The Security of Defense Trade with Allies: Enhancing Contact, Contracts, and Control in Supply Chains

SUMMARY: A Signal of Enduring Defense-Industrial Relationships

Security of supply is a conviction that the goods and services commensurate with a government’s security commitments will be available when its foreign and military policies demand action. Around NATO, the European Union, and in other contexts, governments have entered into various forms of agreements designed to ensure that security in a crisis. The United States has such agreements with twenty-eight countries, though of varying scope, enforceability, and reciprocity. These include the legislated designations of the national technology and industrial base (NTIB), security of supply arrangements (SOSAs), reciprocal defense procurement memoranda of understanding (RDP MOUs), and reciprocal government quality assurance agreements (RGQAAs). Beyond those, there are commercial contracts with foreign suppliers.

Why discuss these now? Protectionism has recently been rising around the world and particularly in the United States, where enthusiasm for rewarding domestic producers has often been conflated with the actual demands of national security. The more proximate prompt has been the COVID-19 pandemic, in which several countries initially restricted exports of medical supplies on which trading partners depended—and the United States was at times on both sides of that problem. Some of the more nationalistic responses to this global medical emergency beg the question of whether even the more reciprocal and salient of these agreements, the SOSAs, would be honored in a national military crisis.
To answer that question, this paper relies on three lines of research: a study of the text of the arrangement documents themselves, interviews with diplomats and defense officials in and around Washington, DC, and a historical analysis of the few contemporary cases in which US security of supply has been tested. This issue brief concludes that the SOSAs themselves say little, and that in practice, they have almost never been tested. However, even if the implicit contracts are unenforceable, the agreements have value as easily arranged signals of underlying, enduring relationships between governments. These arrangements are thus worth reinforcing, and perhaps extending to several other important US partners: Mexico, Japan, and Taiwan.

BACKGROUND: COVID-19 and Other “Buy American” Impulses

“For all the rhetoric about the united fight” against COVID-19, Shawn Donnan of Bloomberg Canada intoned in April 2020, “the current obsession in almost every country is how to ban exports and hoard protective masks, clothing, and ventilators.” China made half the world’s surgical face masks before the pandemic, and subsequently expanded production twelvefold, but in March 2020 its government was loath to allow exports of them. That same month, the Swiss and Austrian federal governments complained to the German federal government about seizures of surgical masks at their borders. In Berlin, Health Minister Jens Spahn insisted that he took “this issue of European solidarity very seriously” and that he merely wanted to ensure that masks went “where they were most needed” and not merely “where the most was paid.” Of course.

By the next month, US officials were behaving no better. On April 7, following presidential orders of a few days prior, the Federal Emergency Management Agency (FEMA) banned exports of “N95 masks, other respirators, surgical masks, and gloves” under section 101 of the Defense Production Act of 1950. Just ten days after that, FEMA permitted some broad exceptions, specifically exports to important trading partners Mexico and Canada. Scott W. Atlas and H. R. McMaster, both of the Hoover Institution and former White House advisers, were writing in the Wall Street Journal that “relying on foreign[-made] drugs is dangerous.” Arthur Herman, author of a popular history of industrial mobiliza-

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tion in the 1940s, was opining in the same newspaper that the United States should thus itself become “the medicine chest of the world.”

Yet for all this Sturm und Drang, and “despite the pressure that the recent surge in COVID-19 cases has put on supply chains,” as two analysts wrote in November 2020, there have been no significant shortages of [personal protective] or other equipment since early spring.”

By September, when even the contracts for artificial intelligence were still behind schedule, the US federal government was canceling orders for further ventilators as excess to need.

Short-term pressure for protectionism thus abated, but a fear of overseas vulnerabilities in the supply chain lingered. Over the summer of 2020, Pentagon officials leveraged the pandemic as a lesson in military vulnerabilities. Will Roper, head of procurement for the US Air Force (USAF), took the main message of COVID-19 as the need for “a strategic focus on the supply chain.”

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Yet what sorts of agreements would that cover? After all, as Schroor insisted, the nations represented by the DMAG all had exchanged RD&D agreements. The house’s provisions.15

Both the attachés and the senators found the House’s idea inadvisable and ultimately unworkable. The provision did not survive conference and did not advance into the 2021 National Defense Authorization Act (NDAA). Former Pentagon official Dov Zakheim described the proposed legislation as lacking “strategic sense,” but “actually full of loopholes,” such as authority for the defense secretary to waive its provisions, and exclusion of trade under existing agreements.16 Yet what sorts of agreements would that cover? After all, as Schroor insisted, the nations represented by the DMAG all had exchanged RD&D agreements.


