

NAVIGATING A NEW U.S.-JAPAN DEFENSE TECHNOLOGY FRONTIER

JAMES L. SCHOFF | MARCH 16, 2015

Japan's government is overhauling the way it develops, procures, and exports defense equipment and technology in a series of bold steps begun in April 2014 that should open a new avenue of U.S.-Japan security cooperation. It could be the most significant change in this area since 1954, when Japan established and began supplying its own Self-Defense Forces (SDF).

Fortuitously, Japan's effort coincides with a recent U.S. defense technology initiative aimed to "sustain and advance America's military dominance for the 21st Century." It was launched amid concerns that America's qualitative advantage is eroding steadily.

The United States and Japan should be able to collaborate more closely on developing the next generation of military technologies for mutual benefit and to help undergird regional stability. The allies already have experience cooperating on missile defense, and both countries' defense industries are currently exploring new business opportunities. But a higher level of strategic collaboration can be pursued. A good time to begin shaping this cooperation is at the expected rollout of new bilateral defense cooperation guidelines in April 2015.

There are, of course, challenges to deeper collaboration. Questions remain about how far Japan's government and industry will push these new boundaries and whether or not the allies

can identify significant practical benefit for new technology cooperation and manage it more effectively than they have in the past. In addition, emerging powers like China that are investing in their own military might feel compelled to keep pace with a major defense innovation push by the United States, and Japan's involvement could complicate this dynamic.

In fact, a major objective of such U.S.-Japan cooperation is to make a regional arms race seem both unappealing and unnecessary to Beijing, by maintaining a comfortable military edge without threatening China. Ineptly pursued, however, this confluence of the two countries' defense technology initiatives could exacerbate regional suspicion even as it fails to qualitatively improve the allies' defense condition.

Still, the potential benefits of bilateral collaboration make it worth taking on these challenges. Success requires deft diplomacy and an element of restraint, along with smart investments in technological innovation.



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A TURNING POINT FOR JAPAN'S DEFENSE INDUSTRY

Japan's move to begin participating in the global defense market is just one part of a new national security strategy unveiled in late 2013 by the administration of Prime Minister Shinzo Abe. Concerned with rising Chinese military spending and activity amid bilateral tensions over disputed islands in the East China Sea, as well as North Korea's ongoing nuclear and missile programs, the Abe government took steps to strengthen its crisis management capability. It is also loosening legal restrictions on the SDF to allow the force to better defend the country and contribute more to regional stability.

Japan's new security strategy includes enhancing its defense production and technological bases, in part by strengthening international competitiveness. Overall, Tokyo is approaching defense procurement reform as a two-level strategy to help domestic firms at the micro-level reach the highest international standards and to diversify Japan's security relationships at the macro-level through broader and deeper defense equipment and technology cooperation with trusted partners.

Accomplishing this strategy involves policy moves designed to extract more value from Japan's limited defense spending, to strengthen the country's defense industrial sector (for both economic and national security benefits), and to bolster alliance cooperation with the United States and other partners (to enhance competitiveness and deterrence).

Tokyo started to implement the defense-industry component of the strategy by revising its principles on the transfer of defense equipment and technology in April 2014. Until this administration, Japanese governments since the end of World War II have effectively banned defense exports as a way to demonstrate the country's commitment to peace and avoid foreign entanglements. This included items that contained any Japan-made content, which made Japanese firms undesirable business partners because a co-developed product could only be sold in Japan.

Tokyo allowed a few exceptions when the United States and Japan collaborated on certain missile defense and aircraft technologies, but this never opened the door to meaningful

exports. Instead, Japan's defense industry focused only on the domestic market, developing some sophisticated capabilities but in small quantities and at relatively high prices.

Under the new rules, Japan now allows defense transfers overseas in a variety of situations, including those that support peacekeeping and disaster relief efforts as well as "international cooperation." Transfers are also permitted when they contribute to Japan's national security, such as by implementing joint development projects or otherwise deepening defense cooperation with allies and partners. Tokyo will still abstain from arms sales if they violate treaty obligations or United Nations-backed sanctions, or if they would be sales to a country in a current conflict where the UN is trying to broker peace.

The new rules also allow follow-on sales to another country beyond the initial buyer (a so-called third-party transfer) when "appropriate control" of that technology is ensured, which widens the potential market further. The first export license Japan issued under the new rules was for a small gyroscope used by the United States in the Patriot missile defense system (to be sold to Qatar), but it will not be long before the government is issuing licenses for parts of a submarine sold directly by Japan to Australia or an entire patrol plane to India.

