one manufactured for a military purpose—like a tank. Rather, the determination is based on whether the item will be *used* for a military purpose. Satellite technologies arguably fall under this category. If a trading partner with the PRC seeks to purchase a COMSAT it could be used for either commercial or military purposes—depending on its characteristics.[563] If the satellite is sought for military purposes, it arguably falls under this regime. How the PRC defines "military purposes" is therefore critical and the subject of some debate. For example, The PRC's philosophy on ISR is fundamentally different than that of the U.S. The PRC reportedly sees such activities as "battlefield preparation" and, therefore, this philosophy would arguably influence licensing decisions relating to remote sensing satellite technologies.[564]

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[558] Iliya Zotkin *et. al.*, "Russian Federation" in Yann Aubin & Arnaud Idiart, eds. *Export Control Law and Regulations Handbook, A Practical Guide to Military and Dual-Use Goods Trade Restrictions and Compliance* (Alphen aan den Rijn: Kluwer Law International, 2007) 261 at 283.
[559] *Ibid.*
[560] PRC, *Regulations Governing Export Control of Military Goods* (22 October 1997), online: Asian Legal Information Institute <http://www.asianlii.org/cn/legis/cen/laws/rgecomg587/>.
[561] *Ibid.* at Art 4.
[562] *Ibid.* at Art. 2.
[563] For example, a COMSAT with a "very large antenna array" could be used for space-based signals intelligence (SIGINT) collection. *The Cox Report, supra* note 22 at 206.
[564] Larry M. Wortzel, "The Chinese People's Liberation Army and Space Warfare" A Project of the American Enterprise Institute (17 October 2007), online: AEI <http://www.aei.org/docLib/20071017_SpaceWarfare.pdf>.

Again, all of this to say the characterization made by Representative Sherman and Undersecretary Tauscher that the U.S. is the only country which controls commercial satellites as munitions is demonstrably false.

The effect of overstatements such as these—whether relating to the treatment of allies under the ITAR regime, the purported impact of the ITAR on universities and research institutions, or the notion that the ITAR is singularly unique in its treatment of commercial satellite technologies—is that the U.S. export control regime appears more dysfunctional than it actually is. As a result, these statements arguably do a disservice to the reform debate by further obfuscating an already complex set of issues.

CHAPTER 3

"WHEREOF WHAT'S PAST IS PROLOGUE, WHAT TO COME, IN YOURS AND MY DISCHARGE"[565]: THE FUTURE OF THE U.S. COMMERCIAL SATELLITE EXPORT CONTROL REGIME

Having examined the history of U.S. strategic export controls, the *AECA* and the ITAR in their current form, and the export control reform debate, we now turn to an examination of current reform efforts—both regulatory and legislative. It should be noted that this is a fertile and evolving field with concurrent reform efforts afoot in both the Executive branch and the Congress. What legislation the Congress will pass, if any, is unknown. Similarly, while the Obama Administration will undoubtedly promulgate regulatory changes to the ITAR, the fundamental reform it seeks may not be fully realized if the Congress does not make the necessary statutory changes to the current export control regime. Before examining current reform efforts, a brief examination of recent export control reform efforts, some successful others unsuccessful, is in order.

I. TINKERING AROUND THE EDGES: REFORM EFFORTS PAST

A number of attempts at export control reform have been made since the enactment of the *STNDAA for FY 1999*. Some of those initiatives have met with success while others have not; some have called for sweeping changes to the regime, others for minor tweaks. While past is prologue, it is not entirely dispositive of future events. Nevertheless, examining what went right and what went wrong with those initiatives is instructive for the examination of current reform efforts that will follow.

A. REGULATORY REFORM EFFORTS

(1) DEFENSE TRADE SECURITY INITIATIVE

In 2000, the Clinton Administration, the U.S. defense industry, and foreign governments were each expressing a high level of concern about the adverse affects of U.S. export controls on cross-border cooperation with allies.[566] As a result, the Administration "unveiled 17 proposals to expedite and reform the U.S. export control system, which it characterized as the first major post-

[565] William Shakespeare, *Tempest*, Act 2, Scene I.
[566] *Defense Trade: Analysis of Support for Recent Initiatives, supra* note 318 at 15.

Cold War adjustment to the U.S. system."[567] The 17 proposals were collectively named the Defense Trade Security Initiative (DTSI). Among the 17 proposals was a streamlined license process for COMSAT components and technical data when all parties to the program are NATO or major non-NATO allies.[568] This proposal was subsequently promulgated in the ITAR.[569] Many of the other proposals were similarly promulgated, but it is not clear whether all 17 were fully implemented.[570] Shortly after the unveiling of the DTSI, the GAO concluded that no analysis had been conducted by the Clinton Administration regarding the underlying problems with the export control system and, as a result, was dubious of the Administration's claim that the DTSI would achieve its stated goals of: "(1) increasing interoperability, (2) enhancing defense capabilities, and (3) promoting transatlantic defense industrial cooperation and competition."[571] The GAO warned, "[w]ithout a clear and common understanding of perceived versus real problems and their underlying causes and without an appropriate analytical framework to tie changes to desired goals, it will be difficult to anticipate the outcomes of changes and to determine whether progress is being made."[572] In a subsequent 2005 report, the GAO concluded that the DDTC was not meeting the metrics established by at least one of the DTSI proposals (i.e. expedited license processing for items exported in support of OPERATION IRAQI FREEDOM) and that several of the more radial DTSI proposals to improve the export control regime were not being widely utilized by exporters (i.e. comprehensive export licenses).[573] The GAO further concluded that while the DoS claimed the DTSI reforms were successful, the DoS had neither "evaluated the initiatives' effects on the arms export control system" nor "provided data supporting its contention."[574]

The GAO's findings aside, ten years have passed since the DTSI was unveiled and the concerns of 2000 persist. Indeed, the Obama Administration, the U.S. defense industry and foreign governments all continue to express a high level of concern about the adverse effects of U.S. export

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[567] *Ibid.*
[568] Department of State Directorate of Defense Trade Controls, *Seventeen Agreed Proposals to Defense Trade Security Initiative*, online: DDTC <http://www.pmddtc.state.gov/licensing/documents/DTSI_17proposals.pdf>.
[569] *ITAR, supra* note 25 at § 123.27.
[570] For example, one proposal called for the review and revising of the USML, which would take place over a four-year period (i.e. one quarter of the USML being subject to review each year). Seventeen Agreed Proposals to Defense Trade Security Initiative, *supra* note 568 at No. 17. It is unclear whether this review was ever conducted.
[571] *Defense Trade: Analysis of Support for Recent Initiatives, supra* note 318 at 15.
[572] *Ibid.* at 17.
[573] *Defense Trade: Arms Export Control System in the Post- 9/11 Environment, supra* note 318 at 3.
[574] *Ibid.* at 4.

controls on cross-border cooperation with allies. To that end, the Obama Administration has proposed the sweeping changes examined in section III, *infra*. Does this Administration, unlike the Administration of President Clinton, have "a clear and common understanding of perceived versus real problems and their underlying causes and an appropriate analytical framework to tie changes to desired goals?" Unless the Administration is utilizing data, studies, or reports that have not been made publicly available, it arguably does not. It follows that ten years hence, the same concerns with the export control system may persist.