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tries had further security of supply arrangements with the United States, in which each government pledged to work to resolve any subsequent problems that might arise with industry under their governance.

With allies like these, would the restrictions be anything more than protectionism? Or are such agreements defective in a way that demands attention in law and regulation? If they are useful, could they be yet more useful for enhancing the security of the United States and its many allies and partners? As intertwined as international trade and international security have long been, we should frame the problem in its economic and political aspects.

**ECONOMICS AND POLITICS: The Value of Trade in Armaments among Allies**

As Adam Smith explained 245 years ago, specialization lowers costs and improves quality, and the extent of that specialization depends on the extent of the market, domestic or global. The economic options of a nation of 330 million people are a small fraction of those possible for a world of 7.7 billion—or just an alliance of some 950 million. As David Ricardo effectively predicted 204 years ago, the great globalization of the past several decades has resulted in a thoroughgoing industrial restructuring, in which national economies specialize where they have comparative advantages, and thus develop mutual interdependence.

Until very recently, reliability of the supply had facilitated acceptance of the interdependence. Until very recently, reliability of the supply had facilitated acceptance of the interdependence.

Barriers to that trade steer economic rents toward domestic producers, at a net cost borne by domestic consumers, and a deadweight loss to the global economy. Bald-faced protectionism can thus make for “good domestic politics, but really dumb economics and national security.” The Jones Act of 1920 has failed for a century to foster an oceangoing merchant fleet of US-flag ships. For another old-is-new example, consider the 1941 Berry Amendment, which governs military purchases of end-items containing certain specialty metals. The 2021 NDAA shamelessly extended its application to stainless flatware. Decoupling from China may be more or less possible or helpful in microelectronics, but decoupling from the whole world’s knives, forks, and spoons is of no military utility. The passage of a law to further national security was thus hijacked to provide a handout to Sherrill Manufacturing of upstate New York, the sole US maker of those products.

While that is a regrettable example, it is a trivial one—the more complex the product, the more challenging reordering the supply chain. Protectionist legislation can become an exercise in “how to make America less productive,” because “a technonationalist view of the world and the reality of global supply chains are simply incompatible.” Cost advantages generally do not change quickly, so rebuilding cost-effective domestic supply chains for all military production would be costly and challenging. Meanwhile, buyers will still tend to prefer lower prices and higher quality in their commercial purchases. Further, with advanced technologies and complex products, vertical integration from scratch can be difficult and costly. This is true about both the specialized aluminum from Russia (briefly subject to sanctions by the Trump administration) needed by European automobile manufacturers and the nucleoside phosphoramidites from South Korea and China needed for

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20 Comment by William “Bill” Greenwalt, former US deputy undersecretary of defense for industrial policy, in Bertuca, “U.S. Military Allies Seek to Block.”
DNA- or mRNA-based COVID-19 vaccines. International trade sometimes provides “access to the latest technologies,” not all of which are developed and produced in the United States. Chauvinistic sensibilities notwithstanding, this is even true in military technologies, many of which depend on underlying civilian technologies, some of which are efficiently sourced around the world.

Further, it is particularly true for small states, which cannot aspire to produce all the military materiel required in crisis. For them, security generally demands supply of armaments from beyond one’s borders, but that itself creates demand for security of the supply itself. For large states, well-tailored barriers can foster domestic industrial and logistical capabilities that ensure security of supply in crises, but this still comes at a cost of net output. Not everything can be so cost-effectively subsidized, and single foreign sources, particularly those of complex, hard-to-replicate products, may present particular logistical and political challenges. Thus, governments and even firms may want some sense of security about that supply. If security of supply is a conviction, then security of supply agreements are a comparative guarantee of that supply so that (again) a government will be able to further its security commitments in accordance with its foreign and military policies.

Where might assurances of international supply fall short? There are cases of force majeure, to be sure. But beyond the routine exigencies of global manufacturing which afflict plenty of firms, governments may interfere with such trade for either economic or political reasons. In a crisis, domestic demand may crowd out export orders, perhaps by governments and even firms may want some sense of security about that supply. If security of supply is a conviction, then security of supply agreements are a comparative guarantee of that supply so that (again) a government will be able to further its security commitments in accordance with its foreign and military policies.

All this increasing specialization in globalized supply chains is good, but it does come with an increased need for coordination, and thus transaction costs. There are political, legal, regulatory, industrial, contractual, and technological means of managing those costs, and the risks of yet greater cost—such as full interruption in supply. Effective management of those transaction costs depends on the quality of the institutions upon which the parties rely to effect the transaction. Contracts between commercial parties depend on legal and regulatory regimes, which do not cross national borders without national consent. Trust among allies depends on the cultural and political bonds, but also threats to the reputation of any one ally. Forging commitments now should mean that beneficial supply deals may not be extended later.