Japan followed up its revised principles for defense transfers by publishing a Strategy on Defense Production and Technological Bases in June 2014 that aims to help industry navigate both the greater competition and the opportunities expected from the new transfer policies. The strategy calls for forging long-term government and industry partnerships, doubling the upper limit for contract length out to ten years, promoting international joint development of certain technologies, formulating a research and development vision for the industry, and strengthening research cooperation with universities, among several other measures.

To lay the groundwork for international collaboration, Japan has negotiated a series of defense equipment cooperation agreements with Australia, France, India, and the United Kingdom (so far) to complement its existing pact with the United States. These agreements create legal frameworks for Japan to participate in joint research, development, and production of defense technologies with partners, and they establish joint committees

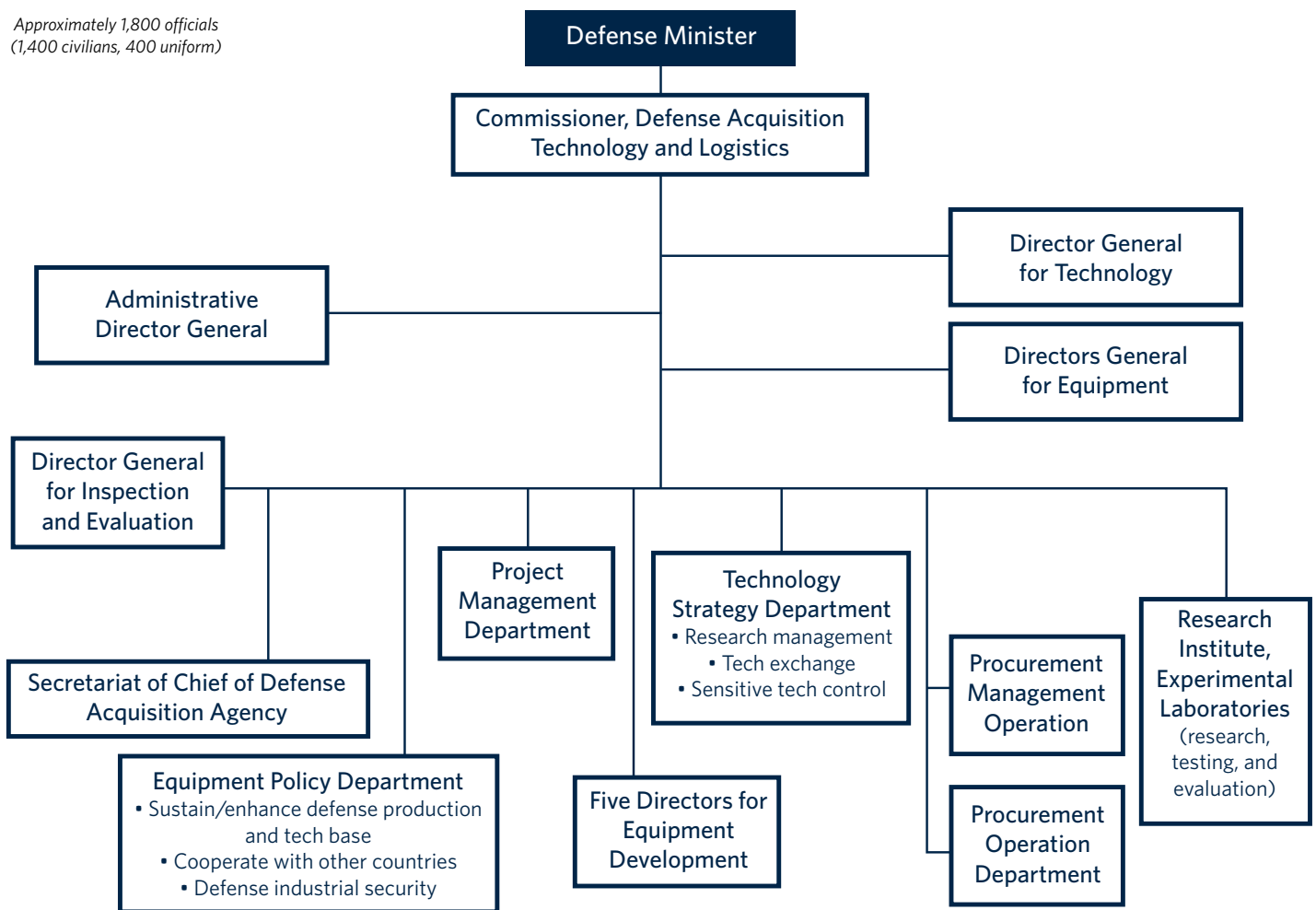
to manage each relationship. This should create more opportunities for Japanese industry and could even facilitate trilateral cooperation in certain cases involving the United States, Japan, and one other partner. Early ideas being considered include Japan-UK collaboration on an improved air-to-air missile and Japan-U.S. cooperation on a new amphibious vehicle to sell in Japan and abroad. These are incremental steps, but they could become more ambitious over time.