(2) NATIONAL SECURITY POLICY DIRECTIVE 56, *DEFENSE TRADE REFORM*

National Security Policy Directive (NSPD) 56, *Defense Trade Reform,* dated 22 January 2008, was implemented to streamline the DDTC's performance.[575] It imposed a 60-day limit on the processing of export license applications, unless national security concerns required otherwise.[576] As indicated in Chapter 2, in 2006, the DDTC processed 70,000 license applications in an average of 43 calendar days, with 10,000 backlogged applications; 15,000 license applications took longer than 60 days to resolve.[577] In 2008, the DDTC processed 84,000 license applications in an average of 16 calendar days, with an average of 3400 cases open at any one time; the number of cases taking longer than 60-days to process dropped to 1100.[578] Improved metrics occurred as a result of more efficient processes, as well as an improved electronic licensing system (DTrade).[579] *H.R. 2140*, discussed below, would codify the NSPD-56 licensing metrics.

B. LEGISLATIVE REFORM EFFORTS

(1) *SATELLITE EXPORTS WITH SECURITY ACT OF 2000*

Just 18 months after the passage of the *STNDAA for FY 1999*, a bill was introduced in the House of Representatives that would have returned the satellites and related items controlled by the DoC prior to the enactment of the *STNDAA for FY 1999* (i.e. COMSATS) to the DoC.[580] Interestingly, the Bill also called for "any other dual-use satellite and related items" to be controlled

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[575] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 16 [NSPD-56 is not publically available].
[576] *Ibid.*
[577] *Ibid.*
[578] *Ibid.*
[579] *Ibid.*
[580] U.S. Bill H.R. 4417, *Satellite Exports With Security Act of 2000*, 106th Congress (10 May 2000). [*H.R. 4417*]

by the DoC under the EAR.[581] This arguably represented a radical expansion of the reform efforts of the 1990s, which is somewhat surprising coming so closely on the heels of *The Cox Report*. Indeed, had it passed, responsibility for all dual-use "remote sensing satellites, scientific satellites, research satellites, navigations satellites, experimental and multi-mission satellites" would have moved from the DoS to the DoC.[582] The result would have been that only purely military and national security satellites and related items would have remained the responsibility of the DoS. The Bill also contained a provision specifically related to the utilization of PRC launch services—variations of which would become ubiquitous in subsequent bills. It required the Secretary of Commerce to obtain the concurrence of the Secretary of Defense before a satellite or related item intended for launch on a PRC launch vehicle could be exported and, should there be a disagreement between the Secretaries, the President would be the final arbiter.[583] Representative Berman, who was not yet Chairman of the House Committee on Foreign Relations, was a cosponsor of the Bill. Although it was introduced in the House, the Bill never came up for a vote and thus died at the conclusion of the 106th Congress.

(2) *Satellite Trade and Security Act of 2001*

With the start of the 107th Congress in January 2001, Representative Berman introduced a bill that, like the *Satellite Exports With Security Act of 2000*, would have transferred all dual-use COMSATs from the DoS to the DoC.[584] Unlike the previous bill however, the *Satellite Trade and Security Act of 2001* specifically indicated that it *only* applied to COMSATs, rather than all dual-use satellites. The Bill also expanded on the controls required when foreign launch services were utilized. Rather than singling out the PRC, these provisions, which included, *inter alia*, mandatory interagency consultations and 24-hour per day, 7-day per week on-site security provided by the DoD,[585] applied equally to all countries other than NATO and major non-NATO allies.[586] As the Act transferred fewer satellites to the DoC and increased controls on more launching states, to include the Russian Federation, it was arguably a less ambitious reform measure than the *Satellite Exports With Security Act of 2000*. Nevertheless, the Bill died in Committee and thus never came up

[581] *Ibid.* at § 2(a).
[582] *ITAR, supra* note 25 at § 121.1, Category XV.
[583] *H.R. 4417, supra* note 580 at § 2(b).
[584] U.S. Bill H.R. 1707, *Satellite Trade and Security Act of 2001,* 107th Congress (3 May 2001) [*H.R. 1707*].
[585] As indicated in Chapter 1, this was one of the recommendations of *The Cox Report*—i.e. that security be provided by the DoD rather than private security guards hired by the exporter.
[586] *H.R. 1707, supra* note 584 at § 3 and § 4.

for a vote.

(3) *FOREIGN RELATIONS AUTHORIZATION ACT OF 2004*

The *Foreign Relations Authorization Act of 2004* included a provision that "would have lifted the requirement to obtain a license to provide marketing information about [COMSATs] to NATO allies, Australia, Japan, and New Zealand."[587] This provision was arguably aimed at addressing the claim of U.S. companies that they are unable to effectively market their COMSATs to potential foreign buyers because of the regulatory hurdles prescribed by the ITAR.[588] Indeed, a DDTC license is required before technical data pertaining to the COMSAT can be disclosed to a potential foreign buyer.[589] While the *Foreign Relations Authorization Act of 2004* passed both the House and Senate, the COMSAT marketing exception provision was stripped out of the final Act, and thus did not become law.[590]

(4) *RONALD W. REAGAN NATIONAL DEFENSE AUTHORIZATION ACT FOR FY 2005*

In 2004, the Congress included a proviso in a defense spending bill that effectuated reform of the ITAR.[591] The proviso indicates that, "[t]he Secretary of State shall ensure that any license application submitted for the export of defense articles or defense services to Australia or the [U.K.] is expeditiously processed by the [DoS], in consultation with the [DoD], without referral to any other Federal department or agency, except where the item is classified or exceptional circumstances apply."[592] The Congress offered neither a specific metric for these exports, nor did it define the term "expeditiously." To that end, the GAO concluded in a 2007 report that the DDTC's 2006 processing metrics for exports to Australia and the U.K. did not differ significantly from other major trading partners in spite of the congressional mandate.[593] It is noteworthy that the current reform legislation before the Senate, as discussed below, includes a similar expedited metric proviso, but unlike this 2004 law, attached a 7-day and 30-day metric to it.[594] The Congress

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[587] *Defense Industrial Base Assessment, supra* note 328 at 4.
[588] See *Zelnio, supra* note 15 at 229.
[589] *ITAR, supra* note 25 at § 123.1(a).
[590] *Defense Industrial Base Assessment, supra* note 328 at 4.
[591] *Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005*, Pub. L. No. 108-375 (2004).
[592] *Ibid.* at § 1225 (b).
[593] *Export Controls, Vulnerabilities and Inefficiencies, supra* note 1 at 8.
[594] *H.R. 2410, supra* note 40 at § 804(a)-(e).

therefore appears to recognize that vaguely worded aspirational terms such as "expeditiously" are not as effective as clearly defined metrics.

(5) *Defense Trade Controls Performance Act of 2007*

On 15 November 2007, Representative Sherman introduced a bill aimed at reforming and improving the DDTC licensing process.[595] The timing of this bill aligned with the period discussed in Chapter 2 in which the DDTC was, by its own admission, failing to execute its mission in a timely manner.[596] The Bill addressed, *inter alia*: license application processing metrics, DDTC staffing, DDTC budget issues (specifically, the use of export registration fees to support the DDTC mission exclusively, rather than for other DoS missions), and increased transparency for license application processing.[597] President Bush's NSPD-56 initiative, which also addressed the DDTC licensing process, was announced just two months after the Bill was introduced.[598] Whether for that reason or for another, the Bill died in committee without ever coming up for a vote.