Managing any such transaction proceeds through three phases, with different types of associated costs, some of which bear benefits too. Contracting potential suppliers means searching for opportunities, marketing one’s own which bear benefits too. Contracting means negotiating deals, dividing proceeds, and protecting respective rights. Controlling the relationship means monitoring and enforcing deals, which can come with particularly high transaction costs. All this requires management by defense and economics departments and ministries on both sides. As nations go to war with existing supply chains, they in many countries in early 2020. Governments or even high-minded firms may also object to another country’s policies on arms export licensing, as was recently the case with German components in French weapons destined for Saudi Arabia, as discussed below.

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26 See the “About Us” page of the Defense MOU Attachés Group (DMAG) website: https://www.dmagdc.info. The DMAG has been meeting monthly since 1979.
might try to secure those chains in advance. That is where security of supply agreements come in.

AGREEMENTS: How Security of Supply Works in Practice

Security of supply problems are not unique to bilateral relationships involving the United States. With smaller national armaments industries, European countries have been dealing with this problem almost since the aftermath of World War II. In 1998, the so-called Letter of Intent was signed among "six of the leading defense industry countries in Europe"—France, Germany, Italy, Spain, Sweden, and the United Kingdom—which collectively "sought to facilitate the restructuring of the European defense industry." In 2000, the same six signed a framework agreement implementing the letter of intent on facilitating transnational military-technological research, harmonizing military requirements, standardizing export procedures, and assuring security of supply.35 The European Defence Agency has maintained its own multilateral program in security of supply since 2006, but as with many security institutions of the EU, its effectiveness is unclear. A smaller and more recent multilateral arrangement exists among Nordic countries, formed by Sweden, Norway, and Finland in April 2019, and joined by Denmark in November 2020.36

European nations have bilateral agreements in the area as well, but based more on mutual respect than binding provisions. The 2010 Lancaster House agreement between France and the United Kingdom commits the two parties to undertake “to increase their security of supply,” but says little more on the issue.37 One of the most enduring—but troubled—bilateral relationships has been between France and the Federal Republic of Germany. The 1971 Debré-Schmidt agreement “successfully governed exports of jointly developed arms until Germany decided to ban exports to Saudi Arabia,” following the murder of Saudi national and Virginia resident Jamal Khashoggi in October 2018.38 This affected not just France’s foreign policy, but the fortunes of companies in third countries, which “lost sales on products that use German components.”39

Germany was not alone, of course. Denmark, Finland, Flanders, the Netherlands, Norway, Sweden, and Wallonia had all ceased exporting armaments to the Saudis by 2016, over the ongoing war against the Houthis in Yemen.40 However, the extent of Franco-German industrial cooperation, and the size of their respective national arms industries, meant that a lack of alignment could be particularly damaging. Failure to fully reestablish the agreement became a major factor slowing the progress of the Franco-German cooperative programs for the European Main Battle Tank and the Future Combat Air System. The 2019 Treaty of Aachen (a furtherance of the 1963 Élysée Treaty) aimed at renewing the Debré-Schmidt agreement by “defining a common approach to armaments exports,” but it did “not get much more concrete than that.”41 There is thus reason to think that “bilateral defense cooperation between Paris and Berlin will remain complicated and underwhelming.”42

With considerable continuity across administrations, and over many decades, the US government has sought independence in choosing where it will permit arms exports. To safeguard this latitude, and its own security of supply, its dealings with foreign industry and national security are structured in three tiers. At the top, the United Kingdom, Canada, and Australia—"three of its closest historical allies"—are gathered inside the fence of domestic de-


36 “Nordic Agreement on Security of Supply,” press release, Swedish Defense Materiel Administration (Försvarsmaterielverk, or FMV), April 11, 2019; and Frederikke Laursen, Department of Acquisitions and Capability, Finnish Department of Defense, email message to author, February 8, 2021. I thank Lieutenant Colonel (ret.) Per Lyse Rasmussen, the former long-serving Finnish armaments attaché in Washington, DC, for making this connection.


40 Besch and Oppenheim, “Up in Arms,” 2. Note that in Belgium, the regional parliaments of Flanders and Wallonia are legally responsible for approving or disapproving arms exports. This situation would be akin to devolving decisions over which countries might receive F-35 Joint Strike Fighters to the Texas Legislature in Austin.


fense-industrial planning as part of the national technology and industrial base (NTIB, pronounced en-tib).\(^\text{43}\) Note that the designation is not an indication that any agreement has been concluded. Rather, inclusion in the NTIB is a unilateral signal—perhaps an “incredibly important signal” by the legislature to the procurement bureaucracy that a given country’s industry should be trusted.\(^\text{44}\) As such, NTIB designation is not so much a lever for securing supply as a means for securing the ex ante benefits of that security.

