The China Challenge

Military, Economic and Energy Choices Facing the U.S.-Japan Alliance

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By Patrick M. Cronin, Paul S. Giarra, Zachary M. Hosford and Daniel Katz

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THE CHINA CHALLENGE: MILITARY, ECONOMIC AND ENERGY CHOICES FACING THE U.S.-JAPAN ALLIANCE

By Patrick M. Cronin, Paul S. Giarra, Zachary M. Hosford and Daniel Katz

TO PREPARE THE UNITED STATES AND JAPAN FOR FUTURE CHALLENGES, THE ALLIES SHOULD:

- **Launch a new, high-level strategic dialogue to reassess the ends, ways and means of the alliance, beginning with its basic objectives, and to develop a clear plan for ensuring implementation;**
- **Prepare to defeat anti-access and area-denial capabilities of potential adversaries through clearly planned, regularly trained and adequately resourced forces;**
- **Plan, as part of the above-mentioned strategic dialogue, for the gradual integration of all U.S. bases in Japan with those of the Japanese Self-Defense Forces;**
- **Seek the long-term integration of a rising China into a global and regional security architecture through a variety of means, starting with a high-level trilateral security dialogue;**
- **Catalyze strategic investments by the public and private sectors in education, infrastructure and innovation-oriented research and development, in conjunction with a credible debt-reduction plan;**
- **Engage emerging economies, such as China, through trade and investment to maximize employment and growth opportunities in the United States and Japan;**
- **Work jointly and in concert with regional partners to ensure that the economic and trade component of the bilateral relationship thrives from now to 2025 and beyond;**
- **Elevate the importance of energy security within the alliance and identify complementarities between the countries' respective energy strategies;**
- **Create – in conjunction with China – a major trilateral dialogue on energy security;**
- **Work with allies and partners to incorporate energy security into the Trans-Pacific Partnership; and**
- **Collaborate on regulatory policies and reactor safety technology for the civilian nuclear power industry.**

I. EXECUTIVE SUMMARY

By Patrick M. Cronin, Paul S. Giarra, Zachary M. Hosford and Daniel Katz

The U.S.-Japan alliance is the cornerstone of peace and prosperity in the Asia-Pacific region.[1] If it is to remain so, the allies must address a host of difficult issues involving defense, economic competitiveness and energy security. The rise of China is linked inextricably with each of these issues, as are the abilities of the United States and Japan to address their internal economic and energy challenges. The allies' success will influence the power and prosperity of each nation and the durability of the alliance itself.

Although the allies continue to share a host of important interests and values, potential cracks are emerging in the alliance. With respect to security, the United States and Japan could potentially disagree on how to deal with China's military modernization (including its growing anti-access and area-denial capabilities), the sustainability of U.S. forces based in Japan and each country's ability to implement its current defense plans. At the same time, the United States and Japan need mechanisms to promote effective decisionmaking as they make choices about force structure, sustain equitable burden sharing and forward bases, and integrate new technologies. Both countries will require resolute political leadership and healthy economies to support current defense plans.

Economically, disagreements between the United States and Japan over how to achieve and sustain growth rates, engage emerging powers and build a unifying regional trading regime could undermine the alliance's ability to shape the region's future. Both countries need pro-growth policies and basic fiscal reforms, a coordinated approach to integrating a wealthier China into an open global and regional economic order, and a serious push for more bilateral free trade and an inclusive regional trading regime.

Although energy issues have not figured prominently in U.S.-Japan relations, a failure to develop

a concerted energy strategy could increasingly stress both allies and possibly the alliance itself.[2] Each country faces challenges over how to ensure sufficient, stable energy supplies within the global energy market, and each will be influenced by how China and other emerging economies gain access to energy in the years to come. In addition to tapping new sources of fossil fuels and clean energy alternatives, the United States and Japan must decide on the role of nuclear power.

If the American and Japanese peoples wish to perpetuate a regional and world order in accordance with their democratic and free-market values, they must sustain a strong alliance well into the future. Both nations share the objective of preserving and adapting an open, rules-based system while simultaneously providing incentives for rising powers such as China to become responsible stakeholders in that system.

This report analyzes critical challenges that the U.S.-Japan alliance will confront between now and 2025 and discusses how it can retain its impressive and indispensable clout. Based on a series of workshops and interviews involving dozens of prominent Japanese and American experts and officials,[3] this report offers specific policy recommendations to help the two nations build an even stronger alliance over the coming decade. The workshops were built around a conceptual framework of three-dimensional power: military power, economic power and transnational power (which, for the purposes of this study, concentrated on energy security). Each workshop yielded a rich menu of ideas and a diversity of views. This report brings together the key questions that experts highlighted, as well as ways that the United States and Japan should begin to address those questions. The gathered experts agreed that the discussion about the alliance has been too focused on immediate challenges, without sufficient thought to more difficult choices that affect long-term policy. There was also a broad consensus that a revitalized alliance would benefit both the United States and Japan and undergird the stability and prosperity of the entire Asia-Pacific region.

II. SECURITY AND THE U.S.-JAPAN ALLIANCE

The U.S.-Japan security alliance includes both hard and soft power dimensions. It is rarely tested but militarily potent. The allies' combined military power continues to deter regional threats and maintain stability. Moreover, the allies' well-organized and appropriately equipped military forces are useful in humanitarian-assistance, disaster-relief and peacekeeping missions, activities that can showcase goodwill and build trust between nations.

An enduring and clear division of labor has been an explicit feature of the security treaty, with the United States conducting offensive missions and operations for regional security and Japan concentrating on the defense of its territory. However, these have become exclusive roles over time, making the alliance less than the sum of its parts. The allies could better preserve their influence in the future by focusing less on a division of labor and more on combined capabilities and integration.

Plans to cut the U.S. defense budget by about $50 billion a year over the next decade (the equivalent of eliminating Japan's total current annual defense budget) are creating anxieties within Japan and elsewhere in the Asia-Pacific region. If the Congressionally mandated budget process known as sequestration comes to pass, the cuts will be even deeper and could call into question America's ability to uphold its commitment to the security of allies in Asia.[4] At the same time, it is not obvious that Japan will play a larger security role in the future, nor is such a large role unequivocally desirable.[5] Japan has a history of conflict with many of its neighbors, including China, who may react negatively to enhanced military capabilities in Japan. The United States may have put history behind it, but others have not yet done so – including many people in Japan who, as a result of Japan's prewar experience, remain uncomfortable with military force.

Those concerns accentuate lost opportunities to strengthen the alliance, including its military ends, ways and means. The *ends* have become more complex since the end of the Cold War; looking ahead, the alliance must stand together or fall apart over how to deal with China. The *ways* of the military alliance center on bases and on whether the two allies can continue to share burdens in an equitable manner. That issue is further complicated by changes in warfare and military technologies that separate, rather than unify, the two nations' militaries. Tokyo's longstanding refusal to accept opportunities for integration means that the alliance is not as capable as it might be. One example of this concerns the modern air combat environment. For any air campaign operating beyond visual range, U.S. aircraft are linked by intelligence and technical networks to enhance battlespace awareness, and command and control integration. The Japan Air Self-Defense Forces are not capable of using this technology (and the doctrine that reinforces it) to link platforms and operational networks. Indeed, at least in the past, they have not even aspired to do so. Finally, in the face of severe financial constraints, it remains an open question whether the allies, separately and in combination, can muster the *means* to continue to support sufficient defenses.

American and Japanese strategists express concern about the growing capability of Chinese military power (the People's Liberation Army, Navy and Air Force) but remain confident that the allies will hold the advantage if they cooperate. However, a failure to integrate U.S. and Japanese military and defense forces may weaken deterrence, encourage political coercion against the alliance and others (backed by the use of military force short of aggression), reduce the credibility of U.S. security assurances, make Japan and others less able or willing to resist Chinese influence, provoke allies and friends to engage in a destabilizing arms race with China

(which could include weapons of mass destruction) and further undermine U.S. alliances in Asia.

China's Military Modernization

Opposition to Soviet aggression provided the glue for U.S.-Japan cohesion during the Cold War. Today, China is increasingly the alliance's focal point. Although China is not an adversary, there is no bigger potential military challenge to the alliance. The United States and Japan share not only a strong interest in the peaceful integration of a rising China but also a responsibility to hedge against a potential Chinese threat. China should not be the sole adhesive for the U.S.-Japan alliance, but a failure to understand the alliance's goals with respect to China could erode bonds between the United States and Japan in the decades ahead.

Coping with an increasingly capable China – particularly one determined to pursue integrated technologies to deny others access in both the East China and South China Seas – touches on the core purposes of the alliance. Politically, it raises the question of how the United States and Japan will seek to shape a rising China. Militarily, it raises the question of how to overcome burgeoning anti-access and area-denial capabilities. There is currently no consensus between the United States and Japan on either of those two questions.