(6) *Strengthening America's Satellite Industry Act*

On 15 October 2009, a bill was introduced in the House of Representatives that, if enacted, would grant the President the authority to remove satellites and related components from the USML except "with respect to any satellite or related component that may, directly or indirectly, be transferred to, or launched into outer space by, the People's Republic of China."[599] In addition, the Bill would require the DoS to submit a report to the House Committee on Foreign Affairs within 90 days of the enactment indicating the possible mechanisms by which the DDTC could function on a 100 percent self-financing basis.[600] Presumably, this self-financing proviso would entail registrants under the ITAR financing the DDTC's operations *in toto*. Were this to occur, criticism would likely result. First, any increase in compliance costs would arguably draw the ire of industry. Second, a regulator is arguably not sufficiently insulated from the regulatee, when the regulatee finances the regulator's operations. Indeed, such an arrangement gives the appearance of peddling influence. The Bill was referred to the House Committee on Foreign

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[595] *H.R. 4246, supra* note 55.
[596] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 16 (e.g. 43-day average license application processing time; more than 10,000 open applications).
[597] *H.R. 4246, supra* note 55 at § 4, § 5, § 7, § 8.
[598] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 16.
[599] U.S. Bill H.R. 3840, *Strengthening America's Satellite Industry Act,* 111th Congress (2009).
[600] *Ibid.* at § 7.

Relations and remains with that committee. Given the current reform legislation before the Senate and the Administration's reform efforts, it is unlikely this Bill will make it out of committee.

C. U.K. AND AUSTRALIA TREATIES

In 2007, President Bush signed treaties with both the U.K. and Australia that would grant ITAR exemptions to those two countries under certain circumstances.[601] Although the President has the authority to make treaties, two-thirds of the Senate must concur before the treaty enters into force.[602] Both treaties were forwarded to the Senate in 2007, but as yet, the Senate has not acted on either. For its part, the Obama Administration strongly supports the ratification of these Treaties.[603]

The Treaties, which are substantively the same, would authorize the President to promulgate regulations under the ITAR to authorize the export or transfer of certain defense articles and defense services between the U.S. and the U.K. and between the U.S. and Australia without a DDTC license when in support of:

> (1) Combined military operations;
> (2) Cooperative security and defense research, development, production, and support programs;
> (3) Mutually agreed security and defense projects where the end-user is the Government of the [U.K.] or the Government of Australia; or
> (4) [USG] end-use."[604]

While some aspects of these Treaties may tangentially benefit the U.S. commercial space sector, it does not appear that COMSATs or other dual-use commercial satellites would be eligible for the license exemptions under the regulations promulgated pursuant to either Treaty. The strictures of the Treaties, each of which relate to national security issues, would appear to require such a result.

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[601] Treaty between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland Concerning Defense Trade Cooperation, done at Washington and London June 21 and 26, 2007 (Treaty Doc.110-7) (submitted to Senate September 20, 2007); Treaty between the Government of the United States of America and the Government of Australia Concerning Defense Trade Cooperation, done at Sydney September 5, 2007 (Treaty Doc. 110-10) (submitted to Senate December 3, 2007).
[602] U.S. Constitution, Article 2, § 2.
[603] U.S. *Statement of Assistant Secretary Andrew Shapiro on Defense Trade Cooperation Treaties, Hearing Before the Senate Foreign Relations Committee* (10 December 2001) 1, online: Senate Foreign Relations Committee <http://foreign.senate.gov/imo/media/doc/ShapiroTestimony091210a-11.pdf>.
[604] *Ibid.* at 5.

As such, one commentator has indicated that, "the positive effects of the Treat[ies] on the aerospace industry could be negligible.[605] It appears, therefore, that for now Canada will remain the only country with a broad exemption under the ITAR—to include license exemptions for COMSATs.

That said, a very broad reading of the Treaties *could* produce a different result. As indicated in Chapter 1, ninety-five percent of U.S. military communications reportedly "travel over commercial telecommunications networks, including satellite systems."[606] Presumably, the military forces of both the U.K. and Australia are similarly dependant on commercial communication networks to support their respective operations. In addition, frequent and unfettered communication between coalition partners during combined military operations is a predicate to success. It could be argued, therefore, that the export of a COMSAT from the U.S. to either the U.K. or Australia—both of which are currently engaged in combined operations with the U.S. in Afghanistan—would in fact support combined operations by facilitating communication between the forces of the U.S. and U.K. and the U.S. and Australia (both inside and outside of Afghanistan).

II. MUSTERING THE POLITICAL WILL: PENDING REFORM LEGISLATION BEFORE THE SENATE

One piece of pending legislation—H.R. 2410, *Foreign Relations Authorization Act, Fiscal Years 2010 and 2011*—is here singled out for examination, as it appears to have a very good chance at becoming law.[607] Moreover, if *H.R. 2410* passed in its current form, it would arguably constitute the most significant reform of the U.S. strategic export control regime since the *STNDAA for FY 1999*. It passed the House by a vote of 235 ayes, to 187 nays on 10 June 2009. With its passage, the House indicated that, "[i]n a time of international terrorist threats and dynamic global economic and security environment, United States policy with regard to export controls is in urgent need of a comprehensive review in order to ensure such controls are protecting the national security and foreign policy interests of the United States."[608] The bill is currently with the Senate Committee on Foreign Relations; the Senate is expected to pass a version of the bill in the summer of 2010; a reconciled bill is likely to be completed by September 2010.[609]

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[605] P.J. Blount, "The ITAR Treaty and its Implications for U.S. Space Exploration Policy and the Commercial Space Industry" (2008) 73 J. Air L. & Com. 705, 720.
[606] *Singer, supra* note 71 at 200.
[607] *H.R. 2410, supra* note 40 .
[608] *Ibid.* at § 802(1).
[609] See *Foust, supra* note 397.

This section will detail the major export control reforms contained in Title VIII of *H.R. 2410*, *Export Control Reform and Security Assistance*, namely: (1) improving license processing metrics; (2) transparency in commodity jurisdiction determinations; (3) ensuring adequate staffing for license offices; (4) periodic review of the USML; (5) transparency in the DDTC licensing process; and (6) granting the President the authority to remove commercial satellites from the USML. Each proposed reform is detailed below.

a. IMPROVING LICENSE PROCESSING METRICS

H.R. 2410 codifies the requirement in the aforementioned NSPD 56, which sets the processing metric for export licenses at 60 days.[610] The legislation requires that 93 percent of applications annually are processed within that metric; a 60-day metric also applies to commodity jurisdiction applications.[611] The legislation requires the DoS to brief the appropriate congressional committees when the established metrics are not being met.[612] The legislation also establishes a processing goal of 7 days when the item to be exported is to go to U.S. allies in direct support of combat operations; a 30-day processing goal is established for NATO allies and major non-NATO allies, irrespective of involvement in coalition combat operations.[613]

Interestingly, *H.R. 2410* also requires the DDTC to submit to the Congress, on 31 December 2011 and 31 December 2012, several of the quantitative metrics discussed in the last Chapter, to include, *inter alia*: (1) the average license processing time and the number of applications for NATO and major non-NATO allies, Australia, New Zealand, Japan, South Korea, Israel, as well as "all other countries"; and (2) the average processing time and number of applications by USML category.[614] The latter would necessarily include a breakout for USML category XV space technologies. In this regard, it would appear the Congress is also interested in getting beyond the anecdotes currently driving the export control reform debate and is instead interested in hard quantitative data.

