



MICHAEL D. SWAINE
with Wenyan Deng and Aube Rey Lescure

CREATING A STABLE ASIA

*An Agenda for a
U.S.-China Balance of Power*



CARNEGIE
ENDOWMENT FOR
INTERNATIONAL PEACE

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—MICHAEL D. SWAINE

SUMMARY

THE WESTERN PACIFIC is experiencing a fundamental and potentially destabilizing military and economic power transition driven primarily by China's economic and military rise and a corresponding relative decline in American power. Efforts by the United States or China to secure future predominance will prove futile and dangerous, given a host of security, economic, and diplomatic factors. Instead, creating a stable de facto balance of power is necessary and feasible for both countries. This shift could take the form of a more durable balance that would necessitate major regional changes that would be difficult to achieve, or a more feasible but less stable balance involving more modest adjustments. The incremental, conditional process this would entail involves developing domestic consensus, securing allied and friendly support, deepening U.S.-China dialogue, and achieving interlinked changes in several existing regional security policies.

THE EMERGING WESTERN PACIFIC ORDER

- **This trend of power transition and heightened instability is highly likely to deepen.** China will almost certainly manage to significantly increase its economic and military capabilities vis-à-vis the United States and its allies. Moreover,

Washington and Beijing handle volatile regional issues very differently, and their respective offense-oriented escalatory military doctrines are likely to persist under existing conditions, increasing the likelihood of severe crises. Key U.S. allies will probably remain unwilling and unable to compensate for America's relative decline.

- **Achieving a stable balance of power requires that the countries concerned develop the commitment to overcome significant obstacles.** The magnitude and scope of relative military and economic strength between the major powers of the region are decisive in determining the pace, scale, and intensity of security competitions. Delaying or futilely pursuing either Chinese or American predominance will put the region at greater risk. The most stable and preferable outcome would involve major changes to volatile regional hotspots, whereas a more modest vision would be more feasible albeit less stable.
- **Both versions of such a balance would entail some common elements.** These include: mutual denial force postures and military doctrines including confidence-building measures, voluntary arms limitations, and other steps; limited freedom-of-navigation operations to verify the regional balance and assert international law; and a strengthened but limited U.S.-Japan security relationship. Balance of power arrangements can and do emerge naturally but must be deliberately calibrated and adjusted via a process of understandings to become stable. To reach such understanding, it will be necessary to overcome the inertia of large, complex governments and both sides' cultural hubris and bureaucratic and political biases.
- **In other respects, a more durable balance would require more sweeping regional changes than its less preferable but more achievable alternative.** A highly stable balance would necessitate substantial progress on several security hotspots, including the creation of a unified, largely nonaligned Korean Peninsula, a demilitarized Taiwan Strait, and militarily limited, jointly developed East and South China Seas. It would also encompass a more open economic environment characterized by an inclusive, region-wide trade and investment agreement. A more attainable though less stable balance instead would involve joint efforts to sustain a regional free trade and investment system short of a comprehensive regional trade agreement, as well as shared understandings regarding potential crisis contingencies on the Korean Peninsula and Taiwan.

POLICY RECOMMENDATIONS

- **Washington and Beijing must conduct a serious, comprehensive, probability-based internal assessment of long-term regional economic, military, and political trends.** On the U.S. side, the deliberate pursuit of a balance would start by clearly understanding continued American strengths in Asia, as well as the difficulties and dangers involved in achieving a *stable* balance. It does not require Washington to make deals with Beijing from a position of weakness—in fact, it necessitates effectively using America’s substantial military and economic power.
- **Initial discussions with Beijing should aim to ultimately create a larger set of understandings about long-term regional security and its requirements.** U.S. officials should convey willingness to consider broader mutual policy adjustments involving confidence-building measures, crisis management mechanisms, and surveillance activities near China if sufficient progress is made.
- **Washington must consult with regional allies and friends at every step in this process.** Areas of focus should include gaining acceptance of a strengthened but limited U.S.-Japan alliance, obtaining South Korean approval of the transition to a stable balance, and reaching agreement on the most optimal long-term status for the Korean Peninsula.
- **Washington should have detailed discussions with allies and China about mutual limits on the types and numbers of their offensive weapons systems.** China needs to agree to similar types of capabilities and limits, as well as specific demilitarization assurances provided as part of future agreements reached with regard to Taiwan and maritime territorial disputes. The difficulties of transitioning to a mutual denial force posture (including verification, definitions, bureaucratic problems, and ally coordination) make it vital that early consultations are successful.
- **The United States, China, and other regional economies must strengthen their domestic economic growth and deepen their commitments to free trade.** Successful long-term integration will depend on getting Beijing and Washington to join a common trade architecture, creating an eventual region-wide free-trade agreement, and conducting more active and focused U.S. economic diplomacy.

INTRODUCTION

IN 2015 I WROTE AN ESSAY ARGUING that several structural and attitudinal factors were combining to create the basis for an increasingly dangerous pattern of Sino-American strategic competition in the Western Pacific.¹ These included the ongoing emergence of a more dispersed distribution of economic and military power, a deepening tension between Chinese and American views toward the past predominant role of the United States in preserving peace and prosperity in the region, and Beijing's growing dissatisfaction with the long-standing regional status quo with regard to several potentially volatile issues. I argued that this strategic competition cannot be resolved on the basis of the maintenance or creation of a future Pax Americana or Pax Sinica in the Asia-Pacific, because neither power will have the capacity or diplomatic adroitness to sustain a unipolar system in a manner that would benefit themselves and the region.

The essay concluded that the most viable long-term solution to the shifting power distribution would lie in the creation of a *stable* form of what was in fact emerging, that is, a Sino-American balance of power in the Western Pacific. Such a stable balance, I argued, would require the establishment of a de facto minimally militarized Sino-U.S. buffer zone of sorts extending along China's maritime periphery across at least the first island chain and including the Korean Peninsula, Taiwan, and disputed areas in the East

China and South China Seas. This buffer zone could only emerge gradually, on the basis of a series of both unilateral and reciprocal initiatives and understandings.

As I pointed out in that essay, a decision to move away from the current intensifying Sino-American strategic competition in Asia and toward the construction of a stable balance of power in the Western Pacific would face many daunting challenges. These range from entrenched beliefs about the indispensable benefits and continued viability of continued American predominance to allied and domestic U.S. political opposition to any accommodation of China, Chinese nationalist demands (arguably growing) for a more defiantly assertive stance toward Washington, and general fears on all sides associated with a transition away from the familiar into the less known.

Such concerns and doubts were echoed in many of the discussions I have had with U.S., Chinese, and other foreign officials, policy analysts, and scholars since the appearance of the 2015 essay. Interestingly enough, however, such views did not usually extend to a rejection of the underlying assessment of the current strategic problem or the need to at least consider alternatives to either American or Chinese predominance.² The most trenchant criticisms of my argument focused instead on the difficulties involved in convincing policymakers in Washington, Beijing, and other Asian capitals of the scope of the power transition under way in the region and the challenges in actually implementing and sustaining a stable balance of power in the Western Pacific.

In response to such criticisms, and partly encouraged by the general absence of any wholesale rejection of my assessment of the underlying problem, I decided to present this more detailed rationale and road map for the implementation of a long-term, stable Sino-U.S. balance of power in the Western Pacific. Although broadly similar to the argument presented in my 2015 essay, the analysis presented herein distinguishes between an ideal or maximally stable version of a future balance, on one hand, and an arguably more achievable (but quite likely less stable), minimalist type of balance, on the other, developed primarily as a response to the deep feasibility concerns expressed by some colleagues and one of the two formal reviewers.

The extent to which either version of a future balance is viewed as necessary and attainable depends greatly on the level of difficulty involved, or the success achieved, in meeting four sets of requirements. Each of these is addressed in detail in the subsequent four chapters.

First, any movement toward a stable balance-of-power environment in the Western Pacific must provide a convincing argument for the unsustainability of both the current security environment, centered on American predominance, or an alternative future system, based on Chinese predominance, in serving as a credible basis for long-term peace and prosperity in Asia. No national leaders or elites will contemplate moving

toward a balance-of-power security environment, either unilaterally or as part of a multilateral effort, as long as they believe there is a reasonably good chance of sustaining the economic, military, technological, and political elements supporting American predominance or creating a new status quo based on Chinese predominance. The former appeals greatly to those wedded to the long-standing status quo in Asia, and the latter appeals to those who believe in the inevitability or justness of a Sinocentric Asia.

Satisfying this requirement involves a close examination of long-term economic, technological, and political trends and features among the major powers in Asia—centered on the United States and China but involving other major regional powers as well—and the implications of those trends and features for relative levels of defense spending, military-related technological innovation, key military capabilities relevant to the Western Pacific, interstate and regional economic influence, and political stability in key states. Assessing such long-term trends inevitably requires making judgments about probabilities, which in turn requires weighting key quantitative and qualitative variables that drive trends, including the importance of past performance levels, the capacity and willingness of political leaders to make hard socioeconomic policy decisions, and the malleability of certain types of seemingly deep-rooted images and assumptions about stability, power, and other key issues. While this process involves measurable data such as numbers of weapons platforms and GDP (gross domestic product) growth rates, it is certainly not predictive in the manner of the physical sciences. That said, if done well, it can offer meaningful distinctions between high- and low-probability events and indicate some of the costs and benefits of alternative security arrangements. Chapter 1 presents the argument for the inability of either Washington or Beijing to create or sustain a stable pattern of military-economic predominance in the Western Pacific.

Second, an argument in favor of transitioning away from a predominance or unipolar system in the Western Pacific must convincingly show all participants that the creation of a stable Sino-American balance of power would present more benefits than costs and certainly not sacrifice any vital national interests for the countries concerned. Indeed, the approach must show that the major powers of the region would stand a high chance of preserving or advancing their interests on the basis of the new configuration, especially when compared with the alternatives. This requirement is essential as a means of deflecting the inevitable counterarguments that a transition to a stable balance of power would involve an acceptance of American weakness and decline and hence the granting of unacceptable concessions to Beijing or, from Beijing's viewpoint, unnecessary and stultifying limits on growing Chinese power and influence.

Meeting this requirement, of course, involves accepting the implications of the preceding trends and features analysis regarding the impossibility of a future unipolar system,

namely, that the economic, political, and diplomatic costs (and risks) of doggedly attempting to sustain or create such a low probability event (that is, a sustained level of predominance) would be much greater than its benefits. In addition, however, one must also convincingly show that a balance of power environment could provide a reasonably high level of stability (in terms of a peaceful and predictable future) and prosperity (in terms of continued robust levels of GDP growth) without compromising the physical security of the major powers involved. In other words, it would constitute a more pragmatic, beneficial, and sustainable alternative to predominance. Chapter 2 presents this cost-benefit argument for transitioning to a stable balance of power.

Third, the creation of a stable regional balance of power must involve the development of a practical and hence reasonably feasible set of either explicit or tacit understandings between Washington, Beijing, and other major Asian powers concerning the most stability-inducing regional military postures, security arrangements regarding the most likely sources of security competition and conflict, and trade and investment arrangements. As explained in “Beyond American Predominance in the Western Pacific,” such postures and understandings would constitute the core of any stable balance of power, since their attainment would significantly reduce the temptation for either Washington or Beijing to test the other’s resolve and relative military, political, and economic leverage on contentious issues, a common problem facing power transitions and balance of power environments. Taken as a whole, such understandings would form the basis of a *de facto* buffer zone in the Western Pacific.

There is no clear and precise formula or set of policies for achieving a sufficiently stable balance of power. In general, a high level of transparency and predictability and a clear and reliable set of both deterrence and reassurance capabilities and policies are required to reduce the need or desire to resort to force or dangerous gambits in defending interests. In the Western Pacific, achieving such goals would, at a minimum, almost certainly necessitate, on one hand, a more predictable, less escalatory, and more symmetrical set of defensive or denial-oriented regional-force postures and related military doctrines in Beijing, Washington, and among other major Asian powers, and, on the other hand, a more extensive and intensive array of confidence-building measures (CBMs) and crisis management mechanisms (CMMs) designed to increase trust and predictability and reduce the likelihood of security-related miscalculations in the region. The latter should especially address, directly or indirectly, those regional hotspots that could generate severe confrontations or military conflict between Washington and Beijing, including the turbulent Korean Peninsula and China-Taiwan relationship, maritime sovereignty disputes between China and several important Asian powers (including U.S. allies), and

a range of sensitive U.S. and Chinese regional military operations and exercises. This set of features comprises the minimalist version of a stable balance.

A maximalist version of a stable balance would include a set of more ambitious and far-reaching policy changes on both sides designed to greatly reduce (to a larger degree than just CBMs and CMMs), if not eliminate, the volatility of these hotspots. Specifically, this would involve far more significant alterations in the future military and political status of important territories such as Taiwan and Korea as well as various types of military deployments and activities in potentially volatile areas such as the East China and South China Seas. These changes would require revisions in long-standing policies among all parties concerned as well as reductions in the level of policy influence resulting from both domestic ultranationalist viewpoints in China and ideologically based anticommunism in the United States. It would also likely involve a much greater level of economic integration of the region, on the basis of a common, inclusive structure of open and free trade and investment, in the form of an Asia-Pacific free trade area.

Obviously, such changes, whether maximalist or minimalist, would involve a prior determination of the specific political, military, diplomatic, and economic risks and benefits each new set of postures and policies would pose for all the parties, including not only the United States and China but also the other territories and states involved. The overall benefits would need to clearly exceed the risks and costs, but it is almost certainly the case that some level of risk for virtually every party would remain. Reducing those risks to an acceptable level would quite likely require a clear recognition that the dangers and uncertainties involved in not undertaking the required policy changes would be even greater in a changing power environment. It would also most likely require some form of agreement, at least a tacit one, on the suitability and feasibility of the process of mutual accommodation through which such changes could occur. Chapter 3 discusses this requirement, presenting seven features of a future stable balance of power environment in the Western Pacific.

Fourth, and closely related to the previous requirement, since the process of building mutual understandings on key issues based on significant changes in military posture and policy can only occur gradually, over many years, all such changes will need to take place in a sequence of usually (but not exclusively) interrelated moves, involving policy statements, agreements, redeployments, and the like. Such moves would ideally involve at first only low risks or costs and relatively modest benefits to all parties but then become more ambitious and beneficial over time, with each move creating incentives for and reducing barriers to subsequent moves, partly through the development of greater confidence in the overall process and greater trust among the parties. Of course, even as incentives for further potentially beneficial actions grow over time, both stakes and risks

will also most likely increase in some cases, thus demanding sustained high levels of confidence that each party could still be able to protect its interests if the process were to fail or stall significantly.

Satisfying this requirement would inevitably involve a prior assessment of the relative ease or difficulty of each set of actions involved in the process and the likely relationship among specific actions as possible *quid pro quos* between the United States, China, and other relevant parties. In particular, all the participants involved must possess the capacity to initiate and sustain specific accommodating or reassuring actions despite possible strong domestic or allied opposition while preserving the ability to opt out of or reverse such actions if the other side fails to reciprocate, follow through, or observe or uphold specific agreements or understandings. As this implies, some actions could occur on the basis of prior understandings, as reciprocal moves. But others might occur unilaterally, as goodwill gestures or tests of position and support designed to elicit an unspecified positive response at some later date or as simple deterrence or reassurance actions. In every case, the general principle would be to move from easy actions to hard actions, with as complete an understanding as possible in advance of the costs and benefits for all parties of each move and its associated countermoves, if any. Chapter 4 presents the key elements of this process for building a stable balance of power environment.

These four requirements for the building of a balance of power in the Western Pacific are listed in order of implementation. That is, any movement toward a stable balance of power can only begin once the United States, China, U.S. allies, and other relevant parties such as Taiwan recognize the power transition under way and then accept the relative benefits of creating a stable balance over attempts to sustain or create predominance. And only on this basis can Washington, Beijing, and other powers then attempt even the minimalist version of a stable balance as outlined above.

The process of building a stable balance of power might sound as though a grand bargain between Washington and Beijing is required both to initiate it and to bring it to a successful conclusion. However, the approach presented in this study differs in some significant ways from such an undertaking. A grand bargain is usually conceived of as a single event, consisting of a comprehensive agreement among the parties concerned covering all major aspects of the issue. As stated in my original essay, the deep distrust between Washington and Beijing and the challenging features of a balance of power environment demand that the process be undertaken gradually, in incremental steps, with many actions undertaken either unilaterally or only in response to clear, prior actions taken by the other side or in the expectation of reciprocal actions.

That said, the process most likely requires some level of prior mutual understanding or at least acknowledgement between the United States and China, and, equally important, between the United States and its key allies, regarding the need to transition toward at least some of the key components of a stable balance of power in the Western Pacific. It also would quite likely require that some tacit understandings be reached at various intervals during the process with regard to specific elements, such as limits on certain types of weapons systems, reciprocal CBMs, and, more ambitiously, the creation of a largely nonaligned Korean Peninsula and limits on the future militarization of the Taiwan issue and various maritime disputes.

Some critics might argue that a stable balance does not require and should not involve any deliberate understandings or undertakings between Washington and Beijing. Instead, such a balance can and should emerge “naturally,” as a result of common economic constraints on military capabilities and common political and diplomatic incentives to stabilize a changing power relationship over time. All that is required, the argument goes, is an array of CBMs and CMMs that lower the likelihood of actual conflict as the two countries adjust separately to an emerging *de facto* balance of power relationship.

As suggested in “Beyond American Predominance,” and discussed in greater detail in chapter 2, while such a development is not inconceivable, it is difficult to see how both Washington and Beijing could successfully end up—without design—in a stable balance that avoided attempts by one or both sides to achieve a relative advantage in pursuing competitive or potentially incompatible interests with regard to Korea, Taiwan, and so on. Why would Washington ultimately adjust naturally and peacefully to the gradual erosion of its past position of predominance and accept (indeed, work to sustain) a stable regional balance of power unless it clearly understood the regional transition under way and accepted it as the best possible (or necessary) outcome. Indeed, given the prevailing, strong U.S. desire to sustain its supposedly benign position of dominance in the Western Pacific, it is most likely that Washington’s acceptance of such an outcome under current conditions would come about only as a result of either a forcing event, such as a major crisis (or crises), that confirmed the loss of U.S. predominance and the need to move peacefully toward a stable balance with Beijing (a very unlikely prospect, since such a crisis would more likely result in an intensified pattern of Sino-U.S. strategic rivalry) or a deliberate decision by both the United States and China to transition to a genuine balance.

In the absence of the latter decision, Washington would most likely either deny the power transition under way or attempt, in a futile manner, to reverse its declining relative power position in the Western Pacific. Either course would arguably result in strong reactions, indeed, likely overreactions, to real or imagined Chinese tests of American resolve regarding such issues as Korea; Taiwan; maritime disputes; U.S. intelligence, surveillance,

and reconnaissance (ISR) operations; and so on. Similarly, in the absence of a deliberate decision to move toward a stable balance, Beijing would most likely either overestimate its increased relative power and take significant and dangerous risks to defend or advance its interests regarding such issues or itself overreact to U.S. deterrence behavior.

In other words, the most likely consequence of an attempt to muddle through the transition in power relations in the Western Pacific toward a natural balance would be a greatly increased chance of crises, almost certainly resulting in a sharper security competition and an increased danger of a Sino-American cold war. Given these considerations, a more optimal approach would indeed involve an explicit recognition of the need to transition to a stable balance of power and a deliberate attempt to undertake such a transition.

The following chapters examine these four requirements for the creation of a stable balance of power in the Western Pacific, involving detailed presentations of the changing regional power environment from American predominance to an uncertain and precarious balance; the relative benefits of a bipolar regional balance of power over efforts to sustain or create U.S. or Chinese predominance; the main maximal and minimal features of a stable U.S.-China power balance; and the process involved in creating such a balance in the region. In each area, both quantitative and qualitative data are presented to support the argument, along with a consideration of the major counterarguments involved. The conclusion summarizes the overall argument and discusses in greater detail the practical challenges confronting the creation of a stable balance of power in the Western Pacific.

1

THE SHIFTING POWER ENVIRONMENT IN THE WESTERN PACIFIC

ECONOMICS, TECHNOLOGY, AND POLITICS will obviously have a strong impact on relative regional economic presence, defense spending, and military capabilities in the Western Pacific over the next twenty-five years. Of particular note are the future growth potentials and long-term trends in the gross domestic product of China and the United States; the shifting economic balance in the region, as indicated by trade and investment data and current and future multilateral economic structures of various types; current and likely future trends in Chinese and American defense spending and technological innovation, based on U.S. and Chinese GDP; current and likely future trends in key weapons systems and other military capabilities of the United States and China; and the potential for allied nations to do more to compensate for the relative decline in U.S. military capabilities. The general trend in these areas shows a steady and most likely continuing erosion of relative U.S. power and presence compared with that of the People's Republic of China and the emergence of the potential structural basis for a future de facto Sino-U.S. balance of power in the Western Pacific as the regional capabilities of the two powers move toward rough parity.

GROSS DOMESTIC PRODUCT

Forecasting economic growth and its effect on state capacity, and especially military capacity, is an inherently difficult exercise, particularly over the long term (that is, more than five to ten years) and especially in the case of rapidly developing economies such as China's. The difficulty stems from the large number of dynamic economic, technological, political, and social variables influencing growth and the complex relationship that exists between aggregate economic growth levels and the resources available to governments for developing both military and nonmilitary power.

Despite the difficulties involved in making such long-term projections, it is possible to do so. Considering the average estimates of low, medium, and high long-term Chinese GDP growth and government revenues and the estimates of future U.S. GDP growth and revenues provided by serious, mainstream economists, it is clear that the past largely dominant economic and military position enjoyed by the United States in the Asia-Pacific region will almost certainly steadily erode and most likely eventually disappear in many areas in the coming twenty-five years, that is, by 2040.

Estimates of long-term Chinese GDP growth vary considerably, depending on the methodology and growth rate employed. At the low end, assuming a very conservative and nonmainstream growth rate of 2.75 percent *average* growth, Chinese GDP, measured in current prices, would be around \$21 trillion by 2040. If a more optimistic growth rate of 4 percent is used, Chinese GDP would be a little over \$28 trillion by that date. Using another set of midrange GDP projections based on an average of International Monetary Fund (IMF) and World Bank data on historical GDP, and employing a set of cautiously optimistic staggered GDP growth rates,¹ results in a figure of a little more than \$29 trillion, measured in current prices, by 2040. At the high end, another set of GDP projections made by the Organization for Economic Cooperation and Development (OECD) and measured at 2010 purchasing power parity (PPP) in real terms puts Chinese GDP in 2040 at \$36.48 trillion.² According to this projected estimate, Chinese GDP will increase at a compound annual growth rate (CAGR) of 4 percent between 2015 and 2040.

On the U.S. side, virtually every projection of long-term U.S. GDP growth by serious economic organizations or experts is at or near the level of 2.5 percent per annum.³ Accordingly, U.S. GDP, measured in current dollars and assuming a growth rate of 2.5 percent year to year based on IMF and World Bank data, would amount to \$33 trillion by 2040. This is slightly higher than the cautiously optimistic, midrange Chinese estimate quoted above (\$29 trillion). However, according to the OECD's long-term GDP projections, measured at 2010 PPP, U.S. GDP would be only \$27.46 trillion by 2040, compared with China's \$36.48 trillion by the same measure. According to this

projected estimate, U.S. GDP will increase at a compound average annual growth rate of 2.3 percent between 2015 and 2040, only slightly lower than the 2.5 percent assumed for current dollar measures.

Despite the considerable variations in estimates, there are several compelling reasons to believe that Chinese economic power will be about equal or superior to overall U.S. economic power by 2040. First, when measuring national power, PPP measures probably provide the most accurate picture. Purchasing power parity reflects the purchasing power of two countries' currencies. This means that, even though the United States' forecasted GDP level may exceed that of China in current dollar measures, U.S. firms, research and development institutions, and other productive forces in the U.S. economy cannot purchase with one dollar the same amount of resources necessary for innovation and production as Chinese firms and institutions can. Therefore, it is much cheaper to conduct research and production in China than in the United States. In China, one gets more bang for the buck than in the United States.

Second, the very conservative and nonmainstream estimate of Chinese GDP in 2040, at \$21 trillion, assumes a growth rate of 2.75 percent. While it is certainly a possibility that China could fall to a level of economic growth below 3 percent, on average per annum, over the next twenty-five years, this is a very unlikely scenario because of the enormous potential for sustained annual growth above roughly 4-5 percent that could be generated once remaining distortions in the Chinese economy have been corrected, and given the still untapped potential for investment and consumer demand across most of China.

For example, the Chinese debt burden is two to three times Chinese GDP, which is similar to the debt level in the United States, but this is not truly a serious debt problem because it is a result of the high percentage of savings in banks that gets lent out, a situation similar to that in Singapore. Another kind of artificial distortion is China's residency-controlling *hukou* system, which is preventing urbanization from taking place at the scale it should, a phenomenon that would generate higher levels of growth. Currently, only 56 percent of the Chinese population lives in urban areas.

In the past few decades, China has been constantly removing these kinds of artificial distortions through structural reforms, and the resulting gains in productivity have been adding to China's growth rate. Should this trend continue, removing structural distortions should make it possible to sustain the 5 to 6 percent growth rate for at least the short to medium term. In other words, because of the many artificial distortions that can be corrected, and given the basic untapped potential still remaining in the economy, it is unlikely that China's economic growth will slow to 3 percent by the end of the decade.

Removing these distortions is certainly no easy task. As Barry Naughton notes, each item on the list of China's supply-side structural reforms presents daunting obstacles. Eliminating excess capacity, for example, requires closing down firms that produce more than they can sell and giving assistance to laid-off workers through job switching and welfare programs.⁴ However, China does not have a serious unemployment problem. The economy will almost certainly continue to see increases in productive capacities at the same time that the Chinese labor force shrinks. Although China faces a genuine predicament in transitioning and transferring the labor force to new sectors, it has arguably been dealing with this challenge for several decades; the ongoing adjustment process is not new. Moreover, unemployment is generally concentrated in selective industries such as steel, so the government can take focused and targeted action to address such problems and in fact has begun to do so.

While state-owned enterprises are a significant challenge (since their return on assets is only about one-half that of private companies),⁵ only about 15 percent of state-owned enterprises account for most of China's current debt. This is a relatively narrow, isolated factor that can be managed through concerted government action, if the will exists to take such action. While local governments will run a greater fiscal deficit, local and central government debt will not be a drag on the GDP growth rate. Economists acknowledge that this debt is essentially guaranteed by the central government, but some argue that Beijing could be forced to channel financial resources toward managing bad debt and tightening monetary policy, which would slow down overall growth. However, given that China has been able to grow at the current rate even with its debt problems, the correction of these problems would only continue to increase Chinese growth rates. Furthermore, because the state has control over both the banks and the state-owned enterprises that borrow from them, the government is in a stronger position to dictate outcomes. As the *Economist* has put it, the state "owns both the banks and their biggest borrowers."⁶

Thus the readily identifiable structural distortions in the Chinese economy and the relatively narrow, identifiable nature of many problems, when combined with the past successful track record of the Chinese government in removing such obstacles, suggest that the potential for structural reforms and sustained growth is reasonably high. Although this does not mean that the Chinese government will necessarily undertake the required reforms within the next five to ten years, these problems will more likely than not be addressed effectively over time, especially if growth rates begin to fall to low levels (that is, below 5 percent). Moreover, while the past is not always predictive of the future, it is important to remember that China has historically been able to grow faster than most analysts have projected. For instance, pessimistic projections have been made since the early years of the reform program and at frequent intervals over the past thirty years,

but in spite of episodes of high inflation and lowered production during the past decade, China's technocratic leaders have managed to sustain an overall high level of growth and avert major social unrest.⁷

Third, some experts argue that future U.S. growth will be sustained by the highly innovative and creative nature of the U.S. economy, allowing the United States to maintain economic superiority over China. However, others argue that innovation does not necessarily drive growth, and this could be a problem in the United States, where select tech behemoths make huge profits that do not drive overall economic growth, and innovation gains do not necessarily translate into productivity gains. Thus, though most economists deem 2.5 percent growth over the long term reasonable for the United States, any divergence from this rate would almost certainly be a move in a downward direction and cannot be discounted. (Indeed, some cautious economists have told the authors that the United States could very likely average around 2 percent growth or even a little less over the long term). In that instance, of course, China's relative economic strength would be even more pronounced, or alternatively, a lower-than-expected Chinese growth rate (mirroring that of the United States) would likely not alter the gradual movement toward a future regional balance. Furthermore, some analysts have predicted that U.S. public debt could run over 100 percent of U.S. GDP by 2030. Unchecked deficits, though unlikely to lead to a sudden currency crisis along the lines of the ones in Latin America and East Asia, could deflate confidence among foreign investors. The resulting declines in capital inflows and the dollar's value could force the United States to raise interest rates or institute painful austerity measures that would increase unemployment and further depress incomes.⁸

REGIONAL ECONOMIC INFLUENCE

The relative economic capabilities and presence of the United States and China in the Western Pacific constitute a critical component of their respective overall ability to influence events and gain benefits across the region. Interstate trade and investment trends within and across the region, as well as various multilateral economic groupings, form the main mechanisms through which such influence is exerted.

TRADE

Overall regional trends in trade suggest that China is becoming an increasingly important, in some cases crucial, trade partner to all regional countries, especially Association of Southeast Asian Nations (ASEAN) members. While future developments might

be significantly affected by several possible regional economic agreements, such as the Regional Comprehensive Economic Partnership (RCEP), the Trans-Pacific Partnership (TPP), and a region-wide free trade agreement (FTA), past and current trends suggest that China has already replaced the United States as the most important trade partner for all regional countries analyzed except India.

China has become an increasingly important trade partner to ASEAN compared with the United States. Chinese total trade with ASEAN-10 (total exports to China plus total imports from China) as a percentage of total ASEAN trade with non-ASEAN countries increased from 5.72 percent in 2000 to 19.70 percent in 2014, while U.S. total trade with ASEAN as a percentage of total extra-ASEAN trade decreased from 21.67 percent to 11.07 percent in the same period. A similar trend is observed in Chinese and U.S. trade with Japan. While trade with China as a percentage of total Japanese trade increased from 17.75 percent in 2007 to 20.48 percent in 2014, trade with the United States decreased from 16.31 percent to 13.57 percent. Similarly, while Chinese trade with Australia as a percentage of total Australian trade increased from 15 percent to 27.47 percent between 2007 and 2014, U.S. trade with Australia decreased from an already meager 9.70 percent to 7.30 percent in the same period.

India may be the only case in which the importance of China and the United States as trade partners is merging, most likely because of India's status as a developing country. In 2009 Chinese trade constituted 9.25 percent of total Indian trade, decreasing slightly to 8.48 percent in 2013 and increasing again to 9.22 in 2014. In comparison, trade with the United States increased from 7.93 percent in 2009 to 8.13 percent in 2014, showing signs of convergence of China and the United States in their importance as trade partners to India. (See appendix A for more details regarding the above trade trends.)

If one looks at trade patterns in terms of value added, measured as finished products (that is, final domestic demand, or combined spending by consumers, businesses, and the government) that end up in China or the United States, as of 2011 Chinese and American value added to the Asian region reached a rough equilibrium. However, for most economies in Asia, China is more important than the United States in terms of value added by those economies, with the exception of Singapore, Japan, India, Cambodia, Vietnam, New Zealand, and the Philippines. In terms of overall trends, the region's exports to China have risen from 8 percent of regional exports twenty years ago to 13 percent today. Asian exports to the United States, on the other hand, have been trending down over the past two decades.⁹

Chinese trade with ASEAN countries, Japan, South Korea, Australia, and possibly India is becoming increasingly more important than trade with the United States.

However, trade in goods is becoming a relatively smaller factor as a component in global production, partly because global growth in recent years has been driven by services rather than by investment (particularly in the case of China) and also because services are less import intensive.¹⁰ That said, the potential for trade in goods to remain strong both regionally and globally will remain high, especially in China and similar developing countries, given their high projected demand for investment.

A second caveat to this analysis of past trends is that while China's share of regional trade relative to the United States will almost certainly continue to increase (assuming, as is likely, that past trends continue), it will probably increase less rapidly. Specifically, as China has started to produce more components domestically rather than importing them from elsewhere, its production structure has become increasingly vertically integrated. Consequently, growth in imports from largely Asian partners has started to lag behind growth in exports to Western trading partners, and China's trade balance with its Asian neighbors has shifted from significant deficits to modest surpluses fairly recently. In the long term, persistence in such trends suggests that China's trade with its neighbors, unlike in the past, will become more beneficial to China than to the neighboring region as a whole, but the significance and longevity of this trend remains to be seen.¹¹

FOREIGN DIRECT INVESTMENT AND LOANS

In contrast to the trade trends noted above, Chinese investment across the Western Pacific region is far from overshadowing American investment in total volume. The United States remains a major investor in most of the major regional states. However, the very high rate of recent growth in Chinese regional (and global) investment,¹² and the potential implications of Chinese-led investment structures and investment-driven plans, such as various free trade areas and the One Belt, One Road initiative, suggest that the relative importance of Chinese investment in Asia will most likely grow significantly in the coming decades. While the total U.S. stock of investment in both ASEAN and non-ASEAN Asian countries will continue to be much greater than China's in the coming decades, Chinese annual flows of investment may soon surpass those of the United States, if they have not already done so, for certain destination countries. Indeed, current trends show that Chinese foreign direct investment (FDI) in Asia is increasing at a much greater rate than U.S. FDI.

In general, Chinese outbound foreign direct investment (ODI) is currently the third largest in the world, behind the United States and Japan, but growing very rapidly as a result of government policies easing regulations for corporate investment overseas and a beneficial shift in the balance between savings and investment. China's ODI from 2011

to 2014 increased at a CAGR of 16 percent and is expected to grow at more than 10 percent per year for the next five years.¹³

While U.S. ODI topped global rankings at \$338 billion in 2013, with Japan in second place at \$135 billion, if Chinese ODI continues to grow at its current double-digit rate, it will soon surpass that of Japan. In fact, there is significant room for China to expand its share of ODI as a percentage of GDP, which remains small compared with other major creditors (2.3 percent to the United States' 22.0 percent and Japan's 4.5 percent).¹⁴ According to a study by David Dollar of the Brookings Institution, China is well on its way to becoming the world's largest net creditor by 2020.¹⁵ And it is likely that a growing percentage of Chinese ODI will come from privately owned enterprises.¹⁶

In Asia, once adjustments are made to exclude offshore financial centers such as Hong Kong, the top destinations of Chinese outward investment at present are Australia, Cambodia, Indonesia, Kazakhstan, Laos, Malaysia, Singapore, Thailand, and Vietnam.¹⁷

According to data from Adrian H. Hearn and Margaret Myers, the China Development Bank and the Export-Import Bank of China provide more investment loans in East Asia than the World Bank and the Asian Development Bank combined.¹⁸ Additionally, the China-led Asian Infrastructure Investment Bank has established a \$50 billion fund for regional development, alongside China's Silk Road Fund, which earmarks \$40 billion for One Belt, One Road infrastructure projects, much of which will be spent in Asia.¹⁹

China's lending pattern in recent years has followed in tandem with the overarching goal of the One Belt, One Road initiative, which would bolster China's economic centrality in Asia in both the inland and the maritime realms. A study by the London-based investment bank Grisons Peak shows a drastic increase in state-backed Chinese investment in Asia since the announcement of One Belt, One Road in 2013, with a clear shift toward Cambodia, India, Indonesia, Pakistan, Sri Lanka, and Vietnam. Of the 172 loans, amounting to \$101.8 billion, made between 2013 and 2015, the share going to Asian countries grew from 27 percent to 51 percent.²⁰ It will remain difficult to assess the trade and investment significance of One Belt, One Road for some years, until the full design of the project and the extent of its activities are known. But the potential for stimulating a sustained increase in Chinese economic activity in the region is high.

Investment in ASEAN Countries. Although China has surpassed the United States in volume of trade in goods with ASEAN countries, its investment levels in much of the region still lagged well behind those of the United States during the 2007–2012 period, with a total of \$23 billion in Chinese FDI compared with \$96 billion in U.S. FDI to ASEAN countries. However, Chinese outbound investment to Southeast Asia is growing rapidly on a year-to-year basis, from \$1 billion in 2007 to \$6 billion in 2012.²¹ More

than 99 percent of American FDI in ASEAN countries is concentrated on Indonesia, Malaysia, Singapore, and Thailand. Chinese FDI, however, exceeds American FDI in Cambodia, Laos, Myanmar, and Vietnam,²² which together account for 35 percent of Chinese FDI in ASEAN countries (see figure 1.1).

FIGURE 1.1
U.S. AND CHINESE TRADE AND INVESTMENT INITIATIVES WITH ASEAN COUNTRIES, 2004



Sources: U.S. Government Accountability Office, *Southeast Asia: Trends in U.S. and Chinese Economic Engagement* (Washington, DC: U.S. Government Accountability Office, 2015); and author's research.

Investment in Non-ASEAN States. In general, while outward FDI to non-ASEAN regional states is higher in volume for the United States than for China, the CAGR of Chinese FDI is much higher. For example, while U.S. annual FDI outflow to Japan decreased from \$8.7 billion to \$4.0 billion between 2002 and 2012, Chinese yearly FDI outflow to Japan grew from \$7.4 million to \$210.7 million in the same period.²³ Chinese

and U.S. FDI outflow to South Korea and Australia show a similar trend. An exception to this trend is India, to which U.S. FDI outflow is growing swiftly, with a compound annual increase of 25 percent for aggregate FDI. However, Chinese FDI outflow to India is increasing even more rapidly. Between 2003 and today, aggregate Chinese FDI increased from \$1 million to \$1 billion, amounting to a CAGR of 120 percent per year.²⁴

A Caveat. Trend lines in Chinese outbound FDI and trade might, of course, be affected by changes in motives underlying the adoption of fiscal policies as China's economy slows and puts less emphasis on resource acquisition. The current high volume of Chinese outbound FDI in developing economies might be aimed at gaining access to natural resources and cheap labor as well as making long-term investments on trade infrastructure such as ports, while motives underlying investment in developed economies such as that of the European Union (EU) might reflect a desire to acquire technology and intellectual-property rights and to bypass tariff barriers by setting up production in destination markets.²⁵ The relative importance of such motives could change over time.

Similarly, China's motives behind trade (and especially import patterns) are a function of shifting comparative advantage in production between economies. If China achieves import substitution of product or product parts previously sourced from Southeast Asia, Japan, and South Korea, regional supply chains will probably look very different, and competition for third-country markets will increase, potentially raising political tensions.

In other words, overall, Chinese trade and investment patterns are not immune to policy preferences and economic priorities that will shift as China's economy matures, and one should therefore keep in mind that changing motives in FDI and trade could result in a landscape of more economic competition alongside deepening interdependence. This could inhibit economic integration and reduce China's capacity to build trust and cooperative relations in the region, although to what extent it would do so is unclear.

THE LIKELY MODEST IMPACT OF EXISTING INTERSTATE TRADE AND INVESTMENT ARRANGEMENTS

A variety of existing or planned trade and investment consortiums could influence the future trajectory of relative economic influence of China and the United States and its allies in the Western Pacific. Among these, the most important are the Trans-Pacific Partnership, the Regional Comprehensive Economic Partnership, and various bilateral and multilateral free trade area arrangements, including a possible Asia-Pacific free trade arrangement.

These arrangements offer potentially significant economic advantages to their members at varying points over the short to long term. However, it is extremely difficult to

conclude that a particular arrangement, or the combined effect of all arrangements, will clearly benefit Washington or Beijing over the other power. Much will depend on the eventual membership profile of each arrangement and the specific benefits each offers. That said, on balance, it seems that whatever benefits each arrangement offers to either Washington or Beijing will be relatively modest, because any genuinely effective regional trade agreement will eventually have to include both the United States and China as the dominant regional economic actors. In other words, it is unlikely that any sort of exclusionary trade pact can be a game changer affecting the balance of economic power in the region, given the large economic role in Asia played by both nations and their strong bilateral economic relationship. Any pact that excludes one of the two powers is likely to have a limited effect in benefiting a state that is party to the pact.

Negotiations for the formation of the TPP were finalized in October 2015, involving the twelve signatory states of Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States, and Vietnam. China is not a founding-member signatory. However, not all of these states have formally approved the arrangement, and it is by no means certain that the arrangement will come to fruition. Indeed, the 2016 election campaign in the United States is showing growing voter resentment toward free trade, including among Republican political bases traditionally tolerant of free trade deals. The leading presidential candidates, Donald Trump and Hillary Clinton, have spoken out in opposition to the Trans-Pacific Partnership, raising serious concerns that the TPP will face congressional and domestic constraints that will force the United States to shelve the deal for at least the near to medium term. However, if the arrangement eventually emerges, all members of the TPP will need to commit to significant levels of both structural and procedural liberalization of their economies.

Experts disagree whether the TPP would confer a significant leadership role on the United States in the Asia-Pacific economic order. By numbers alone, the United States and its allies would most likely benefit from successful regional economic integration through the TPP. Overall, Japan and the United States would account for 64 percent of total GDP gains under the TPP, and the exports of member countries could increase by as much as \$440 billion (7 percent).²⁶ In terms of macroeconomic influence, a cautiously optimistic Chatham House report notes that the TPP “could become the principal grouping through which economic issues, in particular trade and regulation, are governed” and that gains from the TPP “may” mitigate Asian states’ current dependencies on China.²⁷ Similarly, one highly regarded China economist, Barry Naughton, asserts that “the TPP will pull Vietnam (especially) and other signatories economically closer to the United States, and thus reduce Chinese economic preponderance. Given that South Korea is likely to quickly join in any completed TPP agreement, these shifts can have a long-run economic impact on China.”²⁸

However, other economists reject this argument, in one case stating that “[China’s economic preponderance in Asia] is driven by [its] sheer size, its continued growth—which though slower than in the past is still faster than that of most other Asian economies—and its increasing centrality in global supply chains. Moreover, China has its own strategy for increasing its influence, through projects under the ‘Belt and Road’ umbrella, which will be funded by Chinese policy banks and the Chinese-led Asian Infrastructure Investment Bank.”²⁹ And according to Nicholas Lardy, a knowledgeable China economist, the TPP is unlikely to weaken Beijing’s economic position in the Asia-Pacific region relative to the United States. It would advantage American firms over Chinese firms “only very slightly,” since there is little overlap in the range of goods exported to Asian members of the TPP.³⁰

It is possible, however, that the TPP could modestly disrupt the flow of Chinese investment into member states, given that stricter TPP standards favor investments from the private sector, and most Chinese foreign investment to date, has been undertaken by state-owned enterprises. That said, the percentage of Chinese investment involving privately owned enterprises is rising steadily.

Moreover, China might become a TPP member in the future and thus gain many of its benefits. According to one economic model, while income losses to China from the TPP could exceed \$46 billion by 2025, should Beijing join the TPP (along with Indonesia, the Philippines, South Korea, and Thailand) its income gains could be over \$800 billion by 2025, and the gains for the United States would increase fivefold to nearly \$330 billion.³¹

Other experts adopt the even more stringent stance that not only is China a potential beneficiary of the TPP but its membership is essential to the TPP’s success. Yukon Huang of the Carnegie Endowment for International Peace points out that excluding China from the TPP creates great inefficiencies for all nations involved by increasing product costs and employing workforces suboptimally. A vision of a U.S.-led Asian trade area that did not include China, in this estimation, would be both unrealistic and untenable.³²

The Regional Comprehensive Economic Partnership emerged as an effort to end Chinese and Japanese competition over the formation of free trade arrangements with ASEAN states. Membership is closed to countries that do not have an FTA with ASEAN. Currently under negotiation, the RCEP would consist of the ten ASEAN members (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam) along with the six nations with which ASEAN has existing trade agreements (Australia, China, India, Japan, New Zealand, and South Korea). Seven nations are participants in both TPP and RCEP negotiations.³³

Compared with the TPP, the RCEP has had a goods-centric agenda that later came to include some investment and intellectual-property guidelines in response to Japanese

pressure. Overall, RCEP emphasizes flexibility for developing economies and is less ambitious than the TPP, making standards for participation easier to meet.³⁴ Unlike the TPP, the RCEP also recognizes ASEAN centrality and is expected to let ASEAN play a more central role in determining the rigor of the free trade framework, with a pragmatic bias favoring less developed ASEAN members. Some analysis indicates, optimistically, that while the TPP could boost the real incomes of member countries by \$295 billion over baseline projections by 2025 and produce a gain of 1 percent in growth per annum, an ASEAN-centric track like the RCEP, which would include ASEAN+3 countries (China, Japan, and South Korea) along with some form of a Pan-Asian FTA, could yield \$500 billion by 2025, albeit spread over more countries.³⁵

In terms of gains for particular countries, projections show that in the scenario of TPP members joining only the TPP agreement, Japan and the United States would receive the largest *absolute* income gains by 2025, while Vietnam and Malaysia would receive the largest *percentage* of income gains. On the ASEAN+3 and Pan-Asian FTA track, China, Japan, and South Korea would be the largest *absolute* beneficiaries, while Hong Kong, South Korea, and Vietnam would see the largest *percentage* gains. ASEAN would gain less from ASEAN+3 and Pan-Asian track agreements than would Northeast Asian economies because it already has bilateral FTAs with China, Japan, and South Korea. At least one Asian Development Bank study shows that ASEAN countries that are unlikely to meet TPP standards for some time—namely Cambodia, Indonesia, Myanmar, the Philippines, and Thailand—would lose a share of their exports to competitors that are benefiting from TPP membership.³⁶ In such a scenario, these countries have a greater incentive to boost their competitiveness through the Chinese-led and less demanding RCEP framework.

Its comparatively low standards for trade liberalization, however, may significantly reduce the RCEP's relevance and potential for growth in the long run. According to the Asia Foundation, the "RCEP is expected to bring income gains that are more balanced among ASEAN member states," but to do so will require resolving large gaps between the existing FTAs. While the current RCEP tariff-elimination coverage is targeted at 90 percent, member nations' inability to meet the target may force the threshold to be lowered and reduce gains from the RCEP.³⁷

Overall, while the RCEP is a regional economic integration framework that does not include the United States, it actually does little more than streamline the "noodle bowl" of existing FTAs and provides more unified but still relatively loose free trade standards.³⁸ Although gains from the RCEP can be considerable, they will rely on initial momentum from the rapid growth of emerging Asian economies and will slow down if standards such as those on intellectual-property rights are not raised to meet global standards.

In terms of FDI, the TPP track would generate greater impact than a goods-centric track like the RCEP as the TPP template is specifically designed to improve investment rules. Although simulations of pan-Asian regional agreements show increases in Chinese outward FDI stocks, their low initial baseline and China's preference to invest in countries with already low inward FDI barriers mean that absolute increases will probably not be large. The major beneficiaries of FDI under the TPP would be Japan and Korea, since their current barriers to inward FDI are high.³⁹

Many analysts are concerned that if the TPP and RCEP tracks progress in parallel but independently, with one including the United States and the other China, a failure to bring the two agreements onto a convergence path will impede the progress of a larger Asia-Pacific free trade arrangement. Huang notes that having two separate tracks creates inefficiencies and will force members of both to make "divisive and inefficient" choices.⁴⁰ A competing viewpoint from the Peterson Institute for International Economics holds that the structural differences and varying objectives of the two deals would provide mostly complementary benefits that would be of great advantage to participants in both schemes. Such two-track participants would see their income gain rise to 5 percent of GDP (compared with 0.5 percent on the TPP alone track and 1.3 percent on the RCEP alone track).⁴¹ However, the same Peterson Institute report also estimates that consolidating the two tracks into a region-wide agreement "offers the most favorable outcome" and would produce greater gains than "either track alone or even the two in parallel."⁴² If the TPP and RCEP develop in parallel but sequentially, the eventual success of the TPP could be used as leverage to modify RCEP rules toward global standards and facilitate the consolidation of the two pacts into an Asia-Pacific free trade arrangement.

With the TPP and RCEP still under negotiation and expanding their memberships, it is hard to predict their exact effects on members' economies. Preliminary analyses, however, do suggest that a large Asia-Pacific-wide free trade area operating under the more restrictive TPP framework will prove more lucrative for member states over the long term than a free trade area operating under the comparatively more permissive, goods-centric, RCEP-like framework favored by ASEAN and ASEAN+3. However, such a goods-centric framework is likely to be more lucrative for member countries in the short term (up to roughly 2025).

What effect, if any, this pattern of varying benefits has on the relative economic leverage of the United States and China across the Western Pacific is difficult to say at this point, but it is unlikely to make a decisive difference in the overall economic balance. An emerging bottom-line consensus among scholars is that the principle of trade agreements based on open and inclusive membership in pacts such as the TPP, RCEP, and a region-wide Asia-Pacific trade agreement should be endorsed over segmentation, because every bloc created increases inefficiencies and reduces potential gains for all nations involved.

Finally, one should note that, in general, trade levels over the long term are likely to be most dependent on GDP growth rates. As long as China's GDP growth rate significantly outpaces America's GDP growth rate, the former's share of regional trade is likely to continue to increase at a faster rate, in spite of these regional agreements.

DEFENSE SPENDING AND TECHNOLOGICAL INNOVATION

ESTIMATES FOR CHINA

Long-term projections of Chinese defense spending can vary to an even greater extent than GDP growth projections, given the additional variables involved, including, beyond differing levels of GDP growth, varying estimates of defense spending as a percentage of GDP and the multiplier used to convert official into actual defense spending levels. Using a current dollar-based measure, low to medium projections of Chinese GDP could range anywhere from \$21 trillion to \$29 trillion by 2040 as indicated above. According to data from the Stockholm International Peace Research Institute (SIPRI), Chinese defense spending has taken up around 2 percent of Chinese GDP (or around 7 to 8 percent of the total Chinese budget) since 1989.⁴³ Assuming that this 2 percent level holds into the future, Chinese defense spending in 2040 would fall between \$420 billion (if GDP were \$21 trillion) and \$580 billion (if GDP were \$29 trillion), as measured in current dollars.

However, if China were to devote 4 percent of its GDP to defense, as the United States currently does, while maintaining only a 2.75 percent GDP growth rate (resulting in \$21 trillion GDP in 2040), the country would be spending around \$840 billion on defense by 2040. And of course this number would be even higher if the mid-range GDP estimate of \$29 trillion (based on the staggered growth rates employed in calculations at the beginning of this chapter) is used, amounting to over \$1 trillion.

Using a measure of 2010 PPP-based dollars, China's GDP would total \$36.5 trillion in 2040. On this basis, using ready-made OECD projections of Chinese GDP, Chinese defense spending would amount to \$729 billion by 2040, assuming that defense takes up 2.0 percent of GDP. Should defense spending take up 2.5 percent of GDP, it would amount to \$911 billion by 2040. At 4.0 percent of GDP, defense spending would be over \$1.4 trillion.

According to official data from the *Chinese Statistical Yearbook*, Chinese defense spending as a percentage of GDP has been around 1.3 percent on average since the end of

the Cold War. However, because Chinese official data excludes certain defense items included in the NATO definition of military spending, most analysts believe that total Chinese defense expenditure should be roughly 1.5 times the official figure.⁴⁴ Taking 1.3 percent of OECD GDP projection for 2040 and adding a 1.5 multiplier gives a total of \$711 billion, closely matching the \$729 billion derived in the previous paragraph. A minority of analysts believe that the multiplier should be 2.0 rather than 1.5; by these calculations, Chinese defense spending would be around \$948 billion by 2040.

Thus on the Chinese side, defense spending would range from around \$400 billion measured in current dollars (under the unlikely scenario of an average 2.75 percent long-term GDP growth rate per annum and 2.0 percent of GDP devoted to defense spending) to over \$1.4 trillion measured in 2010 PPP-based dollars (using OECD ready-made GDP projections and assuming that 4.0 percent of GDP is devoted to defense). However, the more realistic range is probably between \$700 billion and \$900 billion in defense spending in 2010 PPP terms (using OECD GDP projections and assuming that 2.0 to 2.5 percent of GDP is devoted to defense). As indicated above, a PPP methodology provides a more accurate picture of what can be bought with every dollar, which is an important indicator for comparative purposes. Beijing could fail to sustain this average increase in defense spending if the Chinese government is forced to devote a higher level of government expenditures to nonmilitary ends, such as social welfare, or simply decides to cap its defense spending for other reasons. Indeed, some experts predict a severe guns-versus-butter dilemma for the Chinese leadership in which Beijing is forced to spend far less on defense and more on other areas over time. This type of adverse trade-off over the long term is possible but would be unlikely to exert a major negative effect on defense spending, despite the arguably growing impact on social welfare expenditures of an aging society and the long-standing (but now loosened) one-child policy of the PRC government, which limits the resources available to families for elder care.

The Chinese government has been devoting a larger and increasing share of revenues to social welfare. According to the *China Statistical Yearbook*, China spent a gross total of \$959 billion on social welfare in 2013 alone, an amount equal to 43 percent of total government spending. This includes expenditure items identified as education, social safety net and employment efforts, medical care and healthcare, urban and rural community affairs, and housing security. To arrive at this figure, the exchange rate used was 6.3 renminbi to 1 dollar. For 2009, social welfare spending amounted to \$442.4 billion, which accounted for 36 percent of total government spending. In dollar amounts, the 2013 figure represents a 117 percent increase from the 2009 figure. In terms of government spending, social welfare spending accounted for an additional 7 percent of total government expenditures in the same period.⁴⁵

Looking toward the future, over time this growth in social welfare spending will most likely be made possible by slower growth in infrastructure spending and improvements in revenue collection by the central government, making it unlikely that social costs will force a serious guns-versus-butter choice for the Chinese leadership.

In fact, it is possible that Beijing will have the capacity to sustain a relatively high rate of defense spending over the long term, given China's overall low level of government spending—and its low rate of defense spending, in particular—as a percentage of total GDP. Overall Chinese government expenditure has averaged only 30 percent of GDP during the reform era, compared with an average of 35 percent for other developing countries and nearly 40 percent for developed countries such as the United States.⁴⁶ In addition, as indicated above, since the mid-1990s, Chinese defense expenditures have accounted for less than 2 percent of GDP per annum, while the United States has spent on average roughly 4 percent of its GDP on defense per annum since the end of the Cold War. If Beijing manages to increase its overall government expenditures as a portion of GDP and also increase its portion of defense spending in particular, by 2040 its total level of defense spending could significantly exceed the above estimates.

ESTIMATES FOR THE UNITED STATES

Calculating future defense spending levels is less daunting in the U.S. case. The challenge lies in calculating the percentage of GDP likely to be taken up by defense over the long term and the methodology for measuring spending (that is, in current dollars versus PPP).