The final major part of Japan's process of shoring up its defense industry is the formation of a new agency to oversee the entire procurement process, from R&D and identifying military requirements all the way through selection, purchasing, and life-cycle management of the equipment.

Over the course of 2015, Japan will stand up an Acquisition Technology and Logistics Agency (ATLA) under the minister

FIGURE 1. STRUCTURE OF JAPAN'S NEW DEFENSE EQUIPMENT AGENCY

Approximately 1,800 officials
(1,400 civilians, 400 uniform)



Note: Diagram prepared by the author based on discussions with Japanese Ministry of Defense officials. Final organization might differ slightly.

of defense, consolidating functions that had been scattered around the ministry and the SDF branches and adding new capabilities to manage international collaboration and exports. Roughly 1,800 officials and SDF personnel will work in ATLA under an agency commissioner reporting directly to the defense minister (see figure). ATLA will be responsible for policy, R&D, testing and evaluation, project management, contracting, technology security, and other functions in close cooperation with the SDF, the Ministry of Economy, Trade, and Industry (METI), and the National Security Secretariat.

AN ALLIANCE OPPORTUNITY

If Japan took these policy steps a couple of decades ago amid lingering U.S.-Japan trade tensions, suspicion in Washington would have run high that Tokyo's main goal was to seek to increase its market share at the expense of U.S. defense firms. Today, however, U.S. policymakers are welcoming Japan's moves, in part for the opportunity to broaden the United States' supplier network, improve cost efficiency, enhance alliance interoperability, and maintain an allied edge in certain military technologies where they fear other states are gaining.

As such, revised defense guidelines almost completed by the two governments will likely describe equipment and technology cooperation as a new bilateral enterprise. And large U.S. defense firms like Northrop Grumman and Lockheed Martin are currently upgrading their corporate presence in Japan to take advantage of these changes. This should lead to increased bilateral defense research and procurement collaboration in an almost organic or market-driven way, but the overall impact will be modest if there is not additional leadership on the issue and investment.

The allies have an opportunity to move beyond this incremental approach and take their cooperation to a higher level by involving Japan as a partner in executing the U.S. Defense Innovation Initiative. Also known as the Third Offset Strategy, this Defense Department effort harkens back to America's Cold War military competition with the Soviet Union. It is being placed in a similar context as then president Dwight Eisenhower's "New Look" of the 1950s and the second "offset strategy" developed in the 1970s and 1980s to address perceived defense gaps in the face of Soviet numerical

or technological advantages.¹ This time, China has joined Russia as a major concern, primarily due to its development of accurate long-range missiles and integrated air defense systems, its progress toward fielding fifth-generation fighter aircraft and well-equipped nuclear-powered submarines, and its significant cyberwarfare and space capabilities.²

China's advances are expected to increase the vulnerability of U.S. bases in Asia and the United States' most expensive weapons platforms. This vulnerability, in turn, could call into question America's willingness to risk conflict escalation with China and thus undermine deterrence stability under certain circumstances. Many U.S. officials see foreign military investments by China, Russia, Iran, and others as designed to deter and defeat a regional intervention by the U.S. military, which is a concern to Japan as well.³

In response, Deputy Secretary of Defense Bob Work has emphasized the need to provide U.S. military personnel a competitive advantage, "so that they will never find themselves evenly matched in a conflict." He called this "the essence of deterrence and what will ultimately safeguard all of our interests."⁴

An important aspect of this new U.S. initiative is a Long-Range Research and Development Planning Program to identify, develop, and field breakthrough technologies in the areas of space, undersea, air dominance and strike, and air and missile defense as well as a flexible basket of emerging technologies. The Defense Department organized small teams for each category, drawing on the best talent in the government and military, which will solicit and receive information from industry, academia, federal labs, think tanks, and others—including from other countries. The department wants early results completed in time for inputs to the fiscal year 2017 budget submission, but once initiated, these technology programs could carry on for years and possibly decades.