The United States is capable of retaining its current military edge, but a major challenge for both the United States and Japan is to determine how to sustain that edge given severe financial and political constraints. The U.S. military is responding to global technical and operational challenges, including China, by developing capabilities (e.g., cyberwarfare), concepts (e.g., Air-Sea Battle), doctrines (e.g., Joint Operational Access Concept) and strategies (e.g., the rebalancing of U.S. power to Asia).[6] Even if these initiatives are fruitful, however, greater alliance contributions to security will be necessary.

It may not be possible for the United States to cope with China alone, so Japan's future role will be vital and larger than it has been to date. Yet so far, Japan's response to specific military initiatives has been understated at best. In order to maintain American access and protect Japanese interests in the face of challenges from Beijing and simultaneous structural economic weakness, the United States and Japan will have to cooperate at unprecedented levels. Such cooperation will need to include a shared understanding of the strategic environment, the internal capacity to vet differences and leverage points of cooperation, and a means of overcoming bureaucratic divides. This political-military revitalization of the alliance will be essential to preserving a favorable military balance of power and credible deterrence. In some respects, that is already happening, and the question is how to maximize the trend.

Despite Japan's understated response to a rapidly changing security environment, Japan is reacting to China's emergence. As exemplified by its most recent National Defense Program Guidelines, Japan is rejecting its longstanding "static defense" doctrine in favor of "dynamic defense." The latter emphasizes defense of the southwest Ryukyu Islands, more active use of military forces and greater force mobility. Like those of the United States, however, Japan's security initiatives are hampered by fiscal pressure as well as by uncertainty about future U.S. decisions. Furthermore, it is unlikely that Japan will explicitly alter its constitution with respect to the use of offensive force and collective self-defense (unless a crisis forces it to do so, at which time it may be too late to tailor a response to fit the circumstances). Japan's willingness and ability to loosen its ban on weapons exports occurred without a crisis, however, suggesting a gradual trend toward normalization.

The traditional expectation that economic interdependence between Japan and China would give Tokyo enough leverage over Beijing to forestall

military confrontation was called into question in the autumn of 2010 when China resorted to a variety of coercive tactics – including both diplomatic démarches and the tacit threat to withhold rare earth metals – to pressure Japan over the arrest of a fishing boat captain in disputed waters of the East China Sea. Many people in Japan were alarmed by China's handling of the incident.

Sharing Future Burdens

A second set of questions regarding the alliance's military power centers on the ways of the alliance: alliance management, burden sharing and the depth and trust of cooperation. Will burdens be perceived as fairly distributed? Will the armed forces of the allies become more integrated or remain largely, or even increasingly, separate? What will the mechanism be for sharing burdens in a period when the alliance's objective is ambiguous and its resources are scarce?

The United States and Japan are long past the historic bargain embedded in the metaphor of an unsinkable aircraft carrier.[7] In 1951, then-Prime Minister Shigeru Yoshida championed the idea of providing secure bases in exchange for U.S. support for Japan's economic recovery and territorial defense. This so-called Yoshida Doctrine forged the basis of the Cold War alliance. Yet many people in Japan have grown tired of the "sympathy" budget by which taxpayers pay for maintaining U.S. bases in Japan, and disputes over resources are drawing attention to the costs of the alliance rather than to its value. There are also questions about how much Japan and the United States will each pay to retain bases and move some forces to Guam and elsewhere, including rotating some Marines through Darwin, Australia.

Base integration provides a golden opportunity for maximizing the use of resources in the alliance. Increasingly, U.S. forces based in Japan (and perhaps elsewhere, such as Guam) could be co-located with the Self-Defense Forces (SDF), operating side by side and providing economies of force and resilience. Encouraging coordination among Japan's armed services – and among the U.S. armed services – will provide a springboard for U.S.-Japan integration. Such integration is a potential game changer for the alliance, providing mutual benefit and potential for combined operations, as well as an alternative to U.S. bases in Okinawa (where the majority of U.S. forces are concentrated). However, Okinawa's strategic importance is probably increasing, and careful alliance management is needed to preserve access to bases there while striving for reasonable accommodations with the local population.

Alliance Resources

Beyond the ends and ways of the alliance, there is the issue of means. The classic question about defense spending is "how much is enough?" Within the alliance, however, the questions are more focused on how much military power is sufficient for each country and how alliance integration can enhance the military power of Japan and the United States. Another, closely related, question for the alliance is whether Japan will become a normal military power, capable of using even offensive force in the context of collective self-defense. It has certainly taken steps in that direction, from additional roles and missions to the easing of political and legal restraints. However, those steps fall short of changing Japan's postwar constitution, which is unlikely to happen anytime soon and could prove more destabilizing to Japan's relations with China and others than would less-direct departures from postwar policy.

Japan eschews combat. For both legal and political reasons, Japan prefers to provide basing, logistical support and financial contributions to a range of regional and global security missions. Nevertheless, the SDF is increasingly capable of fulfilling its principal role: the defense of Japan. Despite constitutional restrictions on the SDF and its operations, the alliance was essential to tying

down a very capable Soviet force during the Cold War. The SDF plays a similarly important role today, and Japan continues to be the bulwark of stability and security in Northeast Asia.

Since the end of the Cold War, Japan has taken extensive steps to rationalize and authorize the use of force, both in alliance and national contingencies. Today, in fact, Japan's able maritime and air forces are expanding their capabilities and doctrine; they are also playing a role in the East China and South China Seas and in countering piracy in the Gulf of Aden. The National Defense Program Guidelines published by Japan in December 2010 articulated a clear vision for the future direction of an increasingly capable SDF. For instance, the Ground Self-Defense Force (GSDF) has changed its doctrine from a static force posture to a more active defense in response to Chinese military operations around Japan and the perceived vulnerability of Japanese territory; the GSDF also recently finished its seventh annual "Iron Fist" amphibious exercise with the U.S. Marines in California.[8] Meanwhile, the Air, Maritime and Ground Self-Defense Forces are discussing an Air-Sea-Land concept of operations.

Japan is doing more not only unilaterally but also multilaterally, including conducting military exercises and building security relationships with other nations. It has participated in multilateral maritime exercises with the United States and India, engaged in strategic planning with the United States and Korea, joined the United States and Australia in military exercises, and participated in trilateral disaster-response exercises with the United States and the Philippines. For Japan, these are significant developments. Such efforts can help the allies achieve a greater regional balance of power despite a relative reduction of resources.

In the Asia-Pacific region, Japan and the United States will be able to stretch their defense budgets further if they can deepen cooperation. The most important aspect of military cooperation will be the integration of command, control and information systems. C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) integration has been a chronic weakness in a relationship characterized as "separate but unequal." Japan's steps to safeguard classified information make such integration easier, allowing both defense forces to use tactical data-sharing technology such as Link 16 (which provides secure, digital communications among air, naval and ground forces), but high-level political will is also required to deepen cooperation.

China's increasing capabilities should catalyze unprecedented Japanese military roles, missions and capabilities. These should include a full gamut of capabilities that give Japan greater freedom of operations rather than just filling in for U.S. shortfalls in certain areas. Those capabilities should include:

- C4ISR integration with the United States;
- Operational- and strategic-level intelligence, surveillance and reconnaissance;
- National logistics, infrastructure and base defense and support;
- Rationalization of defense acquisition and the industrial base;
- Defensive counter-air capabilities;
- Cruise and ballistic missile defenses;
- Anti-submarine warfare;
- Advanced surface and subsurface naval capabilities;
- Naval mine warfare;
- Battle group escort;
- Aircraft carriers and fixed-wing tactical aviation at sea; and
- The ability to conduct ground combat maneuvers, including amphibious operations.

The U.S. Role

The Asia-Pacific region remains a top priority for U.S. strategists. However, in a time of reduced resources and growing challenges, American policymakers will need to review everything from the U.S. military's forward presence to the joint development of ballistic missile defense.

To address both fiscal constraints and the need for a strong U.S. military presence in Asia, the United States and Japan should consider sharing bases and facilities. The protracted deadlock over a replacement for the Futenma Marine Corps Air Station is only one piece of a complex puzzle, and diverse interests in Tokyo, Washington and Okinawa are stoking tensions in the alliance. A recent agreement to decouple other aspects of base realignment on Okinawa (including the moving of thousands of Marines) until a new runway can be built at Camp Schwab in Henoko has temporarily reduced friction caused by the longstanding issue of U.S. bases.[9] This was a short-term triumph for political pragmatism. However, in the next few years, democratically elected officials will have to address popular opposition to relocating Marines to existing bases elsewhere on Okinawa (either Camp Schwab, under the current plan, or Kadena, an often-mentioned alternative). Base integration would make it possible to ease political pressures without compromising operational capabilities.

The allies should also consider enhancing operational interoperability. Japan's decision to buy the F-35 Joint Strike Fighter and the continued joint development of ballistic missile defenses reflect a preference for combined operations and interoperability. However, far more can and should be done. NATO forces acting against the Moammar Gadhafi regime in Libya were able to carry out missions despite varying equipment because of successful doctrinal and technical integration, but it has been impossible for Japan to engage in a similar effort with the United States under current interpretations of its constitution. Changes in interpretation, however, can occur without fundamental changes to the Japanese constitution. In addition, other means of strengthening combined military capabilities are possible, as enhancing interoperability is a matter that goes beyond acquisition and technology and includes political and legal issues. Shared facilities and effective communication are critical.