Based on a current-dollar measure in use since the end of the Cold War, U.S. defense spending has averaged approximately 4 percent of GDP per annum.⁴⁷ If this proportion is sustained over the long term, U.S. defense spending will total around \$1.3 trillion by 2040 (assuming 2.5 percent annual GDP growth, which, as noted earlier, results in a GDP of \$33 trillion in 2040). Given significant fluctuations in past year-on-year percentage changes in the amount of U.S. GDP devoted to defense spending, a linear regression model using each year's spending between 1989 to 2014 results in a total of \$1.18 trillion in defense spending by 2040, slightly lower than the figure arrived at using an average GDP percentage.⁴⁸

Using a 2010 PPP-based dollar measure, OECD projections indicate that U.S. GDP will be \$27 trillion by 2040 and \$32 trillion in 2050. If U.S. defense spending were pegged at 4 percent of GDP, the United States would be spending around \$1.1 trillion on its military in 2040. This result closely matches the result yielded by the above regression model. Since approximating future GDP levels adds more complications to the calculations, the results yielded directly from pegging defense spending at 4 percent to

OECD GDP projections may be more accurate and reliable. This suggests that, on the U.S. side, defense spending might be closer to \$1.1 trillion than \$1.3 trillion in 2040. Furthermore, U.S. defense spending could fall below the level of \$1 trillion if sequestration and other significant entitlements-based limitations on the overall U.S. budget worsen appreciably. Indeed, a recent Center for Strategic and International Studies (CSIS) report indicates that “capping resources at the budget levels set by the Budget Control Act would severely constrain implementation of the rebalance.”⁴⁹

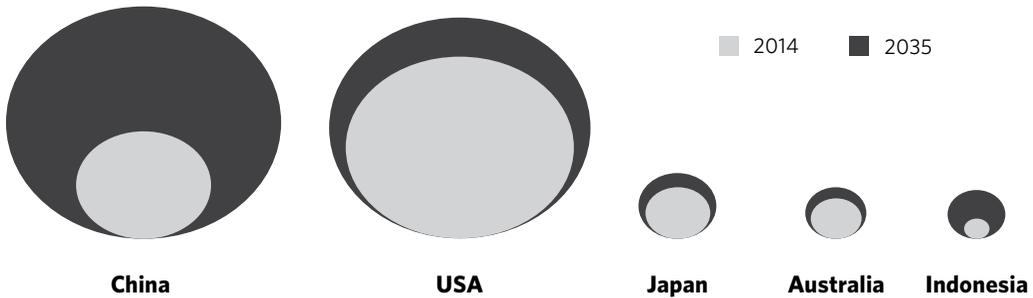
The above analysis clearly indicates that, whether calculated on the basis of official Chinese data on defense spending or on OECD long-term forecasts for Chinese GDP, Chinese long-term defense spending would very likely total somewhere in the range of \$700 billion to \$900 billion (and possibly slightly more) by 2040. Only in the highly unlikely scenario in which Chinese GDP growth averages 2.75 percent annually and China does not increase spending but continues to devote 2.0 percent of GDP on defense does Chinese defense spending total appreciably less, at approximately \$400 billion to \$500 billion. As explained earlier, this low rate of GDP growth is unlikely because of the range of artificial distortions in the Chinese economy, which, if corrected (as has occurred in the past), would release significant growth potentials.

China could choose to significantly increase the proportion of resources it devotes to defense should there be strategic reasons to do so. In addition, because PPP measures more accurately reflect the amount of actual products that could be generated with the resources available, the set of defense spending projections based on ready-made OECD GDP projections place China at \$900 billion (assuming defense spending takes up 2.5 percent of GDP, with the potential to increase further) by 2040 and the United States at around \$1.1 trillion (assuming defense spending takes up 4.0 percent of GDP) by the same time. This is probably the most reliable set of figures.

This suggests that there is a significant possibility that U.S. and Chinese defense spending will roughly converge by 2040, with the United States probably spending marginally more. However, Australia’s recently released 2016 defense white paper goes even further, projecting (though without giving precise figures) that, by as early as 2035, China will rival and may even exceed the United States in defense spending (see figure 1.2).⁵⁰

This would mean that China would almost certainly have significantly greater resources to devote to increasing its military capabilities in the Asia-Pacific than the United States, given that the United States is likely to sustain significant global security commitments over the next twenty-five years, while China is likely to continue to focus the bulk of its defense capabilities on the Asia-Pacific. A report from the Marubeni Research Institute buttresses this finding by suggesting that nominal Chinese GDP in 2035 would be 1.3 times that of the United States and, in a less optimistic scenario (with lower economic growth and a weaker yuan), would be at least 80 percent that of the United States.⁵¹

FIGURE 1.2
DEFENSE EXPENDITURES, 2014 AND 2035



Source: Department of Defense, *2016 Defence White Paper* (Canberra, AU: Australian Government, 2016), 49.

According to this report, it is likely that by 2035 China will not only overtake the United States in nominal GDP but also have accumulated more than 50 percent of the U.S. sum in terms of military budget, weaponry, and military equipment.⁵² While it has been reported recently that the annual level of Chinese defense spending has slowed from double-digit percentages to 7.6 percent in 2016, the lowest in six years, this decreased growth rate is most likely the result of slower growth in China's economy (given the general relationship between such spending and GDP levels) and does not necessarily reflect a guns-versus-butter debate in Chinese decisionmaking. At the same time, however, China's aging population, its greater need for social welfare such as healthcare and education, and the potential internal instability associated with the failure to provide such welfare means that the government probably does not desire to dramatically *increase* defense spending. Yet it will not need to do so to equal or exceed U.S. defense spending in the Western Pacific.

Another recent study that buttresses this assessment is the long-range analysis of relative national power conducted by the U.S. National Intelligence Council. Using a global power index based on GDP, population size, military spending, and technology, the most recent such study concludes that by 2032 China will most likely surpass the United States in aggregate power. On another new measure, the council includes elements such as healthcare, education, and governance. By this multicomponent measure, China will surpass the United States by 2043.⁵³

According to one estimate, at present Washington devotes roughly a little over one-third of its total defense spending to the Asia-Pacific (while 30 percent of spending goes to the Middle East, 10 percent to Europe, 5 percent to the Americas, a small percentage to Africa, and 20 percent for surveillance activities such as command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR)).⁵⁴ However, a focus on various key weapons platforms shows a different (higher) distribution for Asia.

According to calculations based on deployment data compiled by the International Institute for Strategic Studies (IISS) for the year 2000, U.S. deployment of carriers in the Pacific region has been around 50 percent, as has been the percentages for destroyers.⁵⁵ Submarine deployment has been around 56 percent, and frigates 70 percent. In 2012 the U.S. Department of Defense announced that it would base 60 percent of all U.S. Navy vessels in the Pacific theater by 2020, an increase from the traditional 50-50 split between the Pacific and the Atlantic.⁵⁶ In contrast, of the U.S. Air Force's 1,287 active service fighters, only around 260 are assigned to U.S. Pacific Air Forces (USPACAF), which provides the integrated expeditionary air force capabilities for U.S. Pacific Command.⁵⁷ There are around another 100 additional deployed aircraft rotating to Guam.⁵⁸ Thus USPACAF fighter forces constitute between only 20 and 28 percent of U.S. Air Force (USAF) total fighter forces.

In comparison, James Steinberg and Michael O'Hanlon estimate that China devotes approximately 70 percent of its military resources to areas east of China in the Asia-Pacific.⁵⁹ This estimate is based on the number of military districts and the proportion of major military bases that are contiguous to China's eastern borders and the sea. While this is a very loose and notional estimate, it nonetheless is plausible, given that the country's 2013 defense white paper focused primarily on maritime security challenges.⁶⁰

One significant caveat to this conclusion should be considered. If the U.S. government were to increase its level of defense spending to 1970s and 1980s Cold War-era levels of roughly 6 percent of GDP on average per annum over the next twenty-five years, U.S. defense spending by 2040 would total between \$1.6 trillion, according to calculations based on OECD projections, measured in dollars at 2010 PPP, and \$2.0 trillion, according to calculations based on World Bank GDP data, measured in current dollars, and spending on the Asia-Pacific region alone could approach \$1 trillion or perhaps slightly more. This level of spending would obviously provide more resources for sustaining U.S. military predominance, if China did not increase its level of spending as well. However, under such circumstances (amounting to a de facto Cold War environment), it is likely that Beijing would also significantly increase its defense spending as a percentage of GDP, thereby almost certainly eliminating any potential U.S. advantage. In any event, it is extremely unlikely that Washington will make the wrenching decisions necessary to increase defense spending in this manner, absent a major, policy-changing deterioration in the U.S.-China relationship that demands a reordering of U.S. budget priorities.

Indeed, the National Intelligence Council study cited above states that "the U.S. ability to maintain near-current levels of defense spending is open to serious question." While the United States will remain the leading military power in 2030 according to that study, the gap with other countries will diminish. Domestically, spending for major

entitlement programs will make it difficult for the United States to reverse the current trend of decreasing military spending.⁶¹

Finally, it must be stated that, although there is a general correlation between the size and overall growth rates of a nation's GDP and its defense spending and hence military capacity, one can never entirely eliminate the major effects of nonlinear variables such as policy errors, political leadership turnovers, major changes in threat perceptions, rates of technology innovation and acquisition, and exogenous factors such as fluctuations in global trade and financial markets. But barring major, unanticipated shifts in such variables, the above mainstream estimates of a convergence (at a minimum) in U.S. and Chinese defense spending levels devoted to Asia is very likely.

RESEARCH AND DEVELOPMENT

The Chinese government does not publish official figures on Chinese defense R&D spending. One estimate suggests that the current Chinese military R&D budget is equivalent to \$6 billion.⁶² Generally, analysts believe that Chinese defense-related R&D has been steadily increasing since the late 1990s as China's economy has grown (resulting in major increases in overall Chinese R&D spending) and its military-modernization effort has intensified. Currently, Chinese R&D spending ranks second in the world, after the United States, and represents 17.5 percent of global R&D spending, lagging the 31.1 percent for the United States and 21.7 percent for Europe but exceeding the 10.2 percent for Japan.⁶³

Looking toward the future, Chinese R&D spending may amount to between \$416 billion and \$730 billion (see appendix B for details on calculations). The United States has been spending, on average, around 2.6 percent of its GDP on R&D since 1996. If this trend continues, given the above estimates of future GDP growth, the United States will be spending around \$707 billion on R&D by 2040, thus at least roughly equaling and possibly still significantly exceeding Chinese spending. Nonetheless, the likely high future levels of Chinese R&D spending will undoubtedly translate over the medium to long term into much higher levels of technological innovation in the military realm than at present.

A caveat to the picture of a strong and rapidly growing Chinese R&D capacity focuses on the quality of Chinese technological innovation. As one analyst observes, despite Chinese R&D efforts, "No major Chinese innovation or technological breakthrough has been viewed globally."⁶⁴ While China has demonstrated a willingness to invest huge amounts of resources in advancing its scientific and technological abilities, for some observers China is not nearly ready to replace the United States in terms of technological

innovation. This is allegedly because its one-party system severely limits “the ability of its people to think and communicate freely in order to advance the frontiers of science and technology,” according to the same analyst.⁶⁵ However, one must also keep in mind that many of the most cutting-edge commercial technologies in the United States were originally encouraged by or spun off as a result of government financial support and military-related inventions, not solely because of independent efforts occurring within the private sector. In authoritarian states, such government-led innovation in military and strategic sectors can involve a much greater level of independent, innovative thinking than is evident in society as a whole.

U.S.-CHINA MILITARY CAPABILITIES

The likely significant erosion in America’s *relative* economic and technological capacity to generate military resources for use in the Asia-Pacific region compared with China will exert a major adverse impact on its long-standing predominant military position in the maritime realm. In particular, over the coming two to three decades this shift will result in the loss of U.S. military predominance across much of the Western Pacific—within 1,500 to 2,000 nautical miles of China’s continental coastline—and the emergence of a more evenly balanced Sino-U.S. set of force deployments. Although the United States has deployed new capabilities—such as the F-22 and Virginia-class submarines—to the Western Pacific, the military services are facing largely economic challenges in recapitalizing equipment and establishing force readiness. In comparison to the rapid expansion of Chinese military investments, the United States is confronting challenges globally with “lower long-term defense spending projections than planned even a few years ago,” according to recent findings by the CSIS. At the present rate of U.S. capability development, “The balance of military power in the region is shifting against the United States.”⁶⁶

Such a shift in the distribution of military power will become increasingly evident in most of the key military-weapons platforms and support capabilities operating in the maritime realm at present and in the future, including submarines, surface combatants, tactical fighter aircraft, strategic bombers, ballistic and cruise missiles, and more integrated, advanced C4ISR systems. While the United States will continue to deploy very significant numbers of most of these systems in or near the Western Pacific, China will in many cases close the past gap in such capabilities by deploying steadily increasing numbers of advanced platforms. For Beijing, these will include the following:

- More reliable, quieter, and more capable diesel and nuclear submarines

- More capable destroyers and frigates, likely with a continued but declining emphasis on the latter in favor of the former
- Large numbers of fourth- (and probably fifth-) generation fighter aircraft
- Short- and especially medium-range ballistic and cruise missiles including a wide range of increasingly longer-range land, naval (including submarine), and air-based anti-ship ballistic missiles and anti-ship cruise missiles (ASCMs)

In addition, China will make steady advances in several other areas highly relevant to the future power balance in the maritime Western Pacific, including the following:

- Paramilitary naval platforms, centered on armed “white hull” coast guard ships
- Advanced, long-range air-defense systems
- Overall force integration and awareness through improved C4ISR and joint operations capabilities
- Logistics and replenishment at sea and in the air
- The frequency and expansiveness of surface and subsurface naval patrols throughout the Western Pacific

According to a recent CSIS report, China is already expanding its anti-access/area-denial (A2/AD) umbrella beyond Taiwan to the so-called second island chain. Strengthened A2/AD capabilities would entail, in addition to submarines, long-range cruise and ballistic missiles as well as advanced integrated air- and missile-defense systems. Such capabilities would pose significant risks to forward-deployed and forward-operating U.S. forces in the Western Pacific and, along with advanced capabilities in cyber, electronic warfare, and C4ISR, could certainly challenge the capacity of the United States to operate freely and successfully in the region in a conflict.⁶⁷ But even in peacetime, China’s significant increase in military presence in the region relative to the United States will clearly confirm the loss of American maritime predominance.

Projections of the likely future size of the U.S. and Chinese military arsenals to be deployed in the Western Pacific over the next twenty-five years (that is, by the year 2040) are fraught with difficulties. Specifically, attempts to project future deployments based on past trends and features must account for the fact that military capabilities have varied significantly over past decades in both speed and platform size and the capability of deployments. Significant numbers of outmoded platforms have been decommissioned over relatively short periods of time, while modern platforms are sometimes deployed at steadily increasing levels and sometimes in spurts. The analysis that follows employs

past commissioning information for naval vessels and regression analysis for aircraft to project future Chinese and U.S. military capabilities over the long term.⁶⁸ (See appendix C for a more detailed explanation of calculation methods and appendix D for a set of projections based on regression analysis.)

Of course, regardless of methodology, one must keep in mind that such estimates are subject to significant potential variation based on subjective criteria, such as changes in defense spending priorities and threat perceptions, the timing of decisions to decommission specific platforms, and, of course, overall caps on numbers of weapons systems seen as necessary for achieving national security objectives. The figures presented here are therefore only rough assessments of future force levels. Nonetheless, they present a consistent picture of the decline in U.S. military predominance in the Western Pacific.

SUBMARINES

Forty U.S. submarines (all nuclear) are currently assigned to the Asia-Pacific (that is, the U.S. Pacific Command Area of Responsibility, or PACOM AOR).⁶⁹ On the Chinese side, the number of nuclear submarines—SSBNs and SSNs, excluding SSs, SSBs, and SSKs—has increased from six to nine since the early 1990s. The size of the overall Chinese submarine force (including both nuclear and diesel-electric submarines) is much more substantial, however. In total, China has 70 submarines today.

According to commissioning-data projections, Chinese nuclear submarines will number between 8 and 13 by 2040.⁷⁰ Overall submarine levels are estimated to be higher, at between 49 and 73 for the same retirement age.⁷¹ In comparison, by 2040 the United States will have between 42 and 57 submarines of its five currently operational classes.⁷² If the United States were to devote 60 percent of its submarines to the Pacific region, it would have 25 to 34 submarines in the region. In comparison, if China were to devote 70 percent of its submarines to the region, it would have 34 to 52 submarines there. Hence Beijing's total submarine force will almost certainly exceed that of the United States, perhaps by a significant number.⁷³

Of course, the size of the submarine force is only one measure of capability. Qualitative features are equally if not more important, including levels of both technological sophistication and training. A modern submarine can be defined as one that is capable of firing anti-ship cruise missiles and torpedoes and of laying mines. More important, the boat needs to be silent, with anechoic coating, effective machinery mounting, and correct maintenance, the last of which is a potential weak point for the People's Liberation Army Navy (PLAN). Crews need to be well trained and would ideally be experienced in conducting submarine warfare.

According to one knowledgeable source—Bernard D. Cole, professor emeritus at the National War College and a retired U.S. Navy officer—China is poised to develop a more sophisticated submarine force in the next twenty-five years, with more nuclear-powered attack submarines that will allow the PLAN to reach more capably into the Indian Ocean and the Philippine Sea. The PLAN will also increasingly install air-independent-propulsion engineering plans for conventionally powered attack submarines. In addition, the PLAN is likely to develop more nuclear-powered ballistic-missile submarines, which will be enough to maintain a constant at-sea deterrent force vis-à-vis China's neighbors. Although Chinese submarine training is currently surpassed by that of the United States, it will inevitably improve significantly over the next twenty-five years as Beijing deploys more submarines at greater distances from Chinese shores.

SURFACE COMBATANTS

Currently, the U.S. Navy possesses 272 surface ships in total. Overall, the navy plans to increase ship numbers gradually, peaking at 321 in the 2028 fiscal year. However, questions have been raised about the affordability of these plans.⁷⁴

Destroyers. The U.S. Navy's surface combatant force is today composed mainly of Arleigh Burke-class cruisers and destroyers.⁷⁵ The United States has 62 destroyers. Of these, one-half are currently deployed in the PACOM AOR.⁷⁶

At present, China possesses 17 destroyers. According to commissioning data, by 2040, Chinese destroyers would very likely number 42 or 43.⁷⁷ In contrast, U.S. destroyers would number around 65.⁷⁸

If the United States were to devote around 60 percent of its destroyers to the Pacific region, it would have 39 destroyers in the region by 2040. In comparison, if China were to devote 70 percent of its vessels to the region, it would have 30 destroyers in the region. However, this number could be significantly higher if Beijing shifts the structure of its surface combatant force away from smaller, shorter-range frigates to larger, longer-range destroyers as its regional and global maritime interests expand. This is quite likely.

Frigates. As of 2015, the United States possessed only 11 frigates, while the Chinese frigate force numbered 56, including far more sophisticated platforms than in the past. Based on commissioning data for six classes of Chinese frigates, China would have a total of 52 frigates by 2040.⁷⁹ If the commissioning rate of three classes of U.S. frigates were considered, only 9 frigates would be in service by 2040.⁸⁰ If 60 percent of these ships were deployed in the Pacific region, the United States would have 5 or 6 frigates in the Pacific by 2040. In comparison, if China devotes 70 percent of its 52 frigates to the

Pacific region, it will have 36 frigates in the region. Again, this number could be lower if Beijing decides to deploy a higher proportion of destroyers in the overall force. But the general picture suggests that China's total surface combatant force in the Western Pacific (minus carriers) will equal or exceed that of the United States by 2040 at the latest.

Carriers. In addition to destroyers and frigates, the United States also has deployed five aircraft carriers to the PACOM AOR. If the three planned Gerald R. Ford-class carriers are commissioned, there would be a total of fourteen carriers by 2040. If the United States devotes around 50 percent of its carrier force in the Pacific, as has been the case over the past decade, it would thus have six or seven carriers in the region.

Chinese carrier capabilities still lag substantially behind those of the United States. While the United States has been operating carriers since the 1920s,⁸¹ China currently operates only one aircraft carrier—the *Liaoning*, which China bought from Ukraine in 2012 and carries up to 50 aircraft⁸²—with at least another two under construction. However, the IISS projects that by 2023 China will be operating three fixed-wing aircraft carriers.⁸³ A recent CSIS report also concludes that by 2030, China “likely will have multiple aircraft carrier strike groups (CSGs), facilitating the overawing of lesser powers, enhanced regional prestige, and the demonstration effect of near-constant presence,” which will be, for rival claimants of the South China Sea, a “game changer.”⁸⁴

Coast Guard Vessels. Beyond destroyers, frigates, and carriers, China's surface naval capability will almost certainly also contain much larger numbers of more sophisticated paramilitary surface platforms, centered on lightly armed Chinese Coast Guard vessels. In 2016 the United States had 163 such ships.⁸⁵ In comparison, Chinese Coast Guard vessels, although generally smaller and more lightly armed, total nearly twice those of the United States, numbering 326 in 2016, all of which are deployed along China's coastline.⁸⁶ Using commissioning information for eighteen types of Chinese Coast Guard patrol boats that belong to the Government Maritime Forces,⁸⁷ by 2040 China may have between 242 and 281 coast guard ships.⁸⁸ Many of these will almost certainly be larger and better armed than today's vessels. In comparison, total U.S. forces would number around 200.⁸⁹ However, few if any of these ships will be deployed to the Western Pacific. Thus comparisons with Asian coast guard forces are arguably more relevant.

Tactical Fighter Aircraft. This category of weapons platform is difficult to project because of the lack of consistent comparisons both year to year and between China and the United States. The most reliable and comparable set of data from the International Institute for Strategic Studies comes only from the most recent years—between 2010 and 2015.⁹⁰ However, earlier data would not necessarily increase the predictive powers of any regression model because of the swift pace of technological development in recent years, especially on China's side.

Of the 1,287 active-service fighters or attack aircraft the U.S. Air Force deployed in 2013, around 260 aircraft were assigned to the USPACAF.⁹¹ Another 100 additional deployed aircraft rotate on Guam.⁹² Assuming these numbers remain generally accurate today, USPACAF fighter forces are between 20 and 28 percent of USAF total fighter forces.

In comparison, the People's Revolutionary Army Air Force (PLAAF) and naval aviation fighters (operated by the PLAN) number 2,571 in total, of which 1,787 are fighters or attack aircraft.⁹³ If China devotes 70 percent of this total force to the Asia-Pacific theater, its combat-capable aircraft in the region would number just under 2,000 today, with around 1,250 fighters or attack aircraft, significantly higher than the number of fighters and attack aircraft assigned to USPACAF (which is between 260 and 360).

Both regression analysis and procurement projections of six types of fighters suggest a total of around 2,000 to 3,000 fighters by 2040 for China, most of these fourth-, fifth-, and higher-generation aircraft (including, for example, the J-31 and J-20).⁹⁴ (See appendix E for an explanation of how these figures are derived.) Historically, the number of fighters in an air force has decreased as the aircraft move from third to fourth and fifth generations because of the higher cost of producing more advanced aircraft. For instance, the number of fighters possessed by the USAF decreased from 1,666 in 1999 to 1,273 in 2014. However, increasing cost is a factor that is difficult to account for in projections into the future. Since China underwent its modernizations much later than the United States did, the increasing level of resources needed to produce a more advanced fourth- or fifth-generation aircraft is likely to become apparent only at a later date. Thus it is important to keep in mind that the suggested projection numbers given here provide only rough baseline estimates based on past force levels and trends. While not all Chinese fighters would be deployed in the Pacific region (in the East Sea, North Sea, and South Sea Fleet Naval Aviation, and the Eastern and Southern Theater Command Air Forces), in a case of conflict or rising tensions, China would certainly have the option to deploy a majority of them to the region.

On the U.S. side, linear regression suggests that the United States could possess anywhere between 900 and 1,200 fighter aircraft by 2040, 200 to 280 of which would be deployed to USPACAF, including the F-20 and F-35 as well as more advanced aircraft such as the F-X and F/A-XX. This is around 22 to 23 percent of the total USAF fighter force and is consistent with the USAF's past trend of devoting around 20 percent of its force to the Pacific. Given current F-22 and F-35 capabilities, the United States arguably has fighters that can take on the J-31 and the J-20 even today and will certainly retain that capability out to 2040, with additional enhancements from the potential success of the F-X and F/A-XX programs in twenty years.⁹⁵ But the overall picture suggests that China will deploy a clearly superior number of advanced fighters in the Western Pacific.

Strategic Bombers. The total number of U.S. bomber aircraft has remained steady at 155 since 2010, while China's 132 strategic bombers in 2011 had increased to 136 by 2015. A linear regression model suggests that by 2040, the United States would have 160 strategic bombers.⁹⁶ By that date, China will probably have a roughly similar number of this platform.

According to the "USAF Almanac," the U.S. Air Force, as of September 2014, had a total of 159 bombers (4 more than data presented in the IISS's *Military Balance*), of which 141 are in active service,⁹⁷ and 20 of these are B-2 bombers, the only strike aircraft able to penetrate sophisticated air defense at long ranges.⁹⁸ However, none at the time were deployed to USPACAF.

Ballistic and Cruise Missiles. China currently has 72 YJ-62 anti-ship cruise missiles and an estimated 6 DF-21D anti-ship ballistic missiles.⁹⁹ The consistency in past trends suggests that the Chinese ASCM force will not decline. Numbers for land-attack cruise missiles (DH-10) have also remained consistent at the current level of 54 since 2009. However, if China finds land-attack cruise missiles useful in the future, their numbers could increase substantially over the next twenty-five years. Quantitatively, Chinese intermediate-range ballistic missiles (IRBMs) currently number around 6, medium-range ballistic missiles (MRBMs) 134, and short-range ballistic missiles (SRBMs) around 252.¹⁰⁰ Using data since 2010,¹⁰¹ linear regressions suggest that by 2040 China could possess around 37 IRBMs, 276 MRBMs, and 677 SRBMs.¹⁰²

Also worth mentioning is the Chinese DF-26 IRBM, which has an estimated range of 3,000 to 4,000 kilometers (about 1,800 to 2,500 miles). At China's recent military parade on September 3, 2015, commemorating the seventieth anniversary of the end of the Second World War, China announced that the DF-26 IRBM may have an anti-ship variant. In addition to conducting "nuclear counterattack" missions, the DF-26 could attack "medium-sized ships at sea" as part of a "conventional long-range precision strike," according to reports by IHS Jane's. Given the DF-26's range, the missile could allow the People's Liberation Army (PLA) to target U.S. naval formations in the second island chain or out to Guam. This missile, therefore, could be considered as a second-generation anti-ship ballistic missile in addition to the DF-21D.¹⁰³

AIR DEFENSE

Chinese surface-to-air missile (SAM) launchers (self-propelled) currently number 296. Relying on a time series from IISS's *Military Balance*, linear regression analyses estimate that Chinese SAMs could number between 317 and 385 by 2040.¹⁰⁴ Beyond the quantitative aspects, Chinese SAMs have become increasingly advanced technologically,

though many of the models rely on Soviet technologies. (See appendix E for an analysis of the specific capabilities of the currently operational Chinese air-defense systems.)

NUCLEAR FORCES

The Federation of American Scientists estimates that China currently has around 260 nuclear warheads in its stockpile, deliverable through 160 nuclear-capable land-based ballistic missiles of seven types, in addition to a number of cruise missiles, aircraft, and submarine-launched ballistic missiles.¹⁰⁵ In total, China possesses between 183 and 230 delivery platforms.

This study has refrained from making a projection of future numbers of Chinese strategic nuclear weapons for two reasons. First, the accuracy of such projections is in serious doubt because current and historical data on Chinese nuclear arsenals are, at best, rough estimates, given the secretive nature of China's information on its nuclear forces. Second and more significant, while the effectiveness of conventional missiles hinges to a great extent on their quantity and accuracy, increases in the number of nuclear warheads and, to a certain extent, missiles and launchers are less important, especially for the U.S.-China military balance in the Western Pacific. The destructive power of nuclear (and hydrogen) weapons is such that, as long as a country's nuclear stockpile is capable of surviving a first strike and the country has a certain number of delivery platforms, it makes little difference whether it possesses 20 or 200 nuclear warheads, as long as the foe is likely to be deterred by the destruction of a handful of its cities—a logical supposition in the case of the United States.

In other words, regardless of whether the Chinese nuclear arsenal and launching platforms grow to several hundred warheads in the future or simply stay at the current level, as long as China has a certain number of nuclear warheads, continues to harden them, and maintains or enhances its second-strike delivery capability, as expected, the country will most likely continue to feel confident that it can deter a nuclear attack without greatly expanding its force numerically beyond current levels. Similarly, as long as the United States retains a sufficient number of deliverable nuclear weapons capable of surviving a first strike and wreaking unacceptable damage on China, as is likely, it can also deter a nuclear strike by China. Only if China were to increase its number of deliverable nuclear warheads enormously to a level at which it posed a credible first-strike threat against the U.S. nuclear arsenal would nuclear-based strategic stability be threatened. And there is no indication that Beijing has any intention of acquiring such a massive nuclear force.

The major problem for future Sino-U.S. strategic stability derives from the impact of increases in space, cyberspace, ISR (intelligence, surveillance, and reconnaissance), and

other systems and from the expansion of highly accurate, deep-strike conventional capabilities on both sides that could blur the line between conventional and strategic assets in a crisis or conflict and thereby lower the threshold for the threat or use of nuclear weapons. In fact, China is now steadily increasing its advanced missile, space, and cyber capabilities, maintaining its long-standing relative opacity in disclosing its nuclear capabilities and refusing to enter into serious arms-control negotiations with the major nuclear powers. The result could be an overall increase in the difficulties involved in maintaining strategic stability over the long term.¹⁰⁶ Such difficulties could increase the likelihood of highly unstable crises emerging in the Western Pacific as the United States and its allies and China reach parity in conventional forces.

SPACE SYSTEMS

Space systems allow commanders to link together dispersed forces over long distances and play a key role in defeating an adversary's A2/AD capabilities. China demonstrated its antisatellite capabilities in January 2007, when it intercepted a weather satellite in low-earth orbit. In 2006, according to the head of the National Reconnaissance Office, some U.S. satellites were lased by China. Such potential threats to U.S. space-based assets have multiplied over recent years, risking, according to the CSIS, "virtually every satellite in orbit."¹⁰⁷

Because space-based assets provide the United States with the ability to observe (and target) any part of the globe and support continuous communication, China's identification of U.S. reliance on space-based assets is a key U.S. weakness that China potentially holds at risk. The U.S. Department of Defense is exploring measures such as developing communication capabilities that are not reliant on space-based assets, diversifying satellite constellations, and increasing the redundancy of U.S. satellites. However, these long-term solutions are costly,¹⁰⁸ especially given current budget constraints. While China's reliance on space systems will most likely increase in the future, China's ability to interdict America's use of space-based assets in a future conflict or crisis will almost certainly increase over the long term, further reinforcing the decline in U.S. relative military superiority in the Western Pacific. At the same time, China will become more dependent on space assets over time, thus arguably increasing its own vulnerability to attack in this realm.

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE

The importance of ISR systems to military forces cannot be overstated. Intelligence, surveillance, and reconnaissance capabilities include sensors and platforms that operate in

the atmosphere and in space. These platforms monitor regional hotspots and movements of potential adversaries and threats, making it vital for the realization of any counter-A2/AD capability. Current U.S. ISR capabilities include space-based assets, which, though covering the widest surface area, require frequent adjustments to the orbit of satellites, decreasing the satellites' lifespan; airborne manned systems, including the U2 and the P-8 maritime patrol aircraft, whose range and duration of mission are constrained by human limitations; unmanned systems, such as the RQ-4 Global Hawk, which can conduct missions for thirty hours without refueling; and maritime sensors, including submarines and advanced radars, which, though able to detect targets at extreme ranges, are limited by distance to the horizon.

China's increasingly advanced A2/AD capabilities pose threats for current U.S. ISR systems. According to the CSIS, China's rapidly developing sensor network and anti-air, cyber, and electronic warfare capabilities provide the country with "the ability to detect, track, and, if necessary, engage most of the current U.S. ISR fleet."¹⁰⁹ This is not surprising, given that China has invested heavily in C4ISR capabilities since the mid-1990s.¹¹⁰ The CSIS similarly concludes that by 2030 "the PLA can be expected to have persistent regional reconnaissance from space-based platforms and near-space tactical platforms . . . and timely global reconnaissance from a robust space-based architecture."¹¹¹ China's assertiveness regarding the activity of its unmanned aerial vehicles (UAVs) in contested airspace is also worthy of note, such as the Chinese Ministry of National Defense's assertion that Japanese threats to shoot down a Chinese UAV operating near the Senkaku/Diaoyu Islands would constitute an "act of war" and prompt "resolute measures to strike back."¹¹²

In contrast to the battles in Iraq or Afghanistan, where the United States has operated with vast advantage because of huge gaps in adversaries' counter-air capability, in a conflict with China the United States is unlikely to have the same level of situational awareness because of Chinese advances over the past decade in developing counter-air and counter-space weapons systems.¹¹³ In the midterm, investing in stealthy ISR platforms may bridge U.S. capabilities gaps in the availability of platforms that can operate with sufficiently long ranges in the Western Pacific. However, such investments in long-range stealthy ISR platforms are far from certain under current budget restraints.¹¹⁴

Cyber Defense. Cyber threats are relatively new in the international security arena but have nevertheless expanded rapidly in recent years, in terms of both complexity and scope. For China, in particular, cyber espionage, intrusion, and exfiltration provide an asymmetric alternative to leveling the playing field in the face of U.S. conventional military superiority. China's offensive cyberspace operations support its A2/AD capabilities by aiming to disrupt adversary networks, stealing sensitive information, and

seizing “cyberspace superiority” in attacking adversary nodes and deterring adversaries.¹¹⁵ China’s heavy investment in cyber-espionage capabilities was demonstrated most recently by the Office of Personnel Management breach in 2015, and a 2013 national intelligence estimate similarly concludes that China was conducting a cyber-campaign to undercut the United States.¹¹⁶

Since a 2008 breach of classified U.S. military information, the U.S. Department of Defense has made progress in improving cyber defenses. For instance, United States Cyber Command was created in June 2009, and a range of efforts to improve U.S. cyber defenses have been made.¹¹⁷ However, capabilities gaps remain. The U.S. military reportedly still lacks adequate situational awareness in cyberspace to identify and understand actual or potential threats. It also lacks the situational awareness to conduct active targeting against adversary nodes. Furthermore, enhanced sharing of cyber intelligence and threat indicators between allies is necessary for improving overall regional situational awareness.¹¹⁸ This is limited by Seoul’s apparent hesitancy in sharing information with Japan. Despite the December 2014 Trilateral Information Sharing Agreement between the United States, Japan, and the Republic of Korea, which provides further opportunities in information sharing, South Korea has “drag[ged] its feet on implementation with Japan,” even though the country has similar agreements with 24 other governments.¹¹⁹

All this suggests that it is extremely difficult to determine with confidence relative U.S. and Chinese cyber capabilities over the next twenty-five years. The most one can probably say is that both sides will almost certainly possess sophisticated systems capable of threatening the other, thus arguably increasing further the future level of crisis instability.

ELECTRONIC WARFARE

Current U.S. electronic warfare (EW) capabilities have included investments in cell phone jammers in Iraq and Afghanistan, but in a conflict with a peer competitor or a near-peer competitor, modern military communication systems are likely to be designed to resist jamming, especially in an A2/AD network with advanced, military-level communications infrastructure. The U.S. Navy is replacing the E/A-6B Prowler with the newer E/A-18G Growler, which will continue to use jamming equipment.¹²⁰ Growler acquisition will be completed in 2017, and the Prowler will be flown until complete replacement by the F-35 in 2019.¹²¹

However, a large shortfall in EW airframes constitutes a significant gap in U.S. EW capabilities. The United States plans to retire all of its Prowlers, which have been in service for forty-five years, and after the USAF reduces its EC-130H Compass Call weapons system to eight airframes, the EW platforms of the navy and air force will

number only 143. While the F-22 and F-35 have some EW capabilities, these are not dedicated EW airframes, and they lack broad coverage.¹²² In the midterm, this capabilities gap may be mitigated by procurement of the E/A-18G.

Chinese EW capabilities are less substantial than those of the United States, but Chinese investments in EW and informationized warfare has been heavy owing to the Chinese wish to compensate for conventional disadvantages through asymmetric capabilities, such as electronic and cyber warfare. The current Chinese EW platform mainly comprises two transport aircraft, the Y-8 and the Y-9. The Y-8 airframe has been used as the basis for the development of a variety of systems, including early warning, ISR, and electronic warfare applications. Under a high-tech development project called the Gaoxin Project, the PLAAF developed a range of Y-8 models, focusing on improving the airframe's role for electronic reconnaissance and electronic warfare. The Y-9 was also developed as part of the project and is an improvement on the Y-8.¹²³ China is also developing its digital radio-frequency memory capabilities, which can be used to defeat active electronically scanned array radars and poses an increasing problem for the United States.¹²⁴ There have also been reports that China is developing EW capabilities for a variant of the J-16 fighter,¹²⁵ altogether amounting to increased anxiety on the U.S. side regarding Chinese EW prowess in the air and air-defense domains.

While current Chinese EW is still not well understood in the United States, the key information systems that make U.S. joint operations possible, such as the GPS system, satellite communications, and tactical data links, could be severely damaged and even rendered unusable by Chinese EW and cyber capabilities.¹²⁶

OVERALL ASSESSMENT

The foregoing discussion of military capabilities suggests that while U.S. forces in the Western Pacific (centered on carrier battle groups, highly sophisticated nuclear submarines, advanced destroyers and frigates, land-based air power, and land- and sea-based missile defense systems, sophisticated space and cyberspace systems, and more sophisticated and larger numbers of ASCM and land attack cruise missiles, or LACMs) will remain formidable, the United States will almost certainly prove unable to sustain over the long term a clearly predominant regional military presence capable of dominating areas up to China's 12-nautical-mile territorial limit, as it has done in the past. This will be the case even if overall U.S. defense spending exceeds \$1 trillion by 2040. In fact, by that time and almost certainly much sooner, China's combined air, missile, and both surface and subsurface capabilities will quite likely prevent any U.S. surface ship and virtually any aircraft from operating freely under combat conditions within at least 500 nautical miles

of the Chinese mainland (and probably considerably farther) and thereby greatly call into question the ability of the United States to prevail in at least a short- to medium-term conventional conflict.

In particular, U.S. carriers, assuming they could be located and accurately targeted, would be highly vulnerable to more sophisticated and numerous land-, air-, and sea-based attacks in the future. And U.S. land-based air capabilities (including aircraft and forward bases) would be increasingly vulnerable to People's Republic of China's air defense and land-, air-, and sea-launched missiles. While U.S. submarines would most likely continue to constitute a potent threat able to sink any PRC ship, the number and payload of such weapons will be insufficient to sustain a clearly superior U.S. presence, especially given the large number of increasingly capable PRC submarines and antisubmarine warfare (ASW) capabilities present in the Western Pacific by 2040. While the United States will probably deploy ever-larger numbers of longer-range stealth cruise missiles and UAVs to the region, these weapons will also not sustain U.S. superiority, if measured in terms of area control capabilities and visible presence. Moreover, Chinese advanced ballistic and cruise missiles increasingly hold military assets on Guam at risk.¹²⁷ Currently, five U.S. airbases are already within range of Chinese land-attack missiles.¹²⁸ Indeed, in most areas, it is unlikely that the United States will possess an unambiguously clear and convincing (that is, superior) counter to PRC military capabilities.

The good news is that China's military forces will also be unlikely to possess the capabilities to themselves prevail in a conflict in the Western Pacific in 2040. As the above projections suggest, future numbers of major Chinese platforms will not clearly dominate U.S. platforms in the region. In many cases, they will equal or only slightly exceed U.S. deployments in numbers. Moreover, it is likely that U.S. training will remain highly competent, and probably superior, to Chinese training in many areas, although such potential differences are extremely difficult, if not impossible, to estimate.

Several points can be made concerning possible significant variations in these force projections over time. Much debate has occurred over whether U.S. Defense Secretary Ashton Carter's order for the navy to reduce spending on shipbuilding and increase spending on fighter jets and missiles was a sensible one.¹²⁹ On one hand, although more fighters are needed to establish air control over a battle space, if neither side can establish air superiority, then the progress of a campaign would be much more affected by sea and land forces. On the other hand, while more ships are certainly necessary to eliminate the threat posed by enemy ships, investing in significantly higher numbers of surface ships in an age of jet-powered aircraft armed with long-range, highly accurate cruise missiles, as well as the development of anti-ship ballistic missiles with ranges of several hundred or a thousand miles, make such investments increasingly questionable.

If the United States is aiming to fight frequent air wars in close proximity to China or even over Chinese territory, then investing in greater numbers of fighter jets makes sense, because doing so increases the chances of establishing air control. At the same time, because Chinese ballistic missile systems are solid fueled with a relatively short launch time, and because the longer ranges of Chinese mobile missile systems allow launch sites to be spread over a greater geographic terrain, a true deep-strike capability becomes difficult to achieve with regard to China, given its large territory and huge number of military targets. This is compounded by China's deployment of significant numbers of capable air-defense systems with ranges that extend several hundred kilometers over the ocean. The difficulties faced by U.S. long-range strategic bombers would also be experienced by overall U.S. air and naval forces, which are concentrated on carriers and a few bases in Japan and Guam—all of which are already, or soon will most likely be, vulnerable to Chinese missiles.¹³⁰

If the United States primarily desires to keep the oceans open for trade and to defend sea lines of communication (SLOCs), then investing in more ships with greater firepower is a more sensible strategy.¹³¹ However, as mentioned earlier, China's jet-powered aircraft, its supersonic YJ-18 anti-ship (and land-attack) cruise missile (which is expected to be installed on the Song-, Yuan-, and Shang-class submarines), and its anti-ship DF-21D ballistic missile would make it increasingly difficult for any U.S. or allied surface force to operate effectively at a distance close enough to the shore while maintaining a reasonable degree of survivability.¹³² This means that, whether or not the United States chooses to invest more in the joint strike fighters program or in smaller but greater numbers of surface combatants, it will become increasingly difficult for U.S. forces to win an outright victory or to create a condition that would allow for hostilities to cease on favorable conditions. Moreover, any possible victory would quite likely come at the cost of heavy casualties for U.S. forces—and take considerable time, requiring assets from outside the region.

At the same time, *on a global level*, the projections and analysis presented here suggest that the United States will almost certainly remain militarily predominant far into the future. Hence larger numbers of sophisticated aircraft, submarines, and carrier air groups (CVGs) manned by highly trained personnel would probably eventually ensure the defeat of any combined Chinese force in a *protracted* conflict. However, applying out-of-theater U.S. forces to the Western Pacific in a crisis or conflict would take considerable time (measured in many days and even weeks), require a long—and in places vulnerable—logistical supply chain to sustain, and quite likely operate under highly contested conditions in theater, at least initially. That is, U.S. forward bases—almost certainly subject to intensive air and missile attack in a conflict—might not be available to support such outside forces. In addition, the likely need to maintain a significant level of forces in or

near Europe or the Middle East (or both), given the continued problems those areas pose for U.S. and allied security, would inevitably limit the number of U.S. forces available for use in Asia, even in a protracted conflict. Finally, such outside forces could not serve to counter the growing impression among Asian states of a shifting regional balance of power unfavorable to Washington. Indeed, in the absence of military conflict, the shifting power perceptions of regional states (including China) are likely to become the most critical factor influencing political, economic, and security policies across the region.

Several recent mainstream analyses of relative U.S. and Chinese military capabilities in the maritime region confirm this assessment of the changing balance of power in the Western Pacific to varying degrees. A major 2015 RAND study comparing the two nation's sets of capabilities in a few possible conflict scenarios, both in the near term and over the next several years, reaches the conclusion that "the frontier for U.S. dominance in Asia will progressively recede as China's ability to project power improves."¹³³ The CSIS similarly declares that "if China's economic, military, and geopolitical influence continues to rise at even a modest pace [during the next few decades], the world will witness the largest shift in the global distribution of power since the rise of the United States in the late nineteenth and early twentieth centuries."¹³⁴ Other Carnegie studies reach similar conclusions.¹³⁵ Finally, while the Chinese advantage of fighting close to its own territory diminishes as conflict scenarios move farther away from Chinese shores, recent island construction by China on the Spratly Islands may bolster Chinese capacity to project power in contested areas such as the South China Sea.

COMPENSATORY ALLIED CAPABILITIES

In response to the changing Sino-U.S. balance of military forces in the Western Pacific, some observers assert that increasing allied and friendly military capabilities (most notably those of Australia, India, Indonesia, Japan, the Philippines, and South Korea) will compensate for any significant relative decline in U.S. capabilities compared with China, thus creating the basis for continued U.S.-led regional predominance. This argument is not as compelling as many think, for two basic reasons.

First, it is far from certain that these nations will be able to increase their quantitative and qualitative military capabilities over the next twenty-five years at levels sufficient to compensate adequately for declining U.S. capabilities relative to China, especially in some key power-projection areas such as submarines, space, certain classes of surface combatants, ballistic and cruise missiles, and certain types of advanced fighter aircraft. Second, various political and geostrategic factors suggest that not all U.S. allies and

friends will necessarily move in lockstep with Washington to develop both capabilities and military doctrines intended to counter growing Chinese capabilities.

QUANTITATIVE ASSESSMENTS

In recent years, Beijing has come to enjoy significant, and growing, levels of superiority over all U.S. allies and friends (with the partial exception of Japan) in all of the noted military or military-relevant domains. Even when increases in similar U.S. systems deployed to the Asia-Pacific region are included in the mix, Beijing has still been gaining overall in some notable areas. (For a detailed analysis of Chinese versus allied or friendly force levels, please see appendix F.)

Submarines. Compared with China's approximately 49 to 74 submarines by 2040, Japanese submarines are likely to number between 19 and 28, according to past commissioning rates.¹³⁶ The submarine force levels of Australia, South Korea, and India will most likely range between 10 and 20 each by 2040. The forces of Vietnam, the Philippines, and Indonesia will be much weaker in comparison.¹³⁷ Only in the case of Japan will such numbers make an appreciable difference, giving the advantage in combined nuclear and conventional submarines to the U.S.-Japan alliance.

Destroyers. Compared with the 40 or so destroyers China would possess by 2040, Japanese destroyers could number 31 by 2040,¹³⁸ thus significantly adding to U.S. totals (although Tokyo might not possess the legal foundation for deploying them or other weapons platforms in combat situations beyond the home islands, even by that date).¹³⁹ The destroyer forces of Australia (which does not currently have any destroyers but has acquisition plans out to 2020), South Korea, and India are each likely to number between 10 and 20, while Vietnam, the Philippines, and Indonesia do not currently possess any destroyers, although Japan and the Philippines are discussing the transfer of two naval guided-missile destroyers to the Philippines.¹⁴⁰

Frigates. Compared with China's potential for deploying over 50 frigates by 2040, Japan's only class of frigates—the Abukuma FFGM/DE—has not undergone any new commissions since 1993. In 2040 Japanese frigates would most likely maintain their current level of 6 ships, until the older FFGs are decommissioned over the next decade. Australian Adelaide-class frigates and South Korean frigate forces would each number around ten by 2040.¹⁴¹ Again, Vietnamese, Philippine, and Indonesian forces are much weaker in comparison.¹⁴² Hence China's possible combined destroyer-frigate force of nearly 100 platforms by 2040 would roughly equal those in the *total* U.S. and Japanese inventory. As a result, the numbers deployed in the Western Pacific would probably give China the advantage.

Aircraft and Helicopter Carriers. Compared with China's aircraft carriers, the Japanese Hyuga-class helicopter carriers are much smaller, with a displacement of only 18,289 tons at full load,¹⁴³ and cannot operate fixed-wing aircraft. India, in addition to its modified Kiev-class carrier, commissioned in 2013, has a Hermes-class carrier commissioned in 1959 and is building another one—the Indigenous Aircraft Carrier (Project 71). South Korea currently operates a Dokdo-class helicopter assault ship and has plans to deploy two 30,000-ton-displacement light-aircraft carriers between 2028 and 2036.¹⁴⁴ In comparison, China's *Liaoning* carrier has a displacement of 46,637 tons at standard load,¹⁴⁵ a greater full-load displacement, and the ability to operate fixed-wing aircraft, currently the J-15.

Tactical Land-Based Fighters. Compared with China's potential 2,000 to 3,000 fighters and attack aircraft, the Japan Air Self-Defense Force operates 60 F-4s that are forty years old, 201 F-15s that are twenty-five years old, and only 92 newer indigenous F-2s.¹⁴⁶ South Korea currently operates 448 fighters and ground attack fighters but does not operate any naval aviation fighters. The Royal Australian Air Force, in comparison, is much weaker, but it has plans to acquire 72 fifth-generation F-35As to replace its aged inventory of combat aircraft, centered on the F-18. The Indian Air Force is not well integrated, with aircraft and platforms purchased from various countries. Other regional security partners and allies, such as the Philippines, Indonesia, and Vietnam, have comparatively weak air capabilities.¹⁴⁷ Overall, future allied air power will certainly not come close to balancing available Chinese advanced aircraft in numbers.

Coast Guard Combatants. Chinese Coast Guard ships number 394 today. As noted above, China is likely to have between 240 and 280 larger and better-armed coast guard ships by 2040. The coast guard forces of other countries are almost certain to be much less significant, with the sole and important exception of Japan. By 2040, Japan might possess between 530 and 630 coast guard ships.¹⁴⁸ However, whether Japan can sustain the current annual commissioning rate of around 10 or 11 ships needed to reach this number is questionable. Moreover, the Chinese commissioning rate going forward may well exceed the current circa 5 per year if China feels the need to strengthen its hand.¹⁴⁹ In comparison, Australia's 13 Armidale-class patrol boats—the only ones the Royal Australian Navy operates—are set to be replaced starting in 2018 with a new class of 20 offshore patrol vessels of unclear design.¹⁵⁰ South Korean commission data for twelve classes of coast guard ships suggest that the country could have between 88 and 150 coast guard ships by 2040.¹⁵¹ Indian Coast Guard commission data for eleven classes suggest 170 to 190 coast guard ships by 2040.¹⁵² Indonesian commission data for nine classes of coast guard ships (including buoy tenders) suggest 25 to 38 coast guard ships by 2040.¹⁵³ The Philippine Coast Guard commission data for fourteen types of

coast guard ships suggest between 50 and 73 coast guard ships by 2040.¹⁵⁴ While the Philippines currently has over 70 patrol and coastal combatants and plans to invest heavily in future capabilities, the Armed Forces of the Philippines still has a force posture that grossly favors the army.¹⁵⁵ The Philippine Coast Guard ships are also small in size and displacement level compared with those of the Chinese,¹⁵⁶ which means that current Philippine ships are at a disadvantage in the rough waters of the South China Sea in case of a confrontation.

Overall, given their limited numbers, it is unlikely that the coast guard forces of Vietnam, the Philippines, and South Korea will pose a significant force-on-force challenge to the future larger-scale and more numerous Chinese Coast Guard. Only Japan will potentially outmatch the Chinese in numbers, if not in size, assuming a consistent rate of production.

QUALITATIVE MILITARY ASSESSMENTS

Among America's Asian allies and friends in the Asia-Pacific region, Japan plays the most important role in counterbalancing China. Tokyo is a close U.S. ally and already possesses a potent air, naval, and coast guard capability. The Japan Coast Guard, consisting of roughly 400 ships, is probably at present the best in Asia.¹⁵⁷ Also, Japan has one of the world's best ballistic missile defense systems and continuously upgrades its four Aegis destroyers capable of ballistic missile defense.¹⁵⁸

In addition, in recent years, Japan has worked more energetically to increase both its combat effectiveness and its level of interoperability with U.S. forces, especially in the areas of missile defense, ISR, antisubmarine warfare, and more direct logistical support. It is also endeavoring to expand multilateral security cooperation with nations such as Australia, South Korea, and India.

However, as long as Japanese defense spending stays at around the historical level of 1 percent of GDP per annum and significant economic and political limits remain on the size and function of Japanese forces, net increases in Japanese weapons platforms capable of counterbalancing Chinese offshore power will remain fairly modest over the next twenty-five years. These will probably amount to low double-digit net increases, at best, in numbers of advanced conventional submarines, fighters, combat fighters, and destroyers. For example, in the area of combat aircraft, the F-X replacement of the F-35 Lightning II will most likely come slowly and in limited numbers, and there is no replacement yet for Japan's F-15Js. As mentioned earlier, the country's air defense still relies predominantly on rather old F-4s, F-15s, and F-2s. Acquiring significant numbers

of expensive advanced tactical aircraft at the prices imposed by Japan's procurement system will probably prove impossible under current budgetary realities.¹⁵⁹

Furthermore, as long as Japanese defense spending remains low, it is unlikely that Tokyo will significantly increase its carrier capabilities, and almost certainly not to four or five carriers. While Japan will probably continue to improve its level of security cooperation with other Asian states, severe limits will almost certainly remain on the extent and significance of such cooperation for counterbalancing China, owing to both political and resource restraints among all parties concerned.¹⁶⁰ And, despite the passage of a new security bill in the Diet in late 2015, incremental security changes are unlikely to significantly alter the constraints historically faced by the Japanese military.¹⁶¹ Overall, Japan's military forces will continue to focus on their main function of defending against direct attacks on Japanese territory while providing only more-effective rear-area support for U.S. forces operating farther afield. And according to conversations with knowledgeable observers, Japan is far from achieving strong interoperability capabilities with U.S. forces.

South Korea, another close U.S. ally, will almost certainly increase its maritime power-projection capabilities beyond the Korean Peninsula over the next twenty-five years, especially if the threat posed by North Korea abates considerably. As indicated above, in recent years Seoul has acquired Aegis-capable destroyers, a larger submarine force, and airborne warning and control (AWAC) aircraft and is making considerable investments in short- and medium-range ballistic missiles, missile defense, and UAVs. It also has plans to replace its aging combat-fighter force with more sophisticated platforms and, as mentioned above, has plans to acquire another two light-aircraft carriers by 2036.

That said, Seoul's ability to actually acquire such offshore power-projection capabilities will depend greatly on both the North Korean threat situation and Seoul's future financial capabilities. If past trends are any indication, an increasing North Korean nuclear and conventional threat will continue to limit future increases in such projection capabilities to modest levels at best. South Korea demographics are suffering from low birthrates and accelerated aging, and annual increases in military spending have fallen below the 8.8 percent (of GDP) mark, which has been seen as a key budgetary baseline since the beginning of this century. Rising social welfare costs mean that the military budget takes up only 10 percent of central-government spending and is unlikely to rise significantly in future years.¹⁶² In particular, numbers of advanced surface combatants and submarines are likely to increase only at high single-digit or low double-digit levels over the next twenty-five years. Moreover, if South Korea is united during the next twenty-five years, this number could decrease significantly, given both the reduced threat and the likely resource demands resulting from a no-doubt costly unification process.

The Philippines will almost certainly prove unable to provide a significant compensatory military force against China over even the long term, for both political and resource reasons. Although former president Benigno Aquino III unveiled a long-term capability development plan that envisions significant quantitative and qualitative improvements in both air and naval capabilities, a lack of funding and political backing has stalled the program. If the past is any guide, future political transitions, as well as the effects of extensive corruption and patronage politics, will continue to undermine any plans for military modernization and expansion. Furthermore, the Armed Forces of the Philippines are heavily unbalanced toward the army, reflecting the Philippine military's concern about armed domestic insurgencies.¹⁶³ This will quite likely continue to act as a drain of resources away from maritime applications.

It is by no means certain that Manila will undertake the deep reforms needed to remove such obstacles to force modernization. And while certainly more attuned in recent years to the potential threat posed by a rising China, the Philippine public and political elite overall have not shown a clear commitment to developing the resources necessary to create a military force capable of doing more than defending the country against a direct attack. That mission alone is a huge task, given the size of this archipelagic nation. Finally, even if successful, the focus of the desired reforms and buildup will almost certainly remain on border patrol and territorial defense, not power projection. Admittedly, an increased ability to defend one's own territory could arguably reduce any possible future burdens on U.S. forces in performing that task. But U.S. force planning does not and most likely will not in the future encompass such duties.

Australia, another important U.S. treaty ally, has also drawn up ambitious plans to modernize the military. As mentioned earlier, Australia has plans to acquire F-35As to replace its current aircraft, to obtain EA-18G Growlers, and to attain an AWAC capability. The country also plans to procure larger and more capable submarines to replace the existing fleet centered on six Collins-class boats (its largest procurement plan at present), to make high single-digit net increases in numbers of destroyers and frigates and to upgrade its existing F/A-18 and guided missile frigate arsenals.