The Defense Department is placing particular emphasis on the fields of autonomous systems, miniaturization, big data, and advanced manufacturing. Japanese prowess in robotics, energy storage, artificial intelligence, and other U.S. focus areas make this a natural new avenue for bilateral cooperation, involving not only traditional Japanese defense firms but also off-the-

shelf commercial technologies from Japan repurposed for defense application.

The defensive nature of many of these systems makes them good candidates for bilateral collaboration, given Japan's political sensitivity to offensive arms exports. Such collaboration could make cheaper and more effective missile defenses (using electromagnetic rail guns or directed energy), for example, that could defeat Chinese cruise missiles without threatening China itself. Unmanned underwater vehicles might strengthen deterrence vis-à-vis Chinese or Russian submarine operations. Improving the resiliency of forward bases and space-based command-and-control systems are other priorities, and all should be within Japan's political limits.

Still, although the potential benefits of collaboration are great, so are the challenges.

OBSTACLES AND DANGERS AHEAD

Some of these challenges stem from a lack of clarity about how Japan will implement its revised policies, how Japan's corporate culture will respond, and what steps the allies take to manage this unique kind of public-private sector cooperation. Navigating this new frontier will require patience, persistence, flexibility, and consistent leadership attention.

The United States and Japan share a sense of urgency about trying to take advantage of this opportunity, but old habits are hard to break, regardless of whether they reside in the government or private sectors. Many Japanese bureaucrats, for example, hoped that last year's defense transfer relaxation would stimulate multiple corporate deals and export license applications in something of a market-driven dynamic, but companies have been cautious. Japanese firms in particular are looking for more guidance from the government regarding what kinds of collaboration will be supported, and it will take an accumulation of new applications and precedents to clarify what ventures will contribute to "peace," "international cooperation," or "Japan's security." Japanese executives note that simply making money is not a sufficient reason to receive export license approval, and many would feel more comfortable working within a government-to-government framework at this early stage.

A policy-driven approach to defense technology cooperation, however, will take time to coordinate between the allies. To start with, the United States and Japan have slightly different ways of managing the process. The Defense Policy Bureau in Japan has traditionally overseen the fulfillment of the SDF's acquisition needs, but its U.S. counterpart only supports the under secretary of defense for acquisition, technology, and logistics, who has the lead role in the United States. Additionally, there is a bilateral tool for coordinating government-to-government cooperation on defense-related R&D—the Systems and Technology Forum (S&TF)—but it was not designed to consider the wide range of cooperation options that now exist.

The recent introduction of a Capabilities Group to the S&TF is helping to bridge the gap between each country's determination of technology requirements and how to acquire them, but it is possible that further adjustments will be needed if the allies are to take full advantage of the opportunity before them. The S&TF, for example, only involves the Ministry of Defense on the Japan side, but many of Japan's technologies that interest Washington—energy storage, certain materials, and others—are not necessarily under the purview of the Defense Ministry. Consequently, the U.S. side will need to build linkages to the wider civilian-industry community in Japan, including in the space and cybersecurity arenas, via other ministries.

Another challenge is the legal confusion about what kinds of assurances Japan requires regarding third-party transfer. The lack of clarity in this area has added time-consuming procedures to gain approval for the few exports to date, so this needs to be streamlined. New legislation and regulation are also possible in Japan, perhaps in the form of a Defense Production Act to guarantee a reliable supply chain and/or new rules to protect Japan's technology security. Accessing classified information in general is already a complex and expensive procedure for companies new to the process, and some believe that an industry annex to the bilateral agreement on securing military information might be required.

Japan's revamped defense procurement agency should help address many of these challenges, but ATLA will not be fully operational until the fall of 2015, and it is not clear yet

how effective and efficient it will be. Some in Japan already complain that the current ATLA plan leaves the agency understaffed and without sufficient funds to carry out all of its new responsibilities. This has the Defense Ministry looking for ways to leverage other parts of the Japanese government to assist, perhaps by conducting defense R&D in certain METI-funded laboratories that are already in operation or receiving marketing or financing help from other agencies currently providing this support to Japanese industry overall. The other ministries will cooperate to some extent, but their primary responsibilities are not in the defense arena.