To address both fiscal constraints and the need for a strong U.S. military presence in Asia, the United States and Japan should consider sharing bases and facilities.

Domestic politics in Japan will continue to impede cooperation and preclude the exercise of Tokyo's (sometimes expressed, but never implemented) right of collective self-defense. Under current interpretations, even providing fuel for U.S. military aircraft may prove controversial. Political, bureaucratic and practical distractions can hinder investment in bilateral defense collaboration, whether in the Middle East during the past decade or throughout Asia as other players, such as South Korea and Vietnam, compete for attention. A combination of relatively weak coalition governments, a cautious bureaucratic process uncertain of strong and consistent political support, and events in other regions of the world threatens to dissipate the potential military power of the U.S.-Japan alliance. Concerns about provoking China also tend to dilute efforts to build a stronger alliance. More than any other concern, however, budgetary pressure on both allies is a tangible and significant constraint.

Recommendations

The United States and Japan should immediately launch a high-level strategic dialogue to reassess the ends, ways and means of the alliance, beginning with its basic objectives, and to develop a clear plan for implementation. The dialogue should be led by officials at the assistant secretary and director general level, who, in turn, should prepare decisions for cabinet-level officials as part of the official two-plus-two process (with the secretaries of defense and state and ministers of defense and foreign affairs). Although dialogues have varied in quality and depth over the years, the emerging strategic environment demands a fresh attempt at achieving a consensus on important issues such as how to shape the regional military environment and for what ends to prepare military contingencies. Difficult issues, including how to address China's increasing military capabilities and the dispute over territories in the East China Sea, should be included in the dialogue, to avoid misunderstandings about the purpose of the alliance.

As part of the new strategic framework, the U.S. military and the Japan SDF should commence planning to deter and defeat the anti-access and area-denial capabilities of potential adversaries. This should be accomplished through clearly planned, regularly trained and adequately resourced forces, and may ultimately entail Japan's military normalization. The discussion should center on how to ensure freedom of access in the global commons, not only the maritime and air domains, but also in outer space and cyberspace. The principal operational concept of Air-Sea Battle should be debated as part of a serious, valuable dialogue. The United States needs to decide on what it wants before this debate can occur in earnest. Instituting effective procedures for sharing classified information is a bedrock requirement for this fundamental planning dialogue. Operational concepts about the defense of disputed areas should be included to ensure that both allies use the same rules of engagement. This may be occurring in mid-level discussions, but it requires active high-level policy oversight.

Japan and the United States should pursue a long-term policy of seeking to integrate a rising China into a global and regional security architecture and set of common rules. A regular, high-level trilateral security dialogue could develop common areas of engagement that might build understanding and confidence while beginning to address major concerns. For instance, the allies should urge China to adopt a more commonly accepted interpretation of the United Nations Convention on the Law of the Sea with respect to exclusive economic zones and maritime boundaries. They should also encourage China to develop a regional Incidents-at-Sea-type of agreement to manage incidents and disputes when they occur.

As part of a strategic dialogue, the United States and Japan should draft a plan for the gradual integration of all U.S. bases in Japan with those of the SDF. The allies should discuss how the United States plans to rebalance its force posture throughout Asia and the possible effects of that rebalancing on Japan, as well as the effect of Japan's new guidelines calling for the enhancement of its posture in the southwest island chain. Issues such as the future distribution of U.S. forces throughout Japan, including on Okinawa, should be part of the review, but the main aim of integration is to secure greater capability through joint and combined operations and the attendant deterrent effects. In addition, where feasible, the militaries should consider further dual civil-military use of bases such as Yokota Air Base in metropolitan Tokyo.

Together and separately, the United States and Japan should reform and integrate their own and the alliance's defense acquisition strategies, practices and infrastructure. To be realistic, military strategies must be affordable and sustainable, yet laboratory and corporate rigidity drives up costs

and lengthens procurement timelines. Although competition is generally healthy, the vastly unequal U.S.-Japan defense establishments would benefit from more collaboration with respect to alliance acquisition, maintenance and sustainment. In addition, Japan should begin acting on its decision to relax its arms export principles by selling military hardware that could be used for missions such as disaster assistance (like heavy trucks) to other friendly countries.

III. TRADE AND ECONOMIC POWER

Short-term economic forecasts point to modest economic growth for the United States and Japan. According to the International Monetary Fund, the two nations' economies are set to grow by 1.8 percent and 1.7 percent, respectively, in 2012.[10] The 2013 outlook is similar – 2.2 percent growth for the U.S. economy and 1.6 percent growth for the Japanese economy.[11] Those growth rates are insufficient to create high rates of job growth and make it difficult to balance budgets. Also, this near-term outlook could be affected by unpredictable events, from another euro-zone crisis to rising energy prices because of tensions in the Persian Gulf.

Looking ahead, some projections of gross domestic product (GDP) in 2025 show China gaining on, or even overtaking, the United States as the world's largest economy and India gaining on or supplanting Japan as the world's third-largest economy.[12] Although the United States and Japan would retain vast wealth (as the second- and fourth-largest economies in the world, even by pessimistic forecasts), alliance analysts appear to be increasingly anxious about that trend. The United States and Japan are uncertain about whether their economic standing is slipping, China's is rising or both. Paradoxically, there is also concern about a significant slowdown in China's economic growth and the effect it could have on the interdependent regional and global economies.

The United States and Japan need to maintain an open and inclusive economic and trade system throughout Asia. Secretary of State Hillary Rodham Clinton emphasizes the importance of avoiding a dynamic that leads to discriminatory markets, arguing that the United States aims to "create a new high standard for multilateral free trade, and to use the promise of access to new markets to encourage nations to raise their standards and join [the Trans-Pacific Partnership]."[13] Free trade involves more than traditional concern

about the tariffs imposed when goods cross an international boundary. Those who seek to promote free and fair trade must also contend with a range of non-tariff barriers to trade, including the unfair advantage that state-owned enterprises may have over private-sector companies and the failure to fully enforce intellectual property rights. Will China be integrated into a common trading regime that enforces fair rules, or will China spearhead a competing set of trade relationships and rules? Various scenarios exist for the trade and economic trajectories of the United States and Japan, including several possible membership permutations for the Trans-Pacific Partnership (TPP), a China-Japan-South Korea free-trade agreement (FTA), and various constellations involving the Association of Southeast Asian Nations (ASEAN) along with other countries.

Debt and Competitiveness

The United States and Japan face a common economic foe: high levels of debt. The Japanese debt-to-GDP ratio exceeds 200 percent (some estimates have placed it closer to 230 percent).[14] Although Japan's debt is largely domestically held, repayment must compete with a declining revenue base and rising energy prices, among other factors. Along with concerns about Japan's loss of competitiveness, officials and experts are generally worried about the nation's economic strength, even though many are also consoled by Japan's high standard of living. Meanwhile, U.S. debt reached 100 percent of GDP in 2011 and is set to keep rising in the years ahead unless there is more revenue, less spending or both.[15] The total outstanding American public debt is $15.4 trillion, of which $10.67 trillion is publicly held.[16] Although the U.S. and Japanese governments are aware of the need for a credible debt-reduction plan, they also understand the perils of abrupt spending cuts and austerity.

The demands of entitlement programs and debt service require higher revenues – through growth, tax increases or both. In Japan, a surplus of approximately 3 percent of GDP would stabilize the debt ratio, and an improvement of around 10 percent of GDP is necessary to achieve primary balance.[17] The Japanese government deems an increase in the consumption tax necessary to raise revenues.[18] However, domestic political opposition and the inability of a 10 percent tax level (currently 5 percent) to generate "a primary balance any time before 2020" may be impediments.[19] Fiscal consolidation can be seen as a pro-growth policy because more debt would lead to higher interest rates, which, in turn, would negatively affect growth.[20] The United States faces equally momentous debt challenges, although the dollar's status as a global reserve currency and the highly liquid market for U.S. treasury securities have kept borrowing costs relatively low. However, both the United States and Japan should be concerned about the possibility of a future spike in borrowing costs that would lead to unserviceable debt levels.[21] The ability of the two nations to reduce debt meaningfully by 2025 will largely determine the economic destinies of both countries.

As the United States and Japan seek to integrate a rising China into the global economic order, they must consider how best to accommodate Chinese wishes while preserving post-World War II institutions and norms.

Competitiveness is a second potential threat to American and Japanese economic power. Remaining competitive in a global market of emerging economies requires constant economic reform and efforts to deal with structural

challenges, such as demographic issues. Although an aging population may be a more urgent priority for Japan, the United States will also need to confront the medical and social security needs of the baby-boom generation in coming years. Projections indicate that Japan's elderly population (defined as people age 65 or older) will rise from approximately 23 percent of the total population in 2010 to almost 30 percent by 2025. In the United States, the percentage of the population that is elderly will increase from around 13 percent in 2010 to nearly 20 percent by 2025.[22] On the basis of long Japanese life expectancy and an aging population, some analysts recommend changes to the retirement system, suggesting that retired workers need to rejoin the workforce. Social security reform is desirable for both countries, but the current public pension system in Japan is unsustainable and requires higher economic growth to support spending on the elderly.[23] Proposed increases in pension contributions by young people in Japan may discourage work and lead to slower economic growth.[24] Given the different (but still shared) dynamic of aging populations and increased health care costs in the two nations, there may be opportunities for dialogue on approaches to entitlement reform.