Completion of these plans will probably span decades, and many commentators view at least some elements (most notably, the submarine acquisition) as financially unsustainable and technologically beyond Australia's abilities. In any event, the numbers of new or additional platforms are relatively small, amounting to high single-digit or low double-digit increases, and in total will almost certainly not constitute a force capable of adding much to U.S. efforts to counterbalance Chinese military power within the second island chain extending out to approximately 1,500 to 2,000 nautical miles from the Chinese mainland—yet still far from Australia. Most of Australia's military systems are designed

to protect its home territory and access to its ports, all far from China's maritime periphery. Australia has not had a carrier capability since the early 1980s, when its third and last aircraft carrier, the HMAS *Melbourne*, was retired from service.¹⁶⁴ Since late 2014, there has also been speculation that the Australian navy will convert its two landing helicopter docks (LHD)—the *Canberra* and the *Adelaide*—into full-blown aircraft carriers, at the cost of \$300 million per ship. Speculation remains speculation, however, and the Australian government has not made any official announcement regarding the conversion of the *Canberra* and the *Adelaide* into aircraft carriers.

As mentioned earlier, over the next twenty years the Australian government will buy eight or more replacement submarines, nine future frigates, and a number of patrol vessels that will in total cost over 89 billion Australian dollars.¹⁶⁵ However, according to at least one estimate, despite these ambitions and Australia's need for greater maritime capabilities, especially in northern Australia (the Royal Australian Navy operates primarily in the south for historical reasons), questions about affordability persist.¹⁶⁶

Indonesia (not a formal U.S. ally) also has plans to improve its military capabilities. These include probably single-digit net increases in combat aircraft and attack helicopters and the development of a more capable green-water navy centered on corvettes and patrol boats, new diesel-electric submarines, and improvements in its fleet of maritime patrol aircraft.¹⁶⁷

While they are likely to raise the capability, if not the overall size, of Indonesia's armed forces, such improvements, if successful, will remain highly focused on ensuring domestic stability and defending Jakarta's far-flung island territories. In addition, even though Indonesia's defense spending nearly doubled between 2004 and 2013, it remains very low as a percentage of GDP (less than 1 percent) as a result of ongoing economic problems and a variety of demands for social spending. Indeed, the defense industry has been allowed to wither in recent years. Moreover, foreign investors tend not to regard Indonesia as a suitable site for R&D activities, owing to its weak skill base, limited protection of intellectual-property rights, and absence of significant public support for R&D. While President Joko Widodo has called for Indonesia's defense budget to grow to 1.5 percent of GDP, if the past is any guide the bulk of any possible increase will be devoted to personnel costs, not R&D and weapons procurement. Moreover, as with the Philippines, Indonesia's military-modernization efforts will almost certainly continue to suffer from problems of corruption and patronage politics; Indonesia's human capital and technological base will probably remain very weak, and the country's elite divided. One knowledgeable observer has asserted that Indonesia's projection of both hard and soft power is likely to be well below the level one would expect of a country of Indonesia's stature.¹⁶⁸

India's modernization plans are perhaps the most ambitious of any of the powers discussed here. It is certainly possible that New Delhi will seek a long-term power-projection capability of direct relevance to U.S. efforts to counterbalance growing Chinese power in the Western Pacific. This could result from both likely improvements in New Delhi's potential threat to Chinese naval capabilities in the Indian Ocean and its possible future ability to counterbalance, to at least some extent, the Chinese military presence in the South China Sea and, to a lesser extent, the East China Sea.

However, Indian R&D spending levels are considered low even compared with other BRICS economies (Brazil, Russia, China, and South Africa), and in 2010, while China had 41 of the top 500 supercomputers, India had only 4.¹⁶⁹ Military R&D has been steady at around 100 billion to 108 billion rupees per year over the past five years, which equals about \$1.5 billion and is equivalent to between 5.5 and 6.5 percent of the Indian defense budget. The Indian Air Force also suffers from problems. The Indian pilot-to-seat ratio is 0.81 to 1, compared with Pakistan's 2.5 to 1 and America's 2 to 1. Although the air force has contracted to acquire 272 SU-30MKIs, with an expected delivery date of 2030, India possesses only 35 active fighter squadrons, while by current estimates 45 squadrons are required to be able to "counter a two-front collusive threat" of the type that China might pose.¹⁷⁰ Most crucially, an inefficient state administration apparatus and dysfunctional domestic politics also undermine the steady development of Indian national resources and military power.¹⁷¹

Another rising regional player to consider is Vietnam. In the past six to eight years, Vietnam has strengthened its military relations with the United States partly owing to tensions with China in the South China Sea. Since 1988, when China's seizure of Johnson South Reef from Vietnam involved a skirmish that left 70 Vietnamese dead, Vietnam has started to emphasize the maritime domain as an important security challenge. This emphasis is demonstrated through Hanoi's weapons acquisition programs and development of A2/AD capabilities that involve Su-30 fighters, corvettes, frigates, land-based missile systems, and Kilo-class (or Varshavyanka-class) submarines from Russia. Furthermore, in recent years, Vietnam has diversified its traditional reliance on Russian military equipment to explore buying military hardware from U.S. allies and security partners, including South Korea, Japan, Singapore, Israel, and the United States itself, although the Vietnamese procurement budget is small, at \$1.4 billion. Even though Hanoi is now permitted to buy lethal maritime-security equipment from the United States, procurement of advanced weapons systems is complicated and slowed down by the sophistication and cost of U.S. systems and by debates in the U.S. Congress on Vietnamese human rights records.¹⁷²

Overall, although Vietnam will doubtless increase its capacity to defend its home territory against a Chinese attack, it will certainly not match China's capacity to operate in the South China Sea—far from it.

Another important regional power is Russia. Russian military spending grew by 16 percent per year between 2000 and 2014. Expenditures, on average, took up 3.8 percent of Russian GDP in this period. However, Western sanctions against Russia and plunging oil prices may soon force the country to cut back on its military ambitions. While Russia allocates a significant portion of funding for research development, testing, and evaluation, its force-modernization programs have already been severely cut back. For instance, although Russia plans to acquire 600 new aircraft and 1,000 to 1,100 helicopters by the end of this decade, most of these products are modernized versions of Soviet-era aerial systems and not new models. Furthermore, although Russia is developing the new T-50 PAK FA fifth-generation stealth fighter, the air force is reducing the 2020 procurement targets of 52 PAK FAs to only twelve. The sanctions following Moscow's annexation of Crimea also led to a lack of access to essential foreign components by the Russian shipbuilding industry, making the navy unlikely to modernize sufficiently to recoup its surface blue-water fleet.¹⁷³ Such constraints on Russian force modernization are likely to continue for at least the near to medium term.

POLITICAL AND GEOSTRATEGIC FACTORS

A second major factor constraining the compensatory effect of improvements among Asian allies and friends is that one cannot assume that all such powers will employ their improving capabilities in tandem with Washington to counterbalance Chinese military capabilities, either in peace or wartime. Most notably, India, Indonesia, and South Korea could (and quite likely will) all continue to pursue independent, hedged approaches to dealing with an increasingly strong Chinese military and economy. In the absence of a hostile bilateral relationship with Beijing, most if not all would probably avoid undertaking significant coordinated military operations in peacetime, both among themselves and with the United States, that are clearly intended to challenge or counterbalance Chinese military power in the Western Pacific. Even India is unlikely to pursue military-modernization efforts in ways that compromise its long-standing historical emphasis on independence and strategic flexibility. Equally important, in an actual Sino-American conflict, most Asian powers that are not formal treaty allies (and even some allies) would almost certainly calculate their response on the basis of the specific threat posed to themselves, not to the United States. And virtually all powers would also consider their strong (and probably deepening future) level of economic engagement with Beijing and China's overall growing economic clout in the Asia-Pacific region when considering their response.

Except in the highly unlikely case of entrance into a formal mutual security arrangement with Washington, neither New Delhi nor Jakarta would be required to militarily assist the United States in a conflict with Beijing, and both would most likely prefer to stay out of the fray unless directly attacked. Under its current security treaty with the United States, even South Korea is obligated merely to consult with Washington and provide assistance “in accordance with its constitutional processes” in the event of an attack on U.S. territories in Asia.¹⁷⁴ Perhaps more important, ongoing tensions between Japan and South Korea over historical issues, the overall positive view toward China (as opposed to Japan) held by most Koreans,¹⁷⁵ and deepening Sino-Korean economic ties,¹⁷⁶ all suggest that Seoul will continue to resist incorporation into a coordinated and deliberate counterbalancing military strategy toward Beijing, seeking instead to strengthen economic and diplomatic ties with its huge neighbor in all but the most extreme threat scenarios.

On September 3, 2015, South Korean President Park Geun-hye attended the military parade in Beijing commemorating the end of World War II and praised China’s “constructive role in defusing [recent] tensions on the Korean Peninsula.” In the past two and a half years, President Park has met with Chinese President Xi Jinping six times. The two countries show a convergence of views on historical issues such as Japan’s cruel behavior during the Second World War, and advancement in the economic relationship between the two countries is demonstrated by Seoul’s preparations to finalize its free trade area with China and to join the Asian Infrastructure Investment Bank while refusing thus far to take part in the TPP negotiations. On national defense, although Seoul hesitated to adopt the U.S. Terminal High Altitude Area Defense missile-defense system owing to Chinese resistance, this attitude has changed recently, as is evident after the recent North Korean missile launch and nuclear test in 2016. South Korea has agreed to reenter talks aimed at installing a high-altitude defense system after being disappointed by China’s inaction and silence regarding the North Korean launch.¹⁷⁷

While the alliance between the United States and the Republic of Korea remains strong, and while South Korean officials may still be deeply suspicious of Chinese intentions, public opinion polls reflect the pattern of South Korea’s courting of China described above. A quadrilateral opinion poll conducted in Japan, the United States, China, and South Korea in 2015 found that the majority of Chinese (90.1 percent) and South Koreans (70.6 percent) identified China as a country that would deal responsibly with world problems, compared with only 34 percent in the United States and 14.9 percent in Japan. Compared with the 70 percent of Americans and Japanese who were supportive of Japan’s United Nations (UN) Security Council bid, only 19.2 percent South Koreans and 8.5 percent Chinese backed it, according to the same poll. Responses to this poll often reflected Chinese and Republic of Korea alignment on one side, with Japan and the United States on the other.¹⁷⁸

Of even greater importance, absent a major crisis or other event that greatly increases the perceived military threat posed by China, it is highly unlikely that Japan will alter its long-standing political and legal restrictions on the size and offensive role of its armed forces, even over the long term. A clear majority of the Japanese populace will almost certainly remain highly resistant to the transformation of the Self-Defense Forces into a normal military force able and willing to conduct combat operations against China across the Western Pacific. Even under the new, expanded security legislation passed in 2015, the Japan Air Self-Defense Force will remain limited to a use of force only in response to a direct threat or attack against Japanese territory or the provision of rear-area support for U.S. combat forces in contingencies that directly threaten Japanese security, such as a Taiwan conflict. Moreover, economically and financially, Japan will almost certainly continue to face significant, and quite likely growing, limitations on defense spending as its society ages, thus increasing greatly the demand for social welfare expenditures.¹⁷⁹

Allied relations between Japan and the United States are also complicated by local opposition to the relocation plan for the Futenma base. In November 2014, then Okinawa governor Hirokazu Nakaima, who approved a landfill permit for the Futenma Replacement Facility at Henoko, was defeated by Takeshi Onaga, whose campaign promise was to oppose the Henoko relocation plan.¹⁸⁰ The CSIS has argued that, if the Henoko plan cannot be implemented, the only alternative for the U.S. marines would be to continue operating out of Futenma, given the disadvantages of other proposed options, and the consequences of an accident in such a densely populated area “could easily precipitate a crisis in the U.S.-Japan alliance.”¹⁸¹ In other words, the basing problem is likely to remain a potentially serious obstacle to an effort to enhance Japan’s regional security role alongside the United States unless the U.S. and Japanese governments make a genuine effort to come up with creative alternatives.¹⁸²

Finally, it is possible that Russia could actually serve to augment Chinese military capabilities in the Western Pacific over the long term. Most incentives favor Russian strategic alignment with China, even though Russia is arguably increasing its military presence in Central Asia partly to reduce China’s growing influence in that region.¹⁸³ Russian President Vladimir Putin certainly hopes to preserve friendly relations with China for economic reasons, given Russia’s sanction-crippled economy. In May 2014, China and Russia signed a thirty-year natural-gas deal worth \$400 billion. China has become the first buyer of Russia’s most advanced air-defense system, the S-400, with another deal on Russian Su-35 fighters in the works.¹⁸⁴ The PLAN and the Russian Navy have also conducted joint naval exercises in the Yellow Sea, the Sea of Japan, the East China Sea, and the Mediterranean Sea, with another one planned for 2016 in the South China Sea.¹⁸⁵ Russian arms sales to China have significantly increased Chinese capabilities, and

Sino-Russian relations, while definitely falling well short of an alliance, have become close, perhaps “too close for the United States and its Asian allies to take much comfort,” according to Andrew Kuchins.¹⁸⁶ Kuchins even suggests that China and Russia may be reaching a nascent agreement to have Russia take a less neutral stance and support China’s territorial goals in Asia, in exchange for which China would agree not to oppose Russian actions in the West.

On the negative side, Russia remains primarily a European power, and its engagement in the Far East thus far remains underdeveloped and is unlikely to expand greatly, even over the long term. While Russia could assist Beijing politically, rhetorically, and perhaps economically in countering U.S. and allied pressure in the Western Pacific, it is unlikely to play a major military role. This is especially the case given that, despite their closer relations, Moscow and Beijing still retain deep suspicions toward one another.¹⁸⁷ Russia has sold Kilo-class submarines to Vietnam as well as Klub ASCMs, LACMs, and the P-800 Oniks land-based ASCMs.¹⁸⁸ Despite mutual territorial disputes with Japan, Moscow has proved unwilling to collaborate with Beijing on the territorial issue.¹⁸⁹ There have also been reports of Russian outreach efforts to North Korea in what may be attempts to compete with China on influence over the Democratic People’s Republic of Korea regime.¹⁹⁰

Thus all in all, the notion that U.S. allies and friends in the Western Pacific will effectively compensate for any declines in relative U.S. military power vis-à-vis China is based more on wishful thinking than hard-headed assessments of future capability and resolve. In reality, Japan is the only nation that has the potential capability, orientation, and geostrategic location to significantly compensate for declines in relative U.S. power. Yet barring a major increase in the threat posed by China well beyond anything seen thus far, or a clear U.S. withdrawal of support, it is highly unlikely that Tokyo will make the difficult social, political, and economic changes required to become a major military asset able to augment U.S. region-wide power in meaningful ways. It will almost certainly not create the basis for continued U.S.-allied military superiority in the Western Pacific.

2

THE COSTS OF PREDOMINANCE AND THE BENEFITS OF A STABLE BALANCE OF POWER

THE ANALYSIS PRESENTED IN CHAPTER 1 STRONGLY INDICATES that any effort to either sustain (in the case of the United States) or establish (in the case of China) an unambiguous level of military preeminence or predominance in the Western Pacific over the long term will probably prove quixotic and destabilizing, given future economic and political trends and features. Absent a major and very likely highly wrenching reorientation of resources toward almost unprecedentedly high levels of defense spending, neither country will have the economic and hence the defense capacity to dominate the other within the region. And even if one country were to attempt such a radical shift, the other would most likely follow suit, producing an intense arms race and zero-sum political, economic, and diplomatic competition that could destabilize the entire region.

However, for some scholars and policy analysts, the benefits of achieving predominance are so great (at least in theory), and the costs and dangers of achieving and maintaining a stable balance-of-power environment are so high, that the risk of igniting a destabilizing arms race and zero-sum competition, or of failing entirely, is well worth taking. For these analysts, the only serious issue becomes this: Does the aspirant for predominance have the will and tenacity to make the sacrifices necessary to guarantee a sustained, unambiguous level of superior military power and thereby avoid the supposedly worst-case outcome—an unstable balance of power?

With respect to the Asia-Pacific region, the primary problem with this argument (most often made by the U.S. side) is that it underestimates greatly the costs and risks involved in sustaining American predominance in the Western Pacific and overestimates the willingness and ability of the challenging power (that is, China) to subordinate itself to the United States. It also assumes, based on inconclusive evidence, that any genuine balance-of-power environment would be inherently unstable and inferior to even a highly costly unipolar environment.

In truth, predominance is an effective (that is, stabilizing) strategy only when a dominant power is on an unchallengeable upward curve or is clearly capable of sustaining its existing dominant position and when a potential challenger believes that it can protect its most vital interests indefinitely from a position of relative inferiority, in part because it believes that the dominant power has no clear interest in threatening those interests. None of these conditions prevail in the U.S.-China situation in the Western Pacific. As shown in chapter 1, the United States is clearly declining in relative economic and military terms, at least regionally and in some (primarily economic) areas globally.¹

In addition, Beijing clearly believes that Washington poses a sufficiently credible potential threat to both the People's Republic of China regime and Chinese nationalist goals in the region (such as reunification of Taiwan with mainland China) to justify major increases in military capabilities designed to reduce current and future Chinese weaknesses and vulnerabilities in protecting such interests. Indeed, for many Chinese, the ongoing U.S. commitment to the maintenance of its long-standing predominant position across maritime Asia will inevitably compel Washington to increase its alleged efforts to neutralize China's growing power-projection capabilities, thereby constituting a growing security threat to Beijing while undermining its capacity to influence regional events. The only answer to this likely threat, the argument goes, is for China to neutralize American maritime predominance.

Moreover, even if for some unlikely reason Washington is able to preserve some level of military predominance in the Western Pacific, the analysis in chapter 1 strongly suggests that Beijing will nonetheless almost certainly amass a sufficiently robust set of military (and economic) capabilities over the next twenty-five years that together could increase its willingness to take greater risks in defending or advancing its most vital interests, such as its claims to sovereign authority over Taiwan and the maritime territories of the East China and South China Seas. This is even more likely if Beijing continues to believe in the superiority of its commitment and resolve to defend and advance those interests close to home, as compared with the commitment and resolve of the United States. In other words, any future (at best limited) level of U.S. predominance in the Western Pacific is likely to prove insufficient, on its own, to ensure stability over the long term with regard to a stronger, more confident, and economically influential China.

Regarding the overall relative advantages of different power systems, in truth, international relations theorists and historians are divided over the potential costs and benefits of a unipolar versus a balance of power structure. Some observers, such as Robert Gilpin and A. F. K. Organski, believe that only a unipolar system can ensure lasting peace and stability, largely because systems marked by power parity (and in the absence of any external security guarantor) invite constant testing and attempts to achieve dominance by its constituent members.² However, other observers, including both classical realists such as Hans Morgenthau and E. H. Carr and structural realists such as Kenneth Waltz, argue that multipolar or bipolar systems, respectively, can constrain violence and promote stability.³ Whereas the complexity of the former (multipolar) system is seen to elicit greater caution and flexibility in forming alliances, the simplicity of the latter (bipolar) system allegedly reduces the risk of war-inducing miscalculation while permitting power adjustments through recurring low-level crises, that is, the two powers' preponderant power and ability to calculate the overall balance give them the ability to absorb a wide variety of disruptions.

In comparing these two balance-of-power alternatives, at least three systematic examinations of the relationship between great power conflict and the distribution of power within a state system suggest that multipolar systems are slightly more dangerous than bipolar systems. Jack S. Levy showed through a systematic survey of large-scale conflict from 1495 to 1975 that "in terms of most of the key indicators of large-scale war, bipolar systems have historically been more stable than multipolar systems, while unipolar systems have been the least stable."⁴ A 1986 empirical test by William R. Thompson surveying polarity and warfare from 1494 to 1983 revealed that conflict was "much more probable in multipolar contexts."⁵ A more recent study by Nuno Monteiro also found that multipolarity is the least-stable balance of power system.⁶

Nonetheless, despite their possible advantages, in both types of balance of power systems, the potential insecurities and temptations to test and achieve sustained advantages associated with a changing relative power dynamic presents unavoidable risks. In addition, the potentially destabilizing presence within one or more major powers of strident nationalism and an energetic and self-confident democratic political system, as well as various ideological currents, can undermine a "culture of restraint" and generate aggressive, risk-acceptant behavior.⁷ Perhaps even more important for our case, the historical record also suggests that in a bipolar system involving alliances among the two dominant powers, conflict most often results from disputes either between one of the major powers and an ally of the other power or between two smaller powers, each allied to one of the major powers.⁸

At the same time, experts of all persuasions also recognize that (1) balance of power systems are less likely to generate instability if nuclear weapons induce extreme caution

among the parties concerned in provoking and responding to crises or the apparent efforts of the other side to test resolve; (2) economic globalization and associated patterns of interdependence are sufficiently deep, extensive, and essential to regime stability to induce caution and to encourage cooperative efforts to sustain a mutually beneficial economic system; or (3) lesser regional powers (including allies of the major powers) are largely satisfied with the local status quo and larger global international system.⁹

Many of these stabilizing and destabilizing features of balance of power systems clearly exist in the Western Pacific. Examples of the latter include zero-sum maritime territorial disputes between China and two U.S. allies, Japan and the Philippines, as well as the long-standing armed dispute between Beijing's and Washington's two Korean allies, respectively, the Democratic People's Republic of Korea (DPRK) and the Republic of Korea. A variant of this type of potential third-party-generated conflict is also arguably present in the case of the China-Taiwan standoff, assuming that Taipei, although not formally a U.S. ally, is tied to Washington as a U.S. protectorate.

One must also point out that these third-party-related tensions exist alongside a major bilateral source of potential Sino-U.S. conflict in the Western Pacific: the frequent and close-in surveillance and reconnaissance activities of the U.S. military within China's exclusive economic zone (EEZ), an area extending 200 nautical miles beyond China's coastline. Beijing has long claimed that these activities are excessively provocative and dangerous and often demanded that they be reduced in number or ended altogether and at times has sought to interdict them. In an attempt to justify such statements and actions, Chinese officials have on occasion asserted that these activities constitute "hostile actions" that Beijing has a right to prevent under its interpretation of the United Nations Convention on the Law of the Sea (UNCLOS).¹⁰ Washington rejects this stance, insisting that it has a legal right under UNCLOS to conduct such supposedly benign activities within China's EEZ and without prior notification.¹¹ In fact, China has also engaged in more-limited intelligence, surveillance, and reconnaissance activities in Japanese EEZs and disputed waters in the East China Sea and has exercised "innocent passage" within 12 nautical miles of the Alaskan coastline.¹² While such activity points to the apparent hypocrisy of the Chinese position, it does not alter Beijing's stance toward its own EEZ.

On the positive side, examples of the three sets of stabilizing factors for a balance of power environment also exist in the region. First, China and the United States both possess highly credible nuclear weapons capabilities and an appreciation of the dangers of nuclear escalation. Second, the two powers, as well as other major regional states (including U.S. allies), are deeply integrated into an unprecedentedly extensive global and regional network of free trade, production supply chains, investment flows, and technology transfers. This network is far more extensive and consequential for the social

and governmental stability of the states concerned than was the case during the less integrated and less essential bilateral trade relationships existing between the great powers in the late-nineteenth and twentieth centuries. This suggests that a bilateral Sino-U.S. conflict could generate exponentially greater costs, not only for those two major powers but also for other nations, than would have occurred fifty to one hundred years ago.¹³

Third, both large and small Asian states generally support the existing global and regional economic and political-diplomatic order, characterized by the relatively free movement of goods and capital and the presence of global and regional regimes and agreements for facilitating economic intercourse and mitigating disputes. They have no major reason to push either Beijing or Washington to alter the existing status quo in these areas. Moreover, most Asian states value—or at least respect—the important roles in the region played by both China and the United States, as major economic and military powers.¹⁴

Finally, despite such stabilizing characteristics, the dangers of the geopolitical environment in the Western Pacific are compounded by the basic military doctrine and supporting force structure possessed by each nation, features that are becoming more important as China's military power grows. Specifically, both Washington and Beijing have offensive-oriented forces that place a premium on seizing the initiative early on in a conflict and taking the fight to the enemy.

The United States' armed forces are primarily oriented to conduct rapid, offensive war-fighting and war-winning operations against an adversary.¹⁵ Maintaining the initiative necessitates the early destruction of both forward-deployed military platforms and all relevant staging and launching areas, logistics channels, and C4I (command, control, communications, computers, and intelligence) capabilities, regardless of their location. The success of such operations requires preemptive or extremely rapid reaction capabilities and the early establishment of air and sea superiority throughout the theater of war. In confronting a capable adversary, such as China, with a large naval, air, and ballistic missile force, a sophisticated C4ISR infrastructure, and a set of specific offensive capabilities and doctrines designed to prevent an adversary from achieving area control, the U.S. war-fighting approach would place a particularly strong emphasis on rapid, early, deep, and extensive strikes against a wide range of military targets.¹⁶

During the reform era, China's force structure and military doctrine have undergone a fundamental transition, from a purely defensive-oriented, largely immobile, ground-force-centered, low-technology force focused on carrying out wars of attrition on Chinese soil against foreign invaders to a more technologically sophisticated, joint, mobile force expected to engage in both offensive and defensive warfare against a variety

of internal and external adversaries, including the United States. Although still primarily oriented toward the defense of existing Chinese territory, this force has in recent years expanded its roles and missions to include the defense or advancement of Beijing's sovereignty claims to Taiwan and other nearby territories, the prevention of attacks against Chinese soil before they reach the mainland, victory in possible local wars with nearby adversaries, protection against a variety of nontraditional threats to Chinese citizens and property such as terrorists and pirates, and the performance of military operations other than war, including peacekeeping operations.¹⁷

To perform these various roles and missions, China is developing a vastly more modern force structure and associated military doctrine designed to project power beyond China's borders as part of an overall active-defense approach to warfare. As with the United States, this force places a premium on taking the initiative early in a conflict through offensive actions designed to deter aggression, control escalation, and, if necessary, prevail in the conflict.¹⁸ That said, it remains at present largely oriented toward a defense against threats along its territorial periphery through the deployment of a variety of anti-access/area-denial or counterintervention capabilities, including ships, submarines, aircraft, and ballistic and cruise missiles. This includes possible strikes against nearby military installations such as airbases and logistics centers.¹⁹

To some extent, this orientation quite likely reflects the continued influence of a historically defensive military mindset focused on protecting Chinese territory as well as the technological limitations that currently exist on Beijing's capacity to engage in long-range, precision, expeditionary strike operations. However, as Beijing's military capabilities and overseas interests grow and expand, one can assume that Beijing will gradually acquire more of the elements of a more offensive-oriented, longer-range power-projection capability able to perform an increasingly complex array of missions possibly including the defense of maritime strategy and lines of communication and transport. Furthermore, bureaucratic interests within the People's Liberation Army may strengthen China's commitment to offensive doctrines and long-range strike capabilities. For example, maritime disputes and the need to protect sea lines of communication have given impetus to the PLA Navy's efforts to invest in more long-range systems, while the PLA Air Force is furthering its commitment to developing air-launched cruise missiles (ALCMs) and stealth forces to support offensive operations. Relinquishing offensive-oriented strategies and investments would therefore require a significant doctrinal change on the PLA side.

In an environment of clear military predominance by one side or the other, a war-winning, offensive-oriented conventional force structure and military doctrine could arguably serve as a potent deterrent against miscalculation and misbehavior. However, in

something approaching a genuine balance of power situation, and especially in a situation potentially involving a future conflict among nuclear powers, efforts to sustain this military approach could become a recipe for disaster. Under an uncertain power situation, both sides would almost certainly place a high premium on striking first in a severe crisis while showing a strong willingness to escalate rapidly if necessary. Moreover, in a crisis or conflict, Beijing might view any U.S. strikes on Chinese C4I command infrastructures located well inland, or the threat of such strikes, as an effort to interdict China's nuclear retaliatory capability, thus possibly prompting it to issue nuclear warnings—a highly escalatory move.

More broadly, these Chinese and American force postures and doctrines, combined with the shifting and contentious power environment in the Western Pacific, portend growing levels of instability. This might occur as (1) the rising power (China) seeks to reduce its vulnerabilities and in some instances possibly alter key aspects of the regional status quo (for example, regarding contentious territorial sovereignty issues) by excessively challenging U.S. political and diplomatic influence and power projection capabilities in the Western Pacific, and (2) the dominant power (the United States) vainly seeks to maintain its predominance in this region and in the process overreacts to real and perceived Chinese challenges to its position and interests.²⁰

These dual dangers of Chinese overconfidence and American overreaction could generate more serious and intractable political-military crises over time, absent a reasonably stable balance of power. Hence, in order to reduce the instability of a bipolar balance of power in the Western Pacific, efforts must be made to mitigate the existing sovereignty-related disputes and military-related tensions to a much greater extent than at present. Several possible ways to reach a more stabilizing set of understandings on these contentious issues are discussed in chapter 4.

In addition to reducing such tensions, both Washington and Beijing should also abandon their offensive, war-winning doctrines in the Western Pacific in favor of versions of a less escalatory, defensive-oriented active-denial military strategy, given the dangers of such concepts in a balance of power environment.²¹

Such a strategy would be oriented toward denying the other side the confidence that it could benefit from efforts to alter the status quo through military aggression, for example, by forcing a resolution of territorial disputes in its favor (through the armed seizure of disputed areas), coercing a regional power, or attaining a position of regional predominance. It would accomplish this task by relying primarily on active and passive defensive capabilities designed to maintain resiliency and deny attacking forces the

ability to establish air and sea control in any potential area of contention, without the need for preemptive strikes or significant attacks on the other side's homeland.

The specific features of such a mutual denial force posture and strategy are discussed in some detail in chapter 3. A former RAND analyst, Eric Heginbotham summarizes the overall advantages of what he terms an "active denial" strategy for the U.S. side in the following manner:

Undermining confidence in a quick victory, as well as increasing the number and types of risks inherent in military action, enhances deterrence. By making the U.S. position in Asia more resilient, diversifying the manner in which the United States can deliver combat power to blunt offensive forces, and bolstering the defensive capabilities of partners and allies, an active denial strategy would diminish Chinese prospects for quick victory. At the same time, the active denial strategy would ease the urgency and requirement for early U.S. offensive action; in other words, it would also reduce U.S. pre-emption pressures. Resilient air bases and more survivable carriers would enable the United States to avoid being knocked out in initial attacks, allowing U.S. forces to wage counteroffensive operations at a more deliberate pace. A U.S. campaign could see phased operations, in which U.S. forces systematically reduce threats in areas progressively closer to China before shifting the balance of operations to those locations.²²

On the Chinese side, adoption of a robust denial strategy would involve the further implementation and reaffirmation of what some describe as the PLA's current counter-intervention or A2/AD force posture, discussed in greater detail in chapter 3, and the relinquishment of an offensive, war-winning military doctrine as well as some current fielded capabilities. This would require the explicit rejection of efforts to develop a serious power-projection capability designed to seize and hold disputed maritime territories by force or to conduct penetrating and punishing conventional strikes against the territory of regional states, including Japan and other U.S. allies, much less to achieve a position of regional predominance. In the Western Pacific, under a denial strategy, Beijing's conventional military forces would focus almost exclusively on providing adequate defenses against U.S. or allied attacks on currently occupied Chinese territory or U.S. and allied attempts to reestablish a position of military predominance in the area extending at least to the second island chain via air and sea control, and so on.

Thus while for China adoption of a mutual denial strategy would largely involve the abandonment of certain current and future offensive actions, power-projection military capabilities and certain options such as the forcible seizure of claimed territories (both possibly under consideration by Beijing at present), for the United States and its allies

it would involve an arguably more wrenching transition to a new type of limited force structure and doctrine in Asia.

That said, the creation of a mutual denial military posture in the Western Pacific would not require the sacrifice of any vital American (or Chinese) interests. As suggested above, under such a posture, Washington would retain the ability to deter aggression, assure the security of key allies such as Japan, reduce the chances of a highly escalatory crisis emerging, and avert a costly and dangerous arms race in the region. It would also arguably increase Chinese incentives to pursue peaceful means in addressing maritime disputes, given the requirement on both sides of abandoning a force structure designed to seize and hold offshore territories in the East China and South China Seas. Equally important, for China, such a force posture would provide a much more credible (and hence reassuring) foundation for the notion, often stated by U.S. officials, that the United States poses no military threat to Chinese territory. And for both states, such a force posture and military doctrine would prevent the emergence of the other as a dominant, potentially hostile power able to obstruct free trade or intimidate smaller powers politically, economically, or otherwise. Finally, a regional mutual denial force posture would not prohibit either power from acquiring the capabilities necessary to protect maritime SLOCs outside the Western Pacific against both nonstate and state actors, including each other.

3

THE SEVEN COMPONENTS OF A STABLE BALANCE OF POWER

AS THE PRECEDING ANALYSIS SUGGESTS, to avoid a worsening arms race and perhaps even the emergence of a tense, crisis-prone Cold War–like environment in the Western Pacific, the United States, China, and other major Asian powers must accept the realities of the de facto movement toward a balance of power in the region and hence the need to transition to a stable version of that balance. The likely features of such a stable balance were originally presented in outline form in my original essay, “Beyond American Predominance in the Western Pacific,” and to some extent are discussed in chapter 2. They include the following:

- A largely defense-oriented, mutual denial U.S. and Chinese force posture and military doctrine designed to preserve essential deterrence capabilities on both sides while ensuring adequate levels of assurance for the United States, China, and other Asian powers and reducing the chances of escalatory confrontations
- An array of more extensive and intensive region-wide confidence-building measures and crisis avoidance and management mechanisms intended to reduce miscalculations and avoid worst-case interpretations of each power’s motives and actions
- A more stable, long-term set of understandings regarding the most potentially volatile sources of crisis and conflict across the region, including the security

environment on the Korean Peninsula and across the Taiwan Strait, the management of volatile maritime territorial disputes, and the intelligence, surveillance, and reconnaissance activities of China, the United States, and Japan along one another's maritime periphery

- A more integrated, deeper set of region-wide economic structures and processes designed to increase common incentives for an open, cooperative trade, investment, and finance system across the Western Pacific and beyond

In total, these elements constitute a maximalist or ideal set of features of a stable balance. However, lesser, arguably more attainable minimalist approximations of these features also exist that could result in a comparatively less stable balance but one nonetheless still preferable to a destabilizing effort to achieve or sustain predominance.

A less ambitious, minimalist version of a stable balance, would be centered on:

- A mutual denial force posture and military doctrine
- A range of CBMs and CMMs designed to reduce the likelihood and severity of future Sino-American crises
- Understandings regarding possible future contingencies on the Korean Peninsula as well as the use of force and movement toward independence on Taiwan
- A strengthened but limited U.S.-Japan security relationship
- A militarily limited East China and South China Seas environment
- Limited ISR and freedom of navigation (FON) operations
- Joint efforts to sustain a regional free trade and investment system and a strengthened U.S. economic system

One or the other version of a stable balance is essential because no stable balance of power can rest on a level of rough military parity alone. A stable balance also requires reinforcing political, economic, and military structures and processes that reduce the natural tendency of the members of a power balance to test the other side's resolve, possibly as part of an attempt to break out of the balance to achieve a sustained advantage; to minimize the likelihood of political-military crises and the potential for such crises to escalate, via worst-case-oriented miscalculations; and to enhance incentives on all sides to resolve disputes peacefully.

A MUTUAL DENIAL FORCE POSTURE AND REINFORCING CMMS

The emergence of a *de facto* rough parity among conventional U.S. and Chinese forces in the Western Pacific, given their present-day force posture and doctrine, would arguably increase the likelihood of future regional crises and conflicts between them, especially if one or both sides sought to eliminate or forestall such parity. As indicated in the previous chapter, the force posture most capable of sustained stability under these conditions is one centered on a mutual ability to deny efforts at military aggression without posing the threat of severe escalation or gambits designed to achieve a permanent advantage for one side. This would involve a largely symmetrical, defense-oriented, and mutual denial centered military force structure and doctrine.

Such forces would possess three key features: a resilient, hardened force able to survive a preemptive strike by the other side; the capability to severely threaten, if not neutralize, forces engaged in offensive operations against valued assets, such as surface and subsurface combatant ships, aircraft, and amphibious platforms; and an absence of destabilizing and escalatory regional capabilities designed to undertake deep-penetrating strikes against enemy homeland infrastructure and military targets. In other words, the military doctrines and force postures would be primarily defensive in nature, designed to deter through denial (not seizure and control or punishment of homeland territories) and limit offensive capabilities in ways that would minimize escalation and reassure the other side.¹

This type of strategy would require a range of capabilities for both the United States and China, some of them new or enhanced, including robust active and passive defenses to protect air and naval bases in theater (such as hardened facilities, improved ballistic missile defenses, greater camouflage and concealment, and rapid repair capabilities); more robust, defense-oriented cyber and electronic warfare measures; both on-base and theater-level dispersal of critical military assets; a greater reliance in the region on short-range, tactical airpower as well as quieter, faster attack submarines and small, fast frigate-sized warships with robust anti-ship cruise missile capabilities; an expanded inventory of long-range anti-ship missiles deployed on land, ships, and aircraft; a greatly strengthened ability to deliver mines; and, especially in the case of the United States and Japan, a suite of weapons designed to interdict amphibious forces (such as cluster munitions, land-attack missiles, artillery, and rocket systems).² All of these capabilities would greatly constrain the other side's ability to conduct offensive operations.

Both the cyber and space domains pose a potential problem for a mutual denial strategy, in large part because they inherently tend to favor offensive first-strike over defensive capabilities. Ideally, the most stable configuration for these realms is thus one in which

both sides possess and retain strong retaliatory capabilities, a difficult task. That said, it is unclear how decisive either set of realms would be in an inevitably larger conflict in the Western Pacific involving a full array of conventional weapons. The temptation to strike first in the cyber and/or space realms in a larger defensive or denial environment might be relatively low.

On the U.S. and allied side, such a force structure would constitute a very potent form of anti-access/area denial that is able to deny China the ability to seize and hold offshore territories or establish air or sea control for sustained periods of time across the first and second island chains, thus including Japan, Taiwan, and the disputed maritime territories in the East China and South China Seas. While relying on a continued (but somewhat restructured) forward U.S. presence, it would focus on denying Beijing the benefits of military aggression rather than ensuring a decisive victory through punishment and the near-complete destruction of all major military assets. To attain this purpose, Washington would reduce its reliance on vulnerable forward-deployed-carrier battle groups and deep-strike weapons of various types, while increasing its reliance on submarines and the noted defensive capabilities.³

While most of these capabilities would be part of the U.S. force structure, some could be undertaken or augmented by Japan. In general, in a denial force structure, Tokyo would become a “dangerous porcupine,” largely free from coercion, and a facilitator of Washington’s deterrence-by-denial force. As Eric Heginbotham and Jacob Heim state, the United States could assist Japan and other allies and partners in “creating [its] own A2/AD zones equipped with air defense, anti-ship cruise missiles, mines, and sensor networks.”⁴ Tokyo would also need to improve its ability to operate with U.S. forces via improvements in combined training, data sharing, embedded military advisers and liaisons, and prepositioned supplies. All of these capabilities could be attained without necessarily requiring Japan to revise its existing peace constitution or to otherwise acquire an offensive military force designed to conduct combat operations beyond Japan’s immediate vicinity.⁵

Other current U.S. allies in the Western Pacific, that is, Australia, the Philippines, South Korea, and Thailand, would not necessarily need to augment significantly their existing capabilities to complete a U.S.-led denial posture. In some cases (for example, South Korea), their role would almost certainly diminish significantly as a location for U.S. forces, to create a more stable, largely neutral Sino-U.S. buffer area along portions of China’s maritime periphery. In other cases (for example, Australia and the Philippines), the number of locations for U.S. forces might increase. In addition, a denial posture would not require any strategic role for Taiwan. To the extent possible, the island should be neutralized as a driver of Sino-U.S. military competition, becoming part of a buffer

area with minimal military forces on both sides, other than purely defensive, largely indigenously produced weapons on Taiwan.

Although it clearly involves considerable financial costs, this strategy would prove far less costly than U.S. and allied efforts to sustain or restore so-called all-azimuth (from all angles) dominance across the Western Pacific. According to Heginbotham, it would “probably not require an increase in the overall [U.S.] defense budget. Curtailing investment in prompt global strike and reducing the F-35 buy, which would become less critical under a strategy that does not depend on penetrating mainland air defenses, are savings that could pay for the active denial strategy.”⁶

It is worth noting here that a different strategic approach offered by scholars and officials such as Thomas Mahnken and U.S. Deputy Secretary of Defense Robert Work emphasizes the use of qualitative investments by the U.S. military to sustain a strategic advantage vis-à-vis competitors, particularly China. Thomas Mahnken’s argument draws from peacetime competitive strategies developed during the Cold War in the 1970s and 1980s. It consists of first identifying the comparative advantages and related costs and benefits of one’s own and the competitor’s militaries, then making many deliberate investments on specific weapons systems designed to prompt a reaction or shape the spending patterns of the competitor, encouraging it to spend inefficiently, so that defense expenditures become self-defeating and unsustainable.⁷

A slightly different take on this approach is advocated by defense officials such as Work. Termed the so-called third-offset strategy and currently embedded within the Department of Defense’s Defense Innovation Initiative, it aims at increasing U.S. defense expenditures on new technologies to increase the competitive advantage of the United States and its allies. This strategy seeks to counter the relative gains of competitors (China, Russia, Iran, and so on) in A2/AD capabilities, in particular, by creating a larger technological gap that caters to the United States’ strategic advantage (that is, to spend more but spend smartly in a way that is qualitatively prohibitive to competitors) without focusing so much on forcing the adversary to spend inefficiently.⁸

Both of these strategies recognize the baseline assumption that the United States is facing a long-term erosion vis-à-vis China in quantitative (and to some extent qualitative) military resources and should redress this shift by making calculated investments in different defense areas. Aspects of some of these alternative strategies are not incompatible with a mutual denial force structure. In fact, Mahnken actually presents a U.S. denial force posture as one possible example of a useful cost imposition approach. However, these strategies are presumably designed to sustain U.S. predominance, primarily via technological and organizational means. Unfortunately, thus far, they mainly offer a set

of useful principles and concepts, as well as historical examples, that raise issues of future cost imposition and technological development initiatives rather than provide detailed examples of the kinds of force structures and programs that could sustain American predominance in the Western Pacific and their associated costs. In other words, these concepts are thus far mainly aspirational in nature and merely hold out the possibility of neutralizing, at some point in the future, the regional power transition currently under way, at least in the military realm. And of course they do not deal with the possibility that, unlike the Soviet Union, China might prove quite capable of keeping up with the United States technologically.

For China, a denial force structure would contain most of the elements already included in its current A2/AD or counterintervention posture. However, this approach would also require Beijing to forgo, eliminate, or greatly reduce certain offensive weapons and other capabilities designed to seize and hold claimed territories, including both maritime land features and Taiwan, which further highlights the necessity to stabilize these hotspots. Capabilities Beijing would most likely need to relinquish include amphibious forces, more than minimal numbers of offensive short- and medium-range ballistic missiles, and any significant expeditionary forces. In sum, Beijing's conventional regional military forces and doctrine would focus almost exclusively on providing adequate defenses against U.S. or allied attacks on currently occupied Chinese territory or U.S. or allied attempts to reestablish a position of military predominance in the area extending at least to the second island chain. They would not encompass the core elements of an offensive, area-control-oriented, and war-winning strategy. But they also would not put Beijing at a military disadvantage in balancing against other claimants regarding disputed maritime territories.

The transition to this type of mutual denial force posture and defense-oriented military approach would require the abandonment, at least in the Western Pacific, of the kind of war-winning, offensive doctrine basic to both the U.S. and Chinese militaries. This could only occur if both sides accept that the benefits of such a transition would clearly outweigh the dangers or costs. As suggested above and in "Beyond American Predominance in the Western Pacific," a mutual denial environment would be more financially feasible and almost certainly more stable than quixotic efforts by either side to attain or sustain a position of predominance via superior offensive force structures and doctrines. But such an environment would also pose certain risks of cheating and testing the other side's leverage or resolve in efforts to achieve relative advantage. This could become especially dangerous in a political-military crisis, especially if one side believed it had a greater level of resolve or commitment that gave it a decisive advantage in a balance of power situation.

One additional set of concerns involves the implications of a region-centric mutual denial force posture for U.S. and Chinese capabilities beyond Asia. While extraregional U.S. forces could significantly augment regional capabilities in an escalating crisis or conflict, it would take considerable time to transfer many of them to the region, and they would of course not be present to influence the day-to-day perceptions of regional powers toward the U.S.-China military balance in the Western Pacific. Moreover, under a regional mutual denial force posture, some escalatory weapons systems, such as deep-penetration bombers, would presumably remain limited within the entire U.S. inventory, given both budgetary constraints and the effect that the procurement of denial-oriented weapons for the Western Pacific would have on overall U.S. procurement decisions. And many extraregional U.S. forces, such as carrier groups, would still face considerable (indeed, enhanced) threats from the People's Liberation Army when approaching China's maritime periphery.

Because of the above concerns, a mutual denial force posture would also require specific tactical measures designed to reduce the incentives to cheat, test, or otherwise gain a lasting military advantage and to build a sufficient level of trust to permit the mutual accommodations necessary for a stable balance of power. This would require, as a first step, more extensive confidence-building measures and crisis management mechanisms than currently exist in the region.

In addition to the existing multilateral and specific Sino-U.S. CBM agreements on procedures for handling unplanned air and naval incidents and for providing notification of major military activities and the existing CMM hotlines between civilian and military leaders,⁹ both sides (and relevant U.S. allies and friends) should consider establishing a combination of additional measures to build communication, predictability, and trust, to avert and resolve serious political-military crises, and to improve crisis decisionmaking in a mutual denial environment.¹⁰ These measures would include the following:

- Enhancement of informal military-civilian exchanges to include discussion of *long-term* security issues. This could begin with visits of retired military officers and civilian national security experts. Active-duty officers could be included as trust is built on both sides. Discussion topics should include broader Asia-Pacific security issues such as the South China Sea, Korea, and Japan.
- Regular meetings between defense and military officials from both sides under the currently existing dialogue and consultation mechanisms, such as the Military Maritime Consultative Agreement, the Defense Consultative Talks, and the Defense Policy Consultative Talks, as well as through new dialogue channels between both sides' strategic planning departments and ground forces.

- Cooperation in environmental management activities such as countering marine pollution. This could include planning for cooperative responses to oil spills and other environmental disasters.
- Creation of official crisis risk reduction centers in Washington and Beijing (modeled on the U.S.-China Nuclear Risk Reduction Center) to receive, transmit, translate, coordinate, and disseminate all incoming and outgoing messages required for the implementation of jointly agreed confidence-building measures and to respond to air or sea accidents between the military forces of both sides. Such centers would strengthen the technical habits of cooperation between the two sides and encourage trust.
- Greater exchange of port visits and visits of coast guard and naval officers.
- Engagement in cooperative monitoring of sea lines of communication.
- Joint military exercises to practice search-and-rescue procedures and cooperation in search-and-rescue operations.
- Some type of open-skies agreement to permit limited, routine mutual reconnaissance opportunities over the other's territories, or use third-party reconnaissance platforms, to verify the limited features of a denial force posture. This would include Japan.
- Creation of jointly managed, unofficial U.S.-China mechanisms for crisis forecasting and prevention. Using newly developed online analytical tools that substantially increase the accuracy of estimates of the probabilities of events, the United States and China could set up a group of crisis prediction experts, of approximately 50 to 100 scholars, think tank analysts, and retired officials from both sides, to regularly estimate the probability of particular future conflicts and crises. This mechanism would enhance mutual understanding by bringing together U.S. and Chinese crisis management experts in a regular collaborative online exercise and provide an early-warning mechanism for heading off potential crises.
- Additional crisis communication channels, including networks directly linking the U.S. Pacific Command (PACOM) and the U.S. National Military Command to the Central Military Committee (CMC) Operations Department; PACOM and the southern and eastern military theaters; and the PLA Navy and U.S. Navy headquarters. These direct military communications links would increase the clarity of signals in a crisis, reduce uncertainties, minimize misperceptions about military actions on both sides, and build military-to-military trust. As with existing hotlines, it would be necessary to establish protocols for the use of these links before or during a crisis and to test them on a regular basis.

- A U.S.-China “nonconversation” norm whereby key officials at various levels on both sides are allowed to unofficially contact one another outside formal channels to engage in authoritative exchanges of views before or during a crisis. This type of norm would allow decisionmakers and official analysts to clarify in a low-profile way the intentions of the other side, to reduce misperceptions about certain actions, and to become more sensitive to the other side’s interests and concerns.
- A direct channel between a predetermined representative of each side’s top leaders, to serve as intermediaries who are trusted and respected by both sides (for example, between the U.S. national security adviser and the PRC state councilor in charge of foreign affairs, or between nonofficial individuals who are trusted by leaders of both sides). Such a channel could help preserve communication between the two leaders when political conditions make public communication and interaction difficult.
- A group of professional crisis managers inside key decisionmaking bodies (for example, the Department of State policy planning staff or China’s Central Foreign Affairs Office). These crisis managers would be trained in the practice of crisis management and would provide advice to the top leaders on how to minimize problems created by time pressure, cognitive problems, and lack of understanding of the other country’s goals and intentions. Such a group would provide a pool of specialized knowledge about the problems in crisis management that leaders can draw on early in a crisis.¹¹
- Finally, briefing top-level civilian decisionmakers about the rules of engagement and standard operating procedures of the militaries in responding to crises and nonwar sudden incidents. This would help senior leaders on both sides understand the military effects of their crisis management decisions and improve coordination of political and military signals.

Beyond the establishment of more extensive CBMs and CMMs, the United States and China would also probably need to agree on specific sets of procurement and deployment limits on types and numbers of offensive weapons systems to ensure that the mutual denial force posture remained central to both sides’ military orientation. Such an agreement could be formal or informal but would require a sufficient level of transparency to permit reliable verification.

The mutual denial force posture and reinforcement of CBMs and CMMs are essential features that constitute part of a minimalist stable balance of power environment in the Western Pacific. Without such features, the potential will be very high for the existing force postures, military doctrines, and low levels of trust on both sides to create severe crises as China’s relative power grows.

In addition, such mechanisms should serve to reduce Chinese suspicions that the United States is pursuing a mutual denial force posture in the Western Pacific primarily to reduce Chinese power-projection capabilities for the eventual goal of regime change. Indeed, CBMs, as part of the movement toward a balance of power system, should affirm the need for a strong and stable Chinese regime able to maintain growth rates and hence regional economic engagement, which will eventually require a more market-driven and information-open system; whether this can be done on the basis of continued Chinese Communist Party (CCP) rule or will require a more pluralistic, competitive political system should be irrelevant to U.S. strategic interests.

As indicated above and in “Beyond American Predominance in the Western Pacific,”¹² to further stabilize a balance of power environment, Beijing and Washington should also undertake actions, in consultation with allies and friendly states, to reduce even more the volatility of the most likely sources of future political-military crises and to strengthen the foundations of strategic trust between them. Beyond the creation of a combination of CMMs and the CBMs noted above, this would involve that more credible and long-lasting understandings be reached with regard to the Korean Peninsula, the U.S.-Japan alliance, Taiwan, maritime territorial disputes along the Chinese periphery, and both U.S. and Chinese ISR operations and exercises in the Western Pacific.

In addition, as a final key component of a future stable regional balance, Washington, Beijing, and other major regional powers should strengthen the incentives on all sides for more cooperative, mutually beneficial economic outcomes across the Asia-Pacific region, thereby increasing the costs of conflict and deepening a common desire to maintain a stable balance.

Not all of these additional features are as essential as a mutual denial force posture and various CBMs and CMMs for the establishment of a stable balance of power in the Western Pacific. Some are probably dispensable if determined to be too difficult to achieve, while others could be implemented in more limited ways. But the cost of settling for a lesser version of a future balance would almost certainly be a reduced level of stability.

A UNIFIED, LARGELY NONALIGNED KOREAN PENINSULA

The political status and security environment on the Korean Peninsula has been a major source of Sino-American tensions since the Korean War. That the two Koreas remain technically at war, with each side formally allied to either the United States or China

via a security treaty and with significant numbers of American forces based in South Korea, creates a significant security danger for all powers concerned, including nearby Japan and Russia. This danger is reinforced, at least for the United States, South Korea, and Japan, by the additional fact that North Korea is now actively developing a credible nuclear weapons capability. This situation, arguably the most unstable within the Western Pacific, is largely unacceptable to all powers, except, no doubt, North Korea.

Moreover, from a long-term perspective, the continued presence of thousands of U.S. forces on the Korean Peninsula and a strong and tight U.S.–South Korean military alliance represent a significant potential security threat to Beijing. If North Korea were to disappear and the peninsula become united under a single, most likely Seoul-based, democratic government, Beijing would almost certainly seek to entice, pressure, or compel that government to reduce or eliminate its security ties to Washington, end the joint U.S.–South Korean military command structure, and remove U.S. forces from the peninsula to eliminate the threat they would pose to itself.

The current mode of handling this highly dangerous situation on the Korean Peninsula involves largely short-term efforts to coerce or entice Pyongyang to cap or give up its nuclear weapons program and open up to the outside world, through sanctions, economic enticements, and diplomatic efforts, as well as efforts to strengthen the U.S.–South Korean alliance. These policies have not reduced the dangers involved. To the contrary, the security situation has arguably grown steadily worse, driven by Pyongyang's acute hostility to the outside world, its fragile domestic political, economic, and social situation, and its seemingly relentless drive to acquire a credible nuclear weapons capability. A severe political-military crisis on the Korean Peninsula, whether arising from Pyongyang's nuclear weapons program, a conventional military clash, or the implosion of the North Korean regime, could lead to an escalating confrontation or even military conflict between Beijing and Washington as the two powers sought to stabilize the situation or achieve a sustained advantage from the ensuing chaos. The likelihood of such dire outcomes could increase if Beijing's growing economic, military, and political power and influence led it to attempt to use a Korean crisis as an opportunity to pressure the United States to withdraw from the Korean Peninsula.

Given this dangerous and arguably worsening situation, it is in the interests of the United States, China, South Korea, and both Japan and Russia to develop a more effective way of managing the slow-motion crisis on the Korean Peninsula. The most promising such approach would involve a diplomatic and political strategy that engages the fundamental long-term interests of the powers concerned within the context of an overall regional strategic realignment. For the United States, South Korea, Japan, and possibly China and Russia, this would involve the emergence of a unified, nonnuclear

Korean Peninsula under the South Korean political and economic system within an overall balanced strategic environment of the type presented in this report.

For China (and probably Russia), such an outcome would almost certainly prove acceptable if two conditions were met: the unification process was peaceful and avoided vengeful acts against the North Korean leadership; and the resulting unified Korean state was at best only loosely allied to the United States, and there were no U.S. military forces left on the peninsula. Although some Chinese elites no doubt hold significant emotional and political bonds to the North Korean regime, the prospect of a nonnuclear Korean state free of U.S. forces and probably with strong (but not exclusive) economic and political ties to Beijing would very likely tip the balance in China in favor of those (arguably increasing) number of Chinese leaders who view Pyongyang as a liability in political, strategic, and economic terms. The real challenge would lie with the process involved in creating such a unified and largely neutral or weakly aligned Korea.

For the United States, a unified, nonnuclear, and only loosely aligned Korea would present a more mixed picture. In a future unification situation, Washington would most likely prefer to retain considerable forces on the Korean Peninsula or at least a strong security alliance with a unified Korean government over the long term.¹³ The arguments in favor of such a stance would no doubt include the U.S. need to hedge against a possible future aggressive China; the belief that the Korean people would demand such a close security relationship with Washington, to counterbalance Chinese influence; the need to reassure a nervous Tokyo that a unified Korea will not become a threat to Japan; and the related belief that only a strong U.S.-Korean alliance and U.S. forces on the peninsula would prevent Korea from becoming a nuclear power. Each of these points has some validity, at least under current conditions. But their persuasiveness would become highly problematic within the larger context of the stable balance of power environment proposed in this study.