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[610] *H.R. 2410, supra* note 40 at § 804(a)(1).
[611] *Ibid.* at § 804(a)(2)-(3).
[612] *Ibid.* at § 804(b)(2)(B).
[613] *Ibid.* at § 804(c)(1)(A)-(B).
[614] *Ibid.* at § 804(d)(1)(A)-(B).

b. TRANSPARENCY IN COMMODITY JURISDICTION DETERMINATIONS

When doubt exists as to whether an item to be exported is regulated by the USML or the CCL, the prospective exporter can request a CJ determination and the DDTC will provide a definitive answer regarding the item to be exported.[615] One of the primary criticisms surrounding the CJ process is its lack of transparency—meaning that once a determination is made on a certain item, that determination is considered confidential and, as such, CJ determinations are likely made on the same item again and again. This is inefficient for both the prospective exporters and the DDTC. Representative Sherman has indicated, "[t]here shouldn't be a single product where industry doesn't know who has control, except in the circumstances where the product was invented in the last few weeks."[616] To that end, *H.R. 2410* establishes a requirement that all CJ determinations be published on the DDTC's website within 30 days of the determination; published information will include the manufacturer of the item, a brief description of the item, a model or part number, and the USML designation under which the item has been designated; the DDTC is further required to archive this information so that it is searchable by the public.[617]

Virtually all space-related technologies currently fall under the USML.[618] As a result, there appears to be little need for CJ determinations in the space technologies realm. However, if some space-related technologies are ultimately transferred to the CCL as part of the current reform effort, CJ determinations will likely play an increasingly important role for exporters of those technologies.

c. ENSURING ADEQUATE STAFFING FOR THE DDTC

It is said that the DDTC is a chronically understaffed organization.[619] A review of the DDTC website reveals there are currently 44 licensing officers on staff and 6 licensing division chiefs.[620] Between March 2009 and March 2010, the DDTC processed approximately 82,000 export license applications.[621] If the 6 division chiefs and 44 licensing officers reviewed an equal

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[615] *ITAR, supra* note 25 at § 120.4.
[616] *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 33.
[617] *H.R. 2410, supra* note 40 at § 804(f).
[618] *ITAR, supra* note 25 at § 121.1, Category XV.
[619] See e.g. *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5.
[620] U.S. DoS Directorate of Defense Trade Controls, *Key Personnel*, online: DDTC <http://www.pmddtc.state.gov/about/key_personnel.html> (last visited on 9 April 2010).
[621] *Ibid*.

share of license applications, each reviewed approximately 1,640 applications in the last year; if just the 44 licensing officers reviewed an equal share of license applications, each reviewed approximately 1,860 applications in the last year. To put those numbers into perspective, each licensing officer at the DDTC's DoC counterpart, the BIS, reviewed approximately 400 applications in 2007.[622] *H.R. 2410* establishes a requirement that the DDTC staff at least 1 licensing officer for every 1,250 license applications it expects to receive per fiscal year.[623] For the March 2009 to March 2010 timeframe, that would have imposed a requirement that the DDTC staff 65 licensing officers—a 33 percent increase over the 44 licensing officers currently on staff. The legislation also requires, to the extent practicable, that the DDTC assign at least 3 individuals to review applications for CJ determinations.[624]

d. Periodic Review of the USML

The *AECA* indicates, "[t]he President shall periodically review the items on the [USML] to determine what items, if any, no longer warrant export controls under this section."[625] What the *AECA* does not establish is any timeframe for this periodic review. *H.R. 2410* addresses this issue by requiring the Secretary of State to review 20 percent or more of the technologies and goods falling under the USML for each of the next five years; at the end of the five years, the entire list will have been subject to review.[626] The proviso also requires the Secretary of State to submit an annual report to Congress indicating the results of the required review.[627]

It is somewhat surprising, given both the rapidity of technological development as well as the criticisms levied at the makeup of the USML, that the Congress did not opt for a more ambitious minimum timeframe for this review. Five years seems an inordinately long period to conduct the review, particularly when considering that at least one of the aforementioned assessments recommends the USML be dismantled and rebuilt *in toto* every year.[628]

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[622] *Export Controls: Are We Protecting Security and Facilitating Exports? supra* note 5 at 34.
[623] *H.R. 2410, supra* note 40 at § 805(b).
[624] *Ibid.* at §805(c).
[625] *AECA, supra* note 26 at § 2778(f)(1).
[626] *H.R. 2410, supra* note 40 at § 808(b).
[627] *Ibid.* at § 808(c).
[628] *Beyond "Fortress America", supra* note 2 at 59.

e. TRANSPARENCY IN THE DDTC LICENSING PROCESS

Here, *H.R. 2410* amends the *AECA* by addition, indicating "the President shall make available to persons who have pending license applications under this chapter and the committees of jurisdiction the ability to access electronically current information on the status of each license application required by this chapter."[629] This information includes: a case number; the date of receipt for the application; the DDTC disposition date; the interagency review completion date, if applicable; the initial date of congressional consultation concerning the application, if applicable; and the date the license application is sent to the congressional committee of jurisdiction, if applicable.[630] This electronic access requirement comes into force one year after the enactment of the legislation.[631]

f. GRANTING THE PRESIDENT AUTHORITY TO REMOVE COMMERCIAL SATELLITES FROM THE USML

H.R. 2410 authorizes the President to remove satellites and related components from the USML.[632] As discussed in section III, *infra*, the President already possesses this authority for all satellites and related technologies with the exception of: (1) commercial communication satellites; (2) technical data provided to the launch provider (other technical data, as well as defense services and technical assistance for satellites and rockets remained on the USML); (3) commercial encryption items; and (4) satellite fuels. These items are on the USML as a result of §1513(a) of the *STNDAA for FY 1999*. *H.R. 2410* would arguably grant the President the authority to remove all four items from the USML, should he wish to do so.

The proviso also includes a blanket exception with regard to the PRC. Like the *Strengthening America's Satellite Industry Act*, the authority granted the President "may not be exercised with respect to any satellite of related component that may, directly or indirectly, be transferred to, or launched into outer space by the People's Republic of China."[633] In practice, this would mean that COMSATs and related components bound for China, either for launch or otherwise, would remain on the USML, while COMSATs and related components bound elsewhere could be transferred to the CCL. This exception arguably represents a political

[629] *H.R. 2410, supra* note 40 at § 810(a).
[630] *Ibid.* at § 810(b).
[631] *Ibid.* at § 810(a).
[632] *Ibid.* at § 826(a).
[633] *Ibid.* at § 826(b).

compromise and increases the likelihood of the proviso becoming law. Indeed, at a conference in November 2009, an export specialist for the Senate Foreign Relations Committee indicated, "[i]n the political environment we operate in, China is the third rail…[w]e have members who know China tests weapons in space, and they don't want to be accused of giving them any assistance."[634] Moreover, the exception squarely addresses the unauthorized disclosures made by Hughes and Loral that occurred in the 1990s and were the subject of *The Cox Report*.