Competitiveness also hinges on the capacity of the United States and Japan to introduce necessary economic reforms. Viable suggestions for raising Japanese competitiveness include increased long-term investment abroad to encourage mild inflation (and a weaker yen), the opening of Japan to hostile merger and acquisition activity, deregulation as a spur for innovation, labor market reform, and privatization of agriculture and the postal service.[25] The United States needs to avert severe fiscal contractions through new means of balancing revenue and spending, including reform of core entitlement programs. Measures that apply to to both countries include faster economic growth, reduction of corporate income taxes, maintenance of technological leadership, improvement of primary and secondary education (particularly in the United States) along with the use of vouchers, creation of public-private partnerships for building infrastructure funded by user fees, collaboration in robotics and biogenetics, and an increase in public support for research and development.[26] Sustained annual GDP increases above 2 percent would signal successful implementation by the United States and Japan of pro-growth strategies.

China's Economy

The United States and Japan face increased economic competition from rapidly growing economies in every part of the world, but particularly from China.

In a recent report, the World Bank foresees China becoming the largest economy in the world by 2030.[27] China is working to implement its 12th five-year plan (for 2011-2015), which aims to transition China's economy away from export dependence and investment-led growth and toward increased domestic consumption and general economic rebalancing.[28] Certainly, increased domestic consumption has been a major goal in China for the past decade, and Chinese leaders face huge obstacles in steering China toward its next stage of growth and development. Premier Wen Jiabao's announcement that the minimum target for China's economic growth in 2012 would be lowered from 8 percent to 7.5 percent sparked a flood of commentaries that China could face economic decline.[29] Yet although some commentators see a looming "hard landing" of the Chinese economy, most still expect robust economic growth in China, at least in the near term, as a result of political considerations and a pending once-in-a-decade leadership transition.[30] Japan and other nearby countries regard how to increase economic interdependence with China as a serious issue.[31]

As the United States and Japan seek to integrate a rising China into the global economic order, they

must consider how best to accommodate Chinese wishes while preserving post-World War II institutions and norms. Thus far, China has been willing to operate within international financial institutions, but it reasonably desires greater voting shares and senior positions at institutions such as the International Monetary Fund and the World Bank.[32] For instance, China's support for challenging the selection of an American to head the World Bank is likely to appeal to other countries with emerging economies.

A particular concern, especially in the event of U.S. and Japanese economic malaise, is that China may attempt to refashion global norms to its own benefit.[33] China perceives the United States as challenging current World Trade Organization rules-based mechanisms with its stated intention to pursue tougher trade enforcement, particularly vis-à-vis China.[34] The decision of the United States, Japan and the European Union to challenge Chinese restrictions on rare earth metals is illustrative of a larger, long-term tussle over the scope and extent of trading rules.[35]

Emerging economies such as China are challenging American and Japanese approaches to rules regulating fair trade and market access. Although trade may lead to greater profits and shared prosperity, the tradeoffs required to transact business in China concern some U.S. and Japanese companies. In 2011, the annual white paper of the American Chamber of Commerce in China indicated "growing concern about certain regulatory trends" among members, although "85 percent reported revenue growth in 2010, and 78 percent reported that they were profitable or very profitable."[36] Some veteran analysts do not see cooperative trends developing. Instead, they believe that "China will not confront the West on the battlefield, but rather in the markets and in the global information space where Beijing seeks to cast the American enterprise as in decline and frame the public understanding of events in a China-friendly way."[37]

Candid trilateral discussion among the United States, Japan and China about economic and trade rules would be beneficial. Both the United States and Japan have a stake in preserving the basic current order while adapting over time to a rising China. However, an alternative economic order without safeguards for intellectual property and other vital areas would undermine U.S.-Japan economic power, which depends on innovation and global brands.

Asia's Future Regional Trade Architecture

The future structure of trade in the Asia-Pacific region depends on near-term decisions by the United States and Japan. By insisting on more systematic trade rules, both countries have an opportunity to engage China and other emerging economies that share a long-term interest in having common rules of the road.

The current U.S. and Japanese governments see the Trans-Pacific Partnership, which is in the process of expanding, as an ambitious trade agreement with the potential to boost trade and investment, bolster innovation, promote economic growth and development, and support job creation. The TPP is meant to signal the emergence of a "comprehensive, next-generation regional agreement that liberalizes trade and investment and addresses new and traditional trade issues and 21st-century challenges."[38] On November 12, 2011, the leaders of nine countries (the United States, along with Australia, Brunei Darussalam, Chile, Malaysia, New Zealand, Peru, Singapore and Vietnam) announced the broad outline of a new agreement that the United States believes will become a model throughout the region.

The TPP transcends simple free-trade agreements that reduce tariffs at the border and instead seeks to create a common regulatory system to stimulate economic growth, including growth of small and medium-sized enterprises.[39] Japan's Prime Minister Yoshihiko Noda declared his interest in having

Japan join the agreement. Steady progress toward a TPP that includes Japan would bolster the alliance and the economic power of both countries. However, if Japan opts out of the TPP, or its participation is vetoed by the United States, a weaker alliance would result. The potential also exists for China to join TPP negotiations, although it may opt not to do so because of perceptions that the TPP is not aligned with Chinese interests.[40]

In the United States, the TPP wins broad bipartisan support.[41] However, election-year politics may affect the timing of TPP discussions, perhaps pushing them into 2013.[42] Skeptics about the TPP argue that it "… is not by itself and in the end likely to contribute to wider regional integration."[43] To make the TPP a reality and a more widely accepted institution – tomorrow's Free Trade Agreement in the Asia-Pacific region – would require strong, sustained leadership from both the president of the United States and the prime minister of Japan.

Japanese accession to the TPP would be significant on a number of levels. Because Japan's economy is twice the total size of the economies of the eight countries currently negotiating with the United States about the TPP, Japan's potential inclusion in the agreement is "important for the pact's emergence as the preeminent trade agreement in the Asia-Pacific."[44]

Although Japan's leaders favor joining the TPP, the path leading to accession is littered with obstacles. The Japanese business community is a champion of the TPP,[45] but domestic politics are likely to delay consideration of the TPP in favor of internal issues, such as the consumption tax.[46] Whereas TPP supporters in Japan advocate joining in order to play a role in "shaping the agreement," opponents point to potential drawbacks for the highly protected agricultural sector in Japan.[47] In other words, weak coalition governments and a strong agricultural lobby that is resistant to reform are obstacles to Japanese accession. Japan's terms for joining the TPP could trigger a U.S. veto of Japanese entry.[48] Unfortunately, circumstances in both countries in 2012, if not beyond, are inauspicious for simultaneous American and Japanese entry into the TPP.[49] Although U.S. Under Secretary of Commerce for International Trade Francisco Sanchez said, in reference to the TPP, that "we will have an agreement by the end of the year,"[50] Assistant U.S. Trade Representative for Japan, Korea and Asia Pacific Economic Cooperation (APEC) Affairs Wendy Cutler maintained "… we have two tracks going now simultaneously. The TPP negotiations are proceeding on one track, and now our process for considering Japan's bid in [the] TPP is continuing on a separate track."[51]

The main rival to the TPP would be a Chinese-led FTA. Such an arrangement could include a China-Japan-Korea trilateral FTA or an agreement involving the Association of Southeast Asian Nations (namely, ASEAN+3 – China, Japan and South Korea – or ASEAN+6, which also includes Australia, New Zealand and India, or another combination). Since Japan expressed its interest in the TPP, "China has become more active in urging Japan to conclude a trilateral FTA with South Korea."[52] Although China initially favored an ASEAN+3 trade setup, it has gradually warmed to an ASEAN+6 arrangement that would be more acceptable to Japan.[53] The prospects for a China-Japan-Korea FTA are unclear, although the three countries concluded negotiations in March 2012 on a three-way investment treaty that was "… seen as an important stepping stone toward the far more ambitious goal of forging a free-trade zone."[54] Talks on the topic have been proposed for the summer of 2012, but South Korean farmers protested and shut down the initial public hearing in Seoul.[55] The Korean Democratic United Party – the primary Korean opposition party that has threatened to renegotiate the Korea-United States FTA – and some other lawmakers have expressed interest in a China-Japan-Korea FTA.[56] Clearly,

the United States favors inclusivity in Asia-Pacific trade, and China's limited FTAs could challenge that principle.