First, the creation of a defense-oriented, mutual denial security environment of the type described above would appreciably lower the credibility of a Chinese threat to a unified Korea, especially if such an environment also included reassuring security commitments from Beijing. It is difficult to see how or why Beijing would want to threaten a largely neutral and well-armed neighbor with whom it enjoyed strong and close economic and presumably political ties. Of course, U.S. troops in a unified Korea could conceivably create pressure on China of the kind that many in the United States might regard as salutary, as a kind of leverage or insurance policy against adverse events. But the premise of the kind of power balance proposed here is that the United States would not deploy forces along China's maritime periphery that could potentially launch attacks on Beijing. If, under such conditions, a strong, unified Korea would presumably not require

local U.S. forces to defend it against Beijing, what other function would such forces perform on the peninsula? Keeping such forces as a form of insurance would produce more instability than stability in a balance of power environment, likely leading Beijing to hedge itself strongly.

Second, the lowered threat from China that would result from a stable power balance combined with the fact that a unified, only loosely aligned Korea would undoubtedly possess a strong conventional military capability of its own suggest that the Korean people would very likely accept, and indeed might demand, a drastically reduced security relationship with Washington. It is a common misconception that South Koreans will inevitably cling closely to Washington to remain secure. They certainly do so today under the threat of a North Korean attack. If the nation were to be reunified, however, it is possible that many Korean citizens would prefer to end or drastically reduce the U.S. military presence on the peninsula and rely primarily or entirely on their own capabilities, along with good political and economic relations with both Beijing and Washington, to preserve their security. In addition, the primary security concern of a unified Korea might be Japan, not China.

It is nonetheless possible that many Koreans would desire to retain at least some level of security relationship with the United States, in the form of a U.S. commitment to come to Korea's aid if either China or Russia (or perhaps even Japan) for some currently unforeseeable reason posed a serious threat. Such a residual security tie, involving no U.S. combat forces on the peninsula, could prove acceptable to Beijing, as the price of a largely neutral, nonaligned Korea and an overall regional balance. It should prove acceptable to the United States as well, if a unified Korea seemed to favor it strongly over a full-blown alliance. In any event, Koreans would certainly need to support any future understanding on this issue reached by Washington and Beijing.

Third, a unified, at best only loosely aligned, and militarily strong Korea would certainly concern Japan, especially if Seoul appeared to lean more toward Beijing than Washington and Tokyo. But to allay such concerns, Korea would need to preserve a basic balance between Beijing and Washington, while most likely leaning somewhat more toward the United States, on the basis of some level of a residual security tie. Equally if not more important, however, Tokyo would require reassurance in the form of a strengthened security relationship with Washington, discussed below.

Fourth, the existence of a strong conventionally armed Korea, possessing close political, diplomatic, and economic relations with both Beijing and Washington and retaining a residual security tie to the latter power and a continued, indeed closer U.S.-Japan security relationship, should obviate any conceivable Korean need to acquire nuclear

weapons. Indeed, the possession of such weapons would create far more security problems for Korea than it would solve, raising Japanese (and possibly Chinese) fears and significantly undermining the global nonproliferation security regime.

These four features of a future balanced security environment should significantly reduce U.S. resistance to the emergence of a unified, only loosely aligned, and militarily strong Korea. Under such conditions, there would be little if any need for U.S. forces to remain on the peninsula and for a close security alliance to remain in effect. In fact, there could be considerable costs attached to such a posture in an overall balance of power environment in the Western Pacific.

Despite the significant advantages of a unified Korean Peninsula for the emergence of a stable balance of power in the Western Pacific, such an outcome would obviously necessitate the end of the current North Korean regime and a largely peaceful transition process supported by all the major powers concerned. Achieving these conditions would at best require a considerable period of time and might not occur for decades, if at all. Chapter 4 takes up this issue.

Thus in the interim, as a less optimal long-term alternative to a unified peninsula and hence as part of a minimalist stable balance of power environment, Beijing and Washington, with the concurrence of Seoul, will need to create a set of understandings designed to reduce the likelihood of a conflict on the peninsula sparked by various potential contingencies that could take place, such as a violent Democratic People's Republic of Korea implosion or various types of political-military crises precipitated by the DPRK. Such understandings on how to control and limit the effects of contingencies should cover a range of reassuring political, diplomatic, and military actions and CBMs, as well as arrangements for coordinated or cooperative responses. Such a set of understandings would certainly prove far more doable than the creation of a unified Korean Peninsula in any foreseeable time frame. And such a situation could significantly reduce the volatility of the Korean Peninsula as Washington, Beijing, and other powers transition toward an overall balance of power environment in the Western Pacific.

A STRENGTHENED BUT LIMITED U.S.-JAPAN SECURITY RELATIONSHIP

To allay Japanese insecurities resulting from Washington's transition toward a denial-centered security stance and the associated creation of a de facto Sino-U.S. buffer zone along China's maritime periphery, and to make that denial stance more credible,

Washington would need to strengthen its security relationship with Japan, albeit within certain specific limits.

Under this situation, Tokyo would play a key role in the implementation of a denial force posture, by providing forward locations for U.S. forces tasked with defending against threats or attacks on nearby territories or areas, providing essential and largely rear-area support for U.S. forces operating in the Western Pacific, and conducting independent operations in support of the denial force posture. This military role would require a closer level of Japanese coordination with U.S. forces, especially in areas such as ISR, logistics support, and some limited types of joint combat operations, including advanced weapons systems, mine warfare, cyber warfare, space operations, ballistic missile defense, and counterstrikes against attacking forces using cruise missiles, artillery, and air and naval platforms.

These enhanced capabilities would not require any radical changes in Tokyo's current legal context, such as a revision of the Japanese constitution. And they would probably not require any significant expansion of the "concept of operations" contained in the present *Guidelines for U.S.-Japan Defense Cooperation*,¹⁴ including operations to defend against or counter air, naval, ballistic missile, and ground attacks. But they would most likely require increases in specific types of existing military capabilities such as those listed above, along with increased deployments of forces along Japan's southwest archipelago (that is, the Ryukyu Island chain). They would not, however, require any increased Japanese involvement in military operations beyond the immediate vicinity of Japan, such as FON operations and patrols within the South China Sea, for example.

In the Asia-Pacific, a successful U.S.-Japanese denial strategy would be largely dependent on a force posture that seeks to lower the chances of a successful Chinese attack. In terms of missiles, a larger number of smaller, more mobile, dispersed, and lethal weapons systems, such as sea mines, mobile multiple-rocket launchers, fast missile-patrol craft that fire short-range cruise missiles, and truck-mounted coastal-defense cruise missiles can be used in both Japan's southwest archipelago and Taiwan. All of these weapons systems aim to decrease the efficiency of Chinese attack aircraft or amphibious assault ships. These weapons could be hardened, making them more survivable than a smaller force of larger, more expensive weapons platforms.

In the maritime realm, it would be more resource efficient for Japan to invest in a larger number of smaller, faster, and cheaper vessels equipped with anti-ship cruise missiles. These vessels make it more difficult for Chinese ASCMs to successfully target and destroy all ships, which, in turn, makes it more costly for China to initiate an attack since a decreased ability to destroy enemy ships means that Chinese ships would suffer

greater losses. For subsurface forces, a denial strategy calls for increasing the number of quieter, faster attack submarines with better acoustics and sonar systems, equipped with better torpedoes, and potentially fitted with unmanned systems. While submarines with the ability to launch ballistic missiles (SLBMs) would heighten the damage produced by a U.S.-Japanese retaliation should China initiate a conflict, attack submarines are designed specifically to sink other submarines and surface vessels. More attack submarines could significantly increase the cost China would incur on itself by initiating a conflict, thereby making victory more costly and difficult.

The resulting strengthened alliance posture should sufficiently assure Tokyo that Washington's transition to a denial force structure and doctrine will not weaken Japan's security in any way, despite the likely reduction in Washington's reliance on forward-deployed carrier strike forces that such a transition would entail. Indeed, Washington would probably deploy other additional capabilities to Japan under this force posture, possibly including fighter aircraft, submarines, destroyers, and even some ground forces. Indeed, it has been argued that, rather than risking warships within range of PLA defenses or diverting submarines from higher-priority missions, the United States and its allies could rely on ground forces that are based along the first island chain and are armed with mobile launchers and ASCMs. Naval mines would also complicate any Chinese offensive efforts.¹⁵

Some might argue that such an enhanced U.S.-Japan defense relationship would overly alarm China, and perhaps South Korea (or a unified Korea), by increasing the potential threat to both countries. In fact, when placed within the larger context of a transition toward a genuine balance of power environment in the Western Pacific, this enhanced relationship would not pose an increased threat to either country. Specifically, a strengthening of the U.S.-Japan alliance in this limited manner would significantly contribute to the stabilization of the de facto buffer zone along China's maritime periphery by reducing or avoiding increases in offensive strike capabilities potentially aimed at the Chinese or Korean homeland. This would eliminate the possible need for Japan to acquire much greater military capabilities to compensate for an otherwise perceived loss of American capability and presence under a denial posture and would strengthen potential U.S. controls over Japanese military deployments outside the home islands.

Especially given its essential role in the creation of a stable mutual denial force posture, a strengthened U.S.-Japan security relationship must be considered as part of even a minimalist stable balance of power environment in the Western Pacific.

A LARGELY DEMILITARIZED TAIWAN STRAIT

Arguably, a Sino-U.S. confrontation over Taiwan, more than any other hotspot in the Western Pacific, has the potential to escalate to a direct military conflict of major proportions. Indeed, this constitutes the most likely potential trigger for an outright war between the two powers. As countless experts and pundits have observed, despite ever-closer cross-strait economic ties and people-to-people contacts and a long, recent period of positive cross-strait relations under former Taiwan president Ma Ying-jeou, the combination of growing sentiment on Taiwan against reunification (under almost any conditions), continued U.S. political and military support for the island, and China's growing military and economic strength could significantly increase the potential for future crises. These could arise over tension-producing political events on Taiwan or the mainland or as a result either of a much stronger China's refusal to accept future U.S. arms sales to the island or the emergence of a new pattern of Taiwan politics dominated by pro-independence elements. In fact, the recent 2016 election by a large margin of members of the pro-independence Democratic Progressive Party to both the Taiwan presidency and the Legislative Yuan suggests that cross-strait relations might become more turbulent in the near future, as cross-strait relations languish and especially if Beijing becomes significantly less confident in the prospects for eventual reunification. And such increased turbulence is particularly likely to become a long-term problem if this election portends a fundamental long-term weakening of the pro-One China Nationalist Party (Guomintang), as many observers believe.¹⁶

Without a more stable long-term *modus vivendi* between China, Taiwan, and the United States, any future balance of power in the Western Pacific will quite likely remain precarious, if not significantly unstable. Unfortunately, such an arrangement is unlikely to involve any kind of major political breakthrough across the strait, whether in the direction of peaceful unification or a peaceful transition to *de jure* Taiwan independence. As long as Beijing remains committed to reunifying the island with mainland China, Taipei remains opposed to entering into talks with Beijing on the political status of the islands, and Washington remains committed to providing the island with a level of political and military support that permits such opposition, it is hard to imagine that such a breakthrough will occur, even if cross-strait economic and people-to-people ties deepen significantly. Hence the most that can be achieved, and what would most likely be necessary to ensure a reasonably stable balance of power, is the elimination or, failing that, the significant reduction of the Taiwan issue as a major source of security competition between the United States and China. This would require at best the demilitarization and political stabilization of the existing uneasy dynamic, via a more explicit understanding of restraint between Beijing and Washington over arms deployments and

a possible future use of force. Failing that, at the very least, it would require more comprehensive CBMs and tacit understandings designed to reduce the potential for a dangerous use of force. This would most likely include assurances to Beijing that Taiwanese independence will not occur without Beijing's approval and to Washington that Beijing will not employ force against the island in the absence of clear Taiwanese attempts to achieve permanent separation from the mainland.

Specifically, in the maximalist version of a future *modus vivendi*, Beijing would need to verifiably eliminate its current and future capacity to seize or severely punish Taiwan through military means by destroying those weapons that currently directly threaten only Taiwan (consisting mainly of short-range ballistic missiles), forgoing the acquisition of future military threats such as increased amphibious capabilities, and pledging not to employ military force against Taiwan except under extreme conditions, such as a Taiwan declaration of *de jure* independence. For its part, Washington would need to provide credible assurances that it would no longer provide significant defense assistance to Taiwan, in the form of major arms sales, nor improve the defense-relationship with Taipei beyond existing levels. However, Washington should retain the capacity to come to the assistance of Taiwan if Beijing violates its above commitments.

Such an understanding would probably require the revision of the Six Assurances that Washington provided to Taipei, at the latter's request, in July 1982. The first assurance states that "the United States would not set a date for ending arms sales to the Republic of China (ROC)," and the third states that "the United States would not hold prior consultations with the People's Republic of China regarding arms sales to the ROC."¹⁷

The Six Assurances are not U.S. law. They are policy guidelines, determined by the U.S. executive branch and notified to Congress. Hence they can be revised at any time, as circumstances warrant. The maximalist arrangement would quite likely require Washington to drop these two guidelines, as part of a larger understanding with Beijing. However, this action, as well as the arrangement as a whole, could only succeed on the basis of prior consultations with and acceptance by Taipei.

It is also possible that the understanding basic to a maximalist arrangement would require a revision of the Taiwan Relations Act, signed into law in April 1979. The TRA states that

the United States shall provide Taiwan with arms of a defensive character and shall maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardize the security, or social or economic system, of the people of Taiwan....

... In furtherance of the principle of maintaining peace and stability in the Western Pacific area, the United States shall make available to Taiwan such defense articles and defense services in such quantity as may be necessary to enable Taiwan to maintain a sufficient self-defense capacity as determined by the President and the Congress.¹⁸

Whether these articles would need to be revised or jettisoned would depend on the specific understanding reached between Beijing and Washington regarding U.S. defense assistance to Taiwan. However, since these two articles stipulate a level of U.S. assistance keyed to the self-defense needs and threat level Taiwan faces, as determined by the president and the Congress, and the purpose of this U.S.-China agreement would be to reduce considerably, if not eliminate, the Chinese military threat to Taiwan, it is possible, indeed likely, that Washington could comply with that agreement without requiring any revision of the TRA.

The attainment of the sort of common understanding on military issues outlined above would obviously face many obstacles. The most significant among them would almost certainly be political, largely in the form of resistance by both U.S. and Taiwanese politicians to any American effort to limit defense assistance to Taiwan as part of a larger understanding with Beijing and criticism among Chinese nationalists that any agreement to limit China's military options in pressuring Taiwan to enter into political talks with Beijing or in deterring moves toward independence would undermine China's sovereignty claim over the island. In addition, some Taiwanese politicians would undoubtedly argue that any U.S. discussion with Beijing involving the island's security situation would constitute a betrayal of Taiwan and Taiwanese democracy. And military professionals on all sides would probably argue that any significant limitation on the ability to employ force in an unexpected future crisis affecting the island would increase, rather than reduce, instability by weakening deterrence.

These and other objections are discussed in detail in chapter 4. Taken together, they clearly suggest that achieving a reliable understanding between Beijing and Washington over this long-standing issue of contention in the relationship will not be easy. But it is also by no means impossible, given strong and committed leadership in both capitals and reliance on an extensive process of consultations with Taipei, Tokyo, and other relevant parties. Most important, however, the success of such efforts will depend crucially on the larger process and objectives involved in the creation of a stable overall balance in the Western Pacific. Without this larger context and the prior enactment of significant confidence- and trust-building measures, any effort to allay the objections to the sort of security-related understandings presented above would almost certainly fail.

A minimalist version of a stable balance of power arrangement regarding Taiwan would thus involve CBMs centered on a tacit exchange of a no-independence pledge by Washington for a pledge by Beijing not to use force, in the context of a larger movement toward a mutual denial force posture and the enactment of more extensive CBMs and CMMs. Indeed, such pledges regarding Taiwan would probably constitute a necessary precondition for movement toward such a force posture.

A MILITARILY CONSTRAINED, JOINTLY DEVELOPED, EAST CHINA AND SOUTH CHINA SEAS ENVIRONMENT

In recent years, escalating sovereignty disputes over long-standing maritime territorial claims between China and several of its neighbors, including U.S. allies, have significantly raised the importance of this issue in the overall Sino-U.S. security relationship and as a factor in long-term Asian stability. Today, a growing number of observers, including some in or very near to the U.S. government, view Beijing's more assertive efforts to advance these claims, and the American response, as laden with a larger strategic meaning. For such individuals, China's actions have become an indicator of its capacity to challenge international law, assert control over large swaths of the Western Pacific, and weaken the United States and eventually push it out of the region. Hence, in this view, Chinese behavior has become a test of American strength and credibility in Asia, especially in the eyes of those U.S. allies embroiled in these disputes with China: Japan and the Philippines.

Although not all U.S. (and allied) observers accord such strategic weight to these territorial disputes, Washington has clearly become deeply involved in them, perhaps to an excessive degree, by implying that it has a unique and essential security role to play in preventing coercion, aggression, and alleged violations of international law by China and other disputants. For its part, Beijing has by and large rejected what it views as U.S. interference in local territorial disputes, claiming that American actions make these disputes more difficult to handle by distorting the issues involved, militarizing the area via the increasing presence of U.S. warships, and encouraging, directly or indirectly, other disputants to engage in provocative activities. Partly in response to such alleged provocations, Beijing has in recent years increased its capacity and presence in disputed areas within both the East China and South China Seas. This has occurred in the latter region primarily via increased patrols by better-armed military and paramilitary assets, more energetic efforts to limit economic and other activities by rivals, the deployment of greater defense capabilities (in the Paracel Islands), and the creation of artificial islands and the construction of military-capable facilities on several shoals and reefs in

the Spratly Islands. In the former maritime region, it has consisted largely of increased patrols by military assets and more frequent incursions into disputed waters and airspace near the Senkaku/Diaoyu Islands.

This dynamic clearly has the potential to generate more intense crises in the future, as China uses its growing offshore power and presence to strengthen what is in fact a relatively weak military and geostrategic position with regard to the maritime disputes in the East China and South China Seas or to respond to alleged provocations by others. At the very least, such activity could increasingly bring U.S. and Chinese military and paramilitary aircraft and naval vessels into dangerous proximity to one another as each side seeks to convey resolve and deter unacceptable behavior, thus increasing the chances of an escalating incident. In particular, this situation constitutes a prime example of the kind of dangerous dynamic described in earlier chapters, in which Beijing acts excessively to deter or counter perceived U.S. provocations (perhaps out of an exaggerated sense of its growing power) and Washington overreacts to such a perceived challenge to affirm its predominant position and maintain its credibility as a security guarantor.

As with the Taiwan situation, any dependable balance of power must stabilize, to the greatest extent possible, these maritime territorial disputes by removing or reducing them as a source of Sino-U.S. contention. Ideally, this should take the form of a peaceful, permanent resolution of the disputes, through negotiation and compromise on all sides. However, the complexity of the disputes, involving economic resources; differing interpretations of applicable international law and historical rights; overlapping jurisdictional claims based on continental shelves, exclusive economic zones, and other relevant legal zones; and domestic political factors rooted in strong nationalist sentiments, together suggest that any resolution, if at all possible, will take many years, and perhaps decades, to achieve. In the meantime, a stable, enduring *modus vivendi* among all relevant parties is needed, centered on mutual restraint in asserting local sovereign or special rights as well as an effective, peaceful process for handling incidents.

Such an understanding ideally should consist of several elements. The first is an initial shift away from military and paramilitary competition and maneuvering toward an emphasis on diplomacy, primarily via a set of interim (short- to medium-term) understandings among the claimants and between Beijing and Washington regarding levels and types of militarization and the nonuse of force. This must be based on clear, agreed-upon definitions of acceptable and unacceptable military behavior and clear, specific proscriptions on the display and use of force. Without such an understanding, any transition toward diplomatic efforts on claims, jurisdiction, resource development, and an eventual long-term code of conduct for both the East China and South China Seas will remain virtually impossible, as all sides continue to maneuver militarily to deter one another.

Moreover, as a part of this negotiation process, some level of mutually acceptable long-term equilibrium in the military capabilities of the claimants within the Spratly archipelago must be achieved, as a stable ceiling against future militarization. This might involve permission for claimants other than China (such as Vietnam) to upgrade or expand their facilities on land features in the Spratly Islands to bring them up to a par with those that Beijing has constructed. As noted above, China's recent construction of artificial islands and facilities has at least potentially shifted the military balance in the archipelago, incrementally increasing China's ability to threaten the local use of force during negotiations for a future settlement of the dispute. The restoration of a stable military equilibrium among all local parties is therefore a key prerequisite to the creation of a stable long-term balance in the South China Sea and is therefore part of a minimalist version of such a balance.¹⁹

While all claimants must eventually ascribe to such dual interim agreements, the United States and China will need to take the lead in this effort, based on a common recognition of the need to remove these issues as a driver of their deepening strategic contention. That said, a Chinese acceptance of such limits will doubtless prove conditional, based on the eventual acceptance by the other claimants. Such agreements will require overcoming domestic military and paramilitary resistance to any restraints on military activities in disputed areas, including limits on the frequency of FON operations by the U.S. Navy. They will also require overcoming the argument that any agreement to eschew an unprovoked use of force would undermine the sovereignty claims of China and the other claimants. In truth, an agreement on limiting militarization and the use of force can and should be treated as a CBM and a pathway to a more durable stabilization of these disputes and in no way as a constraint on sovereignty, especially if all parties agree.

Second, and more ambitious, a staged diplomatic process is necessary for clarifying the precise content and legal or other rationale of the many claims involved, that is, the jurisdictional disputes involving both sovereignty issues and nonsovereignty (but privileged) rights over resource extraction, such as fishing. This could proceed on a bilateral or multilateral basis but should gradually expand to eventually include all extant claims across the East China and South China Seas. During this process, Beijing would need to clarify the meaning of the nine-dash line, and all claimants would specify their claims to land or underwater features and corresponding waters as they relate to relevant legal (that is, based on the United Nations Convention on the Law of the Sea) definitions, as well as so-called historical rights. When the status of specific features (as islands, rocks, reefs, and so on) is clearly in dispute, the parties concerned should petition for a ruling from the International Tribunal for the Law of the Sea (ITLOS) under UNCLOS. Or, failing that, negotiate understandings regarding such features.

Third, on the basis of such clarification of claims and jurisdiction, all parties must reach an agreement on those areas subject to joint resource development and a procedure for implementing such development. Although often called for, joint development cannot actually occur unless all disputants clarify those areas of overlapping jurisdiction that are subject to joint development, and this cannot occur until the specific areas of overlapping claims are identified and agreed upon. In principle, joint development of disputed maritime areas is already accepted by most if not all disputants as a valid interim means of exploiting resources before any resolution of claims, although some compromise and agreement on the division of proceeds is required. Hence an agreement on such development, once the areas of overlapping claims have been identified, should not prove excessively difficult to achieve.

Fourth, on the basis of the previous two sets of actions, the claimants must negotiate elements of a binding code of conduct for limiting levels of militarization and handling future incidents *over the long term*. This code must build on previously agreed-upon, clear definitions of prohibited activities of all kinds, military and nonmilitary alike (the existing 2002 Declaration on the Conduct of Parties in the South China Sea is extremely vague on this point), a process for identifying and interpreting such activities, and a means of punishing violations. This process could proceed in a variety of ways. It does not need to proceed only on the basis of the existing ASEAN-centered code-of-conduct negotiating process but must eventually encompass all claimants.

Obviously, as with the Korea and Taiwan issues, many obstacles would confront any efforts to greatly reduce disputes over maritime territorial claims as a source of Sino-U.S. tension or conflict. In fact, some of these obstacles are very similar to those mentioned in those two cases, including distrust among virtually all the parties concerned, nationalist domestic pressures, and deeply entrenched bureaucratic interests. Others are more specific, deriving from the complexity of the issue and the large number of parties involved. These obstacles will most likely make it particularly difficult to successfully implement the kind of multiparty, comprehensive code of conduct outlined above. As with the mutual denial force posture and the Korea and Taiwan issues, more extensive CBMs and CMMs are likely to be necessary preconditions, to reduce distrust and strengthen confidence in the enforceability of a legally binding code of conduct.

But beyond this, progress will depend enormously on the willingness of Beijing and Washington to reach mutual understandings on the three core issues mentioned above: limits on militarization, the use of force, and overlapping claims in the South China Sea. In particular, any specific understandings on militarization and the use of force will require a strong civilian leadership commitment to overcome deep-seated resistance in both governments, especially within the military and among some strident nationalists, to placing any limits on military deployments and actions in disputed areas. On the U.S.

side, political leaders will also need to reassure Manila and especially Tokyo that any agreement Washington makes with Beijing to limit the content or scope of its military activities in disputed areas will not place those countries at a disadvantage either militarily or with regard to sovereignty claims. However, this is not impossible, especially with regard to Japan, given the other features of the regional balance outlined above, which include a further strengthening of defense ties with Tokyo.

U.S. leaders will also need to clarify what constitutes unacceptable coercion. Not all forms of Chinese coercion would necessarily threaten the U.S. interest in a stable and peaceful environment. Similarly, on the Chinese side, limits on the use or display of force and clarifications of existing claims will require, on both sides, a determined and strong leadership able to manage backlashes by nationalists and the military and a clear sense of what constitutes unacceptable coercion.

None of this would be impossible on the basis of a prior recognition of the value of such understandings to the creation of a stable Sino-U.S. buffer zone and balance of power environment. Indeed, reaching such an understanding will very likely prove far less difficult than for similar understandings regarding Korea and Taiwan, especially given the more acutely sensitive nature of the two issues as a past source of Sino-American conflict and their high symbolic value for nationalists on all sides. In contrast, most of the East China and South China Seas maritime territorial disputes are recognized by most if not all parties involved as subject to negotiation and hence presumably to compromise. And they arguably do not play as central a role in nationalist arguments and have not been sources of Sino-American conflict in the past.

That said, the clarification of overlapping claims across the entire South China Sea poses a particularly nettlesome problem, given the strong nationalist debates in China and other countries concerning the nature and extent of those claims. Some Chinese officials assert that the claimants agreed during the discussions of the 2002 Declaration of Conduct that they would clarify their claims only in the context of substantive negotiations to resolve the sovereignty issue. However, whether true or not, it is impossible to see how joint development, currently supported by all claimants, could proceed in the absence of a clarification of those areas subject to such sharing arrangements. In addition, if the countries involved (and China, in particular) desire to create a stable environment in the South China Sea as part of a larger regional balance, they will need to resolve or suppress nationalist debates in favor of greater long-term stability. Continued vagueness about sovereignty claims, based in part on internal pressure to secure maximalist positions, would inevitably undermine efforts to establish a more stable equilibrium in that critical subregion.

Thus, overall, the second, third, and fourth elements of a stabilization of maritime disputes (that is, clarification of claims, identification of area subject to joint development, and negotiation of a code of conduct) would quite likely prove to be extremely difficult to achieve and require considerable time and diplomatic adroitness, even in the context of movement toward an overall balance within the region. Moreover, such elements are probably not absolutely essential to the creation of an overall stable balance of power across the region if an enduring cap on the militarization of maritime disputes occurs. Hence these three more-challenging elements should constitute part of the maximalist version of a stable balance.

LIMITED ISR AND FON OPERATIONS TO VERIFY THE REGIONAL BALANCE AND ASSERT INTERNATIONAL LAW

The final area where the United States and China must significantly reduce the probability of confrontation and conflict concerns a range of military activities that fall under the heading of active information gathering for the purposes of intelligence, surveillance, and reconnaissance. Such activity can take many forms, overt and covert, military and civilian, using aircraft, ships, satellites and electronic, cyber, and human means. While Washington regards even close-in, overt ISR activities near a foreign state's territory as entirely acceptable if conducted outside territorial waters and airspace, Beijing has traditionally viewed such behavior, at least rhetorically, as hostile, intimidating, and an affront to Chinese pride.

This contrasting attitude to some extent reflects the very different historical experiences and relative power of the two nations. The United States is the dominant naval, air, space, and cyberspace power in the world, with a strong commitment to maintaining free and open access to international zones and a perceived need to maximize its awareness of its security environment on a global basis. It therefore affirms and exercises its right to operate within or transit freely across such zones, on the basis of a maximalist interpretation of its right to do so under international law and its need to conduct often intrusive but allegedly legal ISR activities for national security reasons. It routinely conducts FON operations, often using warships, into areas where it believes others nations seek to limit physical access illegally and operates ISR flights and ship transits to collect what it regards as essential information on a wide variety of nations and nonstate entities.

China largely rejects this maximalist interpretation of a nation's right to conduct such activities, at least rhetorically. As a proud nation that has experienced, in the modern era,

foreign invasions and humiliations at the hands of stronger, predatory powers, Beijing regards close-in, overt ISR and FON operations by the United States as an all-too-visible expression of the arrogance and bullying of a superpower and a blatant disregard for Chinese sensitivities. Beijing explicitly rejects the maximalist interpretations of international law that the United States and others use to justify their behavior, arguing instead that any coastal nation has the right under UNCLOS to deny, as hostile activities, close-in ISR operations conducted within a nation's 200-mile EEZ, a viewpoint shared by many other developing coastal nations.

This difference in approach and behavior was of little consequence when China possessed neither the capability nor arguably the need to limit U.S. ISR and FON operations near or across its extant or claimed borders. Until the beginning of this century, China was too weak to prevent, and Washington had less need to conduct, such activities. However, a growing, stronger China with greater offshore reach and a more aware and aroused nationalist public have less tolerance for these operations, and the United States has a greater need to assess China's stronger capabilities vis-à-vis, for example, a possible conflict over Taiwan. As a result, Beijing has sought to limit such operations in recent years by conducting dangerous, close-in interceptions of U.S. ISR aircraft and ships operating near China's shores and protesting loudly against FON operations in the South China Sea. This dynamic has the potential to create a major crisis between the two powers, as a stronger Beijing might seek more credibly to deter U.S. actions by a direct use of force or to respond to any resulting accidents that might occur between U.S. and Chinese vessels by seizing the offending U.S. vessel. And this danger will be compounded if in the future Japan or another U.S. ally frequently conducts ISR operations near China. Incidents over such activities could draw Washington into a confrontation with Beijing.

Some observers think that Beijing will reduce if not end its opposition to U.S. ISR and FON operations once it develops an air and naval capacity and a set of national security needs that require the same type of operations that Washington conducts.²⁰ This is possible, but not inevitable. Beijing's view is not based entirely on its sense of vulnerability and weakness in relation to the United States. It reflects a deep-seated resistance to what it regards as bullying and intimidating behavior by any major power, especially in relation to sovereignty issues. Moreover, Beijing is unlikely to develop the need to conduct the kind of frequent, visible, and close-in ISR activities along the U.S. coastline that Washington conducts near China, given the lack of any apparent need for Beijing to deploy PLA forces near the continental United States in, for example, a Taiwan-like contingency. Although Beijing might conduct such operations near U.S. territories in the Asia-Pacific region (such as Guam and Hawaii), it is unlikely to do so as frequently or as obtrusively as does the United States. And if it does, it is quite possible that the United States will oppose those operations.

Therefore, a stable balance of power in the Western Pacific will most likely require a more concrete understanding between Washington and Beijing over the handling of ISR and FON operations in the Western Pacific. To some extent, the two powers have laid the foundation for such an understanding by agreeing to procedures for handling air and naval incidents. However, these agreements are most relevant to unintended accidents, not deliberate efforts to deter or stop these activities. Moreover, they are voluntary and confidential, making them both potentially unreliable and difficult if not impossible to monitor.

To establish a more stable, enduring *modus vivendi* on this issue, both powers will need to compromise their positions and agree to exercise restraint. For its part, the United States must reduce significantly the frequency and close-in proximity of its ISR activities along China's coastline. The proposal for stabilizing the maritime territorial disputes, set out above, requires strong civilian control and limitations over what is often regarded as a U.S. military prerogative to determine when and how to conduct such activities. Alternatives to a reliance on naval and air assets for ISR activities exist and should be explored. At the same time, the willingness of U.S. political leaders to assert such controls, and of U.S. military leaders to accept them, should arguably increase appreciably if both sides are engaged in efforts to undertake the kind of meaningful balance of power described above, involving, at a minimum, the adoption of a mutual denial force posture and the demilitarization of contentious issues. In particular, progress in stabilizing the Taiwan and maritime territorial issues should reduce the need to conduct such activities.

A MORE INTEGRATED, DEEPER SET OF ECONOMIC STRUCTURES AND PROCESSES

As indicated in chapter 1, a stable balance of power in the Western Pacific must involve a stable overall economic environment that benefits all regional nations and maximizes common incentives for cooperation over zero-sum competition or confrontation. Ideally, such an environment would maintain high levels of growth for all major states; expand and deepen an open, region-wide trading and investment system; and increase capital flows into and within the region by the United States, China, and other major economic powers. The primary means of attaining such goals would include

- increasing Chinese prosperity and region-wide economic growth,
- creating a single, unified Asia-Pacific free trade agreement that encompasses the best features of the Trans-Pacific Partnership and the Regional Comprehensive Economic Partnership,

- establishing common U.S.-China membership or involvement in other major regional economic and financial entities such as the Asian Infrastructure Investment Bank (AIIB) and the One Belt, One Road initiative; and
- instituting more vigorous U.S. economic diplomacy through public-private partnerships in infrastructure development, bilateral investment treaties, sectorial agreements, and so on.

None of these features would involve major shifts in policy direction or a basic reordering of policy priorities for the United States or China. And efforts to undermine or develop alternative policy approaches to these features would very likely result in increasingly unhealthy Sino-U.S. economic and political competition and reinforce the larger pattern of strategic competition evident in the Western Pacific today.

If the U.S. objective is to support growth and prosperity in Asia (which is clearly in its economic interest), it cannot hope to do so without a prosperous China. If the United States wants to maintain the prosperity of other Asian nations at the cost of allowing for a less prosperous China, it would have to substitute for the Chinese role in the Asian markets by compensating for the loss of income from other Asian countries. This would be extremely costly, as the United States would need to create a demand for Asian products at home, thereby importing more from Asia and increasing the American trade deficit with Asia. Low-cost producers would be replaced by high-cost producers, increasing the price of goods for American consumers. This option would very probably face immense domestic constraints. In short, the logical option is for the United States to be supportive of both growth in Asia as a whole and growth in China in particular.

Not having China in the TPP would create great inefficiencies for all nations involved. Even if the TPP and RCEP proceed in parallel, they will generate overlaps and inconsistencies that will eventually force Asian countries that are members of both tracks to make divisive and inefficient choices and impede the progress of a larger Asia-Pacific free trade arrangement. Sanchita Basu Das of the ASEAN Studies Center stresses that, to this end, negotiating policymakers “should seek common standards and provisions that could be consolidated going forward.”²¹ The *Economist* writes that leaving out China, the world’s largest manufacturer and a central player in Asian supply chains, would create a “huge gap” that would either burden the TPP with many exemptions or divert trade from efficient Chinese companies to the detriment of the global economy.²² Given that, China’s membership in the TPP would not so much be a gain for China as an essential factor in the TPP’s eventual success.

To this end, trade agreements in the Asia-Pacific region should strive for open membership and should facilitate inclusiveness, not segmentation. In the medium term, China

should be part of the TPP and the United States part of the RCEP, or both should be part of a future Asia-Pacific FTA; ideally, both countries would be members of both groups. The consolidation of both tracks into a region-wide agreement offers the most favorable outcomes. The Peterson Institute for International Economics estimates that consolidating the TPP and RCEP by seeking compromises of features of both frameworks would “produce gains of \$1.9 trillion, far more than either track alone or even the two in parallel.”²³

Thus moving toward the eventual establishment of an Asia-Pacific FTA is desirable for all parties involved. It would include both China and the United States, offer compromises that satisfy frameworks preferred by both developed and developing economies, and boost gains for everyone.

When it comes to regional investment and capital flows, it is doubtful that the United States can rely on its public sector to out-invest China in terms of initiatives like One Belt, One Road and the AIIB. China, on the one hand, benefits from a trade surplus that it has traditionally invested in foreign reserves and bonds in the U.S. Treasury, but these instruments generated low returns. Investing these funds in aid and infrastructure in other countries, which China is increasingly doing, can generate a return on investment for these previously stagnating funds (though, of course, it also incurs a risk of loss). The United States, on the other hand, has no trade surplus and is already struggling to meet targets on foreign aid. Given the premise that China simply has more money to invest, the U.S. strategy should be to piggyback on Chinese investments and influence the flow of funds. It should therefore not only be receptive to One Belt, One Road and the AIIB but also try to steer the Chinese funds toward more deserving countries, generate goodwill, and lend America’s approval and good name to funding schemes. If the United States does not link itself to Chinese investments, it will almost certainly lose leverage in the region. Hence the United States and Japan should both join the AIIB.

Finally, regarding overall U.S. economic policy in Asia, in his article “The New Asian Order” Evan Feigenbaum argues that

the U.S. goal should be not simply to tack an economic component onto its rebalance, or pivot, to Asia, but to encourage a liberal, open, market-based economic order in the region. By that standard, TPP is a very necessary but by no means sufficient condition to meet U.S. goals. A broadened agenda would include bilateral investment treaties with China and India; creative public-private partnerships aimed at injecting the United States into infrastructure developments in Southeast Asia; and sectoral agreements, for example in services and technology-related sectors. Washington could do more in this vein with its allies Japan and South Korea. And Congress needs to put more weight behind reforms of international financial institutions, and

soon; otherwise, even partners such as India may throw up their hands and seek alternatives, much as New Delhi has already done through its involvement with the BRICS institutions and the AIIB.²⁴

With respect to the AIIB, Feigenbaum adds that it is in Washington's interest to at least seek an observer arrangement: "If, as Washington claims, it is really the AIIB's lack of anticorruption and environmental standards that is of concern, then it makes more sense to try to work with the organization to shape new regulations than to remain aloof."²⁵ Giving China-backed Asian regional initiatives the cold shoulder will not lead such initiatives to collapse but will merely cause the United States to forgo opportunities to shape the economic landscape in its interest. Fostering region-wide economic growth, developing inclusive trade agreements, strengthening involvement in regional economic entities, and bolstering American economic diplomacy can therefore help achieve a stable, positive-sum economic balance of power in the Asia-Pacific.

Creation of the more open and inclusive Asian economic order described here would provide an ideal support for a stable balance and hence constitutes part of a maximalist version of that balance. Even without such an order, economic conditions across the region might still support, or at least not undermine, progress toward a stable balance of power. But this will at a minimum require that the United States remain a very strong and attractive player in the Asian economic order, at the very least to maintain a strong Asian stake in economic relations with Washington as a balance and complement to growing Chinese economic influence. This will in turn require that the United States greatly ameliorate its current domestic economic problems, including low levels of infrastructure and education investment, inadequate employment levels for high-skill workers, and gross income inequality. Indeed, a continued inability to address such problems could severely weaken Washington's ability to convince other Asian powers of its staying power in Asia. Hence a strengthening of the U.S. economy and the preservation of America's strong economic role in Asia constitute essential elements of a minimalist version of an overall stable balance.

These seven components of a future long-term stable balance of power in the Western Pacific, if effectively implemented in their entirety, would greatly reduce, if not eliminate, the current and future dangers resulting from the steady decline of America's relative position of power in the region in relation to China. However, even a minimalist version of these elements, centered on more extensive CBMs and understandings (both in general and with regard to aspects of the Korea and Taiwan issues, maritime disputes, and ISR and FON operations), a mutual denial force posture and accompanying military doctrine, a strengthened U.S.-Japan security relationship, and a rejuvenated U.S. economic position, would very likely provide for an adequate level of regional stability. Without

even these minimal changes in the regional security environment, the gradual movement toward a rough U.S. and Chinese military and economic parity across the region will significantly increase the likelihood and severity of future political-military crises.

The discussion in this chapter provides a convincing rationale for the creation of at least the minimalist version of each of the seven components of a stable balance if not the full or maximalist version. But while most observers might accept the logic of these elements, many might nonetheless reject their usefulness owing to the difficulties involved in implementing them, even at minimum levels. Indeed, most commentators with whom I have discussed the notion of a stable balance cite, as the main reason for rejecting the overall argument, the supposed impossibility of reaching the desired end state described in this chapter.

4

GETTING TO A STABLE BALANCE OF POWER

THE INTRODUCTION TO THIS BOOK AND THE ANALYSIS THAT FOLLOWS IT have established that the creation of a stable balance of power security environment in the Western Pacific requires an acceptance or recognition by elites in the United States, China, and other key Asian capitals of four factors:

- The unsustainability of the past, long-standing environment centered on dominant American maritime power and the impossibility that a dominant Chinese position will emerge
- The necessity of consciously transitioning to a balance of power system, given its relative advantages over efforts by either side to create or sustain a unipolar system
- A clear understanding of the essential components of such a balance of power system
- The possibility of creating at least the minimalist version of this system over time, through a process of unilateral and reciprocal actions involving confidence-building measures, crisis management mechanisms, the transition to a mutual denial force posture and set of military doctrines, and mutually agreed-upon reductions in the potential for specific volatile security issues to cause crises and conflict in the region

The preceding chapters have systematically presented the case for the first three of these four conditions. As noted in chapter 3, without an acceptance of these arguments by political leaders in the United States, China, and other Asian capitals, even contemplating a transition to a balance of power environment will remain virtually impossible. Conversely, acceptance of these arguments will very likely make the significant obstacles to creating a balance of power less daunting. Indeed, attempts to implement individual elements of a balance of power, such as a unified, largely neutral Korean Peninsula, are more likely to succeed when all parties recognize that each element is part of a larger strategic action beneficial to both sides. Such a recognition would arguably lower resistance to individual actions that, considered in isolation, seem infeasible, such as undertaking significant political and military risks to create the conditions for a unified Korea or a largely demilitarized Taiwan Strait environment.

With this in mind, the current chapter considers a possible pathway to building the kind of stable balance of power environment described in earlier chapters, in each case distinguishing between minimalist and maximalist versions. Even in the case of the former, there is no single, risk-free formula for making such a transition. The process will inevitably entail some risks. But the risks involved in not undertaking the process are greater. In fact, the biggest hurdle to taking such risks will lie in the (incorrect) belief that it is safer and more effective to remain largely passive and status quo oriented with regard to overall strategy, responding to crises as they occur, muddling through, and avoiding conflict through limited CBMs and other measures in the hope, for some, that a stable balance will occur naturally. This type of approach, in a changing power relationship, is fraught with danger, as such crises are likely to become more intense over time.

The specific features of the maximalist and minimalist versions of a stable balance are not rigid, nonnegotiable requirements that, if not entirely achieved, would doom the undertaking to failure. The feasibility of either version and its specific features will ultimately depend on the degree to which Beijing, Washington, and other major Asian powers such as Japan emphasize their emergence and particular makeup as essential for creating a sufficient level of security assurance and deterrence in a balance of power environment. In my view, some form of one or the other of these two versions is probably necessary for the creation of a stable balance over the long term, with the maximalist version obviously providing the most stable alternative element.

Implementing even the minimalist version of a stable balance will require political leaders of significant vision, will, and courage in Washington, Beijing, and other major Asian capitals. Certain assumptions about the supposedly innate benefits of predominance, the persistent untrustworthiness of the other side, the intractability of political obstacles at home, and the impossibility of creating and sustaining a stable balance

involving a de facto Sino-U.S. buffer zone must be cast aside or held in abeyance to undertake a transition to a balance of power environment. This will be a difficult but certainly not impossible task if elites in all quarters fully recognize the nature of the power transition under way.

PRINCIPLES AND GUIDELINES FOR MOVING FORWARD

The creation of such an environment, as with any interstate environment involving significant change, should follow certain guidelines or principles.

First, a recognition by all sides of the interests served and benefits produced, by moving in the direction desired, in this case toward the building of a stable balance, is essential. Such a recognition by Washington, Beijing, and other major Asian powers would contribute greatly to the creation of a level of trust and willingness to proceed, however tentatively. This action is without doubt the most important element of the entire process, since it will condition greatly how each side measures the value and prospects of any subsequent actions taken.

Here the challenge is to strike the right balance between the two extremes of explicitly agreeing outright and in advance on the need to build a stable balance consisting of some form of every feature of either the minimalist or the maximalist versions, on one hand, and undertaking an open-ended and largely undefined process of gradual change, on the other. The former is highly unlikely and unnecessary, but the latter is probably insufficient as a means of preventing a worsening security environment. As noted in the introduction, some observers argue that it is not necessary for Washington, Beijing, and other major Asian powers to agree, either explicitly or tacitly, on the need for any type of balance of power environment in Asia before beginning the transition process. According to this view, many of the elements of such a de facto balance, such as CBMs, CMMs, a strengthened U.S.-Japan alliance, and even parts of a denial force structure, could occur simply as a natural result of the need to strengthen the twin goals of reassurance and resolve as China's capabilities and reach increase.¹

The problem with this view, as also noted in "Beyond American Predominance in the Western Pacific," is that open-ended efforts to reassure and deter would most likely result in destabilizing attempts to test and probe on issues of serious contention, as Beijing's regional presence and apparent power reach those of the United States. Allaying such tendencies would inevitably require more than just marginal, muddling adjustments. More credible, lasting signals of restraint and resolve would be necessary, which in turn

would require an understanding of the larger strategic objective involved: a genuinely balanced environment built to a significant degree on a set of stable understandings.

Second, an overall preference for moving incrementally is necessary, as opposed to reaching major understandings or grand bargains at a single stroke. This is especially important when the parties involved harbor significant distrust toward one another, many differing interests are present, and the required changes to be made in the (still-functioning) status quo are significant. All of these features exist in the U.S.-China relationship.

Most of the relevant literature on the creation of stable security environments favors an incremental shift in relations between antagonistic powers over striking a grand bargain at a single stroke. In *Understanding Conflict and Conflict Analysis*, Ho-Won Jeong argues that on the various paths to move from an adversarial to an accommodating relationship, “in a non-crisis situation, incremental, rather than dramatic, changes, with a longer time horizon might be natural for eliminating animosities on a persistent basis. Many small steps taken gradually have a cumulative effect in eventual trust building.”²

In addition, incremental change is preferable because how any changes might affect other factors and balances in the system is not certain; the outcome of each change can be more accurately evaluated if undertaken gradually; and incremental changes do not commit the parties involved to alterations so large that it is impossible to withdraw from them if they produce undesirable consequences.³

At the same time, a major challenge in implementing incremental change is to decide what size or degree of such change is most appropriate at a given time. Although the seven components of either a maximalist or a minimalist stable balance of power in Asia can each be viewed as an incremental step toward that ultimate goal, they each constitute a major change that in most cases requires a series of subordinate incremental steps to be realized.

Third, a general preference for taking the easiest steps first is also important because they are by definition more feasible and further contribute to the building of confidence and trust. That said, according to some analysts, it is sometimes useful to deliberately introduce low-level tension early in the process by taking ambitious steps, for example, to get the parties involved to make (usually downward) adjustments to their expectations and begin adapting to change. According to R. J. Rummel, “This helps avoid that large gap between the balance of powers and status quo that requires an adjustment possible only through much more extreme conflict and violence.”⁴ In other words, the two states are able to confront their power gap in lower-stakes contexts and constantly recalibrate to each other. Rummel likens introducing this to “selective burning to control forest fires, inoculation to prevent disease, and herd-thinning to prevent mass starvation”—measures

introduced to “enable continual adjustment” and create a “process of adaptation to change.”⁵ How, when, and indeed whether to introduce such tension depends enormously on the context of the moment and cannot be identified in advance in this study. But it is important to recognize the technique.

Fourth, the use, whenever possible, of reciprocal initiatives is obviously important; they usually involve clear and ideally binding commitments of a mutually reinforcing nature. These sorts of tit-for-tat exchanges, based on “rewarding cooperation and punishing hostility,” can let cooperation “thrive and endure even in an environment where more exploitative strategies are being played.”⁶ Obviously, a key advantage of explicit understandings in such exchanges is that they reduce uncertainty (since a tacit norm usually exists that cooperative or hostile behavior is very likely to elicit a countermeasure of the same kind) and, paired with enforcing mechanisms, can encourage compliance.

Lyle Goldstein of the U.S. Naval War College presents a variant of this (and the previous) technique, in the form of an array of escalating reciprocal Sino-U.S. “cooperation spirals” in all the major areas of bilateral competition. As Goldstein states, through such spirals, “trust and confidence are built over time through incremental and reciprocal steps that gradually lead to larger and more significant compromises.”⁷ Goldstein writes that the endpoints in the cooperation spiral model “only seem utopian in the absence of the accomplishments that result from climbing the earlier steps, and even if the endpoints remain out of reach, each step represents a significant advance.”⁸ Although Goldstein’s specific suggestions for reciprocal actions in most of his proposed cooperative spirals are either inappropriate or unnecessary for our purposes, the general concept is sound.

The key challenge, however, lies in creating incentives on all sides to initiate the process and sustain it over time, preventing defection and the emergence of a negative echo effect where, Robert Axelrod and Robert O. Keohane explain, “if the other player defects once, [the opposite player] will respond with a defection, and then if the other player does the same in response, the result would be an unending echo of alternating defections.”⁹ Such reciprocity approaches can also yield to what Goldstein calls “acrimonious and frustrating patterns of bargaining” if rigidly enforced.¹⁰

Binding reciprocal commitments are difficult to achieve, especially in a climate of distrust and in the absence of authoritative enforcement mechanisms. Unfortunately, in the absence of a crisis, it can be difficult to bring all sides together to agree on an explicit, binding negotiation (or renegotiation) of the status quo. Hence on many issues, and particularly in the early stages of movement toward a balance of power, tacit nonbinding agreements, involving at times initial unilateral actions by one side, are probably more feasible and effective.

According to one analyst, a tacit change can be initiated when one party makes “gap-reducing, unilateral changes” and the “other party agrees by not opposing these changes or compensating for them.” As a result of such a “probe,” a tacit understanding is reached.¹¹ Such “reciprocal unilateralism” is aimed at establishing a spiral of trust and conciliatory moves that result in “informal arrangements that can later be codified into formal agreements.”¹²

However, even with this more unilateralist approach, there is still an underlying assumption that “if some appropriate reciprocation is not [eventually] forthcoming, the further moves will not be considered.”¹³ In short, if the willingness exists on all sides to move toward a stable balance, nonnegotiated and often unilateral moves can push the process along, as long as some degree of reciprocity occurs.

Fifth, the use of interlocking initiatives that at each stage strengthen the incentives for moving to the next phase would assist the process enormously. This is probably best described as “issue linkage” in the international relations literature, defined by Axelrod and Keohane as “attempts to gain additional bargaining leverage by making one’s own behavior on a given issue contingent on others’ actions toward other issues.”¹⁴ However, another way of conceptualizing this approach is to strengthen the appeal to all sides of one specific initiative by showing how its impact could make subsequent initiatives in other areas more feasible and realistic. Conversely, it could also involve a simultaneous undertaking in which two or more types of initiatives, each most appealing to a different party, are considered as a single action. And yet another approach involves a *quid pro quo* arrangement wherein players allow each other to defect on some issues in return for cooperation on other issues, and each player thus makes concessions on issues of lesser value in exchange for gains on issues of more value.¹⁵

Robert E. Tollison and Thomas D. Willet argue that using issue linkage in negotiations can be beneficial to both parties involved, as it can facilitate agreements that could not otherwise be achieved.¹⁶ Indeed, in a formal study on multiplayer reiterated prisoners’ dilemma-type games, Michael McGinnis shows that creating issue linkages across time and games can “[open] up new opportunities for cooperative outcomes in games for which cooperation would not be rational if considered in isolation.”¹⁷

However, McGinnis also notes that linkage-based cooperation “is often very brittle, in that attempts to include or delete issues may shatter the existing basis of cooperation.” If one side refuses to accept the new issue, a spiral of defection is likely to dissolve all previous agreements of cooperation. McGinnis concludes that “it is very important for

players attempting to expand their range of cooperation to exercise caution, lest their undue insistence on more contentious issues lead to an unraveling of their original basis for cooperation.”¹⁸ The difficulty in this case, therefore, is in delinking issues discussed in later rounds from any established agreements attained during earlier rounds to avoid a never-ending loop of renegotiations.

Sixth, and finally, acute attention to the speed and ability of each party to translate economic into military power, via either allied actions or internally, is a general requirement for building confidence in the safety of the overall process. This factor can significantly affect risk calculations and perceived requirements for creating credible initiatives and responses during the process of building a balance of power. Mark Brawley writes that “if leaders believe that economic assets can be converted into military strength quickly, then economic policies have to reflect relative-gains concerns. In this case, states may feel less secure relying on allies, and therefore prefer self-reliance. If a state needs a longer time, or if its transformation of resources into military power is costly, then economic policy might stress investment and higher levels of inter-alliance trade.”¹⁹

In the U.S.-China case, both sides have the latent capacity to spend more on military capabilities, but both are also highly constrained by existing and likely increasing nonmilitary demands on resources. And the time and effort required to substantially increase military capabilities in critical areas (for example, naval, air, and space) is measured in years and perhaps decades, not months.²⁰ At the same time, the United States has, at least potentially, the option of relying on regional allies to augment its capabilities and to transfer military assets from other regions, while China does not. Yet as preceding chapters have shown, in the absence of a truly major increase in threat perceptions, it is highly unlikely that U.S. allies will provide enough extra capacity, or that the United States will run the risk of shifting sufficient resources from other domestic uses or other critical regions of the world (including Europe and the Middle East), to ensure long-term American predominance in the Western Pacific. Thus unless Washington or Beijing foolishly decides to provoke a near-war situation to reorient resources toward the military, both sides will need to rely largely on their own limited capabilities.

In general, this situation tends to enhance caution and predictability on both sides and could reinforce confidence that no sudden surprises will occur as movement toward a balance of power unfolds. But it places a high premium on the ability to verify any agreements reached or initiatives undertaken to limit force postures, as part of a transition to a mutual denial environment.

CONCRETE STEPS IN THE PROCESS

ESTABLISH AN INTERNAL CONSENSUS

As a first step toward building any type of stable balance of power in the Western Pacific, Washington and Beijing must undertake a serious, probability-based internal assessment of long-term economic, military, and political trends and features affecting that region and their implications for existing foreign and security policies and national interests. This should occur before any substantive discussions on the future security environment take place between the two powers or individually with other powers such as allies.

This internal assessment should include all aspects of existing power and influence, with regard to all major powers (that is, Japan, South Korea, Indonesia, India, and possibly Vietnam and Australia), not just the United States and China. The objective would be to assess the continued ability of existing policies and relationships to protect American and Chinese national interests over the short, medium, and long term, within the context of the larger changing power dynamic, and to reach an internal consensus over the kinds of changes and continuity required for the long term.

As part of this assessment, both leaderships should clearly identify their respective vital and secondary interests as well as the possible manner in which those interests might change over time and in response to what domestic and external factors. They obviously must also clearly identify and assess the full range of relevant, existing U.S. and Chinese national security policies, including their features and objectives, in terms of those national interests, at present and under future changing circumstances.

This assessment should include the continued suitability of all policies relevant to the regional security environment, such as existing alliance and other key political relationships, stances toward controversial and potentially volatile issues such as Korea and Taiwan, military doctrines and force structures and postures, and regional economic initiatives, structures, and forums. In other words, all issues relating to the seven maximalist or minimalist components of a stable balance of power presented in this study should be examined. No assumptions would be made beforehand regarding the modification of existing arrangements, but each should be reviewed from a long-term perspective.