These proposed legislative reforms will arguably improve the current export control regime. The proposed reforms include both procedural aspects (e.g. metrics, staffing, and process transparency) and substantive aspects (e.g. review of the USML and authority to remove commercial satellites from the USML). The most important and difficult of these reforms is the review of the USML. Distinguishing the crown jewels from the costume jewelry is no easy feat, but the resultant list should provide the cornerstone for a more efficient and effective export control regime. The only question is why the DoS has been given five years to review and update the USML pursuant to the proposed legislation, given the sense of urgency nearly all parties to the reform debate are currently expressing.

III. THE PRESIDENT'S EXPORT CONTROL REFORM AGENDA

On 13 August 2009, President Obama ordered a "sweeping interagency review" of U.S. strategic export controls. The review was conducted by an interagency task-force which included all USG departments and agencies with a hand in the current export control regime.[635] On 21 December 2009, President Obama signed Presidential Study Directive 8 (PSD-8), ordering officials within his Administration to recommend the statutory and regulatory steps necessary to overhaul the current export control regime—to include those controlling COMSATs and other commercial satellites—based on the findings of the "sweeping interagency review."[636] The review, which has not been made public,[637] concluded, "the current U.S. export control system does not sufficiently

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[634] *Broad, supra* note 36.
[635] *Fact Sheet on the President's Export Control Reform Initiative, supra* note 45.
[636] Amy Klamper, "Obama Memo Puts Export Reform on Front Burner" *Space News* (18 January 2010), online: Space News <http://www.spacenews.com/policy/100115-obama-memo-puts-export-reform-front-burner.html >.
[637] Given Presdient Obama's pledge of transparency and openness in government, the lack of transparency on this issue is somewhat surprising. Indeed, the President has indicated,

reduce national security risk based on the fact that its structure is overly complicated, contains too many redundancies, and tries to protect too much."[638] The PSD-8 officials therefore recommended the regime undergo fundamental reform, to include the creation of: (1) a single control list; (2) a single primary enforcement agency; (3) a single information technology (IT) system; and (4) a single licensing agency.[639] Implementation of this reform agenda will reportedly come in three phases. The first phase includes regulatory reforms to the current system and preparing the legislative proposals necessary to bring the full reform agenda to fruition; the second phase includes further regulatory reforms, to include removal of some items from the USML, as well as increased funding for the future enforcement and IT initiatives to come; phase three includes the passage of legislation required to implement the full reform agenda.[640] Defense Secretary Gates indicated an ambitious timeframe for implementing this reform agenda, to include the passage of necessary legislation, saying all could occur before the end of 2010.[641] While details concerning the Administration's inchoate reform initiative are still somewhat sketchy, enough information has been released to engage in an analysis of the initiative, albeit somewhat perfunctorily.

A. BACKGROUND

On 19 April 2010, the day before Defense Secretary Gates announced the President's reform initiative, several unnamed defense officials within the DoD provided a background briefing on the initiative.[642] At that briefing a senior defense official indicated that principles within the Administration agreed during the summer of 2009 that "fundamental reform" was necessary to

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> My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of transparency, public participation, and collaboration. Openness will strengthen our democracy and promote efficiency and effectiveness in Government.

Barack Obama, *Transparency and Open Government* (undated Memorandum for the Heads of Executive Departments and Agencies), online: White House <http://www.whitehouse.gov/the_press_office/Transparency_and_Open_Government/>. Moreover, the President indicated, "[i]nformation maintained by the Federal Government is a national asset. My Administration will take appropriate action, consistent with law and policy, to disclose information rapidly in forms that the public can readily find and use." *Ibid.* Were the Administration to release the review (or at the very least the data considered by the interagency task-force) the public would have a better insight into *why* fundamental reform agenda was chosen over a less ambitious reform agenda. As it is, the public is left to speculate.

[638] *Fact Sheet on the President's Export Control Reform Initiative, supra* note 45.

[639] *Ibid.*

[640] *Ibid.*

[641] Amy Klamper, "White House Seeks to Consolidate Export Licensing" *Space News* (20 April 2010), online: Space News <http://www.spacenews.com/policy/white-house-seeks-consolidate-export-licensing.html >.

[642] *DoD Background Briefing with Senior Defense Officials from the Pentagon, supra* note 483.

correct the national security challenges posed by export controls.[643] This is telling, as it would appear that "fundamental reform" was the going-in position of the Administration even before the "sweeping interagency review" ordered on 13 August 2009 was conducted. The obvious danger here is that if the principles (which presumably included, at a minimum, the Secretaries of Defense, State, and Commerce) agreed that fundamental reform was necessary *before* the review was conducted, then the underlings conducting that review would almost assuredly reach that same conclusion. If the review was potentially tainted by preconceived notions, then so too would the PSD-8 recommendations flowing therefrom.

It should also be noted that these proposals—namely the creation of a single licensing agency and a single export control list—break no new ground. Indeed, Senator Heinz recommended these exact reforms in his 1991 book and also introduced legislation to those ends.[644] He did so, "to confront head-on the interagency difficulties that have crippled the development of coherent policy over the years," with an emphasis "on the wider idea of economic security."[645] The fact that the arguments for export reform have not changed in decades (although "economic security" is now being framed in terms of "national security") and the proposals to "fix" the problem have not changed in decades, does not necessarily mean that those arguments and proposals are fallacious. However, it again calls into question the notion that, "[t]his country can no longer afford the *status quo*."[646] In the intervening decades since Senator Heinz first made that claim, the sky has not fallen—the U.S. remains the clear leader in commercial space.[647] Absent evidence to the contrary, there is little reason to believe that will not also be true 20 years hence.

B. THE FOUR SINGLES

The President's reform initiative calls for the creation of an entirely new bureaucracy to control the export of munitions, dual-use technologies, and commodities. At the heart of this new bureaucracy are what have been dubbed the four singles: "a single export control list, a single licensing agency, a single agency to coordinate enforcement, and a single unified IT system."[648] This

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[643] *Ibid.*
[644] *Heinz, supra* note 1 at 147-9.
[645] *Ibid.* at 150.
[646] *Ibid.* at x.
[647] *Futron's 2008 Space Competitiveness Index*, *supra* note 465 at 3.
[648] *DoD Background Briefing with Senior Defense Officials from the Pentagon, supra* note 483.

consolidation would merge the USML and the CCL; merge the regulatory functions currently being carried out separately by the DDTC and the BIS; merge the separate IT systems currently being employed by the DDTC and the BIS (i.e. creating a single point of entry for exporters); and merge the enforcement functions currently being carried out separately but the DDTC and the BIS. A senior defense official providing background on the initiative indicated that the purpose of this consolidation is "to make clear to companies that they have a single place to go, in terms of understanding what restrictions may be, and frankly to avoid situations where people may attempt to either forum shop, by trying to use one list versus the other, or cases where they get captured by two lists and have to go…through more than one export control process."[649] While this consolidation might represent a significant change for exporters of some technologies, it would not appear to significantly affect exporters or temporary importers of space-related technologies. As indicated in Chapters 1 and 2, the language of Category XV of the USML is sufficiently broad so as to capture virtually all space-related technologies.[650] As a result, the DDTC is already a "one-stop-shop" for exporters and temporary importers of space technologies. Confusion as to restrictions, forum shopping, and duplicative processes are simply not an issue with regard to space technologies. It would appear, therefore, this is another instance in which the space sector is being conflated with the non-space sector within the larger reform debate. That said, consolidation could improve the efficiency of the current licensing process if it obviated the need for multi-agency review of license applications. For example, if the new single licensing agency included elements from the DoD and NSA, among others, then the national security reviews of these various constituent groups could all be conducted "in-house." It follows that "in-house" reviews *might* be more efficient than the multi-agency staffing occurring under the current export control regime.