The role that existing regional institutions will play in Asia-Pacific trade is open to question. The APEC forum is the highest-level institution for guiding trade and economic policy throughout the region, but it faces an uncertain future. At a minimum, whether APEC will be able to shape a clearly defined trade architecture in the region by 2025 is unclear. Discussions about a Free-Trade Area of the Asia Pacific, encompassing the 21 APEC members, stalled, at which point the TPP was seen as a "more viable strategy towards a broader trade area than engaging in endless – and likely fruitless in the near term – negotiations with some APEC member economies who were proving unwilling to open further in a meaningful way."[57] Accession to the TPP is in theory open to any country.[58] However, a structural barrier to the TPP is resolving "how to relate the new agreement to existing FTAs."[59] In addition, "the agreement will not really make a difference until and unless at least one other major economy joins – especially from Northeast Asia."[60] Among other initiatives, ASEAN envisions an ASEAN Economic Community by 2015.[61] APEC is working to implement "the Bogor Goals of free and open trade and investment in the Asia-Pacific by 2020."[62]

Recommendations

The American and Japanese public and private sectors should make strategic investments in education, infrastructure, and innovation-oriented research and development, in conjunction with a credible debt-reduction plan. Fiscal limitations will allow only selective investments, but targeted investments in areas such as English training in Japan or joint research and development in clean energy could strengthen the drivers of economic growth while simultaneously bolstering the alliance. Although economic decline is a popular theme in the United States and Japan, both countries can best jumpstart their economies by pursuing strategic investments and joint efforts in innovative research and development while also pursuing debt reduction. In an era of stressed government budgets, both governments should incentivize private-sector investment and encourage public-private partnerships.

The United States and Japan should craft a coordinated approach to integrating emerging economies in general and China's economy in particular. The United States and Japan have each launched high-level economic dialogues with China in the past few years. Without curtailing bilateral talks, the United States, Japan and China should establish a trilateral economic dialogue to determine policy priorities for aligning public policies and bolstering private sector trade and investment. Economic interdependence reduces incentives for military confrontation, and economic strength can undergird military power.

The United States and Japan should jointly work to ensure that the economic and trade component of the bilateral relationship thrives indefinitely in concert with regional partners. Japan should join the TPP members in making the TPP a reality this decade. An inclusive architecture that seeks to involve as many regional actors as possible is the best trade solution for the area, and the TPP has the potential to benefit both the United States and Japan, as well as to become an innovative FTA in the Asia-Pacific. However, alternative approaches such as an agreement between Japan and the North American Free Trade Agreement (NAFTA) members should not be ruled out; this would integrate Japan with North American markets, particularly in energy. North American oil and gas exporters would benefit, and Japan would have a reliable source of energy.

IV. ENERGY SECURITY

Although energy security has long been an issue for the alliance, a new combination of global energy trends and geopolitical realities will raise the issue to unprecedented levels of importance in coming decades. Whereas an abundant supply of cheap energy underpinned tremendous post-World War II economic growth, future energy supplies are unlikely to be as affordable. Acquiring the right mix of energy sources to maintain sufficient economic productivity – while ensuring a gradual transition away from fossil fuels to renewable sources of energy – will be one of the most complex challenges for the alliance in this century. Indeed, the means by which the United States and Japan seek to secure their own energy supplies in a complicated geopolitical environment, respond to the enormous and increasing energy demands of a re-emerging China, and address the future of the development and implementation of civilian nuclear power at home and abroad will have huge implications for the alliance.

In the midst of U.S. and Japanese efforts to address their own energy security issues, global demand for energy is increasing at a rapid rate. Total world energy use during the 2010 to 2025 time frame is projected to increase by nearly 30 percent, with China and India accounting for 50 percent of that growth.[63] Meanwhile, many countries around the globe depend increasingly on Middle Eastern oil, despite its susceptibility to disruption. Further instability in the Middle East would likely pose a "major geo-strategic stability threat" to the United States, with the potential for cascading economic effects.[64] Global natural gas production is increasing, however, shifting currency and power flows to new areas. At the same time, demand for nuclear power has bifurcated – growing strongly throughout the developing world, while reaching an inflection point in both the United States and Japan – with as-yet-unknown consequences.

Both the United States and Japan are undergoing internal debates on energy strategy, and there is no consensus among leaders in either country.

To increase economic productivity, Japan will have to craft a new energy policy. Following the March 11, 2011, partial meltdowns of three nuclear reactors at the Fukushima Dai-ichi power plant and the subsequent release of radiation, the Japanese people and government have indicated that civilian nuclear power might play a reduced role in the country's future energy mix. However, any increased reliance on fossil fuels that might result from that decision will make Japan more vulnerable to supply disruptions and price spikes. Previous disturbances in the global energy market have prompted many countries – including Japan – to seek some guarantee of energy supplies outside traditional market mechanisms, including investing in upstream oil production overseas, even if financial logic would dictate otherwise. Meanwhile, the Japanese population favors increased investment in renewable energy sources, which are not yet sufficiently affordable to be a viable alternative.

Japan: Running Out of Power and Time

Japan suffered from its reliance on foreign energy following the oil crises of 1973 and 1979. Although these supply disruptions led to massive growth of the domestic nuclear power industry, Japan continues to be the world's largest importer of liquefied natural gas (LNG), with 90 percent of its supply originating overseas. In addition, Japan is the world's second-largest importer of coal – all of which comes from abroad – and the third-largest importer of oil.[65] Reliance on energy imports results in extremely low energy self-sufficiency (18 percent) compared with either the United States (75 percent) or China (94 percent).[66] Although the nature of the global energy market offers some insulation because of supply-and-demand dynamics, Japanese reliance on imported energy also leaves the country more vulnerable to shocks.

In a nation that already relies heavily on imported energy, the Fukushima nuclear disaster complicated the country's long-term strategy of cultivating domestic energy sources. With much of the population wary of nuclear power following the radiation leaks and inaccurate government statements during the disaster, Japan's efforts to diversify and secure its energy sources have lost public support.

The United States also finds itself in the midst of a heated debate over energy security. The nation consumes large amounts of energy, and Americans are showing frustration with rising gas prices. There continues to be support for a shift to renewable energy sources, but these sources – including solar, wind, biomass and geothermal power– remain costly and have not yet reached the level of economic competitiveness. Meanwhile, technological advances have increased the projected amounts of recoverable oil and natural gas on U.S. land and in its surrounding waters. However, the widely publicized 2010 Deepwater Horizon oil spill in the Gulf of Mexico and reports of contaminated water sources as a result of the natural gas extraction method known as hydraulic fracturing have mobilized opponents against increases in domestic drilling.

Nonetheless, the picture is somewhat rosier for the United States than for Japan. Although the United States, like many industrialized countries, is witnessing a relative plateau in its overall energy demand, its energy consumption from primary fuel is expected to rise from 98.2 quadrillion Btu (British thermal units) in 2010 to 108.0 quadrillion Btu in 2035.[67] Largely as a result of advances in recovering shale gas – natural gas trapped in shale formations, only recently made cost-effective to extract – the United States is projected to become a net LNG exporter by 2016, a net pipeline exporter by 2025 and an overall net natural gas exporter by 2021.[68] The United States is also poised to increase its crude oil production from 5.5 million barrels per day in 2010 to 6.7 million barrels per day in 2020.[69]

The apparent move away from nuclear power in Japan following the Fukushima reactor meltdowns, together with the shale gas revolution in the United States, is shifting the energy security environment. Currently, Japan harbors concerns about the reliability of future U.S. energy supplies, which may be influenced by "shifting political winds in American energy policy."[70] Thus, the United States could help reduce the volatility of Japanese fossil fuel imports – which appear set to remain high – by providing a stable source of natural gas. However, if the allies fail to consult on this issue, they could drift apart, thereby missing an opportunity to strengthen the alliance.

China's Rising Energy Demands

As the United States and Japan seek to enhance their energy security, the allies will need to grapple with China's growing energy needs. Longstanding concern in Tokyo over the stability of energy supplies, especially oil, has intensified as China has switched from being an exporter to being a large-scale importer. In many cases (with the possible exception of Japan and Russia), competition over securing access to energy sources has rendered East Asian countries unable to cooperate to secure their mutual interests.

China's economic growth requires – and is made possible by – access to stable energy supplies. In the midst of its upsurge in energy demand, China recently overtook Japan as the world's largest importer of coal, and its consumption is anticipated to grow each year for the next 15 years.[71] In that same period – assuming relatively steady growth rates – China is likely to become the world's largest importer of oil, surpassing the United States.[72] China's oil import dependence is projected to increase from 54 percent in 2010 to 84 percent in 2035, and its natural gas import dependence is projected to increase from 9 percent in

2009 to 42 percent in 2035.[73] After a brief pause in the wake of the Fukushima accident, China is also pushing forward with an aggressive expansion of civilian nuclear power production.[74]

China's demand for energy – particularly fossil fuels – is likely to lead to intense competition with other countries.

China's demand for energy – particularly fossil fuels – is likely to lead to intense competition with other countries. Consequences of this competition will not only manifest themselves in steadily higher energy prices and acute price spikes but also through tensions with neighbors over territorial rights to oil and gas fields, as well as the maritime routes necessary to transport those resources.