Of course, at this early point in the process, even if the United States initiates such an internal assessment, there is no guarantee that Beijing will do the same. But the assumption here is that any consideration of the kinds of changes advocated in previous chapters as part of a transition toward a stable balance of power will require the same kind of internal review in both capitals and eventually in other major Asian capitals. Hence

if Washington decides to undertake such an assessment, it should certainly strongly encourage, directly and indirectly, both its allies and Beijing to do the same.

In response to such a proposed joint assessment, some observers in the United States, China, and elsewhere will undoubtedly assert that the level of uncertainty regarding future power shifts, interests, and policies is simply too high and, on the U.S. side, the potential risks involved in signaling that the United States would even consider the future viability of existing political relationships and alliances are too great to merit undertaking the activity. After all, China's growth rate might decline greatly, fundamentally curtailing its economic and military power, thus making the entire exercise moot. And U.S. allies might panic in response to the idea that the United States is apparently reassessing its Asian posture and alliance relationships. Moreover, Beijing might take the enterprise as a sign of U.S. weakness, thus opening the door to manipulation and pressure on Washington.

Such objections are a recipe for paralysis in the face of change. Any great power, and especially one with far-flung security commitments and capabilities and facing a problematic economic, political, and military environment, must gain a clear-headed understanding of the manner and degree to which those commitments and capabilities might be challenged in the future, and the possible changes in policy that might become necessary to preserve vital interests. While it would certainly be foolish for either Washington or Beijing to indicate a clear desire, or even a willingness, to alter long-standing policies during this assessment process, it would also be foolish for U.S. and Chinese leaders to fail to take into account the implications of the changes under way today both globally and regionally for long-standing assumptions, relationships, and policies.

As argued in preceding chapters, any objective, clear-headed assessment would quite likely lead to the conclusion that existing and future security trends and features call for more than just muddling through on the basis of current assumptions about continued U.S. maritime predominance or a naive Chinese belief either in win-win outcomes achieved primarily through diplomacy and economic development or in a future characterized by Chinese predominance. The best alternative to a largely unipolar security environment would be a stable balance designed to minimize incentives to test and probe relative strengths and weaknesses while ensuring the continued preservation of vital interests.

Such a balance, whether minimalist or maximalist in nature, would not constitute a one-sided concession or a giving up of one's national interests or an acknowledgement (or signal) of growing weakness by either side. As discussed in more detail in the conclusion to this book, it represents the best (that is, optimal) means of ensuring peace, stability, and economic welfare within the dynamically changing power environment

occurring within a vital region of the world. On the U.S. side, it should thus proceed with (indeed, requires) a clear understanding of the continued strengths and leverage enjoyed by the United States in Asia and globally and its continued ability to protect its most important interests. Indeed, a stable balance would demonstrate that Washington feels secure enough in U.S. strengths to confront—so as to defuse—an increasingly problematic Sino-U.S. escalatory cycle in the Western Pacific. It would also demonstrate a readiness to deal with Beijing on a reciprocal basis, acknowledging interdependence and the need to develop both mutual trust and mutual understanding of each other's mind-set and aspirations. If this process requires that Washington accommodate Beijing in some respects, that is because the United States is not going to create a more stable and prosperous Asia without doing so. The alternative, an arms race or worse, a cold or hot war with China, is eminently avoidable.

That said, a recognition of the value of a stable balance should also include a clear understanding of the difficulties and dangers involved in getting there. Achieving such a balance of whatever type would require a strong commitment based on confidence in the relative benefits of the course chosen compared with the alternatives, a belief in the ability to undertake a range of (often reciprocal) initiatives and reach a range of durable understandings with U.S. allies, friends, and, most important, China and a willingness, as part of this process, to revise existing policies and approaches toward military postures and doctrines and the security hotspots examined in this study.

From a domestic U.S. perspective, the most challenging aspects of such revisions would be those involving Korea, Taiwan, and probably the transition to a denial force posture in the Western Pacific. Even if they were to agree on the need to transition to a stable balance of power, U.S. leaders would very likely accept the notion of a unified, largely nonaligned Korea only on the basis of the prior attainment of many of the other elements of a stable Asian balance, along with a clear prior indication of both Beijing's and Seoul's willingness to support the notion. Similar reservations would almost certainly apply to the Taiwan situation, that is, Taipei and probably Tokyo would need to signal their willingness to accept a Sino-U.S. understanding on military deployments, and of course Beijing would need to agree to significant changes in its current policies. Hence it is most likely that U.S. leaders would only prove receptive to these maximalist versions of the Korea and Taiwan elements during this initial internal assessment phase of the transition on a conditional basis at best. Failing that, they would almost certainly need to accept on a conditional basis the minimalist versions of these elements, involving more limited understandings as defined in chapter 3. Yet such conditional acceptance of either kind would be sufficient to provide the foundation for moving forward to the next step: consultations with U.S. allies and friends.

The major obstacles to U.S. acceptance of the creation of a defense-oriented, denial force posture and military doctrine in the Western Pacific would be twofold. First, and probably most important, the U.S. military (and the U.S. Navy, in particular) would probably argue that such a defensive force posture would prove insufficient to ensure the protection of American interests in Asia and elsewhere. As noted in chapter 2, the U.S. military, and many U.S. political leaders, are wedded to the idea that only clear U.S. military predominance in vital areas such as the Asia-Pacific will ensure peace and prosperity. Hence, the argument goes, the only reliable way to ensure those goals is to increase defense spending, notably, to stay well ahead of the Chinese military across the region. Of course, doing this would greatly enhance military budgets, defense contractor profits, and employment and wage levels for the constituents of many members of Congress working in the defense sector. So considerable political resistance to a denial posture would undoubtedly exist outside of the U.S. military.

The argument against this erroneous counterargument was presented in chapter 2. An effort to stay well ahead of China militarily in Asia will quite likely prove infeasible, unnecessarily provocative, and arguably only more beneficial politically and economically for some narrow domestic interests than strategically for the United States as a whole. The internal U.S. discussion called for herein must deal with these objections head-on, showing both the huge difficulties or near impossibility of maintaining predominance and the relative benefits of a stable balance, politically, economically, and strategically.

Second, and closely related, many will argue that a denial force posture will inevitably panic regional allies and friends, causing them to fear that such a posture will compromise their security and presage a destabilizing U.S. withdrawal from the region. This objection must be addressed via extensive consultations with other nations. These discussions must highlight the relative benefits of a stable balance compared with the alternatives and the continued U.S. commitment to the maintenance of a strong presence in the Western Pacific second to none. A denial force posture will require a continued (albeit modified) forward U.S. military presence and a strengthening, not weakening, of the U.S.-Japan alliance, within limits. But it will also require enhancements in the indigenous military capabilities of U.S. allies and friends. The U.S. public, and many U.S. politicians, would most likely support such increases in regional defense capacity. So the creation of a denial force posture should be presented as a means of reassuring allies (and in particular Japan) and in some cases strengthening defense ties with them. It should also not prevent Washington from suspending movement toward a denial force structure and moving back to a more offensive posture should Beijing reject or fail to follow through with its own limited, denial-centered force posture.

The remaining two political-security elements of a future stable balance of power, the stabilization of maritime disputes and a durable code of conduct and understandings regarding intelligence, surveillance, and reconnaissance exercises, would quite likely pose fewer obstacles to internal U.S. acceptance if placed within the larger context of an overall balance with Beijing.

In the former case, U.S. policy has generally supported limits on the militarization of the South China Sea and the establishment of a durable code of conduct, as well as the clarification of each party's sovereignty claims. However, agreement to handle this issue in the manner described in chapters 2 and 3 would most likely require mutual U.S.-PRC limits on military deployments into the area on both a permanent and temporary basis, thus including the frequency and proximity of U.S. military transits. The U.S. military would almost certainly resist this action. But much would depend on the eventual overall understanding reached among all the parties concerned. Limits on U.S. military transits of the South China Sea would arguably be a small price to pay in return for a much more stable area. Of course, as with other elements of the desired balance, all sides would also need to be confident that they could effectively monitor military and paramilitary activities. An agreement on such matters would need to form part of the overall understanding.

In the latter case, ISR operations and exercises have until now been largely driven by U.S. concerns over PRC military actions against Taiwan and the Senkaku/Diaoyu Islands. If Beijing and Washington are able to reach at least the minimal understandings relevant to a use of force, military deployments, and so on as outlined in chapter 3, then ISR operations and exercises should become more manageable, that is to say, limits on both would become more feasible.

Hence, again, U.S. internal acceptance of these two political-security elements would quite likely be conditional, based on the emergence of understandings with Beijing about various military incursions and with other local parties.

Finally, an American consensus on the creation of a single, unified Asia-Pacific free trade area and a more robust type of regional economic diplomacy is also likely to prove important, albeit not essential (as noted in chapter 3) as a means of reducing destabilizing levels of economic competition and strengthening incentives among all the major nations to cooperate in the maintenance of a stable balance over the long term. The key elements of this open, inclusive economic system will require agreement among U.S. political leaders on: (1) the benefits of passing the Trans-Pacific Partnership and then moving as soon as possible toward an expansion in its membership, to include China and other major Asian economies; (2) providing greater support for the Regional Comprehensive Economic Partnership as a supplemental economic grouping, with

eventual U.S. membership; (3) transitioning toward a region-wide FTA that contains a fairly rigorous but broadly inclusive free trade network, including high-tech, high-skill product and service sectors; and along the way; (4) creating a more active U.S. economic diplomacy designed to stimulate mutual investment between the United States, China, and other major Asian nations; (5) to increase U.S. investment in Southeast Asia; and (6) to achieve sectoral agreements with China, Japan, and South Korea in service- and technology-related areas.

Achieving a consensus in all these areas is likely to prove difficult, if not impossible, over at least the short to medium term, and perhaps even over the long term. Indeed, the United States could actually move in the opposite direction, owing to growing voter resentment against free trade. And such U.S. movement would almost certainly lead to similar behavior in China and other nations. The strength of such opposition over the medium to long term will very likely depend on the outcome of the upcoming U.S. presidential election and the general employment situation within the U.S. economy over the next five to ten years. While a President Trump would most likely oppose the TPP as a path to an eventual Asia-wide FTA, a President Clinton might support both in modified forms. That said, if the U.S. economy strengthens overall and full-time employment levels and wages increase over the coming decade, it is quite possible that sentiment in favor of a more open Asian trading system could emerge. At the very least, such a development would strengthen America's economic position in Asia, a key element of the minimalist version of this economic component of a stable balance.

Beyond such general factors, a U.S. consensus in support of a more inclusive regional trading system would also depend on strong support from U.S. political and business leaders for China's inclusion in a future TPP, which would depend in large part on the larger state of U.S.-China relations and bilateral economic ties in particular. It would also depend on Beijing's progress in implementing deeper levels of more market-based reforms and its greater observance of existing World Trade Organization and other rules regarding intellectual property and similar issues.

Nonetheless, if no U.S. consensus emerges behind a more inclusive and open trade and investment system in Asia of the kind described here, economic conditions across the region might still support, or at least not undermine, progress toward a stable balance of power. But this will require major improvements in the U.S. domestic economic situation. Indeed, such improvements constitute the single most important economic contribution to the emergence of a stable balance, with or without the emergence of a more open and inclusive Asian economic order. Hence achieving a U.S. consensus on the policies needed to reinvigorate the U.S. economy is ultimately the most significant consensus needed in the economic realm.

CONSULTATIONS WITH U.S. ALLIES AND FRIENDS

Once an internal U.S. acceptance of the need to move toward a stable balance, and the general elements of such a balance, are realized, albeit conditionally, the next step is for Washington to open a dialogue with its security partners and allies in Asia, based on that acceptance, to obtain their views of the future and the proper response. Among these powers, a discussion with Japan and South Korea should be a top priority.

Such a discussion could occur initially between the presidents of the three powers and then within the context of established bilateral or trilateral two-plus-two alliance deliberations among foreign and defense officials in the United States, Japan, and South Korea over the long-term security environment in the Asia-Pacific, and only then extend to other allies. The ultimate objective of such talks would be to reach agreement on the major security trends and features occurring now and most likely in the future (using the same approach employed internally by the U.S. government) and the need to adapt to those factors through adjustments in existing strategy. Once the need to adapt strategy is confirmed, discussions should focus on the general type of adaptation required and the best way to move forward.

Ideally, alliance deliberations should focus on the suitability and feasibility of implementing the seven types of maximalist or minimalist elements designed to create a stable balance over time. This would initially include, as a priority, the intention to transition to a denial force posture and doctrine and the implementation of a more broad-ranging set of CBMs and CMMs of the type discussed in chapter 3. On this basis, variations of the remaining sets of political-military features should then be considered.

In these deliberations, it might prove impossible at this point to reach agreement on all of these remaining features. Among them, the most likely feature to be agreed upon is the strengthened U.S.-Japan alliance, as part of the transition to a denial force posture. As noted in chapter 3, Japan would play a major role in implementing such a posture. Indeed, obtaining Tokyo's approval of the future balance strategy required to stabilize the U.S.-China security competition would be an essential requirement of its success. Even though the denial force structure envisioned would most likely reduce allied reliance on forward-deployed carriers and deep-strike weapons, it would require boosting an array of passive and active defense capabilities across Japan, more forward-deployed submarines, and greater interoperability between U.S. and Japanese forces. In addition, both Beijing and Tokyo would eventually need to accept the long-term stabilization of the existing status quo with regard to the disputed Senkaku/Diaoyu Islands, via a clear affirmation of mutual restraint regarding both the deployment of military or paramilitary assets to the area and the placement of personnel or facilities on the islands. All of

these features should serve to strongly reassure Tokyo that a balance of power strategy would not compromise its security in any way.

Bringing South Korea into this discussion would require considerable finesse as well. The creation of a unified, largely nonaligned Korean Peninsula is perhaps the most difficult and problematic element of the balance of power strategy proposed herein. Its success would depend to a large extent upon new actions taken by Beijing, along with additional overtures to Pyongyang. During this initial period of internal U.S.-allied consultation, China would obviously not yet be in a position to undertake any new actions. Hence at this point in the process, U.S. and Japanese discussions with Seoul should focus on only three goals: obtaining approval of the need to transition to a balance of power environment centered on a mutual denial force posture and military doctrine; accepting a strengthened but limited U.S.-Japan alliance as the political linchpin of that strategy; and reaching agreement on the optimal long-term status for the Korean Peninsula compatible with a balance of power environment—or, failing that, on the need to reach certain understandings with Beijing regarding future contingencies, along with other CBMs (the minimalist version of this component of a stable balance).

The primary purpose in creating a unified, largely nonaligned Korea would be to neutralize that historically volatile and conflict-inducing area's role as a source of enduring security competition between Beijing and Washington. That would require both the disappearance of the North Korean regime as a potential source of serious conflict involving both powers and the removal from the peninsula of foreign forces that could threaten either China or Japan. Despite the benefits of this future Korea situation, as long as North Korea remains well armed and hostile, Seoul would almost certainly continue to prefer a close security relationship with Washington involving U.S. forces on the peninsula. Hence at this early point in the transition process, discussion of the long-term status of the peninsula should focus only on the relative costs and benefits of a future neutral, nonaligned peninsula as an element of a larger balance of power environment. And here, the preference of the United States would probably prove decisive in influencing Seoul's (and Tokyo's) calculations. If Washington were to convey its openness to a largely nonaligned Korea enjoying residual security relationships with the United States, both South Korea and Japan would almost certainly become far more inclined to accept such an outcome.

That said, Seoul would also most likely need to credibly reassure Tokyo that a more independent, unified Korea would pose no threat to Japan. This would certainly require at least a residual Korean security relationship with Washington (though not one involving U.S. forces or joint command systems on the peninsula) and certain bilateral Korea-Japan security assurances, most likely including limits on certain types of offensive weapons systems such as ballistic missiles.

None of this should prove impossible to achieve, assuming a general acceptance of the need to transition to a balance of power environment. However, even a tentative and conditional agreement on the long-term status of the Korean Peninsula could take a prohibitively long time to achieve. At a minimum, all parties would need to agree on the importance of reaching the more achievable minimalist understandings noted above.

The United States, Japan, and Korea would then need to discuss the remaining three political-strategic elements of the envisioned balance of power environment, that is, largely demilitarized Taiwan Strait and militarily constrained maritime islands environments and limits on ISR operations and military exercises. Of these elements, the maximalist versions of the stabilization of the Taiwan and maritime sovereignty disputes would undoubtedly prove most challenging. The former, centered on a bilateral U.S.-China understanding regarding production, procurements, sales, and deployments of weapons systems relevant to the Taiwanese military situation, would require, at a minimum, Japanese acceptance. This would arguably become possible only if Washington made it clear to Tokyo that it accepted the value and feasibility of reaching such an understanding with Beijing and also provided credible assurances that such an understanding would not compromise the U.S. capacity to detect and counter Chinese cheating and a possible Chinese attack on the island.

Washington's ability to provide convincing arguments in the former case would depend on the ability of the U.S. leadership to assure Tokyo that broad bipartisan American support existed for reaching understandings with Beijing over Taiwan; indeed, this is a precursor to the success of all the elements of any balance of power strategy. Such broad support would in turn depend in large part on the president's ability to assure his political colleagues and opponents that any understanding with Beijing would not come at the expense of Taiwan's security, as measured by the ability of a denial force structure to deter or defeat a future Chinese attack on Taiwan. Thus these two conditions for Japanese acceptance of a maximalist form of stabilization are actually closely intertwined. And of course, Tokyo would need to be convinced that Taiwan would accept such a U.S.-China understanding, or at least not respond insecurely by attempting to develop an independent, possibly nuclear, deterrence capability.

The last point raises the issue of consultations with Taipei. Any direct discussion with Beijing regarding U.S. defense assistance to Taiwan would require a revision of the Six Assurances. Washington should notify Taipei of the intention to undertake such a revision, in the larger context of movement toward a greater stabilization of the Western Pacific through the establishment over time, and incrementally, of a stable balance of power in the region. This should take place either simultaneously to or before the U.S. consultations with Tokyo and Seoul.

Of course, reaching an internal U.S. consensus on movement toward a bilateral U.S.-China understanding regarding production, procurements, sales, and deployments of weapons systems relevant to Taiwan could prove impossible, even over the long term, thereby removing the need for any notification along these lines to Taiwan or others. Deliberations within the United States and then with other powers might produce only a minimalist agreement to provide the offer of a clear pledge to Beijing to oppose Taiwan independence, in return for a Chinese nonuse-of-force pledge.

Aside from this issue, as part of its notification, Washington would need to convey clearly to Taipei its continued commitment to defeat any direct attack on Taipei under the future denial force posture it would establish in the region. This of course would depend on the maintenance of a U.S. ability to detect, early on, any significant Chinese efforts to build a capacity to attack Taiwan. Moreover, it should also reaffirm to Taipei that the Taiwan Relations Act would remain in effect, assuming that it is not rescinded. At the same time, Washington should make it clear that this assurance certainly does not mean that the United States would accept any Taiwanese attempts to move unilaterally toward the permanent separation of the island from the mainland. Indeed, Washington would inform Taipei that such movement would be strongly opposed under the minimalist version of a stable balance. And it should also make it clear that an effective defense of Taiwan with U.S. assistance will require that Taipei augment its existing indigenous military capabilities with greater independent efforts to harden the island against attack.

At this point in the process, Washington should limit its discussion with Tokyo and Seoul regarding the stabilization of the South China Sea situation and the future deployment of ISR operations and the holding of military exercises in the Western Pacific to a general notification of the intent to achieve a durable understanding with Beijing on these issues, in the larger context of the creation of a (at the very least minimalist) stable balance. This intention should also be communicated to the Philippines and other Southeast Asian nations. In every case, however, Washington should make it clear that any assurances or accommodations made to Beijing would require similar credible commitments in return and that the stable balance desired would not compromise the interests of nearby states.

In addition, Washington should also convey to the non-Chinese claimants and other relevant parties, such as Singapore, Thailand, and Indonesia, that stabilization of the South China Sea maritime disputes will require far more energetic diplomatic efforts, whether bilateral or multilateral, to place limits on levels of militarization, possibly to clarify the claims of each party to land features and waters, and to reach understandings regarding joint development areas. These actions should form the basis of any subsequent credible code of conduct reached. Washington should at this time also make it clear that any

limiting agreements regarding the militarization of the South China Sea and the nonuse of force must include all claimants. In this effort, Washington should clearly state that the minimalist components regarding limits on militarization would be an essential part of any future understandings reached.

At this point, Washington should consider expanding consultations with other U.S. allies and friends in Asia to a discussion of the larger strategy of creating a stable balance in the Western Pacific, including most notably Australia, India, the Philippines, Thailand, and Singapore. The exact timing of such discussions would depend primarily on the success of the more limited consultations in developing a consensus on the key elements of the future Asian balance (that is, whether minimalist or maximalist in nature). A broadened discussion, or at least preliminary conversations regarding overall intent, could occur fairly early on in the process, but any detailed interactions should proceed on the basis of agreement among the United States, Japan, and South Korea regarding most if not all of the key political-military elements of the balance.

Movement toward the seventh feature of a future stable balance of power, an open and inclusive economic system based on a region-wide FTA, will probably proceed on a track largely separate from the other six features. The attainment of this objective could prove extremely difficult over at least the short to medium term and is not absolutely essential to the creation of a stable balance in the Western Pacific. But to sustain such a balance over the long term, movement toward a more open and inclusive system, preferably based on the adoption and expansion of the TPP and its convergence with the RCEP, along with a deepened U.S. economic presence in the region, is probably eventually necessary, to ensure a continued common commitment to an open regional economic system and discourage any long-term movement toward Chinese economic dominance within the region.

Thus even in the absence of a domestic U.S. consensus in support of such movement, Washington should initiate consultations with its allies and major trade and investment partners regarding the establishment of a more open and inclusive economic order in Asia centered on the TPP and RCEP. Without such consultations, and in the event of the failure of the TPP to move forward, the RCEP will probably become the major path toward a more open and inclusive regional system. While this is unlikely to greatly accelerate or deepen Chinese economic influence across the region (serving merely to streamline existing FTAs), it will probably reinforce the impression that China is leading the region economically.

The above consultations and discussions with U.S. allies and friends should be held privately, out of the limelight, and in confidence. However, it is probably inevitable

that these discussions would eventually become public knowledge. Indeed, initial U.S. internal discussions about movement toward a stable balance of power in Asia would probably leak early on, forcing a response from the U.S. administration. Under such circumstances, it is important for the U.S. administration to correctly characterize the assessment under way as a policy review designed to maximize regional peace and stability and preserve regional prosperity over the long term. It should state that any possible changes in U.S. policy resulting from the assessment will be made on the basis of extensive consultations with regional allies and friends, to ensure that their interests are well protected, and will guarantee the long-term preservation of vital U.S. interests.

INITIAL DISCUSSIONS WITH BEIJING

During the internal U.S. discussions and consultations and those with allies and friends, Washington should provide only minimal information to Beijing. The United States should not give the impression that it is engaging in discussions with China about shifts in policies or approaches affecting U.S. interests and those of allies and friends before it has reached agreements on such changes internally and with allies. Any initial conversations with inquiring Chinese officials should merely confirm, at most, that Washington, along with its allies and friends, is examining the best means of ensuring long-term peace and stability in the Western Pacific. But it should also be made clear that this effort will eventually include Beijing.

However, a stable balance of power cannot occur on the basis of a classic grand bargain or concert of powers between the United States, China, and other major Asian nations. The high levels of distrust and uncertainty among these powers prohibit such an overarching agreement, especially in the form of a single explicit, comprehensive, and detailed action. Moreover, the necessarily conditional nature of any movement toward a stable balance assumes that any changes will occur incrementally, largely but not necessarily always on a reciprocal basis, and in response to credible signals of goodwill and compliance from China and others.

Once a conditional acceptance of the intent to transition toward a stable balance of power in the Western Pacific is reached both internally and with regional allies and friends, Washington should proceed on the basis of the guidelines and approaches discussed above to test the waters with Beijing and build the basis for substantive understandings on at least the minimalist version of a future stable balance of power.

As a first step in this process, Washington should focus on efforts to achieve the kinds of CBMs and CMMs outlined in chapter 3. Initial discussions of these initiatives with Beijing could occur as part of normal military-to-military dialogues. But they should

in most cases eventually include both military and civilian leaders, as well as references to the ultimate desire to create a larger set of understandings relevant to the long-term future security of the region. The latter intention should be probed through a separate Sino-U.S. strategic dialogue based on the U.S. discussions with allies regarding future economic, social, and military trends and features.

Because such a strategic dialogue would derive from these U.S. internal discussions, it would need to connect separate global, regional, and functional policy issues with a larger discussion of Chinese and American grand strategic objectives and interests over time. In more concrete terms, a bilateral dialogue would connect long-term alternative projections of likely political, economic, and military trends and developments with perceived core and secondary national interests as they relate to global and regional security issues; identify and explain those trends and activities that would most likely create significant security concerns on either side over particular time frames; and discuss what is likely to be required by each side, in terms of bilateral, multilateral, or other interactions, to avert growing security competition and dwelling on worst-case projections, including changes in anticipated military force structures and deployments, new or more intense types of cooperative and trust-building exchanges, methods for handling potentially volatile issues such as Taiwan and Korea, and other forms of reassurance, avoidance, and the like.

This dialogue should proceed on the basis of a shared preference for the creation of a stable overall balance in the Asia-Pacific. Although alternatives to such a balance, for example, an all-inclusive collective security system or some type of unipolar system, could certainly be discussed, the low probability of such outcomes, given the trends and features discussed in this study, should and, one hopes, would serve to reinforce the need to transition to a stable balance.

Given their sensitivity, initially such dialogues could only proceed on a track-2 level, involving knowledgeable and experienced former officials and policy analysts as well as a wide range of relevant political, economic, and military experts. However, to have any conceivable impact on efforts to build a stable balance of power of whatever kind, such dialogues would also need to enjoy the strong support of U.S., allied, and Chinese governments and be well informed (although not directed) by government views.²¹

During these discussions, and most likely after some notable successes in creating the CBMs and CMMs suggested in chapter 3, U.S. officials should convey to Beijing a willingness to consider broader mutual adjustments in the direction of one or more of the noted additional features of a stable balance, as agreed upon through internal U.S. and allied consultations. These should first include those additional features that are potentially the easiest to achieve, such as a more symmetrical denial-oriented force structure

within the first and second island chains and initial understandings regarding ISR and freedom of navigation operations and contentious maritime sovereignty disputes. Agreement on such changes would not need to be detailed and binding at this point. And Washington must also make it clear to Beijing that any future adjustments emerging from these understandings must ultimately be verifiable and would become invalid if either side appears to renege.

At this point, as a gesture of goodwill, Washington should consider a limited initiative such as the temporary cessation of or significant reduction in the number and proximity of ISR operations conducted along the Chinese coast. At the same time, Washington, and possibly Japan, could offer to conduct joint military exercises with Beijing in unprecedented areas, such as patrols on sea lines of communication, or other similar confidence-building measures.

If Beijing seems receptive to these initiatives, and engages productively in a dialogue on improving the long-term security environment in the region, Washington, in coordination with Tokyo, could then probe Beijing's desire to establish a long-term reduction in U.S. and Japanese ISR operations along the Chinese coast, in return for a similar goodwill initiative on the Chinese side. This could include Beijing's explicit pledge not to interfere with the resulting low level of U.S. and Japanese ISR operations along the coast or limits on Chinese military and paramilitary deployments around the Senkaku/Diaoyu Islands, among other locales.

MOVING TOWARD A MUTUAL DENIAL MILITARY FORCE

The initial discussions and initiatives proposed here will quite likely require many months, and possibly even years, to accomplish. But this process should serve as a testing ground for the creation of goodwill and mutually reassuring restraint on both sides. If successful, it should provide the basis for the attainment of more substantive elements of the future stable balance of power beyond CBMs and CMMs. In particular, if internal deliberations are conducted in Beijing and Washington (and with U.S. allies) that confirm the outlines of the analysis presented in this study, the strategic dialogue between the United States and China regarding long-term regional trends and features should lead to a mutual commitment to create a more defense-oriented set of military postures across the first and second island chains. They should also produce a willingness to discuss more explicit (at least minimalist) understandings regarding potentially volatile issues, such as Korea and Taiwan, that would serve to reduce incentives for an intensifying security competition.

Regarding the movement toward a mutual denial posture, at this point in the transition process Washington should initiate a more detailed discussion with China and with U.S.

allies of the kinds of mutual limits on types and numbers of offensive weapons systems that would be required on both sides. As noted in chapter 3, this should include limits on deep-strike weapons systems such as short- and medium-range missiles; land-attack ballistic and cruise missiles and long-range bombers; agreements on upper levels of surface and subsurface naval warships, most likely stressing shorter-range frigates within the region; greatly enhanced levels of both active and passive defenses to protect air and naval bases in theater; agreements regarding the dispersal of critical U.S. military assets to ensure a flexible, multifaceted defense structure; understandings (based on consultations with Tokyo) on the intention to strengthen U.S.-Japan coordination in several areas but also to limit the Japanese deployment of military forces outside of the home islands; strong limits on the development of amphibious forces within or near the first and second island chains; and increased antisubmarine warfare capabilities on both sides.

For the United States and its allies, such changes would require a reduction of emphasis on the existing highly prominent role of aircraft carriers in the overall force mix within the U.S. Pacific Command in favor of a more defense-oriented force centered on more submarines and long-range anti-ship missiles, strengthened antiaircraft and antimissile capabilities, hardened and dispersed basing and facilities, and increases in the number and capabilities of short-range, in-theater military and paramilitary combat ships. While Japan would need to strengthen its defenses and deepen its ability to coordinate with and support U.S. forces, other U.S. allies and friends would not necessarily need to augment greatly their existing capabilities in tandem with Washington. South Korea's importance would quite likely diminish significantly over time as a location for U.S. forces, in order to create a more stable, neutral buffer area along portions of China's maritime periphery. In other cases (for example, the Philippines and Australia), the number of U.S. locations might increase, as part of a dispersal process.

China would need to agree to similar types of capabilities and limits, in addition to the specific demilitarization or nonuse-of-force assurances provided as part of future agreements reached with regard to Taiwan and maritime territorial disputes in the East China and South China Seas. In particular, Beijing would need to forgo or eliminate certain offensive weapons and other capabilities designed to seize and hold claimed territories, encompassing both maritime land features and Taiwan, including amphibious capabilities, more than minimal numbers of offensive short- and medium-range ballistic missiles, and any significant expeditionary forces. At the same time, any understandings reached between Beijing and Washington regarding their overall denial-oriented force postures should arguably facilitate agreements on these sensitive issues by reducing the potential threat of an offensive attack by either side on Taiwan or in disputed maritime areas. The reverse version of this process could also hold true—reducing volatility

surrounding Taiwan and disputed maritime features could be a prerequisite, or at least a strong incentive, for Beijing to give up offensive weapons and amphibious capabilities.

As with the initial process of consultation and CBMs, the transition to a mutual denial force posture would require many months if not considerably longer, including elements of a conventional multiparty arms-control negotiation. Many complex obstacles would confront such a negotiation, including issues of verification, definitions of in-theater and out-of-theater forces, the determination of what constitutes sufficient levels of limited capabilities, political and bureaucratic problems relating to possible command reorganizations, and of course coordination with allies and friends. Some military services would doubtless resist limits, reductions, or modifications in their force posture, going so far as to create escalatory incidents, and politicians on both sides would probably attack the process for giving away too much or exposing their side to increased dangers.

Such problems make it all the more imperative that prior consultations within the United States, with allies and friends, and with Beijing, along with efforts to deepen CMMs and CBMs, all succeed to the greatest extent possible, resulting in a strong commitment to go forward, reduced criticism of the path ahead, and a level of trust on both sides sufficient to persevere in developing a military environment based on mutual denial. If the initial efforts fail, then Beijing and Washington are unlikely to be willing or able to seriously discuss transitioning to a mutual denial force posture. And even if these initial efforts are successful, many of the obstacles noted here will remain, albeit in arguably more manageable forms. Even under the best of circumstances, problems will remain formidable, reflecting in large part the necessary conditional nature of agreements reached. And even if both sides agree to undertake the necessary changes, verification of actions taken (or not taken) will remain essential for an indefinite period of time.

But despite such problems and concerns, the creation of a mutual denial force posture in the Western Pacific is very feasible. Although it will require a reorienting in military outlook, away from dominance-oriented, war-winning approaches, all militaries concerned are quite capable, financially, organizationally, and otherwise, of making the common transition in force acquisitions and deployments necessary. It will require will, commitment, confidence, and a healthy dose of skepticism and sensitivity toward possible cheating. But past successful arms-control negotiations, for example, between the more adversarial Soviets and Washington, have shown that these features are certainly obtainable in the Sino-U.S. relationship and among allies.

The alternative to the deliberate creation of a mutual denial force posture and military doctrine—haphazard, unilateral development of such features—will almost certainly prove extremely unstable as each side seeks to gain decisive advantages.

DEMILITARIZATION OF CONTENTIOUS MARITIME TERRITORIAL DISPUTES

To a significant extent, transition to a mutual denial force structure in the Western Pacific and the stabilization of contentious maritime issues as well as the Taiwan problem are all interrelated. Confidence on all sides in moving toward a more limited, defense-oriented force structure will depend at the very least on a reliable expectation of a significant reduction in the potential for military competition across most of the region. Hence the discussion among all parties of movement toward a denial force posture should include initial efforts to limit military buildups in disputed maritime areas and at the very least the kinds of pledges discussed with regard to the Taiwan Strait. This minimalist goal should be the first step in developing a more stable environment in the East China and South China Seas and would also be central to the stabilization of the cross-strait situation.

Incentives to move forward in such an interlinked manner would depend to a great extent on the general acceptance by political leaders on all sides of the benefits of establishing a largely neutral *de facto* Sino-U.S. buffer zone along China's maritime periphery that nonetheless preserves vital security interests and leaves open the possibility of an eventual resolution of the sovereignty issues for each party. Thus initial discussions and consultations would no doubt prove essential. Forward movement would probably also require small, unilateral gestures of goodwill with expectations of eventual reciprocity (similar to reciprocal unilateralism). This could involve further movement on one or more of the CBMs noted above, the temporary suspension of FON operations, the dismantling of apparent military facilities on artificial islands, the unilateral announcement of a conditional pledge not to employ force in the region without a clear provocation (assuming other claimants make a similar pledge), and so on. Many such gestures are possible. The important point would be to place such gestures in the larger context of a desired movement toward a general demilitarization of maritime disputes to the maximum extent possible.

The militaries and the more hardline, nationalist interests in China, the United States, Japan, and other involved powers would quite likely constitute the greatest obstacle to such moves. Their receptivity to understandings regarding demilitarization would depend on: military calculations of the adequacy of a denial force posture and nascent military capabilities in preserving necessary options for dealing with a possible reversal of demilitarization efforts along China's maritime periphery; a general acceptance of the rough parity of baseline levels of militarization of islands and rocks among the disputants in the South China Sea; and in the United States, the willingness to accept limits on the frequency and proximity of FON operations and other military activities in disputed maritime areas and on (at the very least) use-of-force pledges with regard to Taiwan.

The first concern would need to be addressed during the internal U.S. discussion on the suitability and feasibility of movement toward a stable balance in the Western Pacific. A mutual denial force posture would make it extremely difficult for either Washington or Beijing to prevail in a direct conflict over the South China Sea. But both sides would also need to feel reasonably secure that they could detect fairly early on, and respond adequately, to efforts to renege on understandings and militarize the area. Thus it would be necessary to develop, if none currently exists, a full situational awareness capability for operations in the South China Sea and to preserve a level of ramp-up or rapid deployment capability to counter any reversals that might occur.

In the East China Sea, U.S. and Japanese capabilities would almost by definition remain sufficient to deter any attempt by Beijing to seize and hold the Senkaku/Diaoyu Islands. At the same time, any understanding reached would also undoubtedly require (as part of a minimalist arrangement) credible Japanese assurances of the intent to refrain from militarizing or otherwise altering the status of those territories. And both sides should issue pledges that they will not employ force without a clear provocation.

The Taiwan situation would present a more difficult problem, even under the minimalist arrangement outlined here, requiring a high level of assurance and verification of limits on both sides' (and especially China's) ability to alter the status of the island through force. This might not prove possible at this point in the evolution toward a stable balance in the Western Pacific. At most, initial discussions of the intention to move toward such limits might be all that are possible.

The second concern, agreement on a baseline level of military presence, will probably involve permission for claimants other than China to upgrade or expand their facilities on land features in the Spratly Islands, to bring them up to a par with those that Beijing has constructed. Chinese military and civilian nationalists would almost certainly object to such an equalization effort. But again, the larger objective of creating a more stable future security environment should drive judgments on such an issue.

The third concern, limits on U.S. military operations, would require a significant civilian recognition and subsequent assertion of the overriding need for mutual restraint in military activities—including FON and ISR operations—as both a CBM and a foundation for long-term stability in sensitive maritime areas. In the United States this would go against a long-standing feature of civil-military relations and also counter a basic assumption regarding the proper means used to defend against encroachments on international maritime laws, as defined by the U.S. and many other countries.

The former feature is the general understanding that the military has the prerogative to determine when and how to conduct a wide variety of military activities it views as

essential to its mission of ensuring U.S. security and that no civilian national security officials outside of the Office of the Secretary of Defense should be permitted to interpret or filter key communications or otherwise shape judgments between the military and the president, as commander in chief on important military matters. The latter is the assumption that FON operations and ISR activities should be unannounced, non-negotiable, and as frequent as the military and the president deem necessary.

In essence, the U.S. president would need to make it clear to the military (and key allies such as Japan, South Korea, and the Philippines) that limits on certain types of military activities in specific areas would be a necessary part of a larger set of understandings with Beijing and those allied Asian powers intended to create a stable balance over time, even under minimalist conditions. It should be emphasized that these understandings would in no case compromise the ability of the United States and its allies to carry out their essential military roles and missions within the context of a mutual denial force posture, including the protection of vital security interests. Hence the military would, of course, provide its views on this issue. However, the president should also make it clear that, as CBMs and likely elements of mutual restraint basic to a stable balance, these understandings would almost certainly involve some limitations on past practices.

The remaining steps necessary to strengthen cooperation and the peaceful discussion of maritime territorial disputes (involving the clarification of claims and overlapping jurisdictions, the identification of areas subject to joint development, and the creation of a binding code of conduct, relevant to both the South China and East China Seas) would doubtless require a much longer period of time to achieve and could prove virtually impossible over any conceivable time frame. Nonetheless, the effort should certainly be undertaken.

Ideally, agreements on CBMs involving the use of force and limits on militarization would pave the way for these steps by reducing domestic resistance to such clarifications. Nonetheless, nationalist resistance would undoubtedly remain strong, suggesting that the political leaderships in the United States and China would again need to take the lead in supporting the greater clarification of claims within China and among the other claimants, through bilateral or multilateral talks.

This clarification would involve a clear confirmation of the following:

- For Beijing, the nine-dash line in the South China Sea as an indication of Chinese sovereignty claims over the land features (islands, rocks, reefs, and shoals) located within the dashes, as well as their adjoining waters, *in contrast to* a claim to all of the waters within the line as sovereign Chinese territory or as areas over which Beijing enjoys unique or exclusive rights

- The geographical definition of individual land features within the South China and East China Seas (for example, islands and high- and low-tide elevations)
- The specific claims to territorial waters associated with each of the designated land features, including any recently created artificial islands
- The extent of any exclusive economic zones attached to claimed islands
- The nature of historical rights relating to the exploitation of marine resources, primarily fishing

In each case, these claims should be based on the rights and privileges defined by the United Nations Convention on the Law of the Sea, including a recognition that so-called historical rights to marine exploitation do not permit the exclusive exercise of such rights, nor any claim to sovereign control over areas outside of territorial waters, and are subject to mutual agreement in those cases where more than one state has a historical claim to the waters involved. These claims should also accord with UNCLOS definitions of baselines, recognizing that for those states that have signed and ratified UNCLOS, its prescriptions supersede any conflicting definitions contained in domestic laws. Once such claims have been clarified through negotiations, the disputants can move to identify overlapping jurisdictions and hence those areas where joint development would be necessary.

Some observers might argue that the formulation of a binding code of conduct should precede these steps, as a necessary precondition. However, it is almost certainly the case that the willingness of highly assertive states locked in contentious sovereignty disputes to agree confidently to a binding code will require a prior increased level of trust, a reduced propensity for military competition, and a clear understanding of the nature and extent of competing claims that can only result from these steps.

DEFUSING TAIWAN AND KOREA AS POTENTIAL SOURCES OF MILITARY COMPETITION AND CONFLICT

Taiwan and Korea are the most likely potential sources of serious military confrontation between the United States and China, given their strategic location along China's mainland coast, their history as previous locations of Sino-U.S. conflict, their close association with important U.S. political and military interests and relationships, and their connection to strong nationalist sentiments in China, Korea, and to a lesser extent Japan.

In the case of Taiwan, some observers will undoubtedly assert that the proposed maximalist U.S.-China agreement regarding Taiwan, as well as the revisions in U.S. policy guidelines or law described in chapter 3, would be either impossible to attain or actually

destabilizing to the island and even to the United States, for several supposed reasons. First, Beijing would never agree to severely reduce, much less eliminate, its military threat to Taiwan, owing to its distrust of the United States and domestic nationalist pressures in favor of retaining a strong coercive option. Second, most political elites and significant portions of the public in Taiwan and the United States would regard any attempt to reach an understanding with Beijing as a genuine betrayal of Taiwan's security interests and a threat to regional stability, largely owing to a belief that China would not comply with the agreement or that it would be impossible to verify Beijing's compliance. Third, any revision of past U.S. assurances to Taiwan would severely damage U.S. credibility, thus undermining relations with U.S. allies, most notably Japan, South Korea, and the Philippines. Fourth, even if such an agreement could be reached, it would not ensure that China could no longer attack or threaten Taiwan militarily. Fifth, if Beijing were to violate the agreement after it had been in effect for some years, the United States and Taiwan would no longer have the capacity to resist a Chinese attack or coercion.

All of these objections have at least some merit, that is to say, none is demonstrably false under present conditions. However, as with the arguments against U.S. support for a reunified and largely nonaligned Korea, in many cases, the strength of these objections depends greatly on certain basic assumptions and beliefs that will almost certainly no longer remain as potent if the United States and China accept the need to transition to the kind of balance of power environment described herein and begin to put in place such a balance. In other cases, however, the legitimacy of the objections will depend on the quality of the agreement reached and the degree of overall risk each side is willing to accept.

The existence of high levels of distrust and nationalist pressures obstructing a Sino-U.S. understanding on the Taiwan issue suggest that progress could occur only on the basis of significant prior trust building and extensive consultations with other concerned parties, most notably Taipei and Tokyo. The former would require intensive and extensive CBMs and CMMs of the type listed in chapter 3. They would also very likely require clear prior indications of progress in building other (at the very least minimalist) elements of a stable balance, including understandings regarding ISR activities, movement toward demilitarizing maritime territorial disputes, and, ideally, progress toward the creation of a unified and largely nonaligned Korea. And at least the minimalist elements would, in turn, become vastly more feasible once Beijing and Washington accepted the necessity of transitioning away from predominance-centered notions of regional stability, a major hurdle but an essential premise of any type of balance of power environment.

Consultations would, of course, require that both Taipei and Tokyo recognize the benefits that demilitarization of the Taiwan Strait (in the maximalist case), mutual

U.S.-China pledges regarding Taiwan independence and the nonuse-of-force (in the minimalist case), and the larger objective of creating a stable balance of power would present to both of them, especially considering the alternative (a steadily intensifying security competition and increased chance of crises or conflict over Taiwan). For Tokyo, this would not pose insurmountable difficulties, given a prior, clear U.S. commitment to move toward the strengthening of the U.S.-Japan alliance and convincing assurances that Washington would remain able and willing to counter a Chinese attack on Taiwan.

For Taipei, accepting demilitarization would quite likely require confidence in the feasibility of the entire process, including, as with Tokyo, Washington's ability and willingness to counter Chinese cheating. More broadly, Taipei would also need to believe that Washington was not abandoning Taiwan or accepting Chinese coercion of the island. Under the maximalist version of a Taiwan arrangement, this would not be easy, but it would become vastly more doable if Washington were to retain the TRA and the four remaining elements of the Six Assurances as well as a convincing capacity to detect and respond to Chinese threats or pressures. This would depend to a great extent on the U.S. deployment of forces and reserve capacity present under a denial force posture. Nothing in that force posture would necessarily preclude such a capacity. But Washington would need to convince Taipei (and Tokyo) of this fact. This, of course, could prove extremely difficult but not impossible.

If the above issues are adequately addressed through both understandings reached with Beijing and consultations with Taipei and Tokyo, concerns over U.S. credibility and Chinese cheating should diminish. Moreover, one should also keep in mind that, once Beijing commits to verifiable movement toward a stable balance of power, the costs for it of reversing course would be enormous.

Movement toward the creation of a unified, largely nonaligned Korean Peninsula constitutes a preferable but not essential condition for the creation of an overall (minimalist) balance of power in the Western Pacific. Ideally, the emergence of such a maximalist outcome would largely eliminate the peninsula as a source of Sino-U.S. strategic competition or conflict. Beijing might prove more receptive to pressuring Pyongyang or enticing it more strenuously to give up its nuclear weapons and implement far-reaching reforms leading to eventual unification if such moves were seen as integral to the creation of an overall regional balance; but there is certainly no guarantee that it would do so, and one would be foolish to think otherwise.

In any event, some version of the current status quo, involving the continued existence of the Democratic People's Republic of Korea regime and the threat it poses to regional security, could arguably persist indefinitely without provoking a major Sino-U.S. crisis,

as long as both countries continue to share a strong interest in reversing Pyongyang's nuclear weapons program and opposing its further armed provocations. Put another way, a future, much stronger China could not reasonably insist that the United States withdraw its military forces from the peninsula and loosen its close alliance relationship with Seoul as long as Pyongyang continued to pose a major threat to South Korean security and regional peace. Seoul would certainly not want to pursue such an outcome, and Beijing would almost certainly not want to force it to do so.

Of course, the primary problem with sustaining this status quo indefinitely is that Pyongyang might at some future point provoke a major crisis on the peninsula by deploying a nuclear-armed missile clearly capable of striking South Korean, Japanese, and U.S. territory or otherwise provoking an armed clash that could escalate to a much larger conflict. And the DPRK could also implode rapidly, prompting a chaotic situation that could result in clashes among intervening U.S., South Korean, and Chinese forces. These possibilities, each of which could result in a major Sino-U.S. clash, place a premium on, at the very least, establishing a reasonably credible understanding among the relevant powers on how to respond to such contingencies. This would constitute a necessary minimalist condition for a stable balance over the long term.

Such a dialogue, which Beijing has thus far resisted, largely out of concern for Pyongyang's reaction, could become much more feasible on the basis of the steps outlined above, including U.S. consultations with Seoul and Tokyo, a genuine strategic dialogue with Beijing, further CBMs, movement toward a mutual denial force posture, and a minimalist understanding regarding Taiwan. Such actions, along with future North Korean provocations, would very likely entice or push Beijing to agree to seek stability-inducing understandings with Washington and Seoul. This entire process will doubtless require a considerable period of time, probably making this element of a stable balance the last step in the entire process. And of course the creation of a unified, largely nonaligned Korean Peninsula would come even later, if at all.

DEEPENING REGIONAL ECONOMIC INTEGRATION

The key to deepening economic integration across the Asia-Pacific region primarily involves the emergence of a Sino-American consensus on various elements, centered on the membership of both nations in the TPP and RCEP and the eventual creation of a region-wide FTA, along with a more active and focused level of U.S. economic diplomacy. But a bilateral consensus alone will not prove sufficient to ensure the attainment of these ends. Both Washington and Beijing, as well as the other major powers in the Asia-Pacific region, must also strengthen their domestic economies, deepening their

commitment to free trade in some instances while carrying out some fundamental structural reforms in other areas. The latter include, most notably, the restructuring of local debt, greater privatization of high-growth sectors, the breaking of state-led oligopolies in China, and financial and tax reform and the rejuvenation of infrastructure investment in the United States, along with various bilateral agreements on trade and investment.

Such actions will doubtless require considerable time, quite likely spanning many years. And the impetus behind them will certainly require more than a recognition of the need for a more deeply integrated, mutually beneficial Asian economic system. In many cases, the obstacles to such reforms are domestic and political, involving deep-seated dysfunctional rifts between conservatives and liberals in the United States and an array of corrupt practices endemic to political and economic elites in China and other Asian nations. These problems cannot be entirely eliminated, even over the long term. However, political and economic leaders in all countries, along with ordinary citizens in democratic societies, can do much to minimize their influence as obstacles to a more open, inclusive, and integrated Asian economic system. But such activism will require a domestic consensus led by strong, focused, and energetic political figures. It is far from certain that such changes will emerge in the United States, China, and other major Asian nations. Hence the Asia-Pacific region might have to settle for a lesser level of integration and openness. Although this will not doom efforts to create a stable regional balance of power, it will arguably make it less durable. In addition, at the very least, the United States will need to preserve or strengthen its economic presence in Asia by strengthening its overall economic situation at home and abroad.

CONCLUSION

AS STATED REPEATEDLY IN THIS STUDY, existing and likely future trends and features of the security environment in the Western Pacific strongly indicate that the long-standing militarily and economically predominant position of the United States in that increasingly critical region will largely disappear over the next twenty to twenty-five years, replaced by a more crisis-prone and unstable rough parity of power between Beijing and America and its allies.

Some (mainly American) observers doubt that this power transition will happen, variously citing the supposedly inevitable significant future decline (if not collapse) of the Chinese economy, the likely capacity of the United States to rebound and sustain its past position of dominance, or the ability of Washington's allies to compensate for any future declines in American regional power.

Others who emphasize that the uncertainty of China's future long-term trajectory and the risks involved in creating and sustaining a stable balance of power in the Western Pacific argue in favor of Washington (and Beijing) maintaining a largely status quo stance, ignoring or minimally adjusting to any near- to medium-term changes in the power balance while developing confidence-building measures where possible and dealing with potential problems as they occur, via enhanced crisis management mechanisms and adroit diplomacy.

And for some such observers, the United States' diminishing power in the Western Pacific relative to China is not really that significant, given its generally superior position of power and influence globally. Whether the United States remains predominant in the Western Pacific is therefore largely irrelevant, they argue, because such regional predominance or preeminence is not so critical to the future stability of the region, given its integration into the global security environment.

In a somewhat similar vein, other observers think that, even if the prediction of relative U.S. decline proves true, the gradual nature of the power transition under way in the Western Pacific and the obvious incentives that exist for Beijing and Washington to cooperate on many critical regional and global issues will facilitate incremental, unplanned or nondeliberate adjustments toward a more or less stable *de facto* balance of power. In other words, neither side will ever face a clear need to significantly and deliberately reorder their power and policy arrangements toward a balance, with the forces favoring cooperation always, in general, overshadowing those arguing for greater confrontation and conflict. And in any event, the long-term and uncertain nature of any power transition under way permits all sides to wait and see what happens and then adjust accordingly.

This study has attempted to deal with these objections in as fact-based, objective, and balanced a manner as possible. The argument presented in the preceding chapters consists of ten core elements:

- Even if the United States remains the major global power long into the future, a fundamental and undeniable military and economic power transition is occurring in the Western Pacific that is already seriously altering calculations of interests and risks in destabilizing directions, as growing Sino-U.S. tensions in the East and South China Seas clearly indicate.
- If left unchecked, this trend is highly likely to deepen over time, since Chinese growth rates (and defense spending) are unlikely to decline drastically, U.S. growth rates (and defense spending) are likely to remain relatively limited, and the significant differences between the two powers over the handling of volatile regional issues and their respective offense-oriented, escalatory military doctrines are likely to persist and become more evident; even a low-growth China will still almost certainly manage to increase significantly its economic and military capabilities in the Western Pacific relative to the United States and its allies.
- Specifically, in this environment, Chinese overconfidence and American overreaction with regard to military activities and the handling of volatile issues will significantly increase the likelihood of more frequent and severe crises, despite continuing

common incentives to cooperate bilaterally in many other areas; such crises will most likely occur regardless of the presence of superior U.S. power on a global level.

- Efforts to deal with this situation by sustaining or creating American or Chinese regional military and economic predominance, respectively, will prove futile and dangerous, especially given prevailing economic limits, the increasingly integrated nature of the regional and global economy, and strong nationalist sentiments on all sides. Even if the United States retains some elements of its past superior power in the Western Pacific, China will quite likely achieve a sufficiently high level of capacity and confidence to alter its regional security calculus in unstable directions.
- Key U.S. allies will very likely remain unwilling and unable to augment declining relative U.S. power in a major way thus retaining U.S./allied predominance; absent a major paradigm-shifting event or series of events, they will almost certainly lack the capacity and political commitment to boost their military and economic capacity and alter their military doctrine sufficiently, and some allies could remain highly hesitant to stand in lockstep with Washington against China.
- Hence the creation of a *stable* version of the de facto balance of power that will almost inevitably emerge anyway is both necessary and feasible, if the powers concerned recognize the problem and national leaderships develop the will and commitment to overcome the significant obstacles involved.
- Although the most stable (maximalist) version of such a balance of power, involving major changes in the security environments that affect the most volatile regional hotspots, is clearly preferable, it is also likely to prove extremely difficult to attain in any conceivable time frame. But a lesser (minimalist) version, centered on CBMs, CMMs, a mutual denial force posture, and more limited understandings involving regional hotspots, while somewhat less stable, is both essential and more feasible.
- Given the long lead times involved in developing or readjusting force structures and economic priorities, and the arguably deepening level of distrust between Beijing and Washington, delaying the creation of even a minimalist balance of power in favor of a wait-and-see stance or futile efforts to retain or achieve predominance will put the region at greater risk.
- Any stable balance of power requires, at a minimum, both a more defense-oriented mutual denial force posture and military doctrine in Beijing and Washington and a significant reduction in the propensity of several volatile regional issues to generate future Sino-U.S. crises.

- The incremental, staged, and conditional process involved in creating these components of a stable balance requires the development of domestic consensus, allied and friendly support of a sustained U.S.-China strategic dialogue, and interlinked changes in several existing regional security policies on both sides.

As suggested in this study, four basic assumptions underlie the above set of arguments. First, the magnitude and scope of relative military and economic power between the major powers of a region (in this case China and the United States) are decisive in determining the pace, scope, and intensity of security competitions. Specifically, such variables critically affect calculations of relative opportunity and risk in employing various types of military and economic pressure or incentives to influence controversial and contentious security issues (such as Korea, Taiwan, maritime disputes, and so on).

Second, balance of power arrangements can and do emerge naturally (as is currently occurring in the Western Pacific) but must be deliberately calibrated and adjusted via a process of both unilateral and reciprocal actions and understandings to become stable over time. In the Western Pacific, CBMs and CMMs on their own will not provide the level of trust and assurance needed and will not reduce the propensity to test and challenge the other side that results from the process of the power transition under way. Under prevailing conditions, all it will take is one major crisis—short of war, but nonetheless severe enough to generate a sharp clash—to reorder threat perceptions toward a sharply adversarial Sino-U.S. relationship, thereby eliminating or at least greatly reducing the chance to develop a stable balance.

Third, it is possible to overcome the enormous inertia of large and complex governments and the cultural hubris and bureaucratic and political biases that underlie beliefs in the superior, stability-inducing qualities of American predominance or Chinese regional centrality. These beliefs, along with the existing deep level of distrust between Washington and Beijing, are perhaps the most significant obstacles to creating, within both capitals, a consensus in favor of a stable balance of power and the commitment to undertake the significant changes most likely required to achieve the desired objective.