Those three countries, however, have also entered into SOSAs with the United States, as have six more countries that are not included in the NTIB: Finland, Italy, Norway, Spain, Sweden, and the Netherlands. Note that these are not technically international agreements, which could be taken as enforceable, but merely pledges of commitment by the government to perform quality assurance work for the other when necessary.\(^\text{46}\) Note further that Romania, Slovakia, and South Korea have RGQAAs, but not RDP MOUs.\(^\text{47}\) For clarification, see the attached table titled Countries with Bilateral Agreements with the United States. Some of these are simply annexes to their RDP MOUs, and some are stand-alone documents that simply note that each government will perform quality assurance work for the other.

A further rung down are the aforementioned RDP MOUs, which cover twenty-five countries—the preceding nine plus Austria, Belgium, Czech Republic, Denmark, Egypt, France, Germany, Greece, Israel, Japan, Luxembourg, Poland, Portugal, Slovenia, Switzerland, and Turkey. A similar set of twenty-one countries have RGQAAs with the United States. Some of these are simply annexes to their RDP MOUs, and some are stand-alone documents that simply note that each government will perform quality assurance work for the other when necessary.\(^\text{46}\) Note further that Romania, Slovakia, and South Korea have RGQAAs, but not RDP MOUs.\(^\text{47}\) Quite apart from these, there are the quotidian contractual obligations of particular programs—most notably, those of the F-35 Joint Strike Fighter.

What, however, are these SOSAs, and what do they provide that contracts do not? Most notably, they are not treaties. All but those with the Netherlands and Sweden are not even between governments, but just ministries. The one with Canada is actually between the Canadian Department of Public Works and Government Services and the US Department of Commerce, which managed defense trade before the George W. Bush administration. The most recent version was signed in 1998, though it has antecedents dating back to 1950. Moreover, it is neither agreement nor arrangement, but technically an MOU. All these arrangements exclude commercial items generally available in the country of supply. Some include or exclude construction materials, without explanation either way. Perhaps most notably, all the arrangements state that they are not binding under international law.

That raises the question of enforceability, apart from fears regarding international trust and reputation. On the US side, coercing misbehaving firms depends on the tools of the 1950 Defense Production Act (DPA) and its Defense Priorities Allocation System (DPAS, pronounced dee-pass). The first title of the act is one of the most powerful laws available to the president, as it theoretically permits control of the economic output of almost any company or person in the United States. In practice, the “regulations implementing Title I authorities provide practical exemptions to this mandate,” and specifically for firms not already contracting with the US government.\(^\text{48}\) This power for coercion is still far in excess of what most allied governments can legally achieve. Only on the Canadian side is similar authority found, in an analogous priorities system for the Canadian defense industry.

In the aftermath of the pandemic, it is possible that governments in other countries will seek similarly expansive authorities. Today, however, on the part of European countries, the arrangements largely call upon the counterpart government or ministry to employ its “good offices” or perhaps “best efforts” in securing the cooperation of companies that have already agreed to uphold a voluntary “code of conduct” in dealing with the United States and its domestic industry. The code membership lists are maintained and published on the internet by the Office of the Deputy Assistant Secretary of Defense (soon to be assistant secretary of defense) for Industrial Policy. The idiosyncratic nature of the lists and their lack of maintenance are remark-


\(^{44}\) Comment by a federal legislator participating in a roundtable discussion of this paper, May 2021.

\(^{45}\) Jerry McGinn, former acting deputy under secretary of defense for industrial policy, email message to the author, April 10, 2021.


able. At the most recent revision of the Italian list, in January 2016, sixty-three firms were members. The undated British list covering an industry with much wider and deeper ties to the United States, however, shows just eight firms. The only other two countries with published lists are Finland and Sweden. As of January 2021, only these four countries had even published their codes of conduct.49

Indeed, representatives from most of the nine countries—and specifically all those interviewed—said that so far as they could tell, the various security of supply arrangements have never been invoked.52 This is not to say that the United States and the nine other countries have never had, in the period in which the arrangements have been in force, bilateral supply problems that merited governmental attention. It is simply that they have been generally less than newsworthy and most often resolved through working-level discussions.