On the U.S. side, Congress has put in place a variety of restrictions related to international defense procurement in general, and these cannot be sidestepped until Tokyo and Washington conclude a Reciprocal Defense Procurement memorandum of understanding. The U.S. government has signed these with several other partners, but doing so involves a review process that can take up to two years. Moreover, the U.S. defense technology and procurement structure is so expansive that it often defies a coherent process that moves predictably from the identification of requirements to R&D and then to acquisition, with a compatible disclosure policy that facilitates international participation. Industry representatives in both countries are actively exploring new opportunities and partnerships, but all of these uncertainties make them hesitant to consider major new investments.

Besides this bureaucratic or legal risk, Japanese firms also face an element of reputational risk. Defense-related sales often make up just a small percentage of a company's total revenue, and many executives worry that high-profile arms exports might alienate the peace-loving Japanese public. Even if the defense operation is a separate division within a well-known Japanese electronics firm, for example, the business name might be tied to the weapons sales, which could generate more harm than good for the company overall. This is truer for companies considering a new entry into the defense industry supply chain. A few Japanese universities and science labs are beginning to collaborate on some research with defense applications, but this is politically sensitive for them as well.

Finally, the allies must also consider how neighboring countries might react to an allied push into the next generation

of military technologies, especially one so clearly designed to counter recent Chinese advances. One country's deterrent can always be another country's perceived threat, which means the way in which Washington implements its new defense initiative will affect the security environment.

China's response does not necessarily have to be negative, but that depends in part on whether or not Washington pursues its innovation initiative in ways that serve wider regional interests. The United States has a positive (though not perfect) track record when it possesses significant military advantages in support of public goods. Asia's prosperity and relative stability since the end of the Cold War supports this observation. Japan, too, wants Washington to be confident in its ability to control escalation and discourage military adventurism in the region.

Early in the Defense Innovation Initiative, the Defense Department outlined multiple goals such as providing a significant warfighting advantage, disrupting and countering material investment strategies pursued by potential future adversaries, and imposing significant costs on future adversaries. This is sure to raise alarm bells in Beijing, and Moscow as well, but there are ways to dampen a potential arms race. If the allies can demonstrate an ability to develop new defense systems affordably, and if those new systems offer the allies military advantages to negate an opponent's power projection without raising existential concerns, then this might actually foster restraint by making an effort to keep pace appear unsustainable and less necessary. The latter point can be strengthened by open-minded diplomacy and a focus on common interests.

Failure in this area, however, could foster mutual suspicion and a fruitless pursuit of total security and military dominance that would inevitably lead to greater defense investment by China (given its means), feeding into a vicious cycle. This will have expensive implications in terms of financial, human, and opportunity costs, echoing the Cold War experience. In that example, U.S. and Soviet defense budgets rose steadily through the 1970s and 1980s to reach about 6 percent and 30 percent of annual GDP, respectively, spending over \$2 trillion combined on weapons procurement and R&D during that time.⁵ It was a tremendous waste, but it shows the lengths

that countries will go to if they believe that their vital security interests are threatened.

RECOMMENDATIONS FOR A NEW BILATERAL ENTERPRISE

Investing time and money in U.S.-Japan defense technology cooperation can enhance the allies' military advantage beyond what either can accomplish alone. Although it is not aimed foremost at reducing procurement costs, it might help in this regard, either through better manufacturing processes, more efficient sourcing, or improving such systems as missile defenses using directed energy instead of expensive missile interceptors. Cooperation can also facilitate breakthroughs that could be applied to other fields such as energy efficiency, protecting against terrorist threats, or mitigating environmental challenges and natural disasters.

Still, the main purpose of this new enterprise should be to reduce allied vulnerabilities and demonstrate clearly that military coercion or adventurism against their interests in the region cannot succeed. This will have to be combined with assurances and corresponding actions that show the interests of other stakeholders in the region will be respected, lest cooperation accelerate a costly security dilemma.

Until there is greater mutual agreement among the major nations in Asia regarding the region's future, a concert of powers is unlikely to be harmonious and deterrence will remain vital. A Cold War redux should be avoidable in Asia given the absence of a true ideological struggle, growing economic interdependence, and many shared interests. The region's nascent security architecture, however, is unable to prevent some countries from resorting to force to seize economic or military advantage, as they acquire the means and confidence to do so.