What is not known at this time is whether the single licensing agency would fall under a current department (i.e. DoS, DoC, or DoD) or whether an entirely new agency would be created. A senior defense official providing background on the initiative indicated that, "none of the national security agencies involved in this have been ruled out."[651] This statement would appear to indicate that the DoC is not a potential candidate for overseeing the new agency. It follows too that the DoC would not be the appropriate department to oversee sensitive military technologies—which

[649] *Ibid.*
[650] *ITAR, supra* note 25 at §121.1, Category XV.
[651] *DoD Background Briefing with Senior Defense Officials from the Pentagon, supra* note 483.

the new single agency would necessarily oversee. As mentioned in Chapter 2, if the DoC is cut out of this process, then the Senate Banking Committee will lose oversight jurisdiction over export controls. If the Administration determines the DoD is the appropriate department to house the new single agency, then each of the Senate and House committees of jurisdiction currently responsible for the oversight of export controls would likely cede jurisdiction to the respective Armed Services committees in the Senate and House. Any such legislation necessary to create the new single licensing agency under the DoD would originate in, pass through, or potentially stall in one or more of these current committees of jurisdiction. As a result, the parochial interests of these committees, which might well lose that jurisdiction under the President's reform initiative, cannot be underestimated. Within this debate, power politics matter.

The single list created under the President's reform initiative is to be tiered based on the importance of the technology to be exported or temporarily imported. A relatively small number of "crown jewels" would be placed in the top tier and subject to the tightest controls; other technologies would be tiered and subject to controls based on their relative importance to national security; items such as "lug nuts, screws, bolts…those simple tools" would be deregulated (i.e. could be exported or temporarily imported license-free).[652] Presumably, this would also include items like Bigelow Aerospace's satellite stand. Yet this begs the question: if the export or temporary import of space technologies—with the exception of the nuts, bolts, and screws holding these technologies together—are still subject to a licensing process under the President's initiative, would it make the U.S. industrial technology base more competitive in the global marketplace? Is the ability to sell bolts license-free going to save the industrial base? Would reducing license application processing times from 16 days to some shorter period solve the purported problem? Or could it be that doing away with the ITAR, with all of its baggage (real or perceived) and decades of negative treatment, is sufficient in and of itself to make U.S. manufacturers more competitive globally—irrespective of increased efficiency?

C. PHASES OF IMPLEMENTATION

Implementation of the President's reform initiative is to come in three phases. Phase one is primarily preparatory in nature and includes, *inter alia*: formulating the tiers for the single control

[652] *Ibid*.

list; "determining the enterprise-wide needs" of a single IT infrastructure; and laying the groundwork for the establishment of a single enforcement agency.[653] Phase two would begin to implement some of the preparatory efforts undertaken in phase one, to include, *inter alia*: incorporating tiers within the current lists (i.e. USML and CCL) to ease the transition once a single list is created; standing up the single IT infrastructure; and providing notice to the Congress for those items the President intends to transfer from the USML to the CCL in advance of the merger of the two lists.[654]

With regard to transferring items from the USML to the CCL, the President already possesses the authority to move any space technology of his choosing, other than those items specifically prohibited by *STNDAA for FY 1999*—i.e. "all satellites and related items that were on the [CCL] of dual-use items on the [EAR] on the date of enactment of this Act"[655]—from the USML to the CCL. The *AECA* vests in the President the authority "to designate those items which shall be considered defense articles and defense services for the purposes of [the *AECA*] and to promulgate regulations for the import and export of such articles and services. The items so designated shall constitute the [USML]."[656] As indicated in Chapter 1, the *STNDAA for FY 1999*, only withdrew the President's discretionary power to determine the content of the USML with regard to "satellites and related items" on the CCL at the time the *STNDAA for FY 1999* was enacted. It follows that all "satellites and related items" *not* on the CCL on 17 October 1998, the date the *STNDAA for FY 1999* was enacted, are still within the discretion of the President to label as USML items or CCL items. According to *The Cox Report*, the following space technologies were on the CCL as of 1998: (1) commercial communication satellites; (2) technical data provided to the launch provider (other technical data, as well as defense services and technical assistance for satellites and rockets remained on the USML); (3) commercial encryption items; and (4) satellite fuels.[657] There are myriad other dual-use satellites apart from "commercial communication satellites." Indeed, the USML distinguishes "communications satellites" from "remote sensing satellites, scientific satellites, research satellites, navigations satellites, experimental and multi-mission satellites"—all of which

[653] *Ibid*.
[654] *Ibid; Fact Sheet on the President's Export Control Reform Initiative, supra* note 45.
[655] *STNDAA for FY 1999, supra* note 24 at § 1513.
[656] *AECA, supra* note 26 at § 2778(a)(1).
[657] *The Cox Report, supra* note 22 at 317-8.

are potentially dual-use.[658] As such, the President, under the discretionary authority granted to him by the *AECA*, could transfer any or all of the latter satellites, and technologies related thereto, to the CCL if he saw fit. An argument could also be made that technologies or innovations that did not exist on 17 October 1998—even if, once realized, those technologies technically fall within one of the four *STNDAA for FY 1999* categories above—are also within the Presidents discretion to place on the CCL. Indeed, a strict interpretation of the statutory language (i.e. applying only to the items on the list on the date of statutory enactment) arguably demands that outcome.

There are two important caveats that bear some mention with regard to this authority. First, as alluded to above, the *AECA* imposes a notice requirement on the President whereby the "President may not remove any item from the Munitions List until 30 days after the date on which the President has provided notice of the proposed removal to the Committee on International Relations of the House of Representatives and to the Committee on Foreign Relations of the Senate…"[659] If the President were to provide notice that he intended to remove some or all commercial earth observation satellites, for example, the Congress could conceivably block such a move legislatively. Given that the notice requirement is only 30 days however, it is highly unlikely that the Congress could pass a joint resolution in time to actually block the proposed move (i.e. there might be a brief period in which these exports would be authorized before the Congress legislatively banned such exports). Second, given the President's national security prerogatives, it is unlikely he would actually effect a transfer of these satellites—namely earth observation and PNT satellites—from the USML to the CCL in recognition of the military value inherent in each.[660] Nevertheless, the President could determine that some of these "non-communication" satellites and related technologies are indeed costume jewelry as opposed to crown jewels and transfer those satellites and related technologies to the CCL. As shown here, he is currently authorized to do so.