Swiss Watch Parts in JDAMs (2003)

On March 31, 2003, Nicholas Hayek, president and majority owner of well-known watchmaker Swatch, told Swatch subsidiary Micro Crystal to halt shipments of oscillators to Honeywell, a supplier to Boeing of GPS receivers used in the production of the Joint Direct Attack Munition (JDAM), a family of drop-and-forget guided bombs. Hayek was somewhat concerned by the US invasion of Iraq: was he now shipping war materiel to a belligerent, in violation of the law in famously neutral Switzerland? Honeywell and Boeing asked the US government to intervene, and diplomatic conversations ensued. The Swiss government determined that the oscillators were dual-use products, not exclusively military ones. Under Swiss law, shipments of dual-use products to belligerents is legal in wartime, so the contracts had to be honored. By April 11, shipments were again flowing.53 In the interim, however, Honeywell scrambled to buy oscillators from a US firm at nearly twice the price.54 The reaction from then-Rep. Duncan Hunter, a Republican from California, was quite sharp. He entitled his amendment to the 2004 NDAA “Elimination of Unreliable Sources of Defense Items and

RESPONSES: How Firms and Governments Have Ensured Security of Supply

Perhaps then, as the chairman of the DMAG said, “it can’t do any harm to have [these arrangements] . . . and we all think that they are valuable, but they are never tested.”51
Components” and sought to require in effect that all firms outside the United States be removed from the supply of critical components for US weapons.\textsuperscript{55}

Hunter overreacted: there was no actual interruption in JDAM production, as buffer stocks were sufficient to keep the line running. Moreover, while Switzerland was and remains an RDP MOU country, the United States and Switzerland have never had a security of supply agreement, arrangement, or otherwise. That did not matter, as the contract ensured the flow of electronic components. Cooler heads thus prevailed. In this case, the response from the JDAM program office, from the Pentagon’s industrial policy office, and the Bush administration as a whole was more measured, as at least one overseas supplier—another microchip manufacturer—had already performed yeoman service for the program in a previous war.\textsuperscript{56}

In 1999, while readying its first JDAMs for the Kosovo campaign, the USAF asked Boeing to assess its ability to rapidly expand its then-trickle of production to support the gathering war effort, taking into consideration any limita-

\textsuperscript{55} This section is substantially drawn from James Hasik, \textit{Arms and Innovation: Entrepreneurship and Alliances in the Twenty-First Century Defense Industry} (Chicago: University of Chicago Press, 2008), 67-68, (under the heading “Building the Bombs: The JDAM Factory and Supply Chain”). The story has been updated with insights from Greenwalt, email message to the author, February 23, 2021.

\textsuperscript{56} Leonard Shapiro, past consultant to the Office of the Assistant Secretary of the Air Force for Acquisition and the Office of the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy, insights conveyed to the author.
tion attributable to supply constraints. The limiting factor was determined to be the supply of tuning crystals for the GPS receivers. The best source was Navman, a small, private maker of navigation equipment in Auckland, New Zealand, that had built its own microchip fabrication plant a few years before in Christchurch. The company had developed a proprietary process for rapidly aging new crystals to achieve the desired level of timing stability. Some in the USAF were understandably nervous about buying an essential part overseas from a firm with no track record as a US military supplier, but since Navman’s process ran an order of magnitude faster than anyone else’s, there was arguably little reason to get another firm involved. The company delivered enough crystals to build enough bombs to keep the USAF’s entire wing of B-2 bombers supplied for the war, and it was well paid for its exertions. Indeed, Navman’s efforts attracted considerable attention. Immediately after the war, Darlene Druyun, then the USAF’s head of procurement, traveled to New Zealand to present the owners with an award—and Druyun was known to hate business travel.57

In the Swiss matter, establishing contact for the initial supply was likely no problem for either Honeywell or Swatch, as both were brand-name companies with large commercial businesses. In this case, the actual contract was ultimately what led to control of the situation—with a little help from the United States’ friends in Bern.

Swedish Steel for MRAPs (2008)
The campaigns in 1999 and 2003 over Kosovo and Iraq initially required modest mobilizations of US industry. In 2007, the surge of US forces and proper armored vehicles into Iraq to crush the insurgency required rather more. In the rush to provide mine-resistant, ambush-protected (MRAP) vehicles to US and other coalition troops in Iraq, no bottleneck was as threatening as that of steel plate.

As Matt Riddle, vice president for survivability systems at BAE Systems, put it to National Defense magazine, “you want 1,000 [MRAP] vehicles a month, but that’s 4,000 tons of steel” for the armor. Only two domestic suppliers were certified by the Defense Department to supply the three-eighths of an inch armor plate used in MRAP construction: International Steel Group and Oregon Steel Mills.58 Only the former was actually in operation at the start of the war. Its production was 35,000 tons annually in 2004, and had been 6,500 tons annually in 2003. The Defense Department would suddenly be demanding 21,000 per month [emphasis added].59 Interestingly, International was owned by Arcelor Mittal, the world’s largest steelmaker; while headquartered in the Netherlands, its chairman and largest shareholder was Indian steel magnate Lakshmi Mittal. More interestingly, Oregon Steel Mills was owned by the Evraz Group; while its shares are traded on the London Stock Exchange, the company itself was headquartered in Luxembourg and Moscow, and was the largest steel producer in Russia. Those foreign-owned firms absolutely supported the war effort.60