The East China Sea is the site of intense hydrocarbon prospecting by both Chinese and Japanese companies. It is also a potential flashpoint. In September 2005, a Japanese P-3C surveillance aircraft identified five People's Liberation Army Navy vessels – including a guided destroyer – sailing around the contested Chunxiao Gas Field in the East China Sea.[75] Given China's reactions to seismic surveys conducted by other countries – including the cutting of cables on Vietnamese ships – it is reasonable to conclude that China may react in similar ways to Japan.[76] Predictably, in early February 2012, China turned back a Japanese survey ship exploring disputed waters.

Military tensions over energy supplies are not limited to prospecting conflicts. The transport of oil, gas and other energy supplies requires securing sea lines of communication (SLOCs). More than half of China's imported oil originates in the Middle East, and over 85 percent of its total imported oil transits strategic maritime routes, including the Straits of Hormuz and Malacca.[77] Chinese ships defending resource-rich areas pose security risks and increase the likelihood of inadvertent contact and potential instances of limited conflict between China and Japan. This is particularly worrisome as China rapidly expands its maritime capability, with large increases in the number of vessels in its inventory and its experiences in conducting operations away from the Chinese coast.[78]

Although Japan and China share many of the same maritime transportation routes, it will be difficult for Japan to put aside past confrontation with China and cooperate over SLOCs. This will open the possibility for further tension between the two economic giants. Japan could reduce its vulnerability by seeking to tie itself to American fossil fuel exports and establish supply routes across the Pacific Ocean all the way to the Gulf of Mexico. One way for Japan to create a closer energy relationship with the United States would be to become part of a trade agreement with NAFTA. How Japan chooses to proceed will affect U.S.-Japan calculations for energy security and, therefore, the overall trajectory of the alliance.

Yet China should not be viewed simply as a competitor for energy. Despite a finite supply of fossil fuel and intense competition in global energy markets, securing energy resources is not a zero-sum game. It is in the interest of both Japan and the United States to work with China as it seeks to acquire adequate energy supplies, and the allies should help to alleviate the energy security concerns of developing countries, including China. Developing actionable policy recommendations may be difficult, but the rising concern over energy security makes it worthwhile. An earlier attempt at energy cooperation, during the tenures of President George W. Bush and Prime Minister Junichiro Koizumi, failed at least in part because it was overshadowed by more urgent business

on the agenda, but an explicit focus on energy may both reduce misunderstanding and advance practical, specific steps. The continued growth of China will postively affect on the economies of its trading partners, of which two of the largest are Japan and the United States. Furthermore, assuring China that its potential energy competitors do not have hostile intent would help smooth regional cooperation.

The Nuclear Power Inflection Point

Alliance power also hinges on how – and to what degree – the United States and Japan will use nuclear power in their energy strategies. Japan has one of the most highly advanced nuclear power industries in the world. Simultaneously, there are few countries that require large, stable energy sources like Japan. Yet unlike the case of China, whose nuclear power growth is continuing unabated, the future of Japan's nuclear power industry is in doubt following the Fukushima disaster.

Despite the Fukushima disaster, nuclear power provides a safe and reliable source of energy that could help Japan to achieve the energy security and economic growth it desires. Before March 11, 2011, nuclear energy was intended to play an integral role in Japan's energy plan. The 2010 Energy Basic Plan called for major expansion of the domestic nuclear energy industry to help double the energy self-sufficiency ratio by 2030 (from 18 percent to 40 percent).[79] However, the Fukushima incident has caused the Japanese public to question the merits of nuclear power. To test the safety of its reactors and attempt to reassure the Japanese public, Japan has currently ceased operations at all but one of the country's 54 nuclear reactors, and all 54 are scheduled to be offline for maintenance and safety upgrades by May 2012. In addition, Japan announced that it would abandon its plan to build 14 new nuclear plants by 2030, which would have increased nuclear power's share of energy production in Japan from 30 percent to 50 percent.[80] This change has prompted the Japanese government to revise its Energy Basic Plan, the details of which will be released in summer 2012.

The costs of reversing the nuclear power trend in Japan will be significant. Following the Fukushima accident, the Tokyo Electric Power Company estimated that its additional costs for fossil fuel purchases to replace power lost from Fukushima would be $10.64 billion.[81] More importantly, however, taking all of its nuclear plants offline will cause a 10 percent power shortage in Japan and a 20 percent increase in electricity costs.[82] These consequences translate to a 1.2 percent annual loss of GDP, equating to approximately $94 billion in annual losses.[83] Because 40 percent of Japan's electricity is used by the industrial sector, cost increases of this nature would be "extraordinarily harmful not only for industry but also for consumers who will see the costs passed down to them."[84]

The reduction of nuclear power generation in Japan introduces a high degree of uncertainty into projections of future demand for fossil fuel in Japan. Some of Japan's older reactors could be decommissioned, and planned nuclear plants could be delayed or canceled; this would reduce the country's nuclear power generation and increase demand for LNG.[85] However, further increases in energy efficiency could save electricity, and Japan could make strides in expanding the use of alternative sources of energy for power generation, which would decrease the demand for LNG.[86] Without firm guidance on domestic nuclear power, government and industry analysts are having particular difficulty assessing the potential vulnerability of the domestic energy system, although it appears to be insufficiently distributed.[87] In addition, there is the risk of increases in prices of fossil fuels, particularly oil and gas, as a result of the high demand of neighbors such as China and the potential for price spikes reminiscent of those during the 1970s.

Diverging strategies in the United States and Japan regarding the future of their respective nuclear power industries could create national economic and political tumult that, in turn, could become a fissure in the alliance. Nuclear energy is a critical form of power production for both countries, and by reducing emphasis on it, they will be introducing a volatility into their energy strategies that could have unintended geopolitical effects. The alliance partners cannot afford to delay decisions on the role of nuclear power in their respective futures. Similarly, to focus solely on the safety problems associated with nuclear power ignores the benefits of the technology. The United States and Japan must find a way to offset both the volatility and the negative environmental impact of fossil fuels. Given the length of time necessary to construct nuclear power stations and the negative consequences of relying on fossil fuels in the immediate term, a decision on the role of nuclear power within the alliance should be made soon.

Access to abundant and affordable energy sources will be critical not only for the continued geopolitical power of Japan and the United States but also for the recovery of both countries' economies. The era of cheap oil seems to be over. Even if the world enters an age of cheap natural gas, the volatility and environmental impacts of fossil fuels will continue to present significant economic and security challenges. Renewable energy sources hold great promise but are not yet cost effective. At the same time, nuclear power remains in the balance as the United States and Japan question its role, yet plans by other regional players (including China, Vietnam and others) to create robust nuclear energy sectors continue unabated.

It is possible, however, that Japan's robust nuclear power industry – one of the most advanced in the world – will survive a potential dearth of domestic demand. Japanese companies that build nuclear reactors are pursuing projects overseas and with demand increasing around the world, Japanese industry stands to benefit. In fact, the Diet approved bilateral nuclear cooperation with Russia, South Korea, China and Vietnam in December 2011, with the possibility of including India in the future. Given progress in the international market, it might not be realistic for Japan to stop all nuclear production, but it is unclear whether external demand can keep the Japanese companies profitable without a robust home market.

The use of nuclear power in Japan strengthens the nation domestically and internationally by insulating it against volatility (including supply shortages, price spikes and SLOC protection issues), as well as the harmful impacts of carbon emissions and the resulting damage to Japan's image as a global leader in reducing the impact of greenhouse gases. Some analysts believe that Japan is destined to be closer energy partners with China than with the United States, but the possibility of competition between the two neighbors could spell trouble for both allies. Although energy security represents only one aspect of Japan's power – and therefore must be weighed against the other power dynamics in the U.S.-Japan alliance – it is a critical aspect in the perception of power for both countries.

Recommendations

The United States and Japan should elevate the level of attention to energy security in the alliance. Although the two allies have prioritized their respective energy strategies, energy security has not received anywhere close to the same level of attention as military issues, despite the former's potential effect on the power of the alliance. As a result, the United States and Japan should reinstate an undersecretary-level energy security dialogue.

The United States and Japan should identify complementarities in their energy strategies. As

part of a newfound prioritization of energy security, government and industry officials in both the United States and Japan should work collaboratively to further connect their strategies in ways that will benefit both countries. For example, the United States government should not enact export restrictions on American natural gas. Although some major American manufacturers rely on cheap supplies of domestic natural gas, the federal government should permit companies to export their product to foreign customers on the open market, including Japan, thereby boosting revenues and increasing jobs in the United States and providing cheaper natural gas to Japan.

The United States, China and Japan should create a trilateral dialogue on energy security. Because there is no true separation between the energy security within the U.S.-Japan alliance and that of China, the power of the alliance will be limited if China is not incorporated into high-level energy discussions. The United States should also work with allies and partners to incorporate energy security into the TPP. Given the importance of energy security, not only between the United States and Japan but also regionally, the United States should consider a larger framework to institutionalize the importance of energy security in the Asia-Pacific region and also to demonstrate that the United States and Japan wish to pursue a cooperative approach to the issue.