Phase 3 of the President's reform initiative would require the Congress to pass the legislation necessary to bring to fruition the four singles.[661] If enacted, the legislation would replace

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[658] *ITAR, supra* note 25 at § 121.1, Category XV.
[659] *AECA, supra* note 26 at § 2778(f)(1).
[660] It is also possible, depending on how tightly or loosely the BIS handled the export of these technologies, that these exports could undermine the Wassenaar Arrangement. Recall that the *AECA* prohibits exports that undermine multilateral agreements to which the U.S. is a party. *AECA, ibid.* at § 2778(a)(1).
[661] *Fact Sheet on the President's Export Control Reform Initiative, supra* note 45.

the *AECA* and the *EAA*. For his part, Representative Berman released a statement in response to Defense Secretary Gates' announcement of the President's export control reform initiative, indicating, "Secretary Gates…set forth his own vision of how the two export control systems might be fully merged. Should the President propose such a step later this year, I will carefully consider it."[662] Representative Berman's choice of language is interesting. The notion that this is Defense Secretary Gates' "own vision" rather than the President's vision or the result of interagency consensus, could be read to mean that all of the stakeholders in the debate are not in total agreement on these issues. According to a senior defense official, Defense Secretary Gates is, "the leading champion of export-control reform as a national security issue."[663] It is possible, therefore, that the President allowed Defense Secretary Gates to pursue the reform initiative without it actually representing the views of the entire Administration. The likelihood of passing all or part of the legislation required to bring the initiative to fruition would likely be diminished if it does not have the full weight of the Administration behind it.

It is impossible to say whether the new bureaucracy created under the Administration's reform initiative would constitute an improvement over the existing bureaucracy. Here, the first sentence of the above quoted Machiavellian admonition would appear to ring true, to wit: "[i]t must be remembered that there is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage, than the creation of a new system."[664] The question is—are the problems with the current system such that the risks associated with creating a new system are worth taking? In order to justify those risks, policy makers should demand, at a minimum: (1) a clear identification and articulation of problems within the current system; (2) empirical evidence—or at the very least something more than anecdotal evidence—relating to those problems; (3) a clear indication that reforming the existing system would not alleviate those problems; and (4) a clear indication that the new system would alleviate those problems. As argued throughout this thesis, these issues have not been sufficiently addressed. It follows, therefore, that the risks associated with creating an entirely new export control regime are not justifiable.

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[662] U.S., House of Representatives Committee on Foreign Affairs, *Berman statement of speech by Defense Secretary Gates regarding President Obama's Export Control Policy Review* (20 April 2010), online: Committee on Foreign Affairs <http://www.internationalrelations.house.gov/press_display.asp?id=726>.
[663] *DoD Background Briefing with Senior Defense Officials from the Pentagon, supra* note 483.
[664] *Noble, supra* note 111 at 251.

CONCLUSION

The current U.S. strategic export control reform debate arguably represents an amalgam of enduring paradigms, doomsaying, message marketing, overstatements, absurdities, and anecdotes—all coupled with seemingly legitimate criticisms. On the horizon, some see only giants. Few, if any, see only windmills. In reality, there is insufficient empirical data to make an accurate determination on the ratio of giants to windmills. As a result, and just as the GAO warned with regard to President Clinton's 2000 DTCI initiative, "[w]ithout a clear and common understanding of perceived versus real problems and their underlying causes and without an appropriate analytical framework to tie changes to desired goals, it will be difficult to anticipate the outcomes of changes and to determine whether progress is being made."[665] Based on publicly available data, there is no clear and common understanding of real versus perceived problems and their underlying causes; there is not an appropriate analytical framework for tying changes to desired goals. It is possible the interagency task-force that conducted the "sweeping interagency review" ordered by the President on 13 August 2009 indentified the real problems, as well as their underlying causes; it is possible an analytical framework was created for tying changes to desired goals. If so, that information has yet to be made available. As a result, the public (to the extent that it is interested or are even aware of the issue) is left to wonder whether the Administration's proposals offer just the type of solution H.L. Menken warned against—neat, plausible, and wrong. For example, how will the single licensing agency created under the Administration's initiative reconcile the counterposing national security and economic interests implicated when export decisions are actually made? While proponents of export control reform have effectively merged these two interests into one for purposes of the debate (i.e. tying the economic health of the space industrial base to national security prerogatives), the two interests nonetheless persist as distinct and often competing interests. Will the new agency champion national security or the economic interests of the space industrial base? If it intends to do both, how will it succeed in balancing these interests where the DoC failed to do so?[666] This is an open question. The fact that the "stars have aligned" and all of the stakeholders in the reform debate are ITAR critics, does not justify rash action—particularly when less ambitious reforms may achieve the desired end with less accompanying risk.

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[665] *Defense Trade: Analysis of Support for Recent Initiatives, supra* note 318 at 17.
[666] *Heinz, supra* note 1 at 39 ("[t]the [DoC] is commercially unable to balance trade promotion and trade controls.").

To that end, the lack of empirical data should not forestall incremental reforms to the present export control regime when such reforms are warranted. For example, if the DDTC license processing procedure slows to the point that it needlessly or arbitrarily hampers the ability of U.S. manufacturers to compete in the global marketplace, that should indeed be remedied. At present, the DDTC metrics for license processing appear to be outpacing the metrics at the BIS (an average of 16 days versus an average of 27 days), despite the fact that the DDTC processes more license applications.[667] Even so, the Congress appears poised to foster increased efficiency in *H.R. 2410*, by increasing the number of DDTC licensing officers and codifying lower license processing metrics. The insularity of this debate is evident from the fact that there appears to be no benchmarking with U.S. competitors in terms of the administrative or regulatory processes associated with foreign space technology exports. In that regard, how can it be said that 16, 26, or even 60 days is an inordinate amount of time to process export license applications and therefore detrimental to U.S. manufacturers, if it is not known how quickly the competition can accomplish the same? For the sake of argument, what if foreign competitors do accomplish these tasks more quickly than the U.S.? Arguably, if the dictates of U.S. national security require a statutory and regulatory regime that is *in fact* more onerous than those of its competitors, then the answer is not necessarily to tear down that regime. To be sure, U.S. industry is arguably disadvantaged when competing with countries that have no labor or occupational safety laws, but the U.S. response to that competitive disadvantage is not to put children to work, do away with the minimum wage, or eschew workplace safety. There are simply certain "costs of doing business" in the U.S.—to include certain constraints on the ability of private companies to export munitions and dual-use technologies therefrom. Given the tendency of private companies to subjugate higher-level interests in favor of their own short-term profits, these constraints do not appear unreasonable. Indeed, the actions of Hughes and Loral in the 1990s fully support this notion. Moreover, the GAO has indicated that, "while exporters and foreign governments have complained about processing time, reviews of arms export license applications require time to deliberate and ensure that license decisions are appropriate."[668]

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[667] *A Strategic and Economic Review of Aerospace Exports, supra* note 150 at 16 (16 days); *DoC Annual Report to the Congress for Fiscal Year 2008, supra* note 528 at 8 (27 days); see e.g. *H.R. 4246, supra* note 55 at § 1(7) ("In 2006, the Department of State processed over three times as many licensing applications as the Department of Commerce with about a fifth of the staff of the Department of Commerce.").