There is no single approach to successfully navigate this new defense technology frontier in alliance cooperation. The effort will be both driven by the market from the bottom up and guided—and occasionally subsidized—by top-down policymaking. Private firms will look to build partnerships and find ways to solve supply chain and technical problems, to make existing products more efficiently, and to develop

innovative ways to satisfy evolving military requirements. The two governments, meanwhile, can also communicate and build an enabling environment for bilateral cooperation including opportunities for long-term R&D collaboration in key strategic areas.

The U.S. secretaries of defense and state plan to meet their Japanese counterparts this spring at a so-called 2+2 meeting ahead of a leaders' summit in Washington between President Barack Obama and Prime Minister Abe. As the two countries' defense and foreign policy leaders roll out the revised defense cooperation guidelines at the meetings, they should highlight this new bilateral enterprise of defense technology cooperation and instruct alliance managers to clarify policy objectives and mobilize an interagency effort to make the most of this opportunity.

The first step is for leadership in both countries to endorse long-term bilateral technology cooperation in support of certain U.S. and allied military requirements, and to involve Japan in the U.S. Defense Innovation Initiative when advantageous. Implementing this collaboration will likely require supplementing or expanding the bilateral Systems and Technology Forum with civilian agency, private sector, and academic involvement to better assess long-term technology trends and consider options to address a wide range of security challenges.

Policymakers should also enhance current S&TF linkages to the ongoing alliance dialogues on bilateral planning and military roles, missions, and capabilities so that U.S.-Japan cooperation is truly responsive to warfighter needs. At the same time, foreign and defense policy leaders need to coordinate closely on a strategy to reassure neighboring countries, maintain sufficient transparency, and consider ways to avoid an arms race in the region.

In addition, the two countries can facilitate government-industry communication to identify and remove obstacles to bilateral cooperation without jeopardizing technology security. An early issue is expediting the conclusion of a Reciprocal Defense Procurement memorandum of understanding. Leaders can also provide modest additional defense funding for R&D and public-private partnerships in Japan and the United States

to incentivize cooperation and contributions from industry, academia, and other government bodies.

Meanwhile, industry in both countries should move quickly with small-scale cooperative projects to help establish administrative precedents while the architects of Japan's new policies are in their current positions. Now is the time to invest—even if modestly—in order to clarify regulatory parameters and deepen personal networks in these fields. Focusing on defensive systems like missile defense, sensors, and reconnaissance early on will make it easier to win public and diplomatic support.

Change is coming to U.S.-Japan defense technology cooperation, but the extent to which this change contributes to peace and stability in East Asia depends on how effectively the two governments can harness this potential. They must organize for success and draw on all of the talent at their disposal—public, private, military, and civilian—while balancing long-term ambition with practical problem solving and the efficient use of resources.

It is okay to start slowly but important to start now, building in time to review performance and make improvements along the way. A strong technology edge for the allies will serve them and the region well in the future, just as it has before.

NOTES

- 1 Robert Martinage, *Toward a New Offset Strategy: Exploiting U.S. Long-Term Advantages to Restore U.S. Global Power Projection Capability*, (Washington: Center for Strategic and Budgetary Assessments, 2014), <http://csbaonline.org/publications/2014/10/toward-a-new-offset-strategy-exploiting-u-s-long-term-advantages-to-restore-u-s-global-power-projection-capability/>.
- 2 See *The Role of Maritime and Air Power in DoD's Third Offset Strategy*, 113th Cong. (2014) (statement of David Ochmanek, senior defense analyst with Rand Corporation); or *A Case for Reform: Improving DOD's Ability to Respond to the Pace of Technological Change*, 114th Cong. (2015) (statement of Frank Kendall, under secretary of defense for acquisition, technology, and logistics).
- 3 Kendall, 2015.
- 4 Claudette Roulo, "Offset Strategy Puts Advantage in Hands of U.S., Allies," DoD News, January 28, 2015, <http://www.defense.gov/news/newsarticle.aspx?id=128064>.
- 5 Compiled by the author using the World Bank for U.S. GDP data, U.S. Office of Management and Budget for U.S. defense data, UN statistics for Soviet Union GDP data, and the U.S. Central Intelligence Agency's "Comparison of Soviet and U.S. Defense Activities from 1973-1987," (published July 1988) for Soviet Union defense data.

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