In the past, such changes and shifts in belief have usually occurred only as a result of the searing experience of major wars. But in the twenty-first century, a more globally interconnected planet and an unprecedentedly interdependent U.S.-China relationship suggest that enlightened self-interest and an appreciation of the opportunities and dangers of the current situation in the Western Pacific can forestall this fate. Although the obstacles to creating a stable balance may seem daunting, change is possible.

Finally, it is important to reiterate that the argument for the creation of a stable balance of power in the Western Pacific presented in the preceding chapters does not require deal

making with China from a position of American weakness, as some will undoubtedly allege. It rests on the effective use of the United States' substantial military and economic power, both globally and regionally, rather than on an attempt to make the best of a weak and diminishing position. It anticipates that the United States will remain the most powerful and influential nation in the world for many decades to come and that Washington, with the support of its allies and friends, can retain a leadership role in Asia—in many respects alongside Beijing—in a manner that is reassuring to all regional powers.

In other words, the process this argument presents for creating long-term stability and prosperity relies on American initiative and strength, not passivity and certainly not one-sided concessions. It also guards against possible Chinese misperceptions of American compromise and restraint as a sign of weakness of which to take advantage. Conditionality, reciprocity, and a willingness and an ability to suspend or reverse actions taken or contemplated are central to the process of building a stable balance over time.

It is up to the reader to determine whether the evidence and logic presented herein and the underlying assumptions employed are sufficient and credible enough to support this argument. At the very least, the hope is that political and military leaders and influential officials and elites in all the countries concerned will undertake a more detailed, probing, long-term look at the changes under way in the Western Pacific and their implications for existing policies and preferences.

APPENDIX A

SINO-U.S. TRADE

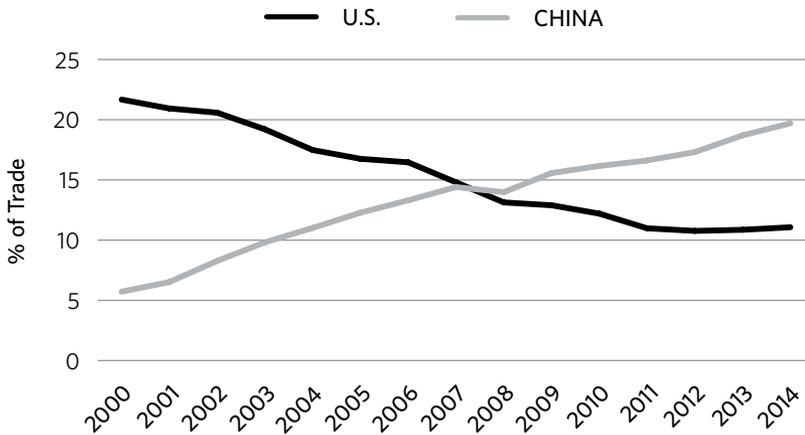
ASEAN'S TRADE WITH CHINA AND THE UNITED STATES

According to the World Bank's World Integrated Trade Solution, Chinese total trade with the ten ASEAN countries (total exports to China plus total imports from China) as a percentage of total ASEAN trade with non-ASEAN countries was only 5.7 percent in 2000 but increased to 19.7 percent by 2014, with a dollar amount of \$382 billion (current dollars). In contrast, U.S. total trade with ASEAN countries as a percentage of total ASEAN trade with non-ASEAN countries decreased from 21.7 percent in 2000 to 11.1 percent in 2014, with a dollar amount of \$215 billion (see figure A.1).

The compound annual growth rate (CAGR) of U.S. trade with ASEAN countries is at 3.5 percent. At this rate, by 2040, U.S.-ASEAN trade will amount to \$522 billion.

That said, given China's experience as a developing economy with fast-changing growth trajectories, any attempt to predict China's future trade with ASEAN is fraught with difficulties. The CAGR of Chinese trade with ASEAN countries over the past fourteen years has been 18.6 percent, and for the period 2009–2014 was 16.1 percent; between 2012 and 2014, it was only around 8 percent. It is unlikely that China will sustain this

FIGURE A.1
U.S. AND CHINESE SHARES OF TOTAL EXTERNAL ASEAN TRADE,
2000-2014



Source: World Bank, “World Integrated Trade Solution,” <http://wits.worldbank.org/>.

Note: The figure shows the import and export trade volumes between ASEAN countries and China as well as the United States as a percentage of total ASEAN trade with non-ASEAN countries.

rate of growth indefinitely into the future. At a growth rate of 18.6 percent, Chinese trade with ASEAN would be \$32 trillion by 2040, a highly implausible number considering that total world trade in 2014 was nearly \$32 trillion (export in 2014 was nearly \$15.9 trillion and imports \$16.4 trillion).

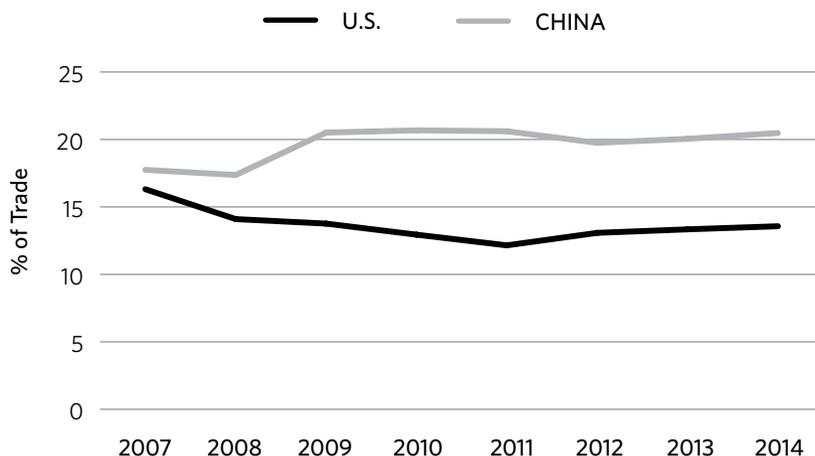
Predicting future trends is hampered by the difficulty of foreseeing China’s future economic growth trajectory. However, even assuming that China’s trade with ASEAN falls to current U.S. levels—growing at 3.0 percent year to year—Chinese trade with ASEAN would be over \$900 billion.

JAPAN’S TRADE WITH CHINA AND THE UNITED STATES

Japanese total trade with China in 2014 (total exports to China plus total imports from China) amounted to \$307 billion. The year-to-year CAGR since 2007 has been 3.8 percent. Of Japan’s total trade with the world, trade with China takes up around 20.5 percent, rising from 17.8 percent in 2007 (see figure A.2). If China and Japan sustain current trends, by 2040, bilateral trade would amount to \$800 billion.

FIGURE A.2

U.S. AND CHINESE SHARES OF TOTAL JAPANESE TRADE, 2007-2014



Source: World Bank, "World Integrated Trade Solution," <http://wits.worldbank.org/>.

Note: The figure shows the import and export trade volumes between Japan and China as well as the United States as a percentage of total Japanese trade.

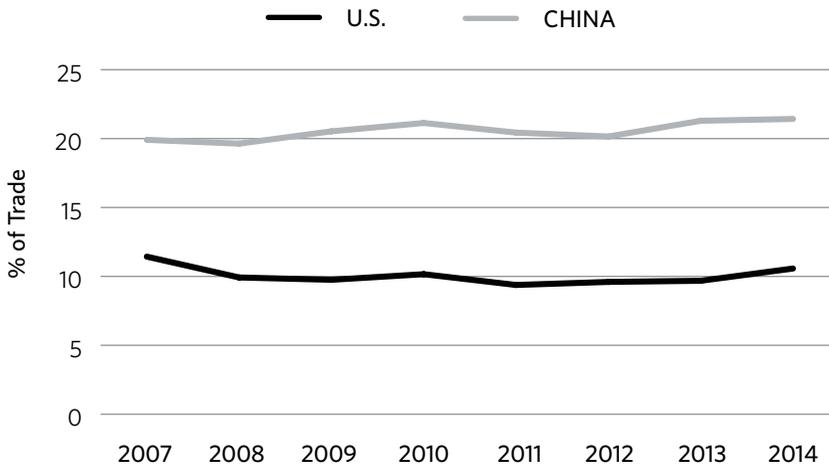
In the same time period, the U.S. share of Japanese total world trade declined from 16.3 percent to 13.6 percent. In 2014 U.S. total trade with Japan amounted to just over \$200 billion, with a CAGR of -1.0 percent since 2007. If this trend continues, bilateral trade between Japan and the United States could fall to \$158 billion by 2040, around half of China's current total trade with Japan.

SOUTH KOREA'S TRADE WITH CHINA AND THE UNITED STATES

South Korean total trade with China in 2014 (total exports to China plus total imports from China) amounted to \$235 billion, with a compound annual growth rate of 7.2 percent since 2007. Of South Korea's total trade with the world, trade with China accounted for around 21.4 percent in 2014, an increase from the 19.9 percent in 2007.

In the same period, U.S. trade with South Korea grew at 4.9 percent year on year and in 2014 totaled \$116 billion, a little less than half that of China. Trade with the United States as a percentage of total South Korean world trade declined slightly from 11.4 percent in 2007 to 10.6 percent in 2014 (see figure A.3).

FIGURE A.3
U.S. AND CHINESE SHARES OF TOTAL SOUTH KOREAN TRADE,
2007-2014



Source: World Bank, “World Integrated Trade Solution,” <http://wits.worldbank.org/>.

Note: The figure shows the import and export trade volumes between South Korea and China as well as the United States as a percentage of total South Korean trade.

If Sino–South Korean trade continues to grow at 6.0 percent, by 2040, the two countries would be trading at over \$1.0 trillion. However, even if Sino–South Korean trade were to grow only at 4.0 percent—the U.S.–South Korean growth rate in trade since 2007—the two countries would still be trading at \$652 billion by 2040. In contrast, the United States would only be trading at \$340 billion by 2040 if the current 4.2 percent CAGR were to continue.

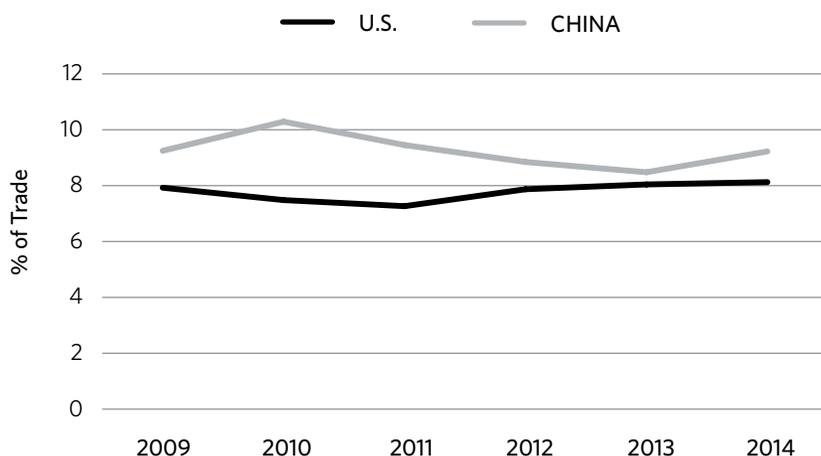
INDIA’S TRADE WITH CHINA AND THE UNITED STATES

In contrast to trade relations with Japan, Sino-Indian and U.S.-Indian trade relations appear more balanced. Indian total trade with China in 2014 (total exports to China plus total imports from China) stood at \$71.6 billion, with a compound annual growth rate of 11.8 percent since 2009. Trade with China takes up around 9.22 percent of India’s trade with the world, a slight decrease from the 9.25 percent trade with China accounted for in 2009 (see figure A.4).

In comparison, U.S. trade with India amounted to \$63.0 billion in 2014, with a CAGR of 12.4 percent. While this is around \$8 billion less than Indian trade with China,

FIGURE A.4

U.S. AND CHINESE SHARES OF TOTAL INDIAN TRADE, 2009-2014



Source: World Bank, "World Integrated Trade Solution," <http://wits.worldbank.org/>.

Note: The figure shows the import and export trade volumes between India and China as well as the United States as a percentage of total Indian trade.

U.S.-Indian trade is on the upswing. In 2009 trade with the United States amounted to 7.9 percent of India's total world trade. In 2014 this percentage increased to 8.1.

India's and China's status as burgeoning developing economies with rapidly changing development trends adds significant difficulties to predicting Sino-Indian trade in the long run. However, given current trends of more or less similar levels of trade growth—albeit with a higher rate on the U.S. end—and similar levels of trade in dollar terms, with a higher numerical value on the Chinese end, Sino-Indian and U.S.-Indian trade in 2040 are likely to be on par with each other, barring a major collapse in the Chinese economy or a stall in Indian economic growth.

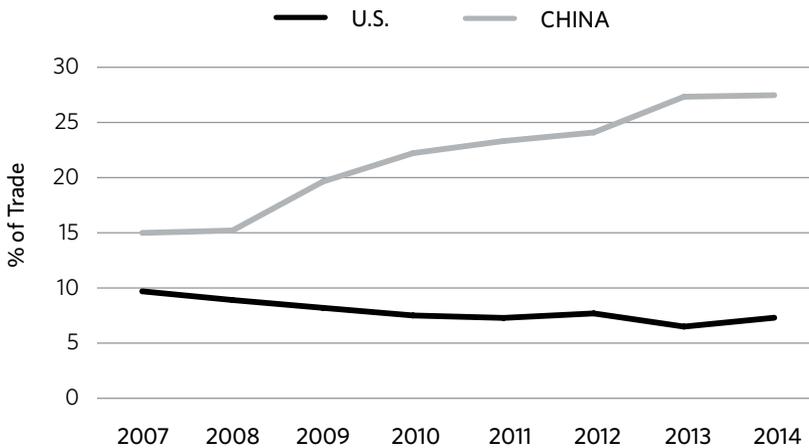
AUSTRALIA'S TRADE WITH CHINA AND THE UNITED STATES

Sino-Australian trading relations saw a significant increase over the past decade. In 2007 Sino-Australian total trade (total exports to China plus total imports from China) accounted for only 15.0 percent of total Australian world trade. In 2014 this percentage rose to 27.5 percent, undoubtedly fueled in part by China's high demand for raw

materials and metals. In 2014 Sino-Australian bilateral trade amounted to \$128 billion. The compound annual growth rate since 2007 has been at 15.8 percent.

U.S.-Australian trading relations declined relative to Sino-Australian ones. In 2014 Australian trade with the United States accounted for only 7.3 percent of total Australian world trade, a decline from the 9.7 percent in 2007 (see figure A.5). At \$34 billion, U.S.-Australian trade in 2014 is only slightly over a fourth of Sino-Australian trade in the same year, at \$128 billion. The CAGR in U.S.-Australian trade since 2007 is 2.0 percent.

FIGURE A.5
U.S. AND CHINESE SHARES OF TOTAL AUSTRALIAN TRADE, 2007-2014



Source: World Bank, “World Integrated Trade Solution,” <http://wits.worldbank.org/>.

Note: The figure shows the import and export trade volumes between Australia and China as well as the United States as a percentage of total Australian trade.

In the future, however, Sino-Australian trade is unlikely to sustain its current growth levels at 15.8 percent, given China’s already-apparent economic slowdown and declining demand for raw materials. However, even if Australia’s bilateral trade with China grows at only 2.0 percent—the CAGR for U.S.-Australian trade—Sino-Australian trade by 2040 would still amount to over \$200 billion. In contrast, U.S.-Australian trade, if growing at the same rate, would only amount to \$57 billion.

APPENDIX B

R&D RESEARCHERS

The presence of R&D researchers is an important measure of R&D investment. A CAGR model suggests that the number of Chinese R&D personnel might increase at the rate of 5.44 percent year to year. If so, China would have around 4,500 R&D researchers per million people. However, changing demographics and the myriad of factors affecting population growth may undermine the accuracy and reliability of this measure. Nonetheless, on the U.S. side, the compound annual increase of R&D personnel is at 1.6 percent year to year, which yields around 6,200 R&D researchers per million people. This result suggests that Chinese R&D researchers per million would be around 70 percent of the U.S. figure by 2040.

According to the Chinese Ministry of Science and Technology database,¹ China had 3.5 million researchers in 2010, making up 23.6 percent of the world total. Chinese R&D total personnel exceeded that of the United States in 2008 and now ranks first in the world. However, when measured by researchers per million people, Chinese R&D personnel was only around one-quarter of U.S. researchers in 2011, according to data from the World Bank's World Development Indicators.²

Another perhaps more accurate measure of the number of Chinese R&D research personnel is the relationship between GDP and the number of Chinese R&D research personnel. The number of R&D researchers per million should rise with rising GDP because as a country increases in wealth, one would expect a commensurate increase in the resources the country can devote to training R&D researchers.

A regression model pegging Chinese R&D researchers per million people to Chinese GDP suggests that Chinese R&D researchers will number around 3,000 per million by 2040. The GDP forecast used for the regression assumes a 4.3 percent average growth rate per annum.³ A regression model calculated also by pegging R&D researchers to GDP suggests that the United States will have around 5,750 researchers per million by 2040, if U.S. GDP increases at 2.5 percent year on year.⁴ According to this set of calculations, Chinese R&D personnel would be around 51 percent of U.S. R&D researchers.

Yet because of China's much larger population, the total number of Chinese R&D researchers would still outpace that of the United States. According to the U.S. Census Bureau, the Chinese midyear population by 2040 would be 1.364 billion, which means that there would be a total number of researchers of 4 million by 2040. The United

States would have a midyear population of 380 million by 2040, which means that there would be a total of more than 2 million (2,185,000) researchers by 2040. Chinese total R&D researchers, therefore, would be 1.8 times that of total U.S. R&D researchers.

APPENDIX C

A NOTE ON METHODOLOGY

IN PROJECTING FUTURE TRENDS, it is worth mentioning that, other than the methods employing past commissioning information and regression analysis, another method considered was calculating the rate at which procurement spending increased over the past decade and projecting future procurement of specific weaponry based on this rate. A useful study by Roger Cliff uses Chinese procurement expenditure between 1998 and 2010 and suggests that PLA weapons procurement expenditure grew at an average annual rate of 12.37 percent between 1999 and 2009. This rate of growth was virtually identical to Chinese defense expenditure as a whole, which grew by 12.4 percent annually between those years. In his projections, however, Cliff uses a rate of growth of 5.5 percent for projections of weapons systems, because this lower growth rate accounts for inflation and considers estimates of unpublished procurement expenditure figures after 2010.⁵ While this method works for near-term projections (within five to ten years), it does not work for long-term projections (two decades and beyond) because current procurement growth rates are not likely to be sustained through the next three decades.

Furthermore, while short-term projections are less impacted by retirement rates, long-term projections must take this into account. For example, if the Chinese submarine fleet grew at a rate of 5.5 percent on average for the next twenty-five years, by 2040 China would have 201 submarines overall (assuming an average retirement age of thirty

years for submarines of all types)—highly implausible numbers. Similarly, because of the comparative nature of this study, U.S. procurement expenditure for aircraft and shipbuilding must be taken into account. The former has been increasing at an average rate of 2.22 percent between 1999 and 2015, and the latter has been increasing at a rate of 5.82 percent over the same period.⁶ According to this set of numbers, U.S. submarines will number 229 by 2040 (again assuming an average retirement age of thirty years for all types) and only 873 fighters (from the current 1,287 fighters in USAF active service), assuming a retirement age of twenty-three years,⁷ both implausible numbers since the first is too high and the second too low.

In contrast, pegging past data on the numbers of specific weapons systems to overall defense spending avoids the problem of estimating retirement ages (because each year's weapons systems data has already accounted for retired machines) and allows for the use of older data. As alluded to earlier, Chinese procurement spending has also increased at the same rate as overall defense spending, at least in recent years, showing that the use of overall defense spending reflects the growth rate in procurement spending.

APPENDIX D

REGRESSION ANALYSIS

SUBMARINES

UNITED STATES

According to a regression model pegging the U.S. submarine force to defense spending and using data since 2000, the U.S. submarine force would remain steady at around 70 to 2040.⁸

CHINA

According to a regression analysis linked to Chinese defense spending (pegged at 6 percent to Chinese GDP, on average), Chinese nuclear submarines (SSNs) would number around 24 by 2040.⁹ The size of the overall Chinese submarine force (including both nuclear and diesel-electric submarines) would be much more substantial, however. In 2000 China had 65 submarines in total; today, the number is 70. According to this trend, China would have as many as 81 submarines in 2040, most likely still deployed in or near the Asia-Pacific, thus significantly outmatching the U.S. force numerically.¹⁰

SURFACE FORCES

DESTROYERS

United States. A regression model using past overall trends that pegs the destroyer force to defense spending suggests that total U.S. destroyers might number around 66 by 2040. If 60 percent were devoted to the Asia-Pacific, the U.S. Pacific forces would possess 39 or 40 of such destroyers.

China. *The Military Balance 2015* data suggest that between 2010 and 2011, two Luzhou, ten Luda Type-051, three Luda mod Type-051DT, one Luda II, and one Luda III—all outmoded platforms—dropped out of service. To avoid the distortion effect of commissioning and decommissioning decisions before 2010, a set of projections using post-2010 data suggests that China may have as many as 50 destroyers in total by 2040.¹¹ However, as China devotes more resources to research and development, both the quality and quantity of Chinese destroyers may increase notably at a level that the regression model fails to incorporate and represent. If China were to devote 70 percent of its forces to the region, Chinese destroyers would number 30 in the Western Pacific.

FRIGATES

United States. The rapid rate of decline in the number of U.S. frigates makes linear regression analysis unrealistic. However, if a power regression model is used, the United States would have around nine or ten frigates in total by 2040, most likely deployed in Asia, as at present.¹² The majority of these frigates will probably be more capable and lethal than the Littoral Combat Ships, if current renovation plans are realized.

China. According to linear regression analysis, China could have as many as 170 frigates by 2040.¹³ Thus regression predictions suggest that the Chinese destroyer force will lag considerably behind that of the United States, while Chinese frigates would greatly outnumber both U.S. destroyer and frigate arsenals in Asia by 2040.

APPENDIX E

SINO-U.S. WEAPONRY COMPARISON

SUBMARINES

Accurate commissioning information is available for eight classes of Chinese submarines (see table E.1).¹⁴ All other weapons systems for all other countries are calculated from similar data tables. The average annual total commissioning rate for all eight types is 2.46 percent. At this rate, by 2040, assuming an average retirement age of twenty to thirty years for all types of submarines,¹⁵ China would have between 49 and 74 submarines, the upper estimate of which roughly approximates the count of 81 quoted above. According to another set of projections by Ron O'Rourke using data after 1995, China would have a total of 54 to 81 submarines of all types,¹⁶ again matching both sets of projections given here.

Qualitatively, the Jin-class (Type 094) nuclear-powered ballistic missile submarines are likely to be developed at a rapid pace. In 2015 the Office of Naval Intelligence reported that the PLAN has four Jin-class submarines in service and may have eight by 2020.¹⁷ In *The Chinese Navy*, Ronald O'Rourke quotes an average commissioning rate of 2.8 submarines per year, which, if sustained indefinitely, results in a steady-state submarine force of 57 to 85 boats of all kinds. While there is no time frame for this projection, it

TABLE E.1
CHINA'S SUBMARINE FLEET, 1984-2015

	Han (Type 091/ 091G SSN) ¹	Shang (Type 093/ 093A SSN)	Jin (Type 094 SSBN)	Kilo SS (Russian)	Ming (Type 035 SS) ²	Song (Type 039 SS)	Yuan (Type 039A SS)	Qing (Type 032 SS)	Annual total	Cumulative total
1984-1990	3								3	3
1991									0	3
1992									0	3
1993									0	3
1994				1					1	4
1995				1					1	5
1996					1				1	6
1997				1	2				3	9
1998				1	2				3	12
1999						1			1	13
2000					2				2	15
2001					1	2			3	18
2002					1				1	19
2003						2			2	21
2004				1		3			4	25
2005				6		3			9	34
2006		1		1		2	1		5	39
2007		1	1						2	41
2008									0	41
2009							2		2	43
2010			1				1		2	45
2011							3		3	48
2012			1				5	1	7	55
2013									0	55
2014									0	55
2015		1	1						2	57

Source: IHS Jane's Fighting Ships 2015-2016.

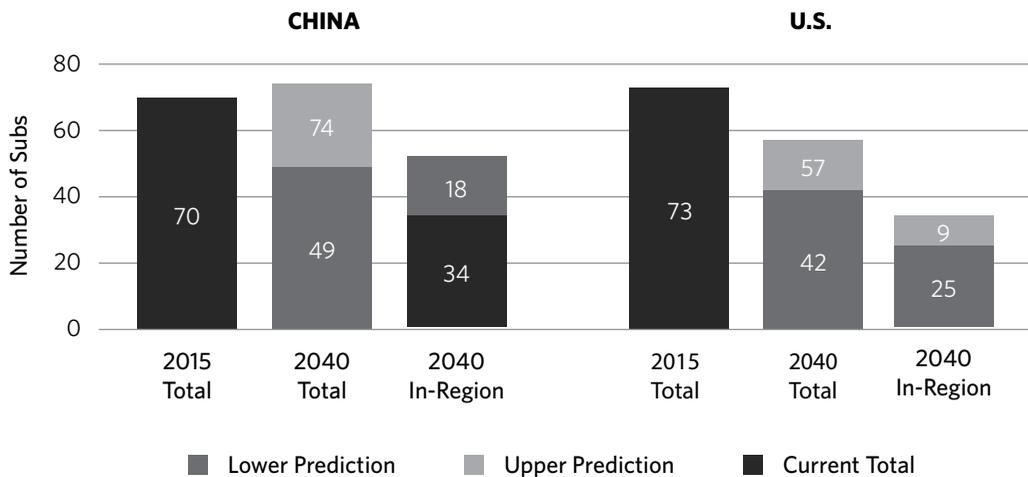
Notes:

- 1 One Han-class submarine was launched in September 1984, and a second one was launched in November 1988.
- 2 The data from IHS Jane's shows when ships were launched, not the commissioning dates. However, while there is only launch information for nine Ming-class submarines, a total of sixteen are currently operational.

does suggest that, in twenty-five years, China could have as many as 85 submarines of all kinds, a result that reflects and supports the projections presented above.

On the U.S. side, accurate commissioning data are available for five classes of submarines.¹⁸ From 1984, when the first boats of the Los Angeles–class and Ohio-class (SSBN and SSGN) submarines were commissioned, to 2015, the average annual commissioning rate for these classes is 2.09. At this rate, again assuming an average life expectancy of twenty to thirty years, by 2040 the United States will have between 42 to 57 submarines of these classes, fewer than the 70 derived from the regression analysis above. Using this measure, compared with the lower Chinese estimate of 49, the United States barely has an edge if its upper estimate (57) is considered and indeed falls behind by seven submarines if the lower estimate (42) is used. The upper estimate of 74 Chinese submarines outmatches both lower and upper estimates of the United States fleet. Furthermore, if the United States is to devote around 56 percent of its submarines to the Pacific region, as has been the case in the past five years, it would have 24 to 32 submarines in the region. In comparison, if China were to devote 70 percent of its submarines to the

FIGURE E.1
U.S. AND CHINESE SUBMARINE FLEETS, 2015 AND 2040



Source: Stephen Saunders, *IHS Jane's Fighting Ships 2015-2016* (Coulson, UK: IHS Global, 2015).

Note: Using commissioning data, the graph shows both estimates for Chinese and U.S. submarine forces in 2040. Figures E.1 through E.4 assume that an estimated 70 percent of Chinese naval vessels will be deployed in the Asia-Pacific theater, based on the analysis of James Steinberg and Michael E. O'Hanlon in their book *Strategic Reassurance and Resolve* (2014). It is also assumed that the United States will deploy 60 percent of its naval vessels in the region, based on U.S. Department of Defense announcements (Ian Rinehart, *The Chinese Military: Overview and Issues for the Congress*, Congressional Research Service, March 24, 2016, 30, <https://www.fas.org/sgp/crs/row/R44196.pdf>).

region, it would have 34 to 52 submarines in the region, significantly more than the U.S. Pacific count. If the United States were to devote only 35 percent of its forces to the Pacific, the capabilities gap would be further widened in China's favor. If the United States were to devote 60 percent of its forces to the Pacific, it would have 25 to 34 submarines in the region. See Figure E.1 for a comparison of Sino-U.S. submarine forces.

SURFACE FORCES

DESTROYERS

Using commissioning rates of three classes of U.S. destroyers, the average annual commissioning rate is 2.48 between 1991—when the first of the Arleigh Burke flights I and II DDGHMs were commissioned—and now. At this rate, by 2040, the United States will have 65 destroyers. If 60 percent of these are deployed, the U.S. Pacific destroyers force would number 39.

Beijing has put more emphasis on smaller frigates than on destroyers, almost certainly reflecting the regional focus of Chinese naval requirements, involving the defense of Chinese coastal areas, regional SLOCs, and sovereignty claims such as those by Taiwan and maritime territories in the East China and South China Seas.

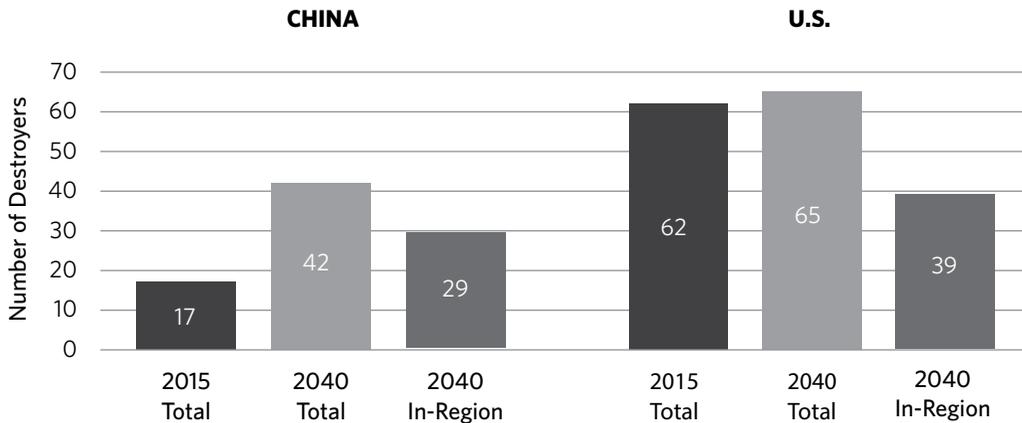
In July 2015, China commissioned its second Type 052-D Luyang III-class destroyer, which is equipped with advanced air defense radar that allows the PLAN surface force to “operate with increased confidence outside of shore-based air defense systems.”¹⁹ The Luyang III also carries the long-range Yingji-18 ASCM, whose supersonic speed and maximum range of 290 nautical miles significantly improves the A2/AD abilities of the PLAN. In the next five years, China is expected to deploy ten Luyang III destroyers in total.²⁰ Using data for eight classes of Chinese destroyers, the average commissioning rate since 1994, when the first of the Luhu destroyers were commissioned, has been 1.18 per year.²¹ Assuming a reasonable average life expectancy of thirty years for destroyers, by 2040 Chinese destroyers would number 42 or 43, only slightly fewer than the 50 derived using regression analysis.

In terms of technological sophistication, as of 2015, China had 20 destroyers with anti-ship missile capabilities and surface-to-air missile capabilities, 15 of which also have hangars. China's Luyang II-class destroyers (Type 052-C), deployed since 2003, launch the YJ-62 anti-ship missile as well as the HHQ-9, China's long-range

active-radar-homing surface-to-air missile with a range of about 90 to 120 kilometers (about 55 to 75 miles), covering the entire first island chain. China’s Luyang III–class destroyers (Type 052-D), though numbering only one in 2015, may be able to rival the U.S. Arleigh Burke–class in terms of its technology, according to at least one estimate. The ship has a multifunction weapons system that is similar to the Aegis system, as well as a vertical launch system for air defense, antisubmarine and cruise missiles, 64 launch tubes, and an active electronically scanned array radar system.²²

However, others argue that the Chinese 052-C/Ds are no match for the Arleigh Burke class. Ching Chang, a research fellow at Taiwan’s ROC Society for Strategic Studies, called the 052-D a major combatant built with “a low level of industrial discipline.” At the same time, Toshi Yoshihara of the U.S. Naval War College (and author of the Japan chapter in *A Hard Look at Hard Power*) argues that, while individual capabilities and the total quantity of ships may be behind the U.S. destroyer force, the 052s “may be good enough for China’s local circumstances.”²³ In addition, China’s cruise missile inventory seems to be significantly larger than what the U.S. Pacific Fleet would deploy, according to at least one source.²⁴ However, the capabilities of the PLAN combatants’ sensor systems remain unclear, and its crew proficiency, while improving, still lags behind U.S. counterparts. Please see figure E.2 for a comparison of Sino-U.S. destroyer capabilities.

FIGURE E.2
U.S. AND CHINESE DESTROYER FLEETS, 2015 AND 2040



Source: Stephen Saunders, *IHS Jane's Fighting Ships 2015-2016* (Coulson, UK: IHS Global, 2015).

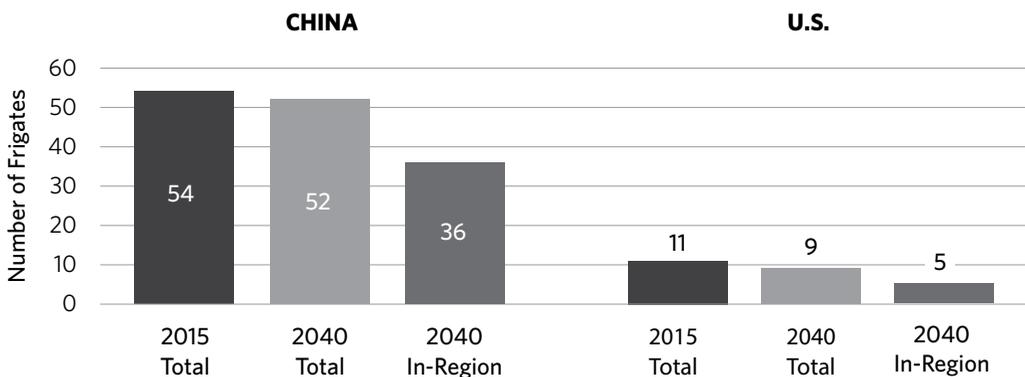
FRIGATES

The commissioning rate of three classes of U.S. frigates is considered.²⁵ If commissioning data from 1984 (when the first of the Oliver Hazard Perry–class FFHs were commissioned) until the present are used, the average annual commission rate is 0.34, resulting in only nine frigates in service by 2040, matching the result derived from regression analysis (nine or ten, cited in Appendix D). If, as recent U.S. deployment data suggest, 70 percent of these ships are deployed in the Pacific region, the United States will have six or seven frigates in the Pacific. If 60 percent of U.S. resources are deployed, still only five or six frigates will be in the region.

Using commissioning data for six classes of Chinese frigates, an average commission rate of 2.08 is derived for the years between 1991, when the first of the Jiangwei (Type 053) FFGHMs were commissioned, and today.²⁶ At this rate, China would have a total of 52 frigates by 2040, assuming an average retirement age of twenty-five years for frigates. This is around the same as the current level of 54 destroyers and significantly less than the figure derived through regression analysis but still much higher than the U.S. number using U.S. commission rates. Please see figure E.3 for a comparison of Sino-U.S. frigate capabilities.

Overall, Bernard Cole estimates, Chinese main surface forces (frigates and destroyers) would most likely be commissioned at the rate of four ships per year. If sustained

FIGURE E.3
U.S. AND CHINESE FRIGATE FLEETS, 2015 AND 2040



Source: Stephen Saunders, *IHS Jane's Fighting Ships 2015–2016* (Coulson, UK: IHS Global, 2015).

indefinitely, this could result in a surface force of 100 by 2040, assuming a retirement schedule of twenty-five years, in line with the commissioning data analysis results presented above (42–43 destroyers, 52 frigates).

In terms of technological sophistication, while the exact percentage of new and more advanced classes of Chinese destroyers and frigates is hard to pin down, particularly because those percentages change with each newly commissioned ship, at least one estimate suggests that, currently, that percentage is 60 percent. This level will almost certainly increase significantly over the next twenty-five years.

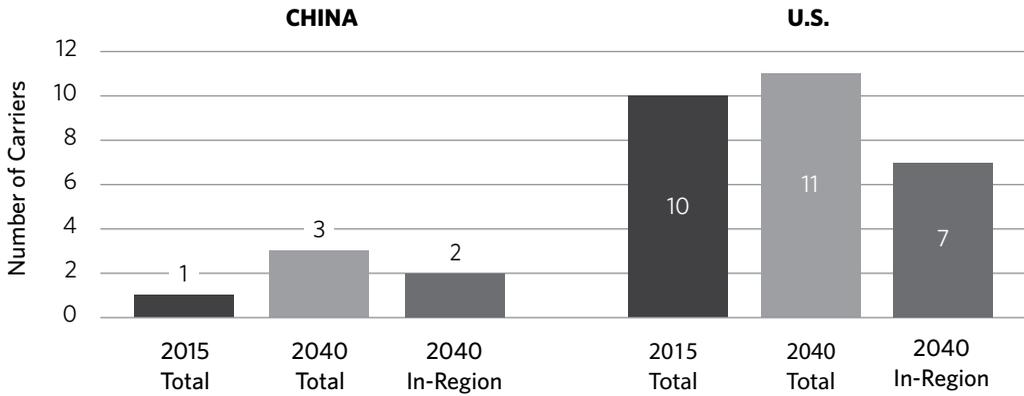
Furthermore, since 2008 there has been a partial shift in China’s operational emphasis from a Taiwan scenario to operations in the Philippine Sea and Indian Ocean. Because China is expected to increase its far-sea operations in the coming years,²⁷ it will quite likely increase the number of its destroyers more quickly than the number of its frigates, advancing China’s ability to project power further and more capably. According to Michael McDevitt, by as early as 2020 the PLAN will probably look like a smaller version of the U.S. Navy and will achieve the status of the “second most capable ‘far seas’ navy in the world.”²⁸

CARRIERS

The Chinese *Liaoning* is a smaller ship and carries far fewer aircraft than the U.S. Nimitz-class carriers. The *Liaoning*’s ski-jump flight deck limits the amount of fuel its aircraft—likely to be composed of J-15s—can carry, thereby restricting the aircraft’s combat radius.²⁹ In comparison, all ten of the Nimitz-class carriers have catapult-assisted takeoff, barrier-arrested recovery (CATOBAR) decks, which allow the carriers to launch fixed-wing aircraft that have more flexible designs and can complete a greater range of operations. Therefore, the *Liaoning* is more suitable for fleet air defense missions than for long-range power projection. However, China could choose to build larger, flat-deck and catapult-equipped carriers. Of the two aircraft carriers currently under construction, it has been reported that one has an angled deck, and the other has a CATOBAR deck.³⁰ Furthermore, China’s decision to buy, disassemble, and study the catapult launch and arrested landing system on the HMAS *Melbourne*, which China bought from the Royal Australian Navy in 1985,³¹ shows that China could be attempting the construction of a carrier with a similar deck. If China successfully constructs two or more carriers by 2040, it is highly likely that more than one of these would possess a flat deck with CATOBAR capabilities. Please see figure E.2 for a comparison of Sino-U.S. destroyer capabilities, and figure E.4 for a comparison of Sino-U.S. carrier capabilities.

FIGURE E.4

U.S. AND CHINESE CARRIER FLEETS, 2015 AND 2040



Source: Stephen Saunders, *IHS Jane's Fighting Ships 2015-2016* (Coulson, UK: IHS Global, 2015).

COAST GUARD SHIPS

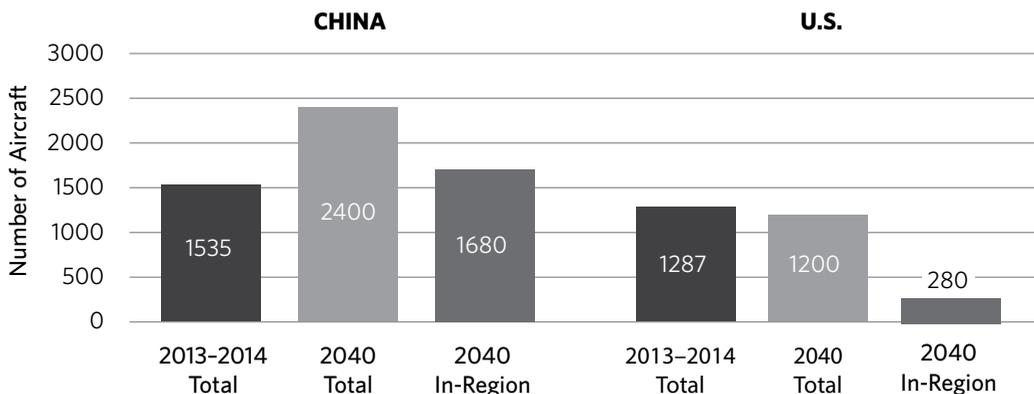
Since the consolidation of four maritime law-enforcement agencies under the State Oceanic Administration in May 2013, China has been increasing the use of nonmilitary assets, particularly the Chinese Coast Guard, to advance territorial claims in the East China and South China Seas while avoiding escalation to military conflict. According to another U.S. Department of Defense study, Chinese maritime law-enforcement vessels number 205, fewer than the number recorded in *The Military Balance 2015*. This includes 95 large coastal patrol cutters (more than 1,000 tons) and 110 small ones (500 to 1,000 tons) but excludes older oceanographic research ships. Furthermore, many of the aforementioned 205 ships do not perform rights-protection (*weiquan*) missions. China's *weiquan* fleet is acquiring vessels much larger than those with a displacement of 1,000 tons, making the 205 figure a rather underestimated reflection of China's coast guard capabilities. Even though the *weiquan* fleet numbered only 80 in 2014, its growth rate does not seem to be slowing. China's *weiquan* fleet has increasingly received large-displacement vessels (more than 3,000 tons) from the navy. Also in 2014, four new 4,000-ton cutters and ten new 3,000-ton cutters were added to the fleet. Two 10,000-ton rights-protection vessels may also enter service. China's growing fleet of large rights-protection ships serve not only to conduct longer patrols and cope with rougher seas but also to challenge or deter potential adversaries.³²

TACTICAL FIGHTER AIRCRAFT

Currently, the United States possesses a total of 3,345 tactical fighters, with 1,150 combat-capable aircraft (including 871 ground-attack fighters, 158 antisubmarine-warfare aircraft, 121 early warning aircraft, 11 electronic intelligence aircraft, 2 ISR aircraft, 76 AWAC aircraft, 68 transport aircraft, and 640 training aircraft) serving naval aviation.³³ As of September 2013, the U.S. Air Force possessed a total of 2,012 fighters or attack aircraft, of which 1,287 were in active service.³⁴ Of its 1,287 active service fighters, around 260 are assigned to U.S. Pacific Air Force, which provides the capabilities of an integrated expeditionary air force for U.S. Pacific Command, including strike, air mobility, and rescue forces.³⁵ There are around 100 additional deployed aircraft rotating on Guam.³⁶ Thus USPACAF fighter forces represent between 20 and 28 percent of the total U.S. Air Force fighter forces. Please see figure E.5 for a comparison of Sino-U.S. fighter capabilities.

On the Chinese side, the PLAAF today is the largest air force in Asia and the third largest in the world. It possesses 2,239 land-based combat-capable aircraft, of which 1,535 are fighters or attack aircraft.³⁷ Including naval aviation (operated by the PLAN), the total combat-capable force is 2,571, of which 1,787 are fighters or attack aircraft.³⁸ If China devotes 70 percent of this total force (operated by PLAAF and PLAN aviation) to the Asia-Pacific theater (assuming all of its naval aviation craft are in that theater), its combat-capable aircraft in the region would number just under 2,000 today, with

FIGURE E.5
U.S. AND CHINESE ATTACK AIRCRAFT FLEETS, 2013–2014 AND 2040



Source: Stephen Saunders, *IHS Jane's Fighting Ships 2015–2016* (Coulsdon, UK: IHS Global, 2015).

around 1,250 fighters or attack aircraft, significantly higher than the number of fighters and attack aircraft assigned to USPACAF (which is between 260 and 360).

Chinese aircraft capability has increased significantly in recent years. In 2010, the PLAAF possessed only 1,419 fighters and attack aircraft,³⁹ compared with its 1,535 fighters and attack aircraft in 2014. Currently, China fields 700 modern fighters (categorized as fourth generation by U.S. analysts).⁴⁰

Given this rapid rate of increase, a regression model suggests that China could possess around 2,640 fighters and attack aircraft operated by its air force by 2040 (assuming Chinese defense spending grows at 6 percent).⁴¹ If Chinese naval aviation is included, the total number of fighters could be around 3,200.⁴² However, this regression model fails to consider the fact that China will certainly deploy more advanced, fifth-generation fighters, such as the stealthy J-31, over the coming years, most likely replacing many fourth-generation models. Whether or not China chooses to produce more fourth- or fifth-generation fighters, existing trends suggest that China will likely have a much bigger, more technologically advanced, and more stealthy fighter aircraft force by 2040, almost certainly well exceeding that of the United States in number, if not in quality, in the Western Pacific.

Procurement information is difficult to attain for fighter aircraft. Using current information on six types of fighters operated by the PLAAF—the J-10, J-11, J-7 Fishbed, JH-7A, J-8 Finback, and Q-5C Fantan—China may have, on average, 1,650 to 3,000 land-based fighters of those types by 2040.⁴³ If production for fourth-generation J-20, J-31, and the carrier aircraft J-15 begins en masse, then this number could be even higher.

On the U.S. end, using past commissioning data for the F-15, the F-16, and the F/A-18 will not produce an accurate picture for 2040 because these aircraft are set to be replaced by more advanced models. The F-22 program, since its inception in the 1980s, was designed to be an advanced tactical fighter that would replace the F-15 and the F-16.⁴⁴ The U.S. Air Force and Navy are currently developing the F-X program and the F/A-XX program, respectively, with the former aimed to replace the F-22 with a new air-superiority fighter and the latter aimed to replace the Boeing F/A-18E/F Super Hornet.⁴⁵ The F-22 program took the United States two decades to develop—from 1986, when the program was launched, to 2005, when the F-22 achieved initial operational capability. The F-35 program also took fifteen years, from 1996, when the program was launched, to 2011, when F-35As were first delivered.⁴⁶ Given current developments of the F-22 and the F-35, in addition to the possibility that the F-X and F/A-XX programs will succeed on a similar time frame, the United States may well have fighters that can take on the J-31 and the J-20 and their successors by 2040.

Using data from the *USAF Almanacs* from 2000 to 2015, the USAF fighter force decreased significantly from 1,666 in 1999 (active duty inventory, total active inventory, excluding Air National Guard and Air Force Reserve Command) to 1,287 in 2013 (total active inventory, active, excluding Air National Guard and Air Force Reserve Command). This quantitative decrease most likely reflects a qualitative improvement in the speed and stealth of USAF fighters. Going forward, if the F-X and F/A-XX programs succeed in twenty years, the United States will have fighters able to take on the J-31 and the J-20 by 2040.

Quantitatively, the number of U.S. fighters by 2040 would most likely reflect the past trend of decreased quantity but improved quality, given the F-X and the F/A-XX, as well as the long-range strike bomber projects. According to a linear projection pegging the number of USAF fighters to U.S. defense spending, by 2040 the United States will have around 900 fighters and ground attack aircraft. Using post-2009 data, which give more weight to recent development, the U.S. Air Force could possess over 1,200 fighter aircraft. As for USAF deployment to USPACAF, data from 2000 show that by 2040, the USPACAF could have around 200 fighters. If only data after 2009 are used, USPACAF would operate around 280 fighters. This is between 22 to 23 percent of the total USAF fighter force, regardless of whether pre-2010 data are included, and is consistent with the USAF's past trend of devoting around 20 to 28 percent of its force to USPACAF.

This number is significantly lower than the Chinese estimates presented above. However, not all 1,535 Chinese fighters and attack aircraft are fourth- and fifth-generation fighters. In terms of technological capabilities, current Chinese J-10s and J-11s are roughly equivalent to an upgraded U.S. F-15,⁴⁷ according to at least one analyst. Compared with the J-11, the F-22 has a 30:1 kill ratio, although at least one senior air force official has been reported as saying that, when the J-20 and the J-31 are completed, the kill ratio against an F-22 may be 3:1. However, China does not need an aircraft that can combat F-22s at a 1:1 kill ratio. T. X. Hammes has made the argument that, if the F-22 is fighting ten older jets, it will simply run out of ammunition. Though it may still be able to get away, it has suffered a tactical defeat by a larger number of inferior and cheaper aircrafts.⁴⁸ U.S. deficiencies in numbers are demonstrated by U.S. plans to purchase the F-22. Having originally planned a purchase of 750 Raptors, the military only bought 187 operational aircraft.⁴⁹ Similarly, Dave Majumdar has argued that even a 3:1 kill ratio by the F-22 versus the J-31 or the J-20 will make any U.S. advantage much too costly. With only 120 of the 187 F-22s combat coded,⁵⁰ the United States will be unable to afford to lose one very expensive F-22 to bring down only three J-31s or J-20s.⁵¹ Any war of attrition would take a serious toll on U.S. forces.

Furthermore, most current tactical aircraft are short ranged and require refueling support to achieve the combat radius necessary to operate in the Pacific. However, as China deploys surface-to-air missile systems with extended ranges, the forward-operation ability of fourth-generation aircraft will become more limited. The possible deployment of the Russian-developed S-400 and Chinese derivative anti-aircraft systems, with a range of 250 miles, would extend China's land-based air defenses beyond Taiwan, pushing back refueling assets and enablers (for example, AWACS and tankers) and limiting their ability to support air-superiority missions.⁵² While the USAF has developed concepts of operations to improve the range of its fighters, over the midterm the capability of the F-22 fleet will be limited by its small size. Of the 187 F-22 airframes, 78 are tasked to USPACOM, and while the F-35 will expand this capability, its range is 500 miles less than that of the F-22, making it less useful for long-range operations.⁵³

China currently has 72 YJ-62 anti-ship cruise missiles and an estimated 6 DF-21D anti-ship ballistic missiles, although the September 3 military parade showed 16 DF-21Ds.⁵⁴ Projections into the future are unreliable owing to the lack of change in these numbers since 2011, when data first became available. Given the consistency in the data since then, it is likely that Chinese ASCM forces will not experience a decrease. Numbers for land-attack cruise missiles (DH-10) have remained at the current level of 54 since 2009. However, if China finds land-attack cruise missiles useful, the numbers could increase substantially over the next twenty-five years.

Chinese intermediate-range ballistic missiles currently number around 6, medium-range ballistic missiles number 134, and short-range ballistic missiles around 252.⁵⁵ Using data since 2010, linear regressions suggest that by 2040, Chinese IRBMs could number around 37, MRBMs 276, and SRBMs 677.⁵⁶

Of course, none of these quantitative estimates address the likely qualitative differences between Chinese and American weapons systems that will probably continue to exist in many areas, primarily in terms of technological sophistication and operator training and experience. The United States military is the most highly trained and combat-experienced force in existence today. Over the coming decades, China's forces will almost certainly narrow the gap in some areas, such as training and leadership, and fifteen to twenty years from now, U.S. forces might not enjoy the level of combat experience obtained in recent years as a result of Middle East and Central Asian wars. Moreover, to some degree these recent U.S. combat experiences are not relevant to a war with China, which has much more superior technological and military capabilities than the markedly inferior state and nonstate forces the United States has fought against in recent decades. Overall, however, it is likely that the accumulated experience and training regimens of U.S. forces will continue to give them a qualitative edge of uncertain degree.

Whether and to what degree this edge will significantly compensate for the future loss of any notable American quantitative edge in the Sino-U.S. military balance of forces in the Western Pacific is almost impossible to estimate. U.S. qualitative superiorities will undoubtedly make a notable difference in actual combat but might exert only a minimal effect at best in countering regional perceptions of a visible shift in the physical balance of forces in the region.

AIR DEFENSE

The main models of Chinese surface-to-air missile launchers in use by the Chinese are the 9K331 Tor-M1 (SA-15 Gauntlet), the HQ-6D Red Leader, the HQ-7A, the Hongqi-16A, and the HQ-17.⁵⁷ In addition, China operates an unknown number of other Hongqi missile launchers.⁵⁸ An example of the technological improvement the Chinese SAMs have undergone is the Chinese version of the Tor-M1 (SA-15 Gauntlet), which improves upon the 12-kilometer-range (roughly 7 miles) Russian model by adding a new Identify or Friend Foe antenna to the search radar,⁵⁹ better electronically scanned radars to guard against enemy jamming, and the capability to link data with other Chinese systems.⁶⁰

In addition, the HQ-7 has a range of 12 kilometers and has a capability against smaller missiles and UAV targets.⁶¹ Some Luhai and Luhai destroyers have been fitted with the naval version of the HQ-7—the HHQ-7 or RF-7 system.⁶² The HQ-12 (KS-1/2) has a range of 50 kilometers (about 30 miles). Similar in appearance to the UK Rapier surface-to-air missile, the HQ-12 SAM is command guided throughout flight and has a maximum velocity of 1,200 meters per second.⁶³ The HQ-9 and its variants, which are short- and medium-range, ground- and ship-based, solid-fuel theater-defense missile systems, have a maximum range of 90 to 120 kilometers,⁶⁴ the upper bound of which is approximately the width of the Taiwan Strait at its narrowest point. Furthermore, in 2014 China announced plans to buy six batteries of the Russian S-400 Triumph long-range surface-to-air guided missile system, which would significantly improve China's ability to defend its air space and give Beijing an advantage in the air space over Taiwan and the East China Sea, with the S-400's capability of engaging with missiles and aircraft at a maximum range of 400 kilometers and an altitude of up to 30 kilometers.⁶⁵ In June 2015, Putin approved, in principle at least, the sale of these S-400 air defense systems.⁶⁶

Moreover, China has purchased the S-300 (with the NATO reporting name SA-10 Grumble or SA-20 Gargoyle) from Russia and has been producing the HQ-10 long-range SAMs—a licensed copy of the Russian S-300 MU-1—which have been operational since 1995. The HQ-10 is critical to China's air defense and has been deployed

near the Taiwan Strait to engage in tracking Taiwan's Mirage fighters and tactical ballistic missiles. In addition, China has manufactured its own upgraded version of the missile, the S-300PMU-1, also known as HQ-15, with a range of up to 200 kilometers.⁶⁷

In addition to these air defense systems, China also operates 270 25-millimeter Type-04A self-propelled guns, 100 35-millimeter Type-07 self-propelled guns, 6 37-millimeter Type-88 self-propelled guns, and more than 7,000 towed guns.⁶⁸

NUCLEAR FORCE

In 2015 at least some of China's silo-based ICBMs became equipped with multiple independently targetable reentry vehicles (MIRVs). China's modernization efforts have also been targeted at transforming older, liquid-fuel missiles with long launch-preparation times with the quicker solid-fuel road-mobile missiles that have longer ranges. Of its 160 nuclear-capable land-based ballistic missiles, around 60 long-range missiles are estimated to be able to reach the United States, of which 45 can reach the continental United States.⁶⁹ For example, the DF-31A (CSS-10 Mod 2), a solid-fueled, three-stage, road-mobile ICBM with a range of over 11,000 kilometers and a payload of a 200- to 300-kiloton warhead, can reach "most locations" within the continental United States, according to the U.S. Department of Defense.⁷⁰ Twenty-five of the DF-31A missiles are currently deployed in three brigades.

APPENDIX F

ASIAN ALLIED/FRIENDLY POWERS

SUBMARINES

The submarine capabilities of U.S. allies and security partners remain far below those of China. In 1992 China had 46 submarines in total, 6 of which are nuclear powered and 40 of which are non-nuclear submarines. As indicated above, this number has increased significantly over the past two decades and is now 70, 9 of which are nuclear and 61 of which are non-nuclear. Equally important, the percentage of China's submarine force made up of more advanced platforms has increased greatly since the 1990s.