The United States and Japan should closely collaborate on regulatory policies and reactor safety technology. Despite the Fukushima accident, nuclear power provides a safe and reliable source of energy that can help each country achieve the energy security and economic growth it desires. There is a wealth of knowledge in the United States on regulating the nuclear industry, including lessons learned from U.S. accidents. Close collaboration will help to reassure the Japanese public about the safety of nuclear power. Furthermore, given the desires in both countries to export nuclear technology, the United States and Japan should work to strengthen international regulations on proliferation-resistant technology for civilian nuclear power exports and to provide training for nuclear industry officials and operators from emerging countries.

V. CONCLUSION

Whether a powerful U.S.-Japan alliance will endure into the next decade and beyond chiefly depends on how well Washington and Tokyo deal with major military, economic and energy challenges. Although each dimension of power is complex, basic policy choices will require coming to grips with the challenge and opportunity posed by a rising China.

Militarily, the United States and Japan face consequential choices on how to deal with China's military modernization (including its growing anti-access and area-denial capabilities), the sustainability of U.S. forces deployed in Japan and the implementation of each country's current defense plan. Economically, the United States and Japan face stark choices over how to promote growth, engage an emerging economy as large as China and form a unifying regional trading regime. Regarding their respective energy security strategies – which heretofore have undergirded the alliance's power – the ability of the United States and Japan to deal with complex domestic and international factors will determine whether they will remain as strong as in past decades. Furthermore, how the United States and Japan work with China to ensure that it has adequate energy resources, and the role of civilian nuclear power as part of their global renewable energy resources and energy industries, will have significant effects.

Although the U.S.-Japan alliance has been the cornerstone of stability in the Asia-Pacific since the middle of the past century, it is by no means certain that this will continue to be the case. A range of alternative future scenarios for the U.S.-Japan alliance are possible. The aim of this report is to gauge strategic perceptions within the alliance in order to highlight the central issues likely to determine the future strength of the alliance. How Washington and Tokyo pursue military, economic and energy strategies in the near term will have continuing effects not only on the alliance's power but also on the security of the Asia-Pacific region.

ENDNOTES

1. See President Obama's remarks at the Asia-Pacific Economic Cooperation meeting: Barack Obama, "Remarks by President Obama and Prime Minister Noda of Japan" (Honolulu, November 11, 2011), http://www.whitehouse.gov/the-press-office/2011/11/12/remarks-president-obama-and-prime-minister-noda-japan.

2. For instance, see the views of Nobuo Tanaka, former Executive Director of the International Energy Agency, in Steve Clemons, "Japan Heading for Energy Death Spiral?," *The Atlantic*, March 30, 2012, http://www.theatlantic.com/international/archive/2012/03/japan-heading-for-energy-death-spiral/255266/.

3. These institutions included the Japan Institute of International Affairs, the U.S.-Japan Research Institute, Waseda University and the Sasakawa Peace Foundation. Individuals who participated in these various events in Washington and Tokyo are listed in the acknowledgements. In addition, various senior officials in both governments offered their views about pressing strategic and policy issues.

4. Travis Sharp, "Down Payment: Defense Guidance, 2013 Defense Budget and the Risks of Sequestration" (Washington: Center for a New American Security, February 2012).

5. Although it is worth noting Yoichi Funabashi's observation that the Self-Defense Force response to the Fukushima Dai-ichi nuclear reactor accident after March 11, 2011 may have marked the end of Japan's postwar period and the beginning of a more normal role for Japan's military. See Alvin Powell, "Japan's Mistakes," *Harvard Gazette*, March 27, 2012, http://news.harvard.edu/gazette/story/2012/03/japans-mistakes/.

6. For the Joint Operational Access Concept, see Chairman of the Joint Chiefs of Staff GEN Martin E. Dempsey, "Release of the Joint Operational Access Concept," January 17, 2012, http://www.dodlive.mil/index.php/2012/01/release-of-the-joint-operational-access-concept-joac/. On U.S. strategy, see Hillary Clinton, "America's Pacific Century," *Foreign Policy*, November 2011, http://www.foreignpolicy.com/articles/2011/10/11/americas_pacific_century.

7. The phrase was used by in 1983 by Prime Minister Yasuhiro Nakasone in the context of working with President Ronald Reagan to strengthen the alliance to deal with the Cold War. See, for instance, Martin Fackler, "Japan's Elder Statesman Is Silent No Longer," *The New York Times,* January 29, 2010, http://www.nytimes.com/2010/01/30/world/asia/30nakasone.html.

8. See 15th Marine Expeditionary Unit, "Exercise Iron Fist Brings Two Nations Together," February 17, 2012, http://www.marines.mil/unit/15thmeu/Pages/2012/ExerciseIronFistbringstwonationstogether.aspx#.T1qwPcxGwYk.

9. See Mure Dickie, "U.S. to Move Thousands of Marines off Okinawa," *Financial Times,* February 8, 2012, http://www.ft.com/cms/s/0/f1e5389a-5266-11e1-a155-00144feabdc0.html#axzz1mDqg4cyZ.

10. See Table 1, "World Economic Outlook Update" (International Monetary Fund, January 24, 2012), http://www.imf.org/external/pubs/ft/weo/2012/update/01/pdf/0112.pdf.

11. Ibid.

12. "Global Trends 2025: A Transformed World" (National Intelligence Council, November 2008), http://www.dni.gov/nic/PDF_2025/2025_Global_Trends_Final_Report.pdf.

13. Hillary Rodham Clinton, "Remarks on Principles for Prosperity in the Asia-Pacific" (Shangri-La, Hong Kong, July 25, 2011), http://www.state.gov/secretary/rm/2011/07/169012.htm.

14. One estimate of Japan's debt-to-GDP ratio for 2011 was 208.2 percent, based on a GDP (in official exchange rate terms) of $5.855 trillion. See Central Intelligence Agency, *The World Factbook*, https://www.cia.gov/library/publications/the-world-factbook/geos/ja.html.

15. "Europe's Debt Rose to 82 Percent of Output at End-Q3," Reuters, February 6, 2012, http://www.reuters.com/article/2012/02/06/us-eu-debt-idUSTRE81500820120206.

16. See TreasuryDirect, figures as of February 27, 2012, http://www.treasurydirect.gov/NP/BPDLogin?application=np. The U.S. Department of Commerce Bureau of Economic Analysis estimated the U.S. GDP as of fourth-quarter 2011 at $15.29 trillion in current dollars. See "Current-Dollar and 'Real' Gross Domestic Product," http://www.bea.gov/national/xls/gdplev.xls.

17. Mitsuru Taniuchi, "Japan in Uncharted Territory: Aging and Growth Policy," presentation at a workshop on "The Future of Economic and Trade Power: Challenges and Opportunities for the U.S.-Japan Alliance," held at Waseda University, Tokyo, December 15, 2011.

18. Ibid.

19. Sourabh Gupta, "Increasing Japan's Consumption Tax: Is This Really the Best Time?" *East Asia Forum*, February 28, 2012, http://www.eastasiaforum.org/2012/02/28/increasing-japan-s-consumption-tax-is-this-really-the-best-time/. Also see "Tax Hike Won't Achieve Fiscal Goals, Forecast Shows," *The Japan Times*, January 25, 2012, http://www.japantimes.co.jp/text/nb20120125a4.html.

20. Taniuchi, "Japan in Uncharted Territory."

21. Matthew O'Brien, "Is Japan Doomed?," *The Atlantic*, February 27, 2012, http://www.theatlantic.com/business/archive/2012/02/is-japan-doomed/253649/. Also see John H. Cochrane, "Why the 2025 Budget Matters Today," *The Wall Street Journal*, April 28, 2011, http://online.wsj.com/article/SB10001424052748704570704576274910548560654.html.

22. Taniuchi, "Japan in Uncharted Territory."

23. Ibid.

24. Ibid.

25. Comments made by David Asher during the workshop on "The Future of Economic and Trade Power."

26. Gary Hufbauer, "Getting our House in Order: Innovative Ways to Turn around the Japanese and American Economies," presentation at the workshop on "The Future of Economic and Trade Power."

27. "China 2030: Building a Modern, Harmonious, and Creative High-Income Society" (The World Bank and Development Research Center of the State Council, the People's Republic of China, February 2012), http://www.worldbank.org/content/dam/Worldbank/document/China-2030-executive_summay.pdf.

28. "China's 12th Five-Year Plan: How It Actually Works and What's in Store for the Next Five Years" (APCO Worldwide, December 10, 2010), http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf.

29. "7.5% GDP Growth Target Not Low: Wen," Xinhua News Service, March 14, 2012, http://www.chinadaily.com.cn/business/2012-03/14/content_14833834.htm.

30. Nick Edwards, "Politics Shelter China's Economy," *The New York Times*, February 27, 2012, http://www.nytimes.com/2012/02/28/business/global/politics-shelter-chinas-economy.html. For a cautious outlook about implementation prospects for some elements of the 12th five-year plan, see also "China's Great Rebalancing Act: Implications for Investors and Companies" (Eurasia Group, August 2011), http://eurasiagroup.net/item-files/China's%20Great%20Rebalancing%20Act/China%20Rebalancing.pdf.