Speaking about the top category of the DPAS, Mittal USA spokesman David Allen told National Defense that “DX ratings are nothing new. We’ve seen them on and off since 1980. We would respond to any DX rating as we have in the past.”61 To further the process, the Pentagon’s Office of Industrial Policy helped manufacturers find supplies overseas, particularly in Israel, Germany, and Sweden.62 Svenska Stål AB (SSAB), “a Swedish specialty steel manufacturer well-known for armor plate, had already supplied

57 Shapiro, insights conveyed to the author.
61 Erwin, “Surge in Vehicle Orders.”
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Two MRAP producers, including one of the early firms in the business, Force Protection. SSAB had other priorities too, including supplying steel for the booming business of erecting cellular telephone towers in China. Resolving potential supply shortages through its mills in Sweden began with intergovernmental discussions. While the United States and Sweden did and still do have a security of supply arrangement, it did not actually cover SSAB. That firm had not signed the US code of conduct, as it was not primarily a defense contractor. Addressing the US need required a personal appeal to the SSAB CEO, Olof Faxander, a Swede who had been born in New Jersey.

US firms owned largely by Americans were remarkably less interested in helping. William “Bill” Greenwalt, then deputy under secretary of defense for industrial policy, sought to bring more US capacity into making that armor-grade steel. After initial entreaties by his office were rebuffed, he sought to use the DPA to compel compliance. Lawyers across the steel industry “laughed at us,” he said, and “told us to pound sand,” because they knew that their firms were not already direct suppliers to the Defense Department. The legacy of the Supreme Court’s refusal to allow Harry Truman’s seizure of the entire US steel industry would continue to the present. If patriotism would not pay enough, then US steel companies would do otherwise.

Instead, Force Dynamics—the joint venture of South Carolina’s Force Protection and Ontario’s General Dynamics Land Systems—diversified its sources of steel for components other than armor in 2007, adding Canada’s Algoma Steel to Mittal as a second supplier on the Cougar program. That year, though, Algoma was purchased by India’s Essar Group, and retitled Essar Steel Algoma. In a globalizing economy, there was simply no wholly American, or even North American, solution to the industrial problem.

The next March, while foreign firms were fulfilling and domestic firms were ignoring US military needs, Robert Lighthizer would write an editorial in the New York Times decrying free trade as not “conservative”—regardless of its economic efficiency. He was a steel industry lawyer who would later become Donald Trump’s trade representative. Working with Lighthizer and White House economic adviser Peter Navarro, lobbyists for that same steel industry would later convince President Donald Trump to impose “emergency” tariffs on foreign steel, asserting that US steel manufacturers needed protection from foreign competition in the interest of national security. In 2007, those firms had nothing to do with national security. As Greenwalt said in an interview, “That is why I like our allies. When needed, they put our orders ahead of theirs—unlike what the US steel industry did at the time with MRAPs.”

In this case, contacting foreign firms was not difficult, as the MRAP surge had finally brought the Defense Department

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63 Hasik, Securing the MRAP.
64 Hasik, Securing the MRAP.
65 William Greenwalt, in conversation with the author.
67 Hasik, Securing the MRAP.
70 Greenwalt, in conversation with the author.
to the “war footing” that then-Secretary Robert Gates had sought. The existing contracting was helpful, but not enough, as SSAB was fulfilling its commitments for modest amounts of steel. Controlling the domestic firms proved challenging, despite the authorities of the DPA. After a few telephone calls, control of the relationship in Sweden was no problem, even for a firm that had not previously been covered by the formal bilateral arrangement.

**Mexican (and Other) Aircraft Parts (2020)**

Shortly after the onset of the pandemic, production for military contracts was generally deemed “essential” across the United States, after some initial fencing with state governors and their invocations of emergency powers. Across the various states of Mexico, where the defense and navy ministries focus as much on domestic threats, this business did not evoke the same sense of essentiality. That US aircraft manufacturers bought large volumes of parts in Mexico was generally known, but perhaps not fully understood. As an official US government briefing put it in 2013, lower manufacturing costs, proximity to aircraft plants in the United States, “duty-free access to other important aerospace markets,” and a bilateral aviation safety agreement with the United States all contributed to the great expansion of that trade, which grew from $1.3 billion in 2004 to $9.6 billion in 2019.