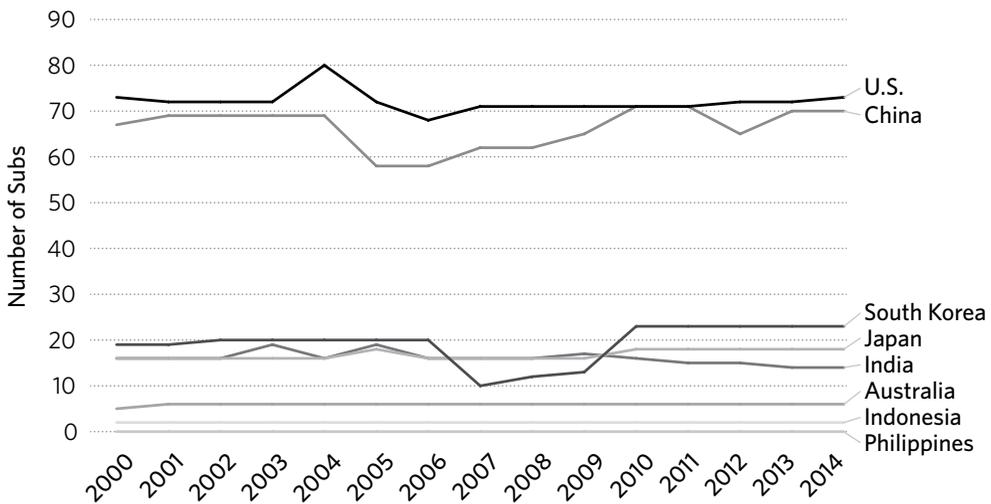
In comparison, Australia had 6 non-nuclear SSKs in 1992, and this number fluctuated around 3 and 4 between 1995 and 2000. Today, it remains at 6. Similarly, Indonesian submarine forces have been consistent at only 2 from 1992 until today. India's submarine fleet is more substantial, with 13 non-nuclear submarines today. However, while India gained its 1 nuclear submarine in 2010, its non-nuclear submarine force saw a decrease from 16 in the first decade of this century. Japan's submarine force has remained consistent at around 17 or 18 (increasing from 16 in 2000), and South Korea's has increased substantially from 4 submarines in 1992 to 23 today. However, Japan's entire submarine fleet of 18 is composed of non-nuclear SSKs, and South Korea also has only SSKs and SSCs. The Philippines has no submarine force at all.

Overall, China's force of 70 submarines today significantly outweighs numerically those of other Asian countries, which, combined, add up to only 63 submarines. China's current force of 70 submarines (nuclear and non-nuclear combined) is on par numerically with the U.S. total of 73 nuclear subs. While the Chinese force is not entirely nuclear powered, having 61 diesel-electric submarines, not all 73 U.S. submarines are deployed in the West Pacific (see figure F.1).

China is expected to have approximately 50 to 75 submarines by 2040, calculated by commissioning information, significantly outweighing the submarine forces of other countries. Using both classes of currently serving Japanese submarines,⁷¹ the average commissioning rate between 1998 (when the first of the Oyashio submarines were commissioned) and today is around 1 per year. At this rate, by 2040, assuming an average life expectancy of twenty to thirty years for Japanese submarines, Japan could possess between 19 and 28 submarines. Given that the Japan Maritime Self-Defense Force has planned to raise the number of its submarines from 18 to 22 by 2018,⁷² Japan could have around 30 submarines twenty-five years from now.

Australia's Collins-class submarines are set to retire in 2025, to be replaced, as the 2009 Defense White Paper outlines, by a class of 12 vessels of unclear design. In 2040, if this plan is followed, Australia will have 12 new submarines. There was speculation that the replacement submarines would be the 4,200-tons displacement Souryu-class boats from Japan,⁷³ but the bid eventually went to the French Shortfin Barracuda-class submarines.⁷⁴

FIGURE F.1
SUBMARINE FORCES OF ASIA-PACIFIC COUNTRIES, 2000-2014



Source: International Institute for Strategic Studies, *The Military Balance 2016* (London: Routledge, 2016).

South Korean submarine forces would be at a similar level. Using commissioning information for both types of currently serving submarines, the average annual commissioning rate is 0.61 between 1993 (the commissioning year of the first Chang Bogo submarines) and today.⁷⁵ At this rate, again assuming twenty to thirty years of retirement age, South Korea could have between 12 and 17 SSKs by 2040. If the projected commissioning of 4 four KSS-2 SSKs between 2016 and 2019 are included, an annual commissioning rate of 0.7 ships would result in 13 to 20 submarines by 2040.

Indian submarine forces are more significant. Using commissioning data for five types of currently serving submarines, the yearly commissioning rate is 0.5 since 1986, when the first 2 Shishumar SSKs were commissioned.⁷⁶ At this rate, by 2040, India would have between 10 and 15 submarines. If commissioning information until 2017 is included, India could possess as many as 18 submarines in 2040, an improvement on the current 13 non-nuclear submarines and 1 nuclear submarine.

The submarine forces of the Philippines, Vietnam, and Indonesia are even less significant. The Philippines does not yet possess submarines. Vietnam currently has 4 Kilo-class submarines, with plans to commission 2 more in 2016, as well as 2 currently serving Yugo-class submarines. Indonesia has 2 Cakra-class submarines commissioned in 1981 and is building 3 Type 209/1400 class SSKs, with 9 more proposed (expected to be stretched and more advanced versions of the Chang Bogo-class from South Korea) by 2024.⁷⁷ If all of the propositions are followed through, Indonesia will possess 12 submarines by 2040, assuming that the 2 current Cakras would have retired by then.

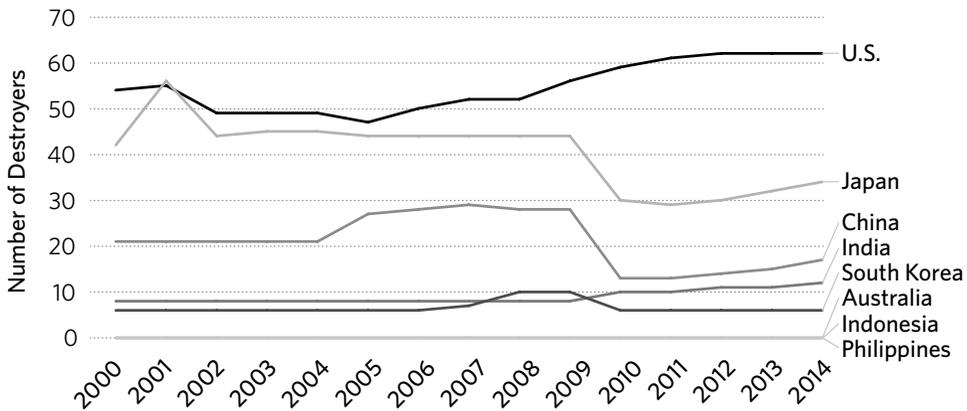
DESTROYERS

The destroyer force is one of the only areas in which China lags significantly behind the United States and Japan, but it still remains ahead of the forces of other U.S. security partners and allies. Chinese destroyers number significantly higher than that of Australia (3 in 1992 and 0 today), Indonesia (which has no destroyers), India (which has 12 destroyers today, an increase from 5 in 1992), South Korea (which has 6 destroyers, a decrease from the 10 it had in 2010), and the Philippines, which has no destroyers.

The only power that has more destroyers than China is Japan, with 32 DDGMs and DDGHMs (which have anti-ship missile capabilities) and 2 DDHMs, giving Japan a total of 34 destroyers today, double the number of China. Overall, the Chinese total of 17 destroyers is significantly less than the United States' 62 destroyers, even though not all 62 of these are deployed in the Western Pacific (see figure F.2).

FIGURE F.2

DESTROYER FORCES OF ASIA-PACIFIC COUNTRIES, 2000-2014



Source: International Institute for Strategic Studies, *The Military Balance 2016* (London: Routledge, 2016).

Looking ahead, Chinese destroyers could number between 40 and 50 by 2040. The destroyer forces of other countries are comparatively less significant, with the possible exception of Japan. Using data for all ten currently serving classes of Japanese destroyers, the annual commissioning rate from 1981, when the first of the Shirane DDHMs were commissioned, to today is around 1.1.⁷⁸ At this rate, Japan would have 31 destroyers by 2040, assuming a retirement age of thirty years for all types. If the Hatsuyuki and Shirane classes are excluded (the Asagiri class is an improvement on the Hatsuyuki class, and the Shirane class, first commissioned in 1981, has only one currently serving ship), the annual commissioning rate from 1988 (when the first of the Asagiri DDGHMs were commissioned) to today is 1.2, translating to 34 destroyers by 2040, signifying a maintenance of the current level of Japanese destroyers.

Australia does not currently possess any destroyers, but it has plans to commission 3 Hobart-class DDGHMs in 2017, 2018, and 2020. While this commissioning data is too weak to allow future projections, given the Australian government’s current funding shortfalls,⁷⁹ Australia may not be able to build more destroyers even after the current 3 are completed.

South Korean destroyer forces are less substantial than those of China and Japan. Using commission data for all three currently serving classes, the annual commissioning rate between 1998, when the first of the Kwanggaeto Daewang DDGHMs were commissioned, and today is 0.7, implying around 17 to 18 destroyers by 2040, assuming that destroyers are retired at thirty years of age.⁸⁰ This is only about one-third of the total Chinese destroyer force, and half of Japan’s.

The Indian destroyer force would lag behind Korea's. Using commissioning data for three currently serving classes, the annual commissioning rate between 1980, when the first of the Rajput DDGHMs were commissioned, to today is around 0.3, resulting in 9 or 10 destroyers in 2040. India has plans to commission 2 more Kolkata in 2016 and 2017.⁸¹ If these are included, India could possess 11 destroyers by 2040, assuming a retirement age of thirty years for all classes.

Vietnam, the Philippines, and Indonesia do not currently have destroyers. However, Japan and the Philippines are discussing the transfer of 2 naval guided-missile destroyers—possibly the Hatakaze class—to the Philippines.⁸²

FRIGATES

Chinese frigate forces have a significant advantage over those of other countries, including the United States. The number of Chinese frigates increased steadily from the 37 in 1992 to 54 in 2015. Australia's frigate forces, though seeing an increase from 7 to 12 over the past twenty-three years, number only 12 today. Indian frigates used to number 21, but today there are only 13, although India has been developing frigates with anti-ship missile capabilities since 2000.

The size of the Japanese frigate force decreased as the number of its destroyers increased. In 2000, Japan had 46 frigates, 34 of which had anti-ship missile capabilities. The total number dropped to 9 in 2015. South Korean frigates, similarly, saw a decrease in number, from 26 in 1992 to 14 today. The Philippines has only had 1 frigate since 1992.

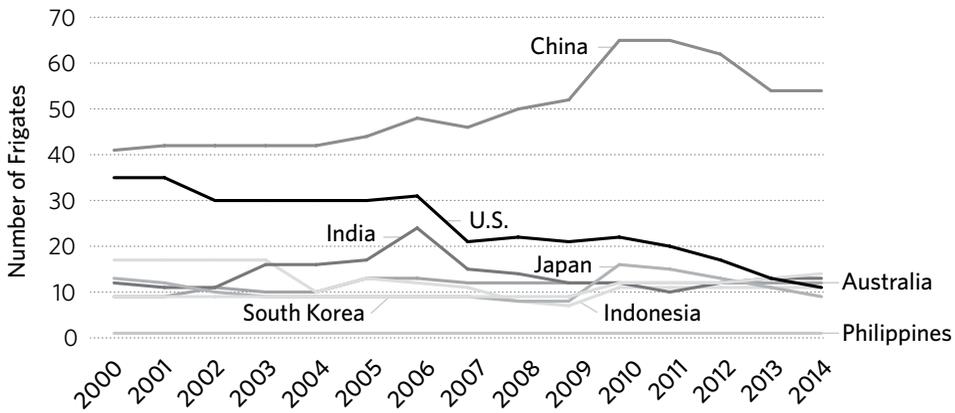
Today, China's total of 54 frigates is only 6 fewer than the 60 frigates of the other Asian countries combined.⁸³ And China significantly outweighs the U.S. force of 11 frigates (see figure F.3).

According to projections using current commission-rate data, China's frigate forces will number around 50 by 2040, about the same as its current level. In comparison, Japan has only one class of frigates—the Abukuma FFGM/DE. The ship was first commissioned in 1989, and there has been no new commissioning since 1993. Given the low likelihood of further commissioning of this class, Japan will most likely maintain its current level of 6 frigates.

The Australian Adelaide-class frigate *Sydney* was decommissioned in November 2015, after thirty-two years of service, leaving 3 Adelaide-class frigates currently serving.⁸⁴ These are set to retire in 2020, after thirty-seven years of service.⁸⁵ One of the three, the

FIGURE F.3

FRIGATE FORCES OF ASIA-PACIFIC COUNTRIES, 2000-2014



Source: International Institute for Strategic Studies, *The Military Balance 2016* (London: Routledge, 2016).

Melbourne, is currently serving in the Middle East. Three other Adelaide-class frigates were decommissioned in the past decade. Considering this information, and using commissioning data for both the Adelaide (Oliver Hazard Perry) class FFGHM and the ANZAC (MEKO 200) FFGHM, an average annual commissioning rate of 0.36 would result in 9 or 10 frigates by 2040, assuming an average life expectancy of thirty-five years (rather than the twenty-five years used for other countries) for these ships, as has been the case with both the Adelaide and the ANZAC classes.

South Korean frigate forces currently number 14. If commissioning information for the Incheon (FFX-I) FFGHM and the Ulsan (FFG) is used (including the one Incheon set to be commissioned in 2016), South Korean frigate forces would number 12 in 2040, assuming an average life expectancy of twenty-five years for frigates.

Indian frigates would number around the same level. Using commissioning information for four currently serving classes,⁸⁶ an average annual commissioning rate of 0.45 results in 11 frigates by 2040, assuming a twenty-five-year retirement age for all classes.

Vietnam has started to commission frigates very recently, with 2 Modified Gepard (Project 11661E) FFGMs commissioned in 2011, and 5 Petya (Project 159A/AE) FFLs commissioned this year. Over the past five years, the annual commissioning rate has been 1.4, which would imply 35 frigates by 2040, again assuming a twenty-five-year retirement age for both classes. Furthermore, Vietnam has proposed building another 2 Sigma-class frigates. If this plan is followed through, Vietnam could have 37 frigates by 2040. However, such recent commissioning data (dated back to only 2011) does not provide a

reliable picture of a long-term trend in commissioning. It is unlikely that Vietnam would sustain the commissioning rate of 1.4 frigates a year for twenty-five years into the future.

Indonesia's frigate forces are less significant. Six Ahmad Yani (Van Speijk) FFGHMs are currently operational, but these were made in 1967 and 1968 and are consequently obsolete. Two Bung Tomo FSHs were commissioned in 2014, but given the past failure to raise Indonesia defense spending above the historical 0.8 percent of GDP,⁸⁷ Indonesia may fail to procure more frigates in the future.

The Philippines operates two classes of frigates, two from the Pilar class and one from the Cannon class.⁸⁸ All three were transferred from the United States to Japan, and another Pilar-class frigate is currently under consideration for transfer. At best, then, the Philippines would possess only four frigates in the near future.

AIRCRAFT AND HELICOPTER CARRIERS

Aside from China, the only Asian nations that currently operate carriers are Japan, India, and Russia. Japan operates 2 light Hyuga-class helicopter carriers, each of which displaces only 19,000 tons fully loaded. They are somewhat comparable to China's Type 0891A *Shichang* training ship, which is used as a helicopter launch vehicle, and therefore not comparable to the *Liaoning*, which displaces over 59,000 tons. India currently has 2 aging aircraft carriers in service, one a formerly British Centaur-class carrier and the other a former modified Soviet Kiev-class carrier. Both are light to medium-sized aircraft carriers with ski-jump decks. Russia currently operates a single Admiral Kuznetsov-class medium-sized carrier. The Russian and larger Indian carriers are comparable in size and function to the *Liaoning*. South Korea operates a Dokdo-class helicopter assault ship that is roughly similar to a helicopter carrier.

The Hyuga class (Japan) could number around 11 or 12 by 2040, according to current and future commissioning trends of the Hyuga class and the upcoming Izumo class.⁸⁹ However, commissioning for the Hyuga class started only in 2009, which means that the annual commissioning rate of 0.4 may not be sustained. Given Japan's budget constraints, it is highly doubtful that the country will build a carrier every two or three years. Furthermore, the Hyuga's small size, with a displacement of only 18,289 tons at full load,⁹⁰ also makes it difficult to match actual aircraft carriers.

Projections for India would not be reliable because only one of its carriers (Modified Kiev class) was commissioned in 2013. Another (Hermes class) was commissioned in 1959, making it over fifty years old and bound to be retired soon. However, India

is building another one—the Indigenous Aircraft Carrier (Project 71). The ship was launched in 2013 and is set to be commissioned in 2018. While India has been operating carriers for much longer than China has, if the currently building or planned carriers of both countries are completed, China will be operating three carriers compared with India’s two.

South Korea currently operates a Dokdo-class helicopter assault ship and has plans to deploy two 30,000-ton displacement light aircraft carriers between 2028 and 2036. The navy plans to equip one of the Dokdo-class landing platform helicopter ships with a ski ramp to operate vertical takeoff and landing aircraft. This ski-ramp-equipped Dokdo could be deployed by 2019.⁹¹ In comparison, China’s *Liaoning* carrier has a displacement of 46,637 tons at standard load and an even greater full-load displacement.⁹²

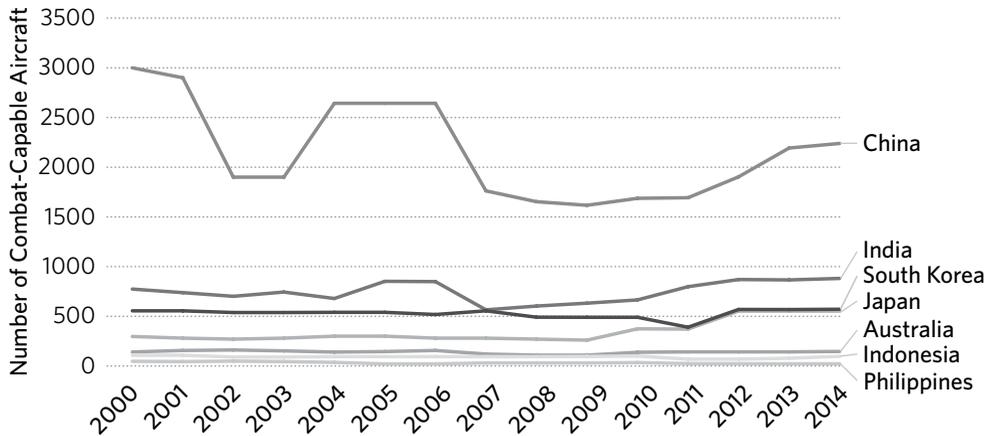
LAND-BASED AIRPOWER

The number of Chinese combat-capable, land-based aircraft is also significantly greater than that of the other Asian countries combined. In 1992 China had nearly 5,000 such aircraft. This number has dropped to 2,239 (of which 1,535 are land-based fighters) but with a far larger percentage of advanced fighters in the inventory.

Compared with China, Australia’s average combat-capable airpower force lingers around 150—with 158 in 1991 and 146 today, 95 of which are fighters or ground-attack fighters. Indonesia possesses only around 100 combat-capable aircraft, with 81 in 1992 and 97 today, 43 of which are fighters and ground-attack fighters. India is another power that has seen a significant increase in land-based airpower, increasing from 630 combat-capable aircraft in 1991 to 881 today, of which 815 in the air force and 33 in naval aviation are fighters. Japanese airpower was around 422 craft in 1992 and increased modestly to 552 in 2015, of which 353 are fighters. South Korea possessed 405 combat-capable aircraft in 1991, 488 in 1999, and 571 today, of which 488 are fighters. The Philippines actually saw a decrease in the number of its combat capable aircraft. In 1992, the country had 44 aircrafts. This number stayed around 30 or 40 until 2006, while it has decreased significantly to 22 today, with no fighters or ground-attack aircraft.

Overall, the major Asian countries have a total of 2,269 combat-capable aircraft, of which 1,827 are fighters or ground-attack aircraft, operated by both navies and air forces. This only slightly outweighs China’s total of 2,239 combat aircraft (see figure F.4). Moreover, the vast majority of these aircraft are designed for territorial defense and have limited range and capability to operate against China or along China’s maritime periphery.

FIGURE F.4
LAND-BASED AIRPOWER FORCES OF ASIA-PACIFIC COUNTRIES,
2000-2014



Source: International Institute for Strategic Studies, *The Military Balance 2016* (London: Routledge, 2016).

Note: The U.S. figures include only naval aviation aircraft, as U.S. forces rely on carrier-based aircraft for operations in the Asia-Pacific theater. The pre-2006 U.S. naval aviation figures were calculated by subtracting marine aircraft and helicopters from the naval aviation aircraft totals.

Projections of land-based airpower over the long term are difficult to make, since numbers of combat-capable aircraft have fluctuated significantly in recent years and because new models are likely to have replaced current ones by 2040. However, many of these combat aircraft are quite old. The Japan Air Self-Defense Force, for example, operates 60 F-4s that are forty years old, 201 F-15s that are twenty-five years old, and only 92 newer indigenous F-2s.⁹³ Nonetheless, if a linear projection based on data since 2006 is used, Japan will possess around 850 fighters by 2040.⁹⁴ However, Japan's current budget restraints make it highly unlikely that this number will be realized. Using only post-2010 data, which reflect more recent trends in procurement, Japan would have around 360 fighters by 2040, which is near the Japan Air Self-Defense Force's current force level.

Korea currently operates 488 air-to-air and ground-attack fighters but no naval aviation fighters. The country has plans to update its current inventory of F-5s, F-4s, F-15Es (Tiger IIs), and F-16s with the KAI KF-X, which is expected to reach initial operational capability by 2025. A linear projection using data since 2001 suggests that South Korea will have around 450 fighters, at about its current level.⁹⁵

The Royal Australian Air Force is focused on acquiring 72 fifth-generation F-35As to replace its aged inventory of combat aircraft (centered on the F-18), 12 new EA-18G

Growler electronic attack aircraft, and a small AWACs capability. Projecting Australian fighter capabilities out to 2040 using linear regression and data from the year 2000 yields a result of over 180 fighters and ground-attack aircraft.⁹⁶ However, given Australia's procurement plans of the very expensive F-35As, Australia's fighter capabilities are not likely to exceed 100 aircraft by much and will probably remain at the current level of around 90 fighters.

Indian acquisition programs seem more ambitious. In 2012 the country selected the Dassault Rafale as the winner of its medium multirole combat aircraft (MMRCA) competition, which is scheduled to supply the Indian Air Force with 126 fighter jets. The delivery date for the Rafales is set to be between 2016 and 2023–2025. However, as of the end of 2014, the weapons still have not been ordered from France,⁹⁷ and the status of the fighters is uncertain after increases in the price of the Rafale. India also has plans to cooperate with Russia in developing a fifth-generation stealth version of the Sukhoi Su-35 and plans to acquire 144 T-50 PAKFA stealth fighter aircraft. But the delivery date for the T-50 would be after 2020, and as of the end of 2014, the jets have not been ordered.⁹⁸ Similarly, India ordered 8 P-8A Poseidon antisubmarine warfare (ASW) aircraft that were delivered between 2012 and 2015, as well as 270 of the F-125IN version of the Jaguar combat aircraft. Possible delivery date ranges from 2016 to 2023–2024, but as of the end of 2014, these planes have also not been ordered.

Linear regression suggests that India would have over 1,200 fighters operated by the air force in 2040 and another 131 fighters operated by the navy. This is a substantial increase from today's 815 air force fighters and 33 naval aviation fighters. However, even if these projections are realized, Indian fighters by 2040 would total only one-half of the number of Chinese fighters (which, as quoted above, could number between 2,600 to 3,200). And of course most of these would be deployed against Pakistan and primarily to defend against direct attacks on Indian territory.

Other regional security partners and allies, such as the Philippines, Indonesia, and Vietnam, have comparatively weak air capabilities. Vietnam currently operates 6 Su-27 Flankers and 20 Su-22 Fitter-H, which can be used for maritime surveillance. In 2013 there were also reports that Vietnam had plans to procure up to 6 P-3C Orion patrol aircraft from the United States.⁹⁹ Its air force operates 97 ground-attack fighters, mainly MiG-21s and Su-30MK2s.

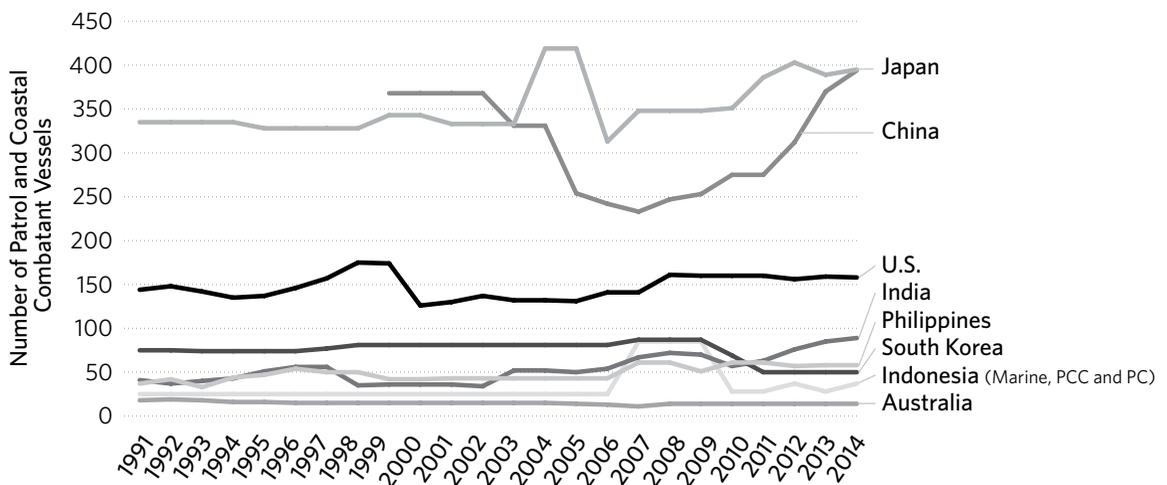
The Indonesian Air Force operates 43 fighters and 97 combat-capable aircraft, including 7 F-5Es (Tiger II),¹⁰⁰ 7 F-16A Fighting Falcons, and 3 F-16B Fighting Falcons. It also operates the Su-27SK Flanker and the Su-30MK Flanker.¹⁰¹ In comparison, the Philippines operates only 22 combat-capable aircraft, with no fighters or ground-attack aircraft. Unless the Philippines, Indonesia, and Vietnam significantly increase their

investment in fighter and ground-attack aircraft capabilities, current procurement trends suggest they will not have a force level comparable to Japan's or Korea's, let alone China's, by 2040.

COAST GUARD SHIPS

Japan's coast guard ship forces (under the Maritime Safety Agency before 2002) remained around 330 until 2005, when the number increased to 419, but it dropped back down to around 350 between 2008 and 2011 (see figure F.5). Today, the number hovers around 400, at 395 in 2015. Australia's coast guard forces numbered 18 in 1991, dropped to 14 in 2008, and have maintained that number in 2015. Indonesia consistently had 25 coastal and inshore patrol craft in its marine forces until 2007, when it suddenly acquired an additional 60 such vessels. The number dropped to 28 in 2011, however, and is at 37 today. India saw a substantial increase in its coast guard ship forces. In 1991 it possessed 41 patrol and coastal combatants, and at present this number is 89. South Korea actually saw a decrease over the past twenty-five years in its coast guard ship forces (under the Maritime Police Force before 2012). In 1992 the country

FIGURE F.5
PATROL AND COASTAL COMBATANT FORCES OF ASIA-PACIFIC COUNTRIES, 2000-2014



Source: International Institute for Strategic Studies, *The Military Balance 2016* (London: Routledge, 2016).

Note: Chinese figures are unavailable for the years 1991-1998.

had 75 ships, but this number has decreased to 50 today. The Philippines, like India, saw a substantial increase in its patrol and coastal combatant force. In 1991 the Philippines had 37 such vessels, and today the number is 58.

As the foregoing indicates, overall, the only country whose coast guard force is comparable to China's is Japan; both countries have around 400 ships. And yet, as the CSIS recently concluded, the Japan Coast Guard and the Japan Maritime Self-Defense Force are "increasingly finding themselves stressed to meet operational requirements in the East China Sea" owing to increasing numbers of Chinese patrol craft.¹⁰² The United States has never deployed more than 200 patrol craft,¹⁰³ a very small number considering its size, but this is undoubtedly owing to its fortuitous geographic location bordering two much weaker, friendly powers and to the two vast oceans that insulate it.

China's advantage, at least quantitatively, against other Asian powers is also reflected in maritime law-enforcement vessels. According to a study by the U.S. Department of Defense, Japan possesses only 78 maritime law-enforcement vessels compared with China's 205. Of those 78 vessels, 53 are large, displacing more than 1,000 tons, and 25 are small, displacing 500 to 1,000 tons. Indonesia owns only 8 coast guard vessels, and the Philippines only 4. The coastal patrol capabilities of U.S. allies and security partners are thus currently dwarfed in comparison to Chinese capabilities.

By 2040, Chinese coast guard and patrol ships are likely to number between 242 and 281, as estimated by projections based on commissioning data. In comparison, those of other countries are almost certain to be much less significant, with the sole and important exception of Japan. Commissioning data for 34 classes of Japanese patrol and coast guard ships indicate that Japan Coast Guard ships have been commissioned at an annual rate of 10.7 ships since 1978, when the first of the Takatori-class ships were commissioned.¹⁰⁴ If this rate continues, by 2040 Japan will have between 530 and 630 coast guard ships, assuming an average retirement age of thirty to fifty years for all classes. This is two to three times the Chinese estimate. However, whether Japan can sustain an annual commissioning rate of 10 or 11 ships is under question. The Chinese commissioning rate going forward may also exceed the current circa 5 per year if China feels the need to strengthen its hand. Furthermore, the 10,000-ton cutters that China is reportedly building are rumored to be even larger than the 9,350-ton (full load) Japanese Shikishima helicopter-carrying cutters, which are currently the largest patrol vessels in the world. At least one analyst suggests that the size of China's EEZ does not necessitate such large patrol cutters and that cutters of that size—with the ability to carry helicopters and boats—could land at least an infantry company quickly.¹⁰⁵

The coast guard capabilities of other U.S. regional allies and security partners are much less significant. Australia's Armidale-class patrol boats—the only patrol boat the Royal

Australian Navy operates—currently number around 13 and have been commissioned at the rate of about 1.2 per year since 2005, when the *Armidale* was first commissioned. The *Armidale*-class boats are set to be replaced starting in 2018 with a new class of offshore patrol vessel (OPV) of unclear design. The new OPV will be a larger vessel that will provide better seakeeping abilities and longer endurance for operations. The 2009 Defense White Paper proposes 20 of these OPVs (they are known in the paper as offshore combatant vessels, or OCVs) with a displacement of 2,000 tons.¹⁰⁶ If this plan is not followed through, and if the Royal Australian Navy commissions future patrol boats at the rate that it has done with the *Armidale*, by 2040 Australia will have around 23 coast guard ships. In both scenarios, therefore, Australia is likely to have only approximately 20 coast guard ships in twenty-five years.

South Korea's coast guard capabilities are much greater than Australia's. According to commissioning data for twelve classes of coast guard ships, South Korea has been commissioning coast guard ships at the rate of around 2.8 per year since 1995, when its only 1,200-ton-class ship was commissioned.¹⁰⁷ If this rate persists until 2040, South Korea could have between 88 and 150 coast guard ships, assuming an average retirement age of thirty to fifty years.

Indian coast capabilities are likely to increase significantly over the next twenty-five years. Commissioning data for eleven classes of Indian coast guard ships indicate that Indian coast guard ships have been commissioned at an annual rate around 3.7 since 1988, when the first two *Vikram*-class ships were commissioned.¹⁰⁸ At this rate, India would possess 170 to 190 coast guard ships by 2040, assuming a retirement age of thirty to fifty years for all classes. While the increase from the current 89 boats is significant, future trends for India are still less significant than China's estimated 240 to 280 ships by 2040.

The coast guard forces of Indonesia, Vietnam, and the Philippines are also meager compared with that of China. According to commissioning data for nine classes of Indonesian coast guard ships (including buoy tenders), the annual commissioning rate since 1981, when Indonesia first commissioned its *Kujang*-class ships, is around 0.9.¹⁰⁹ At this rate, Indonesia could possess 25 to 38 coast guard ships by 2040, assuming an average retirement of thirty to fifty years for all classes.

Philippine Coast Guard forces are more significant. Commissioning data for fourteen types of coast guard ships suggest an annual commissioning rate of 1.83 for all classes since 1974, when the *Salsam* class was first commissioned.¹¹⁰ At this rate, by 2040 the Philippines would have between 50 and 73 coast guard ships, again assuming an average retirement age of thirty to fifty years.

Vietnamese coast guard forces have perhaps the highest potential for development among the three countries. However, because commissioning data became available for Vietnam only in 2013, the average commissioning rate for its four types of coast guard ships is at 4.0 per year, a trend that is unlikely to last.¹¹¹ Nonetheless, even at this unsustainable rate, Vietnam would only have 100 coast guard ships by 2040, assuming that all its current coast guard ships retire by then. While this is a significant development from the current levels, a future projection based on the commissioning rate suggests that Vietnam would still lag behind China considerably.

NOTES

INTRODUCTION

- 1 Michael Swaine, "Beyond American Predominance in the Western Pacific: The Need for a Stable U.S.-China Balance of Power," Carnegie Endowment for International Peace, April 20, 2015, <http://carnegieendowment.org/2015/04/20/beyond-american-predominance-in-western-pacific-need-for-stable-u.s.-china-balance-of-power-pub-59837>.
2. Indeed, many interlocutors acknowledge that predominance is unsustainable over the long term, as some international relations experts assert. See, for example, Robert Gilpin, *War and Change in World Politics* (Cambridge: Cambridge University Press, 1981). Gilpin argues that hegemonic stability is unsustainable in the long-term for two reasons: first, over time, the costs of sustaining preeminence begin to erode the hegemon's economic capabilities, thereby diminishing its relative economic and military advantage, and second, the "hegemonic paradox"(p. 156-210) dictates a diffusion of economic, technological, and organizational skills to other nations that also cause the hegemon to lose its comparative advantage. Both of these conditions are present in the U.S.-China relationship.

1. THE SHIFTING POWER ENVIRONMENT IN THE WESTERN PACIFIC

1. Assuming, as Yukon Huang from the Carnegie Endowment has suggested, a growth rate of 5.5 percent between 2016 and 2020, 5 percent between 2021 and 2025, 4.50 percent between 2026 and 2030, and 2.50 percent between 2031 and 2040. These rates are significantly lower than historical Chinese economic performance, which averaged 10.12 percent per year between 1983 and 2013. Nadge Rolland, “China’s National Power: A Colossus With Iron or Clay Feet?,” in *Strategic Asia 2015–2016*, edited by Ashley Tellis, Alison Szalwinski, and Michael Wills (Washington, DC: National Bureau of Asian Research, 2015), 30–31. Data for the projections come from an average of International Monetary Fund and World Bank databases of GDP measured in current dollars. World Bank, “World Development Indicators” (Washington, DC: World Bank, 2015), <http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators>; International Monetary Fund, World Economic Outlook database, April 2015 (Washington, DC: International Monetary Fund, 2015), <https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/weoselgr.aspx>.
A recent report by the Marubeni Research Institute uses an even higher projected GDP growth rate. The report projects that Chinese real GDP growth between 2016 and 2020 will be 6.20 percent, between 2021 and 2025 will be 5.50 percent, between 2026 and 2030 will be 4.80 percent, and between 2031 and 2035 will be 4.00 percent. Takamoto Suzuki, “China 2035: China Will Be a Eurasia Super Power: Neighboring Countries Will Face Difficulties” (Tokyo: Marubeni Research Institute, February 5, 2016), 4, http://www.marubeni.com/research/report/political_economy/global/data/China2035.pdf.
2. Organization for Economic Cooperation and Development, *GDP Long-Term Forecast* (indicator), 2016, doi: 10.1787/d927bc18-en.
3. Federal Reserve Bank of St. Louis, “Real Gross Domestic Product,” <https://research.stlouisfed.org/fred2/series/A191RL1A225NBEA>. The Marubeni Research Institute report puts U.S. real GDP growth between 2016 and 2020 at 2.4 percent per year and that between 2021 and 2035 at 2.0 percent per year. Suzuki, “China 2035,” 4.
4. Barry Naughton, “Supply-Side Structural Reform: Policy-makers Look for a Way Out,” *China Leadership Monitor*, no. 49 (Winter 2016), <http://www.hoover.org/sites/default/files/research/docs/clm49bn.pdf>.
5. Yukon Huang, “Rethinking China’s State-Owned Enterprises,” *Financial Times*, November 21, 2014, <http://carnegieendowment.org/2014/11/21/rethinking-china-s-state-owned-enterprises>.
6. “Special Report: Finance in China,” *Economist*, May 7–13, 2016, 4.
7. Michael D. Swaine et al., *China’s Military and the U.S.-Japan Alliance in 2030* (Washington, DC: Carnegie Endowment for International Peace, 2013), 66–67.
8. *Ibid.*, 203.
9. Jay H. Bryson and Erik Nelson, “How Important Is China to Other Asian Economies?,” Wells Fargo Securities Special Commentary, August 25, 2015, http://www.realclearmarkets.com/docs/2015/08/Importance of China for Asia _ Aug 2015.pdf.
10. Yukon Huang, “Can China Get Its Rebalancing Right?,” *Financial Times*, February 5, 2016, <http://blogs.ft.com/the-exchange/2016/02/05/can-china-get-its-rebalancing-right/>.

11. Yukon Huang, quoted in Chong Koh Ping, "China's One Belt, One Road Initiative Goes Beyond Just Trade, Infrastructure: George Yeo," *Straits Times*, July 21, 2015, <http://www.straitstimes.com/business/economy/revival-of-silk-road-project-will-change-asia>.
12. Ernst & Young indicates that Chinese FDI to the entire world grew at a rate of 16 percent between 2011 and 2014. See Ernst & Young, "Riding the Silk Road: China Sees Outward Investment Boom; Outlook for China's Outward Foreign Direct Investment," *Global Markets-EY Knowledge*, March 2015, 2, [http://www.ey.com/Publication/vwLUAssets/ey-china-outbound-investment-report-en/\\$FILE/ey-china-outbound-investment-report-en.pdf](http://www.ey.com/Publication/vwLUAssets/ey-china-outbound-investment-report-en/$FILE/ey-china-outbound-investment-report-en.pdf).
13. Ibid.
14. Alicia Garcia-Herrero, Le Xia, and Carlos Casanova, "Chinese Outbound Foreign Direct Investment: How Much Goes Where After Round-Tripping and Offshoring?," Research Working Paper no. 15–17, Banco Bilbao Vizcaya Argentaria, June 2015, https://www.bbvarsearch.com/wp-content/uploads/2015/06/15_17_Working-Paper_ODI.pdf.
15. David Dollar, "China as a Global Investor," Foreign Policy in a Troubled World, Asia Working Group paper no. 4, Brookings Institution, May 2016, http://www.brookings.edu/-/media/research/files/papers/2016/05/china-as-a-global-investor-dollar/china-as-a-global-investor_asia-working-paper-4.pdf.
16. While the *Diplomat* reports that state-owned enterprises still account for 70 percent of nonfinancial Chinese outward foreign direct investment as a result of government encouragement to go global, a KPMG report reveals that different metrics point to the growing role of privately owned enterprises compared with that of state-owned enterprises in outward direct investment. Privately owned enterprises account for a growing share of outbound M&A (in terms of deals value), up to 41 percent of Chinese outbound M&A in 2014 compared with 31 percent in 2013 and only 10 percent in 2010. This is largely thanks to the Chinese Ministry of Commerce's easing of the approval requirements for privately owned enterprises to invest abroad. See Shannon Tiezzi, "China Invests in the World," *Diplomat*, June 24, 2015, <http://thediplomat.com/2015/06/china-invests-in-the-world/>; and "China Outlook 2015," *KPMG International Global China Outlook 2015*, <http://www.kpmg.com/ES/es/Internacionalizacion-KPMG/Documents/China-Outlook-2015.pdf>.
17. Garcia-Herrero, Le, and Casanova, "Chinese Outbound Foreign Direct Investment," 8, https://www.bbvarsearch.com/wp-content/uploads/2015/06/15_17_Working-Paper_ODI.pdf; also see Ernst & Young, "Riding the Silk Road," 12, [http://www.ey.com/Publication/vwLUAssets/ey-china-outbound-investment-report-en/\\$FILE/ey-china-outbound-investment-report-en.pdf](http://www.ey.com/Publication/vwLUAssets/ey-china-outbound-investment-report-en/$FILE/ey-china-outbound-investment-report-en.pdf).
18. Adrian H. Hearn and Margaret Myers, "China and the TPP: Asia-Pacific Integration or Disintegration?," *Dialogue*, July 2015, 4, <http://www.thedialogue.org/wp-content/uploads/2015/07/CLA-TPP-Report-final-web.pdf>.
19. China launched the Asian Infrastructure Investment Bank in 2014, with authorized capital of \$100 billion. However, Asian Development Bank studies show that investment needs in Asian developing countries during 2010–2020 for national infrastructure alone amount to \$8 trillion a year. The Asian Development Bank could lend only 1.5 percent of this amount, leading some scholars to conclude that there is an obvious need for additional sources of investment. See Zha Daojiong, "China's Economic Diplomacy: Focusing on the Asia-Pacific Region," *China Quarterly of International Strategic Studies* 1, no. 1 (2015): 85–104, <http://www.worldscientific.com/doi/pdf/10.1142/S2377740015500050>; also see Asian Development

- Bank Institute, “Infrastructure for a Seamless Asia,” 2009, <http://adb.org/sites/default/files/pub/2009/2009.08.31.book.infrastructure.seamless.asia.pdf>.
20. James Kyngé, “China’s Ambitions for Asia Show Through ‘Silk Road’ Lending,” *Financial Times*, April 1, 2016, <http://www.ft.com/intl/cms/s/3/8e1219d8-f7e3-11e5-803c-d27c7117d132.html#axzz45v7FYFuo>.

Despite China’s remarkable effort to ramp up loans to its neighbors, scholars such as Zha Daojiong point out that the availability of investment capital alone does not automatically make China the lender of choice. See Zha Daojiong, “China’s Economic Diplomacy.”

 21. U.S. Government Accountability Office, *Southeast Asia: Trends in U.S. and Chinese Economic Engagement*, report to congressional requesters, GAO-15-724 (Washington, DC, U.S. GAO, August 2015), 24, <http://www.gao.gov/assets/680/671988.pdf>.
 22. *Ibid.*, 25.
 23. United Nations Conference on Trade and Development database, http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?IF_ActivePath=P,5.
 24. *Ibid.*
 25. I am indebted to Phillip Saunders for his insights on shifting motives behind outbound foreign direct investment.
 26. Gary Clyde Hufbauer and Cathleen Cimino-Isaacs, “What You Need to Know About the Trans-Pacific Partnership,” Peterson Institute for International Economics, originally broadcast on *PBS NewsHour*, June 23, 2015, <http://www.piie.com/publications/opeds/oped.cfm?ResearchID=2802>.
 27. Xenia Wickett, John Nilsson-Wright, and Tim Summers, *The Asia-Pacific Power Balance: Beyond the U.S.-China Narrative* (London: Chatham House, September 2015), 4, https://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20150924AsiaPacificWickettNilssonWrightSummersFinal.pdf.
 28. Barry Naughton, Arthur R. Kroeber, Guy de Jonquières, and Graham Webster, “What Will the TPP Mean for China?,” *Foreign Policy*, ChinaFile, October 7, 2015, <http://foreignpolicy.com/2015/10/07/china-tpp-trans-pacific-partnership-obama-us-trade-xi/>.
 29. *Ibid.*
 30. See Jane Perlez, “U.S. Allies See Trans-Pacific Partnership as Check on China,” *New York Times*, October 6, 2015, <http://www.nytimes.com/2015/10/07/world/asia/trans-pacific-partnership-china-australia.html>.
 31. Joshua P. Meltzer, “Why China Should Join the Trans-Pacific Partnership,” Brookings Institution, September 21, 2015, <http://www.brookings.edu/blogs/order-from-chaos/posts/2015/09/21-us-china-economic-integration-tpp-meltzer>.
 32. Yukon Huang, personal conversation. Also, Meltzer argues that the RCEP cannot be a real alternative to the TPP and that both the United States and China would see significant gains if China joined the TPP. See Meltzer, “Why China Should Join the Trans-Pacific Partnership.”
 33. These are Australia, Brunei, Japan, Malaysia, New Zealand, Singapore, and Vietnam.

34. Shintaro Hamanaka, "Trans-Pacific Partnership Versus Regional Comprehensive Economic Partnership: Control of Membership and Agenda-Setting," ADB Working Paper Series on Regional Economic Integration no. 146 (Manila, Philippines: Asian Development Bank, December 2014), 13, <http://www.adb.org/sites/default/files/publication/152753/reiwp-146.pdf>.
35. "Economic Implications of the Trans-Pacific and Asian Tracks," Peterson Institute for International Economics, 35, http://www.piie.com/publications/chapters_preview/6642/04iie6642.pdf. ASEAN+3 is made up of the ten ASEAN signatories plus Japan, Korea, and the People's Republic of China.
36. Alan V. Deardorff, "Trade Implications of the Trans-Pacific Partnership for ASEAN and Other Asian Countries," *Asian Development Review* 31, no. 2 (2013): 14, https://openaccess.adb.org/bitstream/handle/11540/4101/Volume%2031_No%202_2014_01.pdf?sequence=1.
37. Jingyang Chen, "TPP and RCEP: Boon or Bane for ASEAN?" Asia Foundation, September 9, 2015, <http://asiafoundation.org/in-asia/2015/09/09/tpp-and-rcep-boon-or-bane-for-asean/>.
38. Bipul Chatterjee and Surendar Singh, "Why RCEP Is Vital for India," *Diplomat*, March 3, 2015, <http://thediplomat.com/2015/03/why-rcep-is-vital-for-india/>.
39. Peter A. Petri, Michael G. Plummer, and Fan Zhai, "The Trans-Pacific Partnership and Asia-Pacific Integration: A Quantitative Assessment," East-West Center Working Papers Economic Series no. 119 (Washington, DC: East-West Center, 2011), 46, https://www.usitc.gov/research_and_analysis/documents/petri-plummer-zhai%20EWC%20TPP%20WP%20oct11.pdf.
40. Personal conversation with Yukon Huang.
41. Peterson Institute for International Economics, "Economic Implications for the Transpacific and Asian Tracks," 43, https://piie.com/publications/chapters_preview/6642/04iie6642.pdf.
42. *Ibid.*, 35.
43. Data from the Stockholm International Peace Research Institute (SIPRI) suggest that Chinese defense spending has taken up 1 to 2 percent of GDP since 1988 (the highest was 2.5 percent, in 1989, 1990, and 1992), and SIPRI figures for China are for "estimated total military expenditure, including estimates for items not included in the official defence budget." SIPRI, Military Expenditure Database, 1988 to 2015, Share of GDP, China, fn. 51, <https://www.sipri.org/databases/milex>.
44. Official Chinese defense spending as recorded in the *China Statistical Yearbook* 2015 was 741 billion renminbi, or around \$117 billion. However, official Chinese defense-spending data tend not to reflect the full extent of the Chinese defense budget. The Stockholm International Peace Research Institute, for example, reports that Chinese defense spending in 2014 was \$199 billion, around 1.7 times what is reported by the *China Statistical Yearbook*. SIPRI, Military Expenditure Database, 1988 to 2015, 2015 data (Solna, Sweden: Stockholm International Peace Research Institute), <https://www.sipri.org/databases/milex>. With a 1.5 multiplier to the Chinese official defense-spending figure, China's defense spending should be around 1,111.5 billion renminbi, or 370.5 billion renminbi more than what the official figure claims. *China Statistical Yearbooks, 1996–2015*, National Bureau of Statistics of China, annual data for 2015, <http://www.stats.gov.cn/english/statisticaldata/AnnualData/>, <http://www.stats.gov.cn/tjsj/ndsj/2015/indexeh.htm>.

45. "Government Finance: Main Items of Public Government Expenditure of Central and Local Governments," *China Statistical Yearbook*, data for 2014, <http://www.stats.gov.cn/tjsj/ndsj/2014/indexeh.htm>.
46. Yukon Huang, "Rethinking China's State-owned Enterprises."
47. SIPRI, Military Expenditure Database, 1988 to 2015.
48. The regression trend line has its drawbacks, since U.S. military expenditure cannot increase indefinitely and has indeed been decreasing in recent years. However, R squared is at 0.8 (very close to 1.0), indicating that the fitted trend line and predictions are very close approximation to the actual values. The p values are very small, indicating strong statistical significance and suggesting that the correlation between year and military spending is not random.
49. Michael Green et al., "Asia-Pacific Rebalance 2025: Capabilities, Presence, and Partnerships," Center for Strategic and International Studies, January 2016, vii, http://csis.org/files/publication/160119_Green_AsiaPacificRebalance2025_Web_0.pdf.
50. Department of Defense, *2016 Defence White Paper* (Canberra, AU: Australian Government, 2016), 49, <http://www.defence.gov.au/WhitePaper/Docs/2016-Defence-White-Paper.pdf>.
51. Takamoto Suzuki, "China 2035: China Will Be a Eurasia Super Power: Neighboring Countries Will Face Difficulties" (Tokyo: Marubeni Research Institute, February 5, 2016), 4, http://www.marubeni.com/research/report/political_economy/global/data/China2035.pdf.
52. Suzuki, "China 2035," 3–4.
53. "Global Trends 2030: Alternative Worlds," National Intelligence Council, December 2012, 16, http://www.dni.gov/files/documents/GlobalTrends_2030.pdf.
54. James Steinberg and Michael O'Hanlon, *Strategic Reassurance and Resolve: U.S.-China Relations in the Twenty-First Century* (Princeton, NJ: Princeton University Press, 2014), 98.
55. International Institute for Strategic Studies (IISS), *The Military Balance 2000* (London: Routledge, 2000).
56. Ian Rinehart, "The Chinese Military: Overview and Issues for the Congress," Congressional Research Service, March 24, 2016, 30, <https://www.fas.org/sgp/crs/row/R44196.pdf>.
57. U.S. Air Force, "USAF Almanac 2014," *Air Force Magazine* 97, no. 5 (May 2014): 52, <http://www.airforcemag.com/MagazineArchive/Magazine%20Documents/2014/May%202014/0514commandsandreserves.pdf>.
58. U.S. Pacific Air Forces (USPACAF), "Info," March 11, 2015, <http://www.pacaf.af.mil/Info/FactSheets/Display/tabid/420/Article/248963/pacific-air-forces.aspx>.
59. Steinberg and O'Hanlon, *Strategic Reassurance and Resolve*, 98–100.
60. Fu Peng, ed., "The Diversified Employment of China's Armed Forces," Defense White Paper 2013 (Beijing, CN: Information Office of the State Council, 2013), http://www.nti.org/media/pdfs/China_Defense_White_Paper_2013.pdf.
61. "Global Trends 2030: Alternative Worlds," 100.
62. Rolland, "China's National Power," 47.
63. *Ibid.*, 34.
64. *Ibid.*, 35.

65. Ibid., 35.
66. Green et al., “Asia-Pacific Rebalance 2025,” 3, vii.
67. Ibid., 4.
68. Appendix D also presents results from regression analysis for naval vessels. This set of results provides another reference point for potential future force levels but is arguably less reliable than the results derived from commissioning data.
69. Green et al., “Asia-Pacific Rebalance 2025,” 125. A report by the Heritage Foundation states forty-one. “2016 Index of U.S. Military Strength,” Heritage Foundation, 2015, <http://index.heritage.org/military/2015/chapter/op-environment/asia/>.
70. Assuming a minimum of twenty and a maximum of thirty years of retirement age for all types. Ronald O’Rourke, “PLAN Force Structure: Submarines, Ships, and Aircraft,” in *The Chinese Navy*, eds. Phillip C. Saunders, Christopher Yung, Michael Swaine, and Andrew Nien-Dzu Yang (Washington, DC: National Defense University Press, 2011), 147. The seventy Chinese submarines are of three types: Han (Type 091/091G SSN), Shang (Type 093/093A SSN), and Jin (Type 094 SSBN).
71. According to another set of projections by Ron O’Rourke using data after 1995, China would have a total of fifty-four to eighty-one submarines of all types, again, matching both sets of projections. Ronald O’Rourke, “China Naval Modernization: Implications for U.S. Navy Capabilities; Background and Issues for Congress,” Congressional Research Service, November 23, 2015, https://news.usni.org/wp-content/uploads/2015/12/RL33153_6.pdf.
The currently operational Chinese submarines are of eight types: Han (Type 091/091G SSN), Shang (Type 093/093A SSN), Jin (Type 094 SSBN), Kilo SS of Russian design, Ming (Type 035 SS), Song (Type 039 SS), Yuan (Type 039A SS), and Qing (Type 032 SS).
72. These classes are Los Angeles (SSN), Ohio (SSGN), Ohio (SSBN), Seawolf (SSN), and Virginia (SSN).
73. Please see appendix E for more details on how these projections are made.
74. Green et al., “Asia-Pacific Rebalance 2025,” 126.
75. These are built around the Aegis Combat System that includes ballistic-missile defense and ASCM capabilities.
76. IISS, *The Military Balance 2015* (London: Routledge, 2015), 52–54.
77. These are Luda (Type 051 DDGM/DDGHM), Luhai (Type 051B DDGHM), Luhu (Type 052 DDGHM), Luyang I (Type 052B DGHM), Luyang II (Type 052C DDGHM), Luyang III (Type 052D DDGHM), Luzhou (Type 051C DDGHM), and Sovremenny (Project 956E DDGHM). This projection assumes a reasonable average life expectancy of thirty years for destroyers.
78. These are Arleigh Burke (Flight IIA), Arleigh Burke (Flights I and II DDGHM), and Zumwalt.
79. Assuming an average retirement age of twenty-five years for frigates. The six classes of Chinese frigates are Jianghu I/V (053H FFG), Jianghu III (Type 052 H2 FFG), Jiangkai I (Type 054 FFGHM), Jiangkai II (Type 054A FFGHM), Jiangwei I (Type 053 FFGHM), and Jiangwei II (Type 053H FFGHM).