31. Comments by Fukunari Kimura during the workshop on "The Future of Economic and Trade Power."

32. Wang Bo and Ding Qingfen, "China Calls for Deeper Reform at IFIs," *China Daily*, November 12, 2010, http://www.chinadaily.com.cn/china/2010-11/12/content_11544000.htm.

33. For instance, see Dani Rodrik, "Will China Rule the World?," Project Syndicate.org, January 12, 2010, www.project-syndicate.org/commentary/will-china-rule-the-world-.

34. "Washington Seeks to Extend Hegemony to Trade," *Global Times*, March 1, 2012, http://english.peopledaily.com.cn/90777/7745061.html.

35. William Wan, Keith B. Richburg and David Nakamura, "U.S. Challenges China's Curbs on Mineral Exports; China Vows to Push Back," *The Washington Post*, March 12, 2012, http://www.washingtonpost.com/world/national-security/us-to-challenge-chinas-curbs-on-mineral-exports/2012/03/12/gIQAV8BX8R_story.html.

36. "American Business in China: 2011 White Paper" (The American Chamber of Commerce in the People's Republic of China, April 26, 2011), http://web.resource.amchamchina.org/cmsfile/2011/04/28/8ff8c3d4d14f50713e1be8f538b43f80.pdf.

37. Stefan Halper, "Red Capitalism," *American Review*, December 2011, http://americanreviewmag.com/stories/Red-capitalism.

38. "Trans-Pacific Partnership Leaders Statement," November 12, 2011, http://www.ustr.gov/about-us/press-office/press-releases/2011/november/trans-pacific-partnership-leaders-statement.

39. See the U.S. Trade Representative website, http://www.ustr.gov/tpp, for a more detailed description of the Trans-Pacific Partnership and U.S. policy.

40. "U.S. Rule of TPP Halts Natural Expansion," *Global Times*, November 14, 2011, http://english.peopledaily.com.cn/90780/7643791.html.

41. Congressman Kevin Brady, "Brady Opening Statement: Hearing on the Trans-Pacific Partnership," December 14, 2011, http://waysandmeans.house.gov/News/DocumentSingle.aspx?DocumentID=272447.

42. Based on discussions during a U.S.-Japan Research Institute event in association with the Waseda University Organization for Japan-US Studies, Japan Society for the Promotion of Science Washington Office, February 22, 2012.

43. Christopher Findlay, "Japan: To TPP or not to TPP," *East Asia Forum*, November 14, 2010, http://www.eastasiaforum.org/2010/11/14/japan-to-tpp-or-not-to-tpp/.

44. Takashi Terada, "Japan and the Trans-Pacific Partnership" (Sasakawa Peace Foundation USA Policy Brief, February 2012).

45. Ibid.

46. Discussions during the workshop on "The Future of Economic and Trade Power."

47. Terada, "Japan and the Trans-Pacific Partnership."

48. Ibid.

49. Ibid.

50. Francisco J. Sanchez, "The Changing Landscape of U.S. Trade" (The Paul H. Nitze School of Advanced International Studies, Johns Hopkins University, Washington, March 13, 2012), http://media.sais-jhu.edu/archive/podcast/francisco-s%C3%A1nchez-changing-landscape-us-trade.

51. Wendy Cutler, "Japan and the Trans-Pacific Partnership" (The Brookings Institution-Sasakawa Peace Foundation USA, Washington, December 2, 2011), http://www.brookings.edu/~/media/Files/events/2011/1202_transpacific_partnership/1202_transcript_final.pdf.

52. Terada, "Japan and the Trans-Pacific Partnership."

53. Ibid.

54. Kelly Olsen, "Asia Investment Pact Could Lead to Free-Trade Talks," *The Wall Street Journal*, March 22, 2012, http://online.wsj.com/article/SB10001424052702303812904577297031769972986.html.

55. Evan Ramstad, "Farmers' Fight of China FTA Could Be Biggest Yet," Korea Realtime blog on wsj.com, February 27, 2012, http://blogs.wsj.com/korearealtime/2012/02/27/farmers-fight-of-china-fta-could-be-biggest-yet/.

56. Ibid.

57. Deborah Elms and C.L. Lim, "The Trans-Pacific Partnership Agreement (TPP) Negotiations: Overview and Prospects," RSIS Working Paper No. 232 (S.

Rajaratnam School of International Studies, February 21, 2012), 2. The paper will be a chapter in the forthcoming book, *The Trans-Pacific Partnership (TPP): The Quest for Quality in a 21st Century Trade Agreement* (Cambridge, England: Cambridge University Press, Summer 2012).

58. Ibid., 3.

59. Ibid., 13.

60. Ibid., 22.

61. See "ASEAN Economic Community," http://www.aseansec.org/18757.htm.

62. "Asia-Pacific Economic Cooperation (APEC) – Australia in APEC," Australian Government Department of Foreign Affairs and Trade, http://www.dfat.gov.au/apec/index.html.

63. U.S. Energy Information Administration, *International Energy Outlook 2011*, "Data Tables," September 19, 2011, http://www.eia.gov/oiaf/aeo/tablebrowser/#release=IEO2011&subject=0-IEO2011&table=2-IEO2011&region=0-0&cases=Reference-0504a_1630; and International Energy Agency, *World Energy Outlook 2011*.

64. David Asher, "The Geo-Strategic Implications of the New Middle East," presentation at the Center for a New American Security, Washington, October 6, 2011.

65. International Energy Agency, *Key World Energy Statistics 2011*, http://www.iea.org/textbase/nppdf/free/2011/key_world_energy_stats.pdf.

66. "The Strategic Energy Plan of Japan," Ministry of Economy, Trade and Industry, Japan, June 2010, 2; and Noriyuki Mita, "Comparative Energy Strategy," presentation at a workshop on "The Future of Energy Security: Challenges and Opportunities for the U.S.-Japan Alliance," held at the Japan Institute of International Affairs, Tokyo, December 14, 2011.

67. U.S. Energy Information Administration, *Annual Energy Outlook 2012 Early Release Overview*, January 23, 2012, 6, http://www.eia.gov/forecasts/aeo/er/pdf/0383er(2012).pdf.

68. Ibid., 2.

69. Ibid., 1.

70. "Japan's Energy Security: Outlook and Implications" (National Bureau of Asian Research, January 25, 2012), 3.

71. Shoichi Itoh, "Market and Geopolitical Challenges for Energy Security in Northeast Asia," presentation at the workshop on "The Future of Energy Security."

72. Ibid.

73. Ibid.

74. Keith Bradsher, "China Marches On With Nuclear Energy, in Spite of Fukushima," *The New York Times*, October 10, 2011.

75. Mark J. Valencia, "The East China Sea Dispute: Ways Forward," PacNet Number 47, (Pacific Forum CSIS, September 15, 2006).

76. Brian Padden, "South China Sea Disputes Top Regional Security Concerns," Voice of America, December 20, 2011, http://www.voanews.com/english/news/asia/South-China-Sea-Disputes-Top-Regional-Security-Concerns-135950433.html.

77. Kent E. Calder, "Sino-Japanese Energy Relations: Prospects for Deepening Strategic Competition," presentation to the Conference On Japan's Contemporary Challenges, March 9, 2007, http://eastasianstudies.research.yale.edu/japanworld/calder.pdf; and Zhang Jian, "China's Energy Security: Prospects, Challenges and Opportunities" (The Brookings Institution, July 2011), http://www.brookings.edu/~/media/Files/rc/papers/2011/07_china_energy_zhang/07_china_energy_zhang_paper.pdf.

78. For example, although China's participation in anti-piracy efforts has been largely applauded, it does provide critical operational experience that it can translate to other areas.

79. Mita, "Comparative Energy Strategy."

80. "The Strategic Energy Plan of Japan," 10.

81. Yoko Kubota, "Update 3-Tepco to Raise Customer Rates as Fuel Costs Rise," Reuters, December 21, 2011, http://www.reuters.com/article/2011/12/22/tepco-idUSL3E7NM07A20111222.

82. Jack Spencer, "Japan's Nuclear Withdrawal: Bad for Japan, Bad for the U.S., Bad for the World," Backgrounder No. 2622 (The Heritage Foundation, November 7, 2011).

83. Spencer, "Japan's Nuclear Withdrawal;" and "The 37th Middle-Term Economic Forecast (2011-2020)" (Japan Center for Economic Research, June 2011), http://www.jcer.or.jp/eng/pdf/m37r_summary.pdf.

84. Spencer, "Japan's Nuclear Withdrawal;" and Chikako Mogi, "Analysis: Energy Policy Chaos Threatens Japan's Economy," Reuters, August 4, 2011, http://uk.reuters.com/article/2011/08/04/us-japan-energy-idUKTRE7731GS20110804.

85. Junichi Iseda, "The Future of Energy Security: Challenges and Opportunities for the U.S.-Japan Alliance," presentation at the workshop on "The Future of Energy Security."

86. Ibid.

87. Mita, "Comparative Energy Strategy."

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