The US Defense Department was unamused by the lack of priority. Pentagon acquisition chief Ellen Lord then communicated “directly with the Mexican leadership to identify those companies and express the essentiality and the importance of those companies” in US military supply chains. The letter, notably, went to the Mexican foreign minister, and not the defense or navy minister. Mexico has no security of supply arrangement with the United States, no RDP MOU, and a long history of avoiding military entanglements with other countries—particularly the United States. Even so, the threat to the Mexican aircraft-parts industry seems to have been enough to encourage the Mexican federal government to lift orders closing the factories in question, as the problem quickly dropped out of the news. Regardless, the episode usefully focused attention on the US government’s ability to understand its own supply chain.

In this case, contact was never an issue for governments, as Mexico’s cost-effectiveness in manufacturing was already widely known. Contracts were not helpful, as the governmental fiat, not corporate reticence, had effected the interruption. Control on the US side was achieved with a simple if implicit economic threat to move the sources of supply back north of the border.

**RECOMMENDATIONS: Enhancing Relationships with Formalities**

Beyond this refocusing on supply chain visibility, there is a widely held presumption that “when the COVID-19 pandemic subsides, the world is going to look markedly different.” However, whatever the aspirations of protectionist politicians, the underlying economics cannot be wished away. The challenge then for managers in industry and responsible officials in government, as a Harvard Business Review article put it, “will be to make their supply chains more resilient without weakening their competitiveness.” What could make things different yet again by sparking another crisis is hard to know. Just consider how the 1957 Asian flu was not followed by a global reaction remotely akin to that of the 2019 coronavirus. With such imperfect foresight, security of supply merits periodic reconsideration. Bilateral conversations about the arrangements often start from the vantage point of enhancing the rela-

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75 Shih, “Global Supply Chains in a Post-Pandemic World.”
76 Shih, “Global Supply Chains in a Post-Pandemic World.”
tion, not repairing its missing defects. 78 So what can be enhanced, at least on the US side?

**Contact**

These arrangements would seem to be mostly about control, but actually, their greatest value may be in enhancing contact. Membership on a code of conduct list is an important signal of willingness to support the needs of a formal or informal alliance for security. Foreign purchasing, however, is the exception to a presumption of monopsony in the US market. Foreign firms have alternatives, without the sales constraints of the export controls of the Departments of State and Commerce or the press-ganging threats of the DPA. When foreign firms offer technologies not fully available domestically, it is thus particularly important for government to understand how the marketing should be done. 79 For if the politicians in the Trump administration did not care about the NTIB, the security of supply arrangements, and the RDP MOUs, most program officials still simply do not know about them. 80

To improve the marketability and utility of interallied supply:

- The assistant secretary of defense for acquisition should send a memorandum to the acquisition community reminding them of the specific value of the NTIB, the security of supply arrangements, the RDP MOUs, and the RGQAAs. The assistant secretary should further note, as articulated by the Office of Management and Budget in June 2021, that the Biden administration’s emphasis on domestic sourcing does not apply to a wide range of products and suppliers in countries covered by the Trade Agreements Act of 1979. 81

- The faculty of the Defense Acquisition University and the Dwight D. Eisenhower School for National Security and Resource Strategy (part of the National Defense University) should consider undertaking further research on the utility of these arrangements, and whether to include that discussion in their teaching.

- The assistant secretary of defense for industrial policy should develop and recommend consistent branding for code of conduct companies to employ in visual marketing efforts, to remind US buyers of their pledge to US security.

So much for thinking about contact on the US side. There remains an outstanding question of how agreements with the United States figure into other countries’ various agreements. As noted above, Norway, Sweden, and Finland each have security of supply arrangements with the United States, but also have an agreement among themselves and Denmark too. Buyers of military materiel in any of these countries may want to know how the various governments may prioritize shipments to the United States in the event of war against, notably, Russia. A fully valid pecking order may be impractical to demand, but some ideas and assurances might merit discussions, both bilateral and multilateral, before a need for action becomes unilateral.

**Contracts**

Contractual obligations do matter, even to officials who might claim sovereign immunity. Consider the recent ejection of Turkey from the F-35 program. The idea of Russian-built radars in constant proximity with Joint Strike Fighters was intolerable, but the Defense Department allowed participating Turkish firms to continue in the program through 2022, “to honor signed contracts.” 82 Note as well how neither the Turkish government nor Turkish firms sought to end that relationship early; political spite should not interfere with making money.