[668] *Export Controls, Vulnerabilities and Inefficiencies, supra* note 1 at 7.

Another area in which a dearth of empirical data should not preclude incremental reforms to the current export control regime relates to the makeup of the USML. To be sure, reform of the USML will arguably solve the vast majority of complaints about the ITAR. A nimble and narrowly tailored USML should reflect the fact that certain commercial space technologies are widely available on foreign markets, while at the same time continuing to protect those technologies in which the U.S. maintains an advantage. This would not only allow DDTC licensing officers to spend more time concentrating on the crown jewels, but also afford U.S. manufacturers of costume jewelry technologies a reprieve from superfluous administrative processes. As indicated above, a reformed USML must clearly indicate to exporters and temporary importers of space technologies what items it controls. The most workable solution for accomplishing this goal is to employ broad language that acts to "catch" new technologies and specifically catalogues all items to be excluded from the USML. Again, this level of specificity is critical, given the fact that the effectiveness of U.S. export controls is largely dependent on industry self-regulation.

Arguably, the hardest decision associated with the removal of certain technologies from the USML is whether the U.S. is prepared to countenance the arming of its enemies or potential enemies with technologies that could come back to harm Americans or, at the very least, facilitate the same. Indeed, if the costume jewelry currently controlled under the ITAR is deregulated and allowed to be exported without a license (i.e. also not a licensed export under the CCL), that technology could—and probably will—end up on a Iranian or North Korean satellite at some point in the future. Although there is clearly no right answer to this philosophical quandary, it should nonetheless give pause to policy makers when determining what items should be removed from the USML.

Finding a solution to issues relating to globalization, the development of advanced space technologies elsewhere, and multilateralism are elusive and also highlight the geopolitical complexities of the export control reform debate. In this regard, the ITAR should not be made the scapegoat for the apparent decline in U.S. market share in the realm of space technologies absent empirical evidence to the contrary. Such empirical evidence does not currently exist. Nevertheless, as the ITAR is the one element of this apparent decline in market share that is within the control of U.S. policy makers, the urge might be upend it in the hopes that the U.S. will regain

its hegemonic position in space. That is unlikely, irrespective of the path ultimately chosen by policy makers. As indicated above, "[n]o matter what the United States does, multipolar space will create new policy realities."[669]

These new multipolar realities do not portend doom for the U.S. in the realm of commercial space. The U.S. is still the leader in commercial space by a wide margin and there is little reason to believe that will not remain the case for years to come. Even so, doomsaying within the export control debate continues. One of the common themes in the export control reform debate is that revenue drives innovation and thus, the impetus for ITAR reform: open up foreign markets to the U.S. space industrial base and the resulting increases in revenue will spur further innovation and guarantee U.S. dominance in space for the future. Yet the fact is, no other government in the world currently invests in space technologies to the extent that the USG does; no other country's space industrial base currently garners the commercial revenues that are garnered by the U.S. space industrial base. As such, the notion that other countries are somehow going to achieve parity with or outpace the U.S. without a similar investment by their respective governments and/or without similar commercial revenues for their respective space industrial bases, does little more than strain credulity. Such doomsaying is simply not believable. At the same time, if other countries do manage to achieve parity or outpace the U.S. in the creation of innovative space technologies without making a similar government investment or without a similar commercial revenue stream, then that portends a larger problem—beyond the purported commercial revenue lost or expended as a result of the ITAR. To the extent that this is already true or to the extent that the U.S. space industrial base if failing to meet all of the needs of the USG or commercial sector, criticism of the ITAR may be overshadowing or, at the very least, obscuring an as yet unidentified larger problem with the U.S. space industrial base.

The U.S. can arguably afford the *status quo* for as long as it takes to get this right. To that end, the Congress and the Administration should pursue incremental ITAR reform measures before endeavoring to create an entirely new bureaucracy to control strategic exports. Such incremental measures include the passage of *H.R. 2410* and the regulatory reformation of the USML (i.e. removing the costume jewelry). Should it become law, *H.R. 2410* will arguably improve the ITAR

[669] *Laird & Dupas, supra* note 395.

by, *inter alia*: increasing the number of licensing officers at the DDTC; codifying existing export license application metrics; and improving the transparency of the license review process. Granting the President the authority to move all COMSATs and related components to the CCL is also a positive step. However, the President should not exercise that authority immediately. First, it is not entirely clear whether such a move would discernibly improve the efficiency of COMSAT exports considering the DDTC's average export license application metrics are currently lower than those of the BIS. Second, the aim of the ITAR is to protect those technologies in which the U.S. maintains an advantage; therefore, some COMSATs and related components should continue to require the highest controls. As the vice president of EADS North America put it, "[y]ou cannot build a big sophisticated satellite without US parts and components, you just cannot do it…[Those components might comprise no more than five percent of the satellite], but it's a very important five percent."[670] The U.S. should not risk losing this "very important five percent" by reducing the regulatory hurdles associated with all COMSATs and related components. As for the remaining 95 percent, the President should consider moving those items to the CCL as part of his larger regulatory reformation of the USML, if doing so would comport with the national security prerogatives of the AECA.

The Senate should also ratify the U.K. and Australia Treaties on Defense Trade Cooperation. While it does not appear doing so would have a tremendous impact on the export or temporary import of space technologies, it would arguably quell some of the criticism that the ITAR fails to adequately distinguish between allies and adversaries in its application.

Finally, after *H.R. 2410* becomes law, the USML is subject to regulatory reform, and the U.K. and Australia Treaties are ratified—and after a period sufficient to determine whether these reforms have had an impact on the export control regime—the USG should commission a comprehensive study, to: (1) determine the impact of these reforms; and (2) determine whether further reforms are necessary to achieve the national security ends of the U.S. The study findings, to the extent possible, should be based on empirical data garnered from industry-independent sources. The Congress should also request a GAO report on the same, as well as continue to hold hearings on the matter. If problems persist, then further reform efforts should be considered.

[670] *Foust, supra* note 417.

Challenging the orthodoxy that the U.S. export control regime is toxic gave this author some pause. Indeed, the number and gravitas of export control reform proponents (to say nothing of the dearth of defenders) implicates a powerful logical fallacy—*argumentum ad populum*. With so many believing something is true, it is decidedly uncomfortable voicing decent—and potentially dangerous. Indeed, as Voltaire wrote, "[i]t is dangerous to be right in matters where established men are wrong."[671] I will stop well short of saying that I am right. Instead, I will simply say that this is an exceedingly complex and multifaceted issue accompanied by a multitude of open questions and a decided lack of empirical data. As such, and given that the nation's security is arguably at stake, a conservative approach to reform is preferred above a more radical approach.

[671] Originally (in old French), "…il eft dangereux d'avoir raifon dans des chofes où des hommes accrédités ont tort." Voltaire, *Le Siècle de Louis XIV* (London, 1788) at 113.

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