Enhanced contractual arrangements can thus be leveraged as a means of enhancing security of supply. Domestic surge capacity is expensive, but domestic stockpiling through advance orders can be both a confidence-building and time-buying measure. While lean manufacturing has proven to offer great economic advantages, it is perhaps not advisable for all things required in crises. 83 Subsequently, if emergencies interrupt physical flows of goods, or induce

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78 Interview with a past deputy undersecretary of defense for industrial policy; and Håkan Seipel and Håkan Söderstedt of the Swedish FMV, conversations with the author.
79 Hasik, *Securing the MRAP*.
80 Greenwalt, in conversation with the author.
governments to interrupt those flows, then at least the flow of intellectual property could be facilitated—with appropriate compensation. By arranging in advance the terms for local manufacturing in the event of crisis, a sense of security over that supply can be enhanced. In World War II, the allies built thousands of Swiss Oerlikon and Swedish Bofors guns under license, when access to Swiss and Swedish factories could only come across Axis-controlled territory or waters. In March 2020, Medtronic published on the Internet the design specifications and software code for its Puritan Bennett 560 ventilator. The device was already sold in thirty-five countries, but the company’s generosity with its intellectual property opened the possibility that other firms could bring spare production capacity to bear.84

By building these arrangements into at least a few products essential in various crises, swing capacity can be arranged later, as demand emerges and options unfold.85 So, to lever-

The Security of Defense Trade with Allies:
Enhancing Contact, Contracts, and Control in Supply Chains

age the contracts that the United States and its domestic suppliers already have and could yet develop with foreign firms, the assistant secretary of defense for industrial policy should open discussions with his counterparts in security of supply countries about adding provisions, to industry’s contracts and codes of conduct, for compulsory but compensated licensing of designs in crises, should the physical flow of those products be interrupted, and should the simplicity of the product allow it.\(^{86}\)

**Control**

In the wake of pandemic disruptions, Pentagon officials have been advised to take charge of their supply problems, notably through funding investments in domestic manufacturing with Title III of the DPA. US capacity for hubris is impressive, but the nation’s capacity for autarky should not be overestimated. Reshoring is harder than politicians imagine, so remember that the United States is stronger with its allies.\(^{87}\) If the Great Decoupling from China is alluring but difficult, ideas for any other decoupling should be forgotten immediately.\(^{88}\)

Consider the case of the agreement that got away. Amid angst over Chinese control of rare-earth mining, the Obama administration attempted to conclude not just an arrangement or agreement, but a security of supply treaty with Japan. The particular issue forcing the diplomatic initiative was a shortage of neodymium magnets. Each of Boeing’s JDAMs needed just 30 grams, but neodymium was unavailable in the United States, and the alternative of samarium-cobalt magnets was an imperfect substitute. A Japanese firm with important patents in the area had considered opening a factory in South Carolina, with promises of Title III money, but this investment did not come to fruition. Instead, the administration tried to negotiate the treaty, but failed due to opposition from Japanese corporate lawyers, who saw little advantage for their firms.\(^{89}\)

In this case, the ease of a nonbinding arrangement may be preferred to both the difficulties of a binding treaty and the cost of a Title III DPA investment. Similarly, if concerned about those aforementioned Chinese backdoors, the United States government could “pay semiconductor makers to compete [sic] versus China,” or it could simply enter into a bilateral security of supply arrangement on semiconductors with Taiwan.\(^{90}\) With less similarity, but similar importance, the United States could seek a bilateral security of supply arrangement with Mexico, to add political formality to the existing monetary incentives of the shared North American economy.

Therefore, to expand the reach of the security of US supply, the Departments of Defense, State, and Commerce should hold interagency discussions with the aim of advancing security of supply arrangements or agreements with Japan, Taiwan, and Mexico.

The arms-trading relationships with Japan, Taiwan, and Mexico are quite asymmetrical, but for other dyadic pairs of countries, such mutual interdependence can create “weaponized interdependence” through a mutual exchange of hostages.\(^{91}\) Part of the price extracted by Britain and France for abandoning their own airborne early warning aircraft programs, and joining the NATO Airborne Warning & Control System program, was a mandate that Boeing purchase lots of British and French components for those aircraft. That provided a certain security of supply against US underappreciation of their common Alliance, as supply could be held up in both directions.\(^{92}\) Such damaged trust hurts not just the companies, and the bilateral political relationships, but perhaps the whole Alliance.\(^{93}\) Before contem-

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\(^{89}\) Brett Lambert, former deputy under secretary for manufacturing and industrial base policy, in conversation with the author, January 2021.


plating such a nuclear option, one should simply remember that all of these arrangements are with significant importers of US armaments. The international arms market is a competitive one, and those countries have options. “In the end,” as one of the attachés told us, “we buy much more from [the Americans] than they buy from us. Don’t mess with that.”

ABOUT THE AUTHOR

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94 Interview with an attaché from a DMAG country, January 2021.

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## Table 1:
Countries with Bilateral Defense Trade Agreements with the United States

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