80. The three classes are Freedom-class littoral-combat ship (flight 0), Independence-class littoral-combat ship (flight 0), and Oliver Hazard Perry (FFH).
81. Thomas J. Christensen, *The China Challenge* (New York: W. W. Norton, 2015), 86; Green et al., “Asia-Pacific Rebalance 2025,” 126.
82. Steinberg and O’Hanlon, *Strategic Reassurance and Resolve*, 104.
83. IISS, *The Military Balance 2014* (London: Routledge, 2014), 30.
84. Green et al., “Asia-Pacific Rebalance 2025,” 19.
85. IISS, *The Military Balance 2016* (London: Routledge, 2016), 45.
86. *Ibid.*, 248.
87. These are Haixun 01 class (PSO), Haixun 11 class (PBOH), Haixun 21 class (PBOH), Haixun 31 class (PBOH), Haixun 051 class (PBO), Haixun 22 class (PSO), Type 718 offshore patrol ship (PSO), Type 813 (Survey Ship) (AGS), Jianghu class (PSOH), Type 218 patrol craft, offshore patrol ships (PSO) (Haijing class), Type 825C offshore patrol ships, Shupang (Type 636A class), Tuzhong class (ATF), Type 218 patrol craft (PB), Yanbing (Mod Yanha class) (AGB/PSO), Type 618 patrol craft (PB), and Wolei (Type 918) (PSO). The dates used are a mix of date commissioned, date entered service, and date transferred to Chinese Coast Guard or Government Maritime Forces. For Haijing-class PSO, one was commissioned in 1976. For Type 218 patrol craft and Type 218 patrol craft (PB), numbers are approximate.
88. Commissioning data is taken from 1986—when the first of the Haixun 051 PBOs entered service—to today. The average annual commissioning rate has been 5.17 per year, and a retirement age of between thirty and fifty years for all classes is assumed. While there is little data on the retirement age of Chinese Coast Guard ships, a study by the U.S. Congressional Budget Office indicates that U.S. Coast Guard ships would be retiring at thirty to fifty years by around 2020. “Options for Combining the Navy’s and the Coast Guard’s Small Combatant Programs,” Congressional Budget Office, July 2009, 6, <https://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/104xx/doc10460/07-17-smallcombatants.pdf>.
89. $P = 1.31E-09$. A natural log regression for the United States suggests that U.S. Coast Guard vessels would number around 176 (R^2 squared = 0.76).
90. International Institute for Strategic Studies (IISS), *The Military Balance 2015 to 2010* (London: Routledge, 2010 to 2015).
91. “Options for Combining the Navy’s and the Coast Guard’s Small Combatant Programs,” 52. The 1,287 active-service aircraft include A-10Cs, F-15Cs, F-15Ds, F-15Es, F-16Cs, F-16Ds, F-22As, and F-35s. U.S. Air Force, “USAF Almanac 2014,” 34.
92. USPACAF, “Info.”
93. The PLAAF possesses 2,239 total land-based combat-capable aircraft, of which 1,535 are fighters or attack aircraft. These include J-7, J-7E, J-7G, J-8B, J-8F, J-8H, J-11, Su-27SK, Su-27UBK, J-10, J-10A, J-10S, J-11B/BS, JH-7A, Su-30MKK, and Q-5C/D/E Fantan. Chinese combat-capable naval aviation aircraft number 332, of which 228 are fighters or attack aircraft. These include J-8Fs, JH-7/JH-7As, J-10As, J-10Ss, J-11B/BSs, and Su-30MK2s. IISS, *The Military Balance 2015*, 241.
94. The six fighter types are J-10, J-11, J-7 Fishbed, JH-7A, J-8 Finback, and Q-5C Fantan.

95. The F-22, since its inception in the 1980s, was designed to be an advanced tactical fighter that would replace the F-15 and the F-16. IHS Jane's, *Jane's All the World's Aircraft: Development and Production*, 104th rev. ed. (Coulson, UK: IHS Global, 2016). The air force and the navy are currently developing the F-X program and the F/A-XX program, respectively, the former aimed to replace the F-22 with a new air-superiority fighter and the latter aimed to replace the Boeing F/A-18E/F Super Hornet. Dave Majumdar, "China vs. America in the Sky: A Stealth-Fighter Showdown Is Brewing," *National Interest*, November 14, 2014, <http://nationalinterest.org/feature/china-vs-america-the-sky-stealth-fighter-showdown-brewing-11676?page=2>. The F-22 program took the United States two decades to develop—from 1986, when the program was launched, to 2005, when the F-22 achieved initial operational capabilities. The F-35 program also took fifteen years, from 1996, when the program was launched, to 2011, when F-35As were first delivered. IHS Jane's, *All the World's Aircraft*.
96. P value: 1.17E-05.
97. These include B-1, B-2, and B-52. U.S. Air Force, "USAF Almanac 2015," *Air Force Magazine*, vol. 98, no. 5 (May 2015): 34.
98. Green et al., "Asia-Pacific Rebalance 2025," 122.
99. IISS, *The Military Balance 2015*, 241, 237.
100. "Intermediate-range ballistic missiles" refers to the DF-3A (CSS-2). "Medium-range ballistic missiles" refers to the DF-21 (CSS-5) and its variants (DF-21A, DF-21C, DF-21D). "Short-range ballistic missiles" refers to the DF-3A (CSS-2), including the DF-11A (CSS-7) and the DF-15/M-9 (CSS-6).
101. There are huge discrepancies between the data presented before the 2010 edition and that presented in the 2010 and later editions of *The Military Balance*. For instance, in 2010, China possessed 204 SRBMs, but in 2009 the reported number was 725. Similarly, in 2010, China had 116 MRBMs, but the reported number in 2009 was 21. Data from the most recent five years is chosen, therefore, to reflect more current trends in growth. The International Institute for Strategic Studies (IISS), *The Military Balance 2009* (London: Routledge, 2009), 382; *The Military Balance 2010* (London: Routledge, 2010), 399; *The Military Balance 2011* (London: Routledge, 2011), 230; *The Military Balance 2012* (London: Routledge, 2012), 234; *The Military Balance 2013* (London: Routledge, 2013), 287; *The Military Balance 2014* (London: Routledge, 2014), 231; *The Military Balance 2015* (London: Routledge, 2015), 237.
102. IRBMs: $R^2 = 0.68$, p value = 0.043; MRBMs: $R^2 = 0.88$, p value = 0.00013; SRBMs: $R^2 = 0.85$, p value = 0.0035.
103. Richard D. Fisher Jr., "DF-26 IRBM May Have ASM Variant, China Reveals at 3 September Parade," IHS Jane's 360, September 3, 2015, <http://www.janes.com/article/53994/df-26-irbm-may-have-asm-variant-china-reveals-at-3-september-parade>.
104. International Institute for Strategic Studies (IISS), *The Military Balance 2000–2015* (London: Routledge, 2000–2015). The upper limit simply pegs surface-to-air missile sums to defense spending, in which case R^2 is 0.26. The lower estimate pegs surface-to-air missile sums to log-transformed defense-spending data. The linear model fits the log-transformed data set a little better, with a higher R^2 of 0.37.
105. The nuclear-capable land-based ballistic missiles are DF-3A, DF-4, DF-5A, DF-5B, DF-15, the DF-21, DF-31, DF-31A, and DF-41. For the estimate of 260 nuclear warheads, see Hans M. Kristensen and Robert S. Norris, "Chinese Nuclear Forces, 2016," *Bulletin of the Atomic Scientists* Vol. 72, No. 4 (2016): 205–211, <http://www.tandfonline.com/doi/pdf/10.1080/00963402.2016.1194054>.

106. Green et al., “Asia-Pacific Rebalance 2025,” 155.
107. *Ibid.*, 143.
108. *Ibid.*, 144.
109. *Ibid.*, 146–48.
110. Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China* (Arlington, VA: U.S. Department of Defense, 2015), http://www.defense.gov/Portals/1/Documents/pubs/2015_China_Military_Power_Report.pdf.
111. Green et al., “Asia-Pacific Rebalance 2025,” 16.
112. Michael S. Chase et al., “Emerging Trends in China’s Development of Unmanned Systems,” RAND Corporation, 5, http://www.rand.org/content/dam/rand/pubs/research_reports/RR900/RR990/RAND_RR990.pdf.
113. Kevin Pollpeter, Statement Before the U.S.-China Economic and Security Review Commission, *Hearing on China’s Space and Counterspace Programs*, 114th Cong. (2015), http://origin.www.uscc.gov/sites/default/files/transcripts/February%2018,%202015_Transcript.pdf.
114. Green et al., “Asia-Pacific Rebalance 2025,” 147.
115. Office of the Secretary of Defense, *Annual Report to Congress*, 33.
116. “U.S. Intelligence Chief: China Top Suspect in Government Agency Hacks,” Reuters, June 26, 2015, <http://www.reuters.com/article/us-cybersecurity-usa-china-idUSKBN0P525G20150626>. Ellen Nakashima, “U.S. Said to Be Target of Massive Cyber-Espionage Campaign,” *Washington Post*, February 10, 2013, https://www.washingtonpost.com/world/national-security/us-said-to-be-target-of-massive-cyber-espionage-campaign/2013/02/10/7b4687d8-6fc1-11e2-aa58-243de81040ba_story.html.
117. Defense Science Board, “Resilient Military Systems and the Advanced Cyber Threat,” Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (Washington, DC: U.S. Department of Defense, January 2013), <http://www.acq.osd.mil/dsb/reports/ResilientMilitarySystems.CyberThreat.pdf>.
118. Green et al., “Asia-Pacific Rebalance 2025,” 149.
119. U.S. Department of Defense, *Trilateral Information-Sharing Agreement Concerning the Nuclear and Missile Threats Posed by North Korea Among the Ministry of National Defense of the Republic of Korea, the Ministry of Defense of Japan, and the Department of Defense of the United States of America* (Arlington, VA: U.S. Department of Defense, 2014), <http://archive.defense.gov/pubs/Trilateral-Information-Sharing-Arrangement.pdf>. Green et al., “Asia-Pacific Rebalance 2025,” 61.
120. *Ibid.*, 150.
121. William K. Lescher, “Department of Defense Briefing by Rear Adm. Lescher on the Fiscal Year 2016 Navy Budget in the Pentagon Briefing Room,” February 2, 2015, <http://www.defense.gov/News/News-Transcripts/Transcript-View/Article/607006>. Tyler Rogoway, “The Navy Has Retired the EA-6B Prowler After 45 Years of Service,” *Foxtrot Alpha*, July 30, 2015, <http://foxtrotalpha.jalopnik.com/the-navy-has-retired-the-ea-6b-prowler-after-45-years-o-1715596340>.

122. Colin Clark, "Why the Navy Really Wants 22 More Growlers," *Breaking Defense*, March 26, 2014, <http://breakingdefense.com/2014/03/why-the-navy-really-wants-22-more-fa-18gs/>.
123. National Institute for Defense Studies, *China Security Report 2016*, 28–30, http://www.nids.go.jp/publication/chinareport/pdf/china_report_EN_web_2016_A01.pdf.
124. Kevin Pollpeter, "Space, Cyber, and Electronic Warfare," 192.
125. "China Tests Electronic Warfare Variant of J-16 Fighter Jet," *Sputnik News*, December 25, 2015, <http://sputniknews.com/asia/20151225/1032275995/china-tests-electronic-warfare-jet.html>.
126. Green et al., "Asia-Pacific Rebalance 2025," 15–16.
127. *Ibid.*, 41.
128. *Ibid.*, 121.
129. Anthony Capaccio, "Carter Orders Navy to Build Fewer Ships, Spend More on Jets," *Bloomberg News*, December 17, 2015, <http://www.bloomberg.com/politics/articles/2015-12-17/carter-orders-navy-to-build-fewer-ships-spend-more-on-jets>.
130. Dan De Luce, "The U.S. Navy Wants to Show China Who's Boss," *Foreign Policy*, December 14, 2015, <http://foreignpolicy.com/2015/12/14/the-u-s-navy-wants-to-show-china-whos-boss/>.
131. James Hasik, "What Is the Pentagon's Strategy in Cutting LCS for F-35s?," *National Interest*, December 19, 2015, <http://nationalinterest.org/blog/the-buzz/what-the-pentagons-strategy-cutting-lcs-f-35s-14684?page=show>.
132. De Luce, "U.S. Navy Wants to Show China Who's Boss."
133. Eric Heginbotham, Michael Nixon, Forrest E. Morgan, Jacob Heim, Jeff Hagen, Sheng Li, Jeffrey Engstrom, Martin C. Libicki, Paul DeLuca, David A. Shlapak, David R. Frelinger, Burgess Laird, Kyle Brady, Lyle J. Morris, "Tallying the U.S.-China Military Scorecard: Research Brief for *The China-U.S. Military Scorecard*" (Santa Monica, CA: RAND Corporation, 2015), 1, http://www.rand.org/pubs/research_briefs/RB9858z1.html.
134. Green et al., "Asia-Pacific Rebalance 2025," 10.
135. For example, Swaine et al., *China's Military and the U.S.-Japan Alliance in 2030*.
136. Japanese submarines are the Oyashio (SSK) class and the Souryu (SSK) class.
137. Vietnam currently has four Kilo-class submarines and plans to commission two more in 2016, as well as two currently serving Yugo-class submarines. Indonesia has two Cakra-class submarines commissioned in 1981 and is building three Type 209/1400-class SSKs, with nine more proposed (which are expected to be stretched and more advanced versions of the Chang Bogo-class from South Korea) by 2024. If all of the proposals are followed through, Indonesia will possess twelve submarines by 2040, assuming that the two current Cakras have been retired by then.
138. These are the Akizuki (DDHM), the Asagiri (DDGHM), the Atago (DDGHM), the Hatakaze (DDGHM), the Hatsuyuki (DDGHM), the Kongou (DDGHM), the Murasame (DDGHM), the Shirane (DDHM), and the Takanami (DDGHM).
139. Assuming a retirement age of thirty years for all types.
140. "Possible Transfer to the Philippines, Two Naval Guided Missile Destroyer From Japan," *Manila Livewire*, June 30, 2015, <http://www.manilalivewire.com/2015/06/possible-transfer-to-the-philippines-two-naval-guided-missile-destroyer-from-japan/>.

141. Assuming a twenty-five-year retirement age for all classes. The Australian Adelaide-class frigate *Sydney* was decommissioned in November 2015, after thirty-two years of service, leaving three Adelaide-class frigates currently serving. These are set to retire in 2020, after thirty-seven years of service. One of the remaining three, the *Melbourne* is currently serving in the Middle East. Three other Adelaide-class frigates were decommissioned in the past decade. The estimate given considers this information and uses commissioning data for both the Adelaide-class (based on the Oliver Hazard Perry-class) FFGHM and the ANZAC (MEKO 200) FFGHM, assuming an average life expectancy of thirty-five years (rather than the twenty-five years used for other countries) for these ships, as has been the case with both the Adelaide and the ANZAC classes.

The South Korean frigates are the Brahmaputra-class (Project 16A FFGHM), the Godavari-class (Project 16 FFGHM), the Shivalik-class (Project 17 FFGHM), and the Talwar-class (Project 1135.6 FFGHM).

142. Vietnam has started to commission frigates very recently, with two Modified Gepard (Project 11661E) FFGMs commissioned in 2011 and five Petya (Project 159A/AE) FFLs commissioned this year. Over the past five years, the annual commissioning rate has been 1.4, which would result in 35 frigates by 2040, again assuming a twenty-five-year retirement age for both classes. Furthermore, Vietnam has proposed building another two Sigma-class frigates. If it follows through on this plan, Vietnam could have 37 frigates by 2040. However, such recent commissioning data (dating back to only 2011) does not provide a reliable picture of a long-term trend in commissioning. It is highly unlikely that Vietnam will sustain the commissioning rate of 1.4 frigates a year for twenty-five years into the future.

Indonesia's frigate forces are less significant. Six Ahmad Yani (Van Speijk) FFGHM are currently operational, but these were built in 1967 and 1968. Two Bung Tomo FSHs were commissioned in 2014, but given the past failure to raise Indonesia defense spending above the historical 0.8 percent of GDP, Indonesia may fail to procure more frigates in the future.

The Philippines operates two classes of frigates, with two from the Pilar-class and one from the Cannon-class. All three were transferred from the United States to Japan, and another Pilar-class frigate is currently under consideration for transfer. At best, then, the Philippines would possess only four frigates in the near future.

143. Stephen Saunders, *IHS Jane's Fighting Ships 2015–2016* (Coulson, UK: IHS Global, 2015).

144. Jung Sung-ki, "South Korea Envisions Light Aircraft Carrier," *Defense News*, October 26, 2013, <http://megalodon.jp/2013-1027-1658-30/www.defensenews.com/article/20131026/DEFREG03/310260005/S-Korea-Envisions-Light-Aircraft-Carrier>.

145. Saunders, *IHS Jane's Fighting Ships 2015–2016*.

146. IISS, *The Military Balance 2015*, 260.

147. Vietnam currently operates 6 Su-27 Flankers and 20 Su-22 Fitter-H, which can be used for maritime surveillance. In 2013 there were also reports that Vietnam has plans to procure up to 6 P-3C Orion patrol aircraft from the United States. Its Air Force operates 97 ground attack fighters, mainly MiG-21s and Su-30MK2s. The Indonesian Air Force operates 43 fighters and 97 combat capable aircraft, including 7 F-5Es (Tiger II), 7 F-16A Fighting Falcon, and 3 F-16B Fighting Falcon. It also operates the Su-27SK Flanker and the Su-30MK Flanker. In comparison, the Philippines operates only 22 combat capable aircraft, with no fighter or ground attack aircraft. Unless the Philippines, Indonesia, and Vietnam significantly

increase their investment in fighter and ground-attack aircraft capabilities, current procurement trends do not suggest a force level comparable to that of Japan or Korea, let alone China, by 2040.

148. These are Shikishima class (PLH/PSOH), Mizuho class (PLH/PSOH), Soya class (PLH/PSOH), Izu class (PL/PSOH), Miura class (PL/PSOH), Kojima class (PL/PSOH), Hida class (PL/PSO), Nojima class (PL/PSOH), Shiretoko class (PL/PSO), Ojika class (PL/PSOH), Aso class (PL/PSO), Hateruma class (PL/PSO), Kunigami class (PL/PSOH), Iwami class (PL/PSO), Taketomi class (PL/PSOH), Takatori class, Teshio class (PM/PSO), Amami class (PM/PBO), Tokara class (PM/PBO), 750-ton class (PM/PBO), Takatsuki class (PS/PBF), Mihashi and Raizan class (PS/PBF), Tsuruugi class (PS/PBOF), Yodo class (PC/YTR), Hayagumo class (PC/PBF), Kotonami class (PC/PB), Murakumo class (PC/PB), Akizuki class (PC/SAR), Asogiri class (PC/PB), Hayanami class (PC/PB/YTR), Matsunami class (PC/PB), Shimagiri class (PC/PB), coastal patrol and rescue craft (214 in total, no specified class), and Natsugiri class (PC/PB).
149. Furthermore, the 10,000-ton cutters that China is reportedly building are rumored to be even larger than the 9,350-ton (full load) Japanese Shikishima helicopter-carrying cutters, which are currently the largest patrol vessels in the world. At least one analyst has suggested that the size of China's EEZ does not necessitate such large patrol cutters, and cutters of that size—with the ability to carry helicopters and boats—could land at least an infantry company quickly. Chuck Hill, “The Chinese Coast Guard to Build World's Largest Offshore Patrol Vessel—and More,” Center for International Maritime Security, February 8, 2014, <http://cimsec.org/chinese-coast-guard-build-worlds-largest-offshore-patrol-vessel/9625>.
150. Department of Defense, *Defending Australia in the Asia Pacific Century: Force 2030* (Canberra, AU: Australian Government, 2009), 73; Jonathan Mead, “On Track to Deliver Even More,” *Royal Australian Navy News*, September 10, 2015, 2, <http://navynews.realviewdigital.com/?iid=127437#folio=2>.
151. The twelve classes are 1,200-ton class (PG), 430-ton class (PBO), inshore patrol craft, Bukhansan class (PBO), Hyundai Type, salvage ship (ARSH) (of various classes), Daewoo Type (PSO), Sambongho class (patrol ship PSO), P127 class (PB), Gunsan class (salvage ships), Tae Geuk class (PB), and Hae Uri class (PB).
152. The eleven Indian Coast Guard classes are Sankalp class (offshore patrol vessels WPSOH), Samudra (UT 517) class pollution control vessels (WPSOH), Samar class (offshore patrol vessels WPSOH), Vikram class (offshore patrol vessels WPSOH), Priyadarshini class (coastal patrol craft WPBO), Rani Abbakka class (PBO), Sarojini Naidu class (WPBO), interceptor craft (WPBF), Rajshree class (PBO), Aadesh class (PBO), and coastal interception craft (PBF). The Military Balance section on the Coast Guard section excludes Vishwast class (WPSOH), Timblo class (patrol craft PB), Bristol class (inshore patrol craft WPBF), and Griffon 8000 TD(M) class Hovercraft, while Jane's includes these. If these classes are included, the commissioning would be around 5.5, and would result in around 240 to 280 patrol craft by 2040.
153. The nine classes of Indonesian ships are disaster response ships (WPSO), buoy tender ships (WABU), Damen 6210 (offshore patrol ships WPSO), Damen 4810 (buoy tenders WABU), Damen 5811 (buoy tenders WABU), KCR-40 class (patrol craft PB), Kujang class (WPB), Golok class (WSAR), and harbor patrol craft (WPB) (first six built between 1978 to 1979).

154. These are OCEA offshore patrol vehicles OPV 270 class (PBO), San Juan class (WPBO), Rodman 38 class (PB), Corregidor class (buoy tender ABU), Salsam class (tTender AKLH), large patrol craft, PCF 46 class coastal patrol craft (PB), PCF 50 (Swift MK 1 and MK 2) class coastal patrol craft (PB), PCF 65 (Swift MK 3) class coastal patrol craft (PB), De Havilland class (PB), Rodman 101 class (PB), cutters (PBR), OCEA FPB 72 MK II (patrol craft PB), and Ilocos Norte class.
155. Green et al., “Asia-Pacific Rebalance 2025,” 75.
156. One of the larger Philippine Coast Guard ships, the Corregidor-class buoy tender, displaces 1,148 tons at full load, while the smaller Rodman class displaces only 10 tons, and the San Juan class 508 tons. Saunders, *IHS Jane’s Fighting Ships 2015–2016*, 640–41. China possesses 95 large coastal patrol cutters that exceed 1,000 tons in displacement and 110 small ones that displace between 500 and 1,000 tons. U.S. Department of Defense, *Asia-Pacific Maritime Security Strategy* (Washington, DC: U.S. Department of Defense, 2015), 13, http://www.defense.gov/Portals/1/Documents/pubs/NDAAP20A-P_Maritime_Security_Strategy_08142015-1300-FINALFORMAT.PDF.
157. Michael Auslin, “Japan’s National Power in a Shifting Global Balance,” in Tellis, Szalwinski, and Wills, *Strategic Asia 2015–2016*, 77. IISS, *The Military Balance 2015*, suggests 395 coast guard ships in 2015. In 2014 it was reported that Tokyo constructed 2 large cutters in September, and there are plans to construct eight more vessels by the end of fiscal 2015. Japan is planning to spend 57 billion yen to construct 10 ships in the course of two years.
158. Auslin, “Japan’s National Power,” 78–79.
159. Swaine et al., *China’s Military and the U.S.-Japan Alliance in 2030*, 132.
160. Ibid.
161. Jeffrey W. Hornung and Mike M. Mochizuki, “Japan: Still an Exceptional U.S. Ally,” *Washington Quarterly*, vol. 39, no. 1 (2016), 95–116.
162. Chung Min Lee, “Challenges to South Korean Power in the Early 21st Century,” in Tellis, Szalwinski, and Wills, *Strategic Asia 2015–2016*, 90–124.
163. Green et al., “Asia-Pacific Rebalance 2025,” 75.
164. Saunders, *IHS Jane’s Fighting Ships 2015–2016*.
165. Green et al., “Asia-Pacific Rebalance 2025,” 69.
166. Ibid., 73.
167. While the current Indonesian Navy appears formidable, with a 213-ship fleet including 11 major surface combatants, 2 submarines, and 72 patrol and coastal combatants, fewer than half of these ships are seaworthy, and the rest are old. The largest ships are outmoded and include 6 Dutch-constructed frigates made in the 1960s. Vikram Nehru, “Indonesia: The Reluctant Giant,” in Tellis, Szalwinski, and Wills, *Strategic Asia 2015–2016*, 188–222.
168. Ibid., 193.
169. Rajesh Rajagopalan, “India’s Unrealized Power,” in Tellis, Szalwinski, and Wills, *Strategic Asia 2015–2016*, 160–189. The BRICS economies are Brazil, Russia, Indonesia, China, and South Africa.
170. Ibid., 181.

171. Ibid., 162.
172. Green et al., “Asia-Pacific Rebalance 2025,” 105.
173. Andrew C. Kuchins, “Russian Power Rising and Falling Simultaneously,” in Tellis, Szalwinski, and Wills, *Strategic Asia 2015–2016*, 124–158.
174. “United States of America–Republic of Korea Treaty,” art. III, *American Journal of International Law*, vol. 48, no. 3 (July 1954): 147–152.
175. Pew Research Center notes that 56 percent of South Koreans have a positive view of China. “How Asians View Each Other,” Global Attitudes & Trends, July 14, 2014, <http://www.pewglobal.org/2014/07/14/chapter-4-how-asians-view-each-other/>.
176. Jonathan Pollack of the Brookings Institution writes that “by numerous measures—meetings between senior officials, trade and investment, social, cultural, and educational exchanges, and high levels of public support in both countries—relations have progressed to levels unimaginable only a few years ago.” Also, “Its leaders have concluded that the congruence of interests between South Korea and China far outweighs the risks. Support for the relationship, though not unambiguous within South Korea, is broadly held across the political divide.” Jonathan Pollack, “The Strategic Meaning of China-ROK Relations: How Far Will the Rapprochement Go and With What Implications?” Brookings Institution, September 29, 2014, <http://www.brookings.edu/research/articles/2014/09/strategic-meaning-china-south-korea-relations-pollack>.
177. Jane Perlez, “North Korea’s Rocket Launch Frays Ties Between South Korea and China,” *New York Times*, February 10, 2016, <http://www.nytimes.com/2016/02/11/world/asia/china-south-korea-thaad.html>.
178. Brad Glosserman and Akira Igata, “The ROK Adrift? Not Quite,” Pacific Forum, Center for Strategic and International Studies, PacNet, no. 84, December 9, 2015, http://csis.org/files/publication/151209_pacnet_1584_0.pdf.
179. Swaine et al., *China’s Military and the U.S.-Japan Alliance in 2030*, 113.
180. Eric Johnston, “Okinawa Governor Moves to Revoke Approval for Futenma Replacement Work,” *Japan Times*, September 14, 2015, <http://www.japantimes.co.jp/news/2015/09/14/national/politics-diplomacy/okinawa-governor-revokes-approval-futenma-relocation-work/#.VqpLZVMrL2Q>.
181. Green et al., “Asia-Pacific Rebalance 2025,” 56.
182. On the point of potential alternatives, see Akikazu Hashimoto and Mike Mochizuki, “Revise the Plan to Build the U.S. Marine Air Base in Henoko, Okinawa,” *Diplomat*, September 11, 2015, <http://thediplomat.com/2015/09/revise-the-plan-to-build-the-u-s-marine-air-base-in-henoko-okinawa/>.
183. Green et al., “Asia-Pacific Rebalance 2025,” 25.
184. Ibid.
185. “Russia Will Take Part in Multinational Navy Drills in Disputed South China Sea,” *Russia Today*, May 30, 2015, <https://www.rt.com/news/263533-rusia-multinational-navy-drills/>.
186. Kuchins, “Russian Power,” 157.
187. Ibid., 158.

188. Carl Thayer, "Can Vietnam's Maritime Strategy Counter China?" *Diplomat*, September 29, 2014, <http://thediplomat.com/2014/09/can-vietnams-maritime-strategy-counter-china/>.
189. "Moscow Rejects Beijing's Offer to Co-operate on Separate Territorial Disputes With Tokyo," *South China Morning Post*, February 7, 2014, <http://www.scmp.com/news/china/article/1422444/moscow-rejects-beijings-offer-co-operate-separate-territorial-disputes>.
190. Justin McCurry, "North Korea and Russia Forge 'Year of Friendship' Pariah Alliance," *Guardian*, March 12, 2015, <http://www.theguardian.com/world/2015/mar/12/russia-and-north-korea-forge-year-of-friendship-pariah-alliance>.

2. THE COSTS OF PREDOMINANCE AND THE BENEFITS OF A STABLE BALANCE OF POWER

1. This shifting power distribution seemingly provides an example of the view that hegemonic stability is unsustainable in the long term because, as scholars such as Robert Gilpin note, over time, the costs of sustaining preeminence begin to erode the hegemon's economic capabilities, thereby diminishing its relative economic and military advantage, and because the "hegemonic paradox" dictates a diffusion of economic, technological, and organizational skills to other nations that also cause the hegemon to lose its comparative advantage. See Robert Gilpin, *War and Change in World Politics* (Cambridge: Cambridge University Press, 1981).
2. Robert Gilpin, *War and Change in World Politics* (Cambridge, UK: Cambridge University Press, 1983); A. F. K. Organski, *World Politics* (New York: Knopf, 1968).
3. Hans Morgenthau, *Politics Among Nations: The Struggle for Power and Peace* (New York: Knopf, 1973); E. H. Carr, *The Twenty Years' Crisis, 1919–1939: An Introduction to the Study of International Relations*, 2d ed. (London: Macmillan, 1962); Kenneth N. Waltz, *Theory of International Politics* (Reading, MA: Addison-Wesley, 1979).
4. Jack S. Levy, "The Polarity of the System and International Stability: An Empirical Analysis," in *Polarity and War*, edited by Alan Ned Sabrosky, 41-66 (Boulder, CO: Westview Press, 1985), 58.
5. William R. Thompson, "Polarity, the Long Cycle, and Global Power Warfare," *Journal of Conflict Resolution*, vol. 30, n.4, (1986): 587.
6. Nuno P. Monteiro argues that multipolar systems are relatively more unstable for four reasons: "First, with three or more regional powers, there is a high likelihood of competition that can eventually lead to conflict. Second, the regional distribution of power is less likely to be balanced before alliances are made. Imbalances of power are more likely to generate predatory conflicts, with two or more states ganging up on another. Third, regional multipolarity increases the potential for miscalculations about relative power, which, in turn, raise the odds of conflict. Finally, multipolar regions present ample opportunities for buck-passing, making balancing more difficult." Nuno Monteiro, *Theory of Unipolar Politics* (New York: Cambridge University Press, 2014), 34. Monteiro's analysis, based on the Correlates of War database (correlatesofwar.org), also suggests that great powers spend the highest percentage of years at war in unipolar systems.

7. Claude Inis has written that historically, “moderation and restraint characterized the game of power politics in Europe” during eras of successful balance of power, but nationalism, democracy, and various ideological currents undermined the culture of restraint and led to the breakdown of the balance of power. (See Claude, Inis L. “The Balance of Power Revisited,” *Review of International Studies* 15, no. 2 (1989): 77-85. <http://www.jstor.org/stable/20097172>, 80.)
8. Monteiro, *Theory of Unipolar Politics*, 21.
9. See Thomas Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966); Kenneth N. Waltz, “The Origins of War in Neorealist Theory,” in *The Origin and Prevention of Major Wars*, edited by Robert I. Rotberg and Theodore K. Rabb 39-52 (Cambridge, UK: Cambridge University Press, 1988) <http://www.jstor.org/stable/204817>; Kenneth N. Waltz, “Nuclear Myths and Political Realities,” *American Political Science Review*, vol. 84, no. 3 (September 1990), 731-745; Erik Gartzke and Quan Li, “War, Peace, and the Invisible Hand: Positive Political Externalities of Economic Globalization,” *International Studies Quarterly*, vol. 47, n.4, 2003): 561–86, http://pages.ucsd.edu/~egartzke/publications/gartzke_li_isq_03.pdf; Hoon Lee, “Economic Globalization and Territorial Disputes,” Gulen Institute, http://www.guleninstitute.org/publications/analyses/294-economic-globalization-and-territorial-disputes-122/#_ftn11; Philippe Martin, Thierry Mayer, and Mathias Thoenig, “Make Trade Not War?” *Review of Economic Studies*, vol. 75, no. 3 (2008): 865–900, <http://www.parisschoolofeconomics.eu/docs/koenig-pamina/martinmayerthoenig.pdf>; and Nuno Monteiro, “Unrest Assured: Why Unipolarity Is Not Peaceful,” *International Security*, vol. 36, no. 3 (Winter 2011–12): 9–40, http://www.mitpressjournals.org/doi/pdf/10.1162/ISEC_a_00064.
10. James R. Holmes, “China’s War on Maritime Law,” *Diplomat*, September 4, 2014, <http://thediplomat.com/2014/09/chinas-war-on-maritime-law/>.
11. The U.S. Department of Defense lists the Chinese requirements as “excessive demands” deemed incongruous with international law and conducts challenges to such demands under the title of Freedom of Navigation Operations. See U.S. Department of Defense, *Asia-Pacific Maritime Security Strategy*, 2015, 7, http://www.defense.gov/Portals/1/Documents/pubs/NDAA%20A-P_Maritime_Security_Strategy-08142015-1300-FINALFORMAT.PDF.
12. Bonnie Glaser, “People’s Republic of China Maritime Disputes,” CSIS, January 14, 2014, https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/attachments/ts140114_glaser.pdf; and Jim Sciutto, “Chinese Navy Ships Entered U.S. Waters Off Alaskan Coast,” CNN Politics, September 4, 2015, <http://www.cnn.com/2015/09/04/politics/china-ships-alaska-us-waters/>.
13. For many analysts, economic globalization makes conflict less likely owing to the forgone opportunity cost of trade and investment in the event of conflict, the mobility of foreign direct investment in response to crises and conflicts, and the decreased strategic importance of territory and resources versus wealth gained through trade. See Daniel Griswold, “Trade and Globalization Play a Major Role in Reducing World Conflict,” *Manzella Report*, January 1, 2006, <http://www.manzellareport.com/index.php/trade-finance/416-trade-and-globalization-play-a-major-role-in-reducing-world-conflict>; Gartzke and Li, “War, Peace, and the Invisible Hand”; Reuven Glick and Alan M. Taylor, “Collateral Damage: Trade Disruption and the Economic Impact of War,” Federal Reserve Bank of San Francisco, working paper 2005–11, <http://www.nber.org/papers/w11565.pdf>; Lee “Economic Globalization and Territorial

Disputes.” Lee states that territorial disputes are less likely to escalate to conflict in the era of globalization because conflict incurs high opportunity costs of forgone trade and investment; trade encourages specialization in the production of goods and services and makes traders and consumers dependent on foreign markets; and the full capital mobility of foreign direct investments makes breaking trading ties even more costly and forces policymakers toward peaceful resolution.

14. The commitment of most Asian states to the current status quo, centered on largely free trade systems and existing multilateral regimes for promoting stability and prosperity and resolving disputes, is reflected in the growth of free trade zones and the deepening pattern of trade interdependence across the region. See Frances Ng and Alexander Yeats, “Major Trade Trends in East Asia: What Are Their Implications for Regional Cooperation and Growth?,” World Bank Group, June 2003, <http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-3084>; United Nations Economic and Social Commission for the Asia Pacific, *Asia-Pacific Trade and Investment Report 2014: Recent Trends and Developments*, 2014, <http://www.unescap.org/sites/default/files/APTIR%202014%20-%20Full%20Report.pdf>; Emiko Fukase and Will Martin, “Free Trade Area Membership as a Stepping Stone to Development: The Case of ASEAN,” World Bank Discussion Paper no. 421, 2001; John Larkin, “(Still) Moving Towards Free and Open Trade,” *Russia Beyond the Headlines*, January 10, 2013, http://rbth.asia/articles/2013/01/10/still_moving_towards_free_and_open_trade_21423.html.
15. Michael D. Swaine et al., *Conflict and Cooperation in the Asia-Pacific Region: A Strategic Net Assessment* (Washington, DC: Carnegie Endowment for International Peace, 2015), 97.
16. *Ibid.*, 205–06.
17. *Ibid.*, 36.
18. *Ibid.*, 36–38.
19. Swaine et al., *China’s Military and the U.S.-Japan Alliance in 2030*, 38.
20. As Heginbotham states, for the United States, “doubling down on the current force posture by acquiring the offensive systems necessary to strike quickly at the outset of a conflict to reassert U.S. dominance, as some have advocated, is both unaffordable and unlikely to succeed. The capabilities necessary to pursue such a course could undermine stability by contributing to growing incentives for both sides to strike first in the event of crisis.” Eric Heginbotham and Jacob L. Heim, “Deterring Without Dominance: Discouraging Chinese Adventurism Under Austerity,” *Washington Quarterly*, vol. 38, no. 1 (2015): 196.
21. Some analysts have offered another somewhat defense-oriented alternative to the current U.S. offensive war-fighting strategy as a less escalatory and costly alternative means of maintaining U.S. predominance in the Western Pacific: the so-called offshore-control strategy. This strategy envisions a long-range blockade of China in a conflict, focusing on controlling access to the Indian Ocean as well as the South China and East China Seas. Its supposed advantages include the fact that major U.S. assets would lie largely outside the reach of China’s counterintervention forces, centered on land-based ballistic and cruise missiles and fighter aircraft. T. X. Hammes, “Offshore Control: A Proposed Strategy for an Unlikely Conflict,” International Institute for Strategic Studies, Strategic Forum, National Defense University, June 2012, www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA577602. However, offshore control also has many features that make it largely undesirable as an alternative predominance strategy. First, it would require a significantly higher level of U.S. naval, air, and possibly ground

support capabilities than currently exist in the Western Pacific, sufficient to create and sustain a far-flung blockade at a considerable distance from China. Second, it is difficult to see how such a blockade would be implemented. One cannot easily identify the destination of the thousands of oil tankers that cross the Western Pacific each month. Often, their cargo will change ownership, and hence destination, while in transit. Third, such a blockade would very likely require the de facto abandonment of key U.S. allies and partners, most notably Japan. Tokyo would fall outside the zone of U.S. operations of an offshore-control strategy, thereby creating extreme insecurities that might cause Japan to develop an independent security posture, perhaps involving the acquisition of nuclear weapons. Fourth, this strategy would probably constitute a weaker conventional deterrent by offering China the chance to establish a *fait accompli* difficult to reverse, by, for example, a sudden seizure of territories within the blockade area. See Heginbotham and Heim, “Deterring Without Dominance”; Christopher Layne, “The (Almost) Triumph of Offshore Balancing,” *National Interest*, January 17, 2012, <http://nationalinterest.org/commentary/almost-triumph-offshore-balancing-6405>; Barry R. Posen, “The Case for Restraint,” *American Interest*, vol. 3, no. 1 (November–December 2007), <http://www.the-american-interest.com/2007/11/01/the-case-for-restraint/>; Stephen M. Walt, “The End of the American Era,” *National Interest*, November–December 2011, <http://nationalinterest.org/article/the-end-the-american-era-6037>; Stephen G. Brooks, G. John Ikenberry, and William C. Wohlforth, “Don’t Come Home, America: The Case Against Retrenchment,” *International Security*, vol. 37, no. 3 (Winter 2012–13), 7–51.

22. Heginbotham and Heim, “Deterring Without Dominance,” 196–97.

3. THE SEVEN COMPONENTS OF A STABLE BALANCE OF POWER

1. For a variant of these features, see Heginbotham and Heim, “Deterring Without Dominance”; and Andrew S. Erickson, “Deterrence by Denial: How to Prevent China From Using Force,” *National Interest*, December 16, 2013, <http://nationalinterest.org/commentary/war-china-two-can-play-the-area-denial-game-9564>.
2. Heginbotham and Heim, “Deterring Without Dominance”; Erickson, “Deterrence by Denial.” Also see Michael Gerson and Daniel Whiteneck, “Deterrence and Influence: The Navy’s Role in Preventing War,” *CNA Strategic Studies*, March 2009, https://www.cna.org/CNA_files/PDF/D0019315.A4.pdf.
3. Heginbotham and Heim, “Deterring Without Dominance”; Erickson, “Deterrence by Denial.” To remain operationally effective, U.S. carriers would need to significantly improve the combat radius of their mainstay combat aircraft: the FA-18 E/F, the F-22, and F-35 fighters. Currently, the Super Hornet’s radius is only 722 kilometers (390 nautical miles). The Chinese DF-21D ASBM has a range of about 1,500 kilometers (810 nautical miles), which forces U.S. carriers to operate within the range of the DF-21D missile even if the United States is not aiming at mainland Chinese targets. To raise the cost to Beijing of initiating a conflict, the United States would benefit from fighters with longer legs. The Raptor’s radius is 760 kilometers (410 nautical miles), and the F-35B (STOVL), the only model that has been deployed, has a radius of 845 kilometers (456 nautical miles). These are likely to be operated from air bases in Japan, probably Kadema or Futenma, which is around 1,000 kilometers from

the Taiwan Strait but around two to three times that distance from potential conflict zones in the South China Sea. This would necessitate aerial refueling, which exposes the fighters to greater risk in a dangerous combat scenario. The F-35A (conventional) and F-35C (carrier-based) have longer ranges at over 1,130 kilometers (over 610 nautical miles), which means that a sufficient number of F-35C could lower the risk to which U.S. carriers are exposed while still imposing a heavy enough cost to Chinese fighters.

4. Heginbotham and Heim, "Deterring Without Dominance," 194.
5. *Ibid.*, 194. Also see Hammes, "Offshore Control." Although Hammes argues in favor of a long-distance blockade strategy against China that is not being proposed here, he does advocate for denial capabilities that "allow U.S. and allied forces to fight as part of an integrated air-sea defense over their own territories."
6. Heginbotham and Heim, "Deterring Without Dominance," 195.
7. Thomas Mahnken, "Cost-Imposing Strategies: A Brief Primer," Maritime Strategy Series, Center for a New American Security, November 2014, http://www.cnas.org/sites/default/files/publications-pdf/CNAS_Maritime4_Mahnken.pdf.
8. Bob Work, "The Third U.S. Offset Strategy and its Implications for Partners and Allies," speech presented at the Willard Hotel, Washington, D.C., January 28, 2015, <http://www.defense.gov/News/Speeches/Speech-View/Article/606641/the-third-us-offset-strategy-and-its-implications-for-partners-and-allies>.
9. Bonnie Glaser and Mira Rapp-Hooper note that a significant aspect of these two CBM agreements is that

both the code of conduct for encounters at sea and the notification of major military activities agreement are voluntary and confidential. They are voluntary in that neither agreement is binding and the parties can discontinue their participation at any time. And they are confidential in that neither the US or China is to make any third party disclosures about their assessments under these agreements. The voluntary, non-binding nature of the accords obviously means that reciprocity cannot be guaranteed. . . and confidentiality will make it especially hard to know if the US and China are, in fact, notifying each other as they have promised to do and complying with the rules for ship-to-ship encounters. . . . Other landmark CBMs, such as the 1972 US-USSR Incidents at Sea Agreement, do not include these provisions. And while, of course, the purpose of these CBMs is to build ties between the US and Chinese militaries, these unique features mean that the implementation of these agreements will be especially hard for interested observers to monitor.

See Mira Rapp-Hooper and Bonnie Glaser, "In Confidence: Will We Know If US–China CBMs Are Working?," Asia Maritime Transparency Initiative, Center for Strategic and International Studies, February 4, 2015, <http://amti.csis.org/in-confidence-will-we-know-if-us-china-cbms-are-working/>. Also see Mira Rapp-Hooper, "What's in a Confidence Building Measure?," *Lawfare: Hard National Security Choices*, February 8, 2015, accessed March 28, 2016, <https://www.lawfareblog.com/whats-confidence-building-measure>.

10. The following CMMs resulted from a multiyear collaborative project on Sino-U.S. crisis management jointly administered by the Carnegie Endowment for International Peace and the China Foundation for International and Strategic Studies in Beijing.

For discussions of the above CBMs, see Joseph L. Sheffield, Major, USAF, "Military to Military Confidence Building Measures and Cooperation With the PRC," Air Command and Staff College, Air University, April 2009, <http://www.dtic.mil/dtic/tr/fulltext/u2/a539454.pdf>; and Bonnie Glaser, "Cross-Strait Confidence Building: The Case for Military Confidence-Building Measures," in *Breaking the China-Taiwan Impasse*, edited by Donald S. Zagoria and Chris Fugarino, 155-182 (Westport, CT: Praeger Publishers, 2003). Also see Kyle Churchman, "Building a New Type of U.S.-China Military-to-Military Relationship: An Interview With Major General Yao Yunzhu," National Bureau for Asian Research, September 19, 2015, <http://xivisit.nbr.org/2015/09/19/building-a-new-type-of-u-s-china-military-to-military-relationship/>.

11. These professional crisis managers could organize exercises to increase the ability of decision-makers to see a crisis from the other side's perspective. Such exercises would focus on reminding decisionmakers of the need to respect the other side and to understand the other side's sensitivity to face or image. These presentations would focus on explaining the other side's assumptions, perceptions, and biases in a crisis. Such exercises could reduce misunderstandings of others' intentions, providing leaders with a more realistic understanding of the other side's threat perception.
12. Michael Swaine, "Beyond American Predominance in the Western Pacific: The Need for a Stable U.S.-China Balance of Power," Carnegie Endowment for International Peace, April 20, 2015, <http://carnegieendowment.org/2015/04/20/beyond-american-predominance-in-western-pacific-need-for-stable-u-s-china-balance-of-power-pub-59837>.
13. See David F. Helvey, "Korean Unification and the Future of the U.S.-ROK Alliance," Strategic Forum, National Defense University, February 2016, <http://ndupress.ndu.edu/Portals/68/Documents/stratforum/SF-291.pdf>.
14. *Guidelines for U.S.-Japan Defense Cooperation*, United States Department of Defense, http://archive.defense.gov/pubs/20150427_--_GUIDELINES_FOR_US-JAPAN_DEFENSE_COOPERATION.pdf, April 27, 2015, 12.
15. Andrew F. Krepinevich, "How to Deter China: The Case for Archipelagic Defense," *Foreign Affairs*, 9:2 (March/April 2015): 80-84.
16. Sheryn Lee and Ben Schreer, "Time to Start Worrying Again? Cross Strait Stability After the 2016 Taiwanese Elections," ETH Zurich, Center for Security Studies, March 22, 2016, <http://www.css.ethz.ch/en/services/digital-library/articles/article.html/196375>.
17. "Six Assurances to Taiwan," July 1982, Taiwan Documents Project, <http://www.taiwandocuments.org/assurances.htm>.
18. H.R. 2479, Taiwan Relations Act, <https://www.congress.gov/bill/96th-congress/house-bill/2479>.
19. For the argument on restoring equilibrium in the Spratly islands, see Michael McDevitt, "The South China Sea: Island Building and Evolving U.S. Policy," forthcoming.
20. Discussed by Mark E. Redden and Philip Saunders, "Managing Sino-U.S. Air and Naval Interactions: Cold War Lessons and New Avenues of Approach," *China Strategic Perspectives* 5, Institute for National Strategic Studies, September 2012, <http://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-5.pdf>.

21. Sanchita Basu Das, "TPP and RCEP: Competing or Complementary Models of Economic Integration?" Brookings Institution, February 11, 2014, 23, http://www.brookings.edu/-/media/events/2014/2/11-asia-pacific-economic-integration/20140211_tpp_rcep_transcript.pdf.
22. "Into the Home Stretch," *Economist*, July 25, 2015, <http://www.economist.com/news/finance-and-economics/21659716-all-its-flaws-biggest-trade-deal-years-good-news-world>.
23. As noted in the Peterson Institute report, "This estimate is based on a consolidation reached from the TPP and Asian tracks through compromise; it uses a template that is the average of the TPP and Asian track templates. A stricter TPP template would yield even greater gains. . . . Economies that participate in only one track would be especially important beneficiaries from consolidation: TPP and Asian track economies would roughly triple the gains that they could achieve on their own tracks. By contrast, economies that participate on both tracks and thus have access to both markets before consolidation would gain much less; for them, the FTAAP would add only 15 percent more income." Peter A. Petri, Michael G. Plummer, and Fan Zhai, "The Trans-Pacific Partnership and Asia-Pacific Integration: A Quantitative Assessment," *Policy Analyses in International Economics* 98, November 2012, 40–43, http://www.piie.com/publications/chapters_preview/6642/04iie6642.pdf.
24. Evan A. Feigenbaum, "The New Asian Order," *Foreign Affairs*, February 2, 2015, <https://www.foreignaffairs.com/articles/east-asia/2015-02-02/new-asian-order>.
25. *Ibid.*

4. GETTING TO A STABLE BALANCE OF POWER

1. An example of a "separated but coordinated" approach is Joshua Cooper Ramo's "co-evolution." Joshua Cooper Ramo, "How to Think About China," *Time*, April 19, 2010, 30–31, <http://www.strongwindpress.com/pdfs/tuijian/wuschina.pdf>.
2. Ho-Won Jeong, *Understanding Conflict and Conflict Analysis* (London: SAGE, 2008), 208.
3. R. J. Rummel, *The Just Peace*, vol. 5 in *Understanding Conflict and War* (London: SAGE, 1981), chap. 9, <https://www.hawaii.edu/powerkills/NOTE10.HTM>.
4. *Ibid.*, chap. 10.
5. *Ibid.*, chap. 10.
6. Byron Bland, "Building Trust Through Unilateral Strategies," *Palestine-Israel Journal*, vol. 13, no. 2 (2006), <http://www.pij.org/details.php?id=817>.
7. Lyle J. Goldstein, *Meeting China Halfway: How to Defuse the Emerging U.S.-China Rivalry* (Washington, DC: Georgetown University Press, 2015), 12, 14.
8. *Ibid.*, 14.
9. Robert Axelrod and Robert O. Keohane, "Achieving Cooperation Under Anarchy: Strategies and Institutions," *World Politics*, vol. 38, no. 1 (October 1985): 245. Also see Michael D. McGinnis, "Issue Linkage and the Evolution of International Cooperation," *Journal of Conflict Resolution*, vol. 30, no. 1 (March 1986): 151.

10. Ibid., 246.
11. Rummel, *The Just Peace*, chapter 10.
12. Bland, “Building Trust Through Unilateral Strategies.” One such emphasis on unilateral initiatives involving eventual reciprocity is termed GRIT (the “Graduated and Reciprocated Initiatives in Tension Reduction” proposed by Charles Osgood in 1962). It focuses on “unilateral initiatives aimed at a series of cooperative moves,” where one party makes “unilateral, persistent initial concessions” as a proof of goodwill in order to break a dead-lock or establish the potential for further concessions if the opponent agrees to cooperate. GRIT is arguably much more permissive than a pure reciprocal (tit-for-tat) strategy; however, since reciprocity is not guaranteed, “a conciliatory concession normally commences with a small step at a time so that the gradual move will not risk the initiator’s security.” See Ho-Won Jeong, *Understanding Conflict and Conflict Analysis*, 209. Jeong writes that “this concession might be small, but has to be persistent with an irreversible commitment. An invitation to reciprocate is made in a subtle manner rather than being presented as an explicit demand. Eventually, gradual tension reduction builds a safe environment for taking more bold initiatives. The psychological effects of a series of unilaterally undertaken acts are supposed to erode perceptions of threats.” (210)
13. Bland, “Building Trust Through Unilateral Strategies.”
14. Axelrod and Keohane, “Achieving Cooperation Under Anarchy,” 239.
15. A caveat to this strategy is that it succeeds only if the interests of the two players are complementary and there is a mutual understanding of which issues incur which payoffs for which player.
16. Robert E. Tollison and Thomas D. Willet, “An Economic Theory of Mutually Advantageous Issue Linkage in International Negotiations,” *International Organization* 33 (Fall 1979): 425–49.
17. McGinnis, “Issue Linkage and the Evolution of International Cooperation.”
18. Ibid., 141, 158.
19. Mark R. Brawley, “The Political Economy of Balance of Power Theory,” in *Balance of Power: Theory and Practice in the 21st Century*, edited by T. V. Paul, James J. Wirtz, and Michel Fortmann (Stanford, CA: Stanford University Press, 2004), 86.
20. Increasingly long R&D cycles for weapon systems, for example, could mitigate the above concern.
21. This description of the intended strategic dialogue is taken from Michael D. Swaine, *America’s Challenge* (Washington, DC: Carnegie Endowment for International Peace, 2011), 354–55.

APPENDICES

1. “2010 Chinese R&D Researchers Continue to Rank First in the World” [2010 Nian Woguo R&D Renyuan Zongliang Jixu Weiju Quanqiu Shouwei], China Science and Technology Statistics [Zhongguo Keji Tongji], February 10, 2012, <http://www.sts.org.cn/nwdt/gndt/document/2012/2012070304.htm>.

2. World Bank, World Development Indicators database, <http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators>.
3. Regression equation: $y = 0.078592179x + 500.7350373$. Although the equation is a linear regression equation ($y = mx + b$), because the actual and forecasted GDP numbers are not linear the graph does not show a linear line.
4. Regression equation: $y = 0.100213686x + 2433.328087$. Again, the graphed line is not linear because the actual and forecasted GDP numbers do not increase at a linear pace.
5. Roger Cliff, *China's Military Power: Assessing Current and Future Capabilities* (Cambridge, UK: Cambridge University Press, 2015), 88–89.
6. Todd Harrison, "Analysis of the FY 2015 Defense Budget," Center for Strategic and Budgetary Assessments, 2014, http://www.govexec.com/media/gbc/docs/pdfs_edit/analysis-of-the-fy-2015-defense-budget.pdf. This growth rate is also buttressed by data published by Philpott Ball & Werner (PB&W). PB&W, "U.S. Department of Defense Procurement and RDT&E Report, GFY 2014," September 2013, 37–55, <http://www.pbandw.com/wp-content/uploads/2013/09/DoD-Procurement-RDTE-Analysis-2014.pdf>.
7. U.S. Air Force, "USAF Almanac 2014," 38.
8. p value = 2.09E-12.
9. p value = 8.50E-08.
10. p value = 7.89E-15.
11. $R^2 = 0.845$, p value = 0.08.
12. $R^2 = 0.7$.
13. $R^2 = 0.835$; p value = 1.32E-18.
14. The eight types are Han (Type 091/091G SSN), Shang (Type 093/093A SSN), Jin (Type 094 SSBN), Kilo SS of Russian design, Ming (Type 035 SS), Song (Type 039 SS), Yuan (Type 039A SS), and Qing (Type 032 SS).
15. O'Rourke, "PLAN Force Structure: Submarines, Ships, and Aircraft," 147.
16. O'Rourke, "China Navy Modernization: Implications for U.S. Navy Capabilities; Background and Issues for Congress," *Congressional Research Service*, May 31, 2016, <https://news.usni.org/wp-content/uploads/2016/06/RL33153.pdf>.
17. Richard D. Fisher Jr., and James Hardy, "U.S. Upgrades Assessment of China's Type 094 SSBN Fleet," *IHS Jane's 360*, April 20, 2015, <http://archive.is/EIS1y>.
18. These are Los Angeles (SSN), Ohio (SSGN and SSBN), Seawolf (SSN), and Virginia (SSN).
19. U.S. Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century*, April 2015, 13, <https://fas.org/nuke/guide/china/plan-2015.pdf>.
20. *2015 Annual Report to Congress*, U.S.-China Economic and Security Review Commission, November 2015, 241, http://origin.www.uscc.gov/sites/default/files/annual_reports/2015%20Annual%20Report%20to%20Congress.PDF.
21. The eight classes of Chinese destroyers are Luda (Type 051 DDGM/DDGHM), Luhai (Type 051-B DDGHM), Luhu (Type 052 DDGHM), Luyang I (Type 052-B DGHM), Luyang II

- (Type 052-C DDGHM), Luyang III (Type 052-D DDGHM), Luzhou (Type 051-C DDGHM), and Sovremenny (Project 956E DDGHM).
22. Manny Salvacion, “China Building Type 055 Destroyer More Powerful Than U.S. Arleigh Burke-Class,” *Yibada.com*, July 3, 2015, <http://en.yibada.com/articles/42579/20150703/china-type-055-destroyer-u-s-arleigh-burke-class.htm>.
 23. Ching Chang and Toshi Yoshihara, quoted in Wendell Minnick, “China’s DDGs Set to Outnumber Neighbors,” *Defense News*, January 8, 2015, <http://www.defensenews.com/story/defense/naval/ships/2015/01/08/taiwan/21379159/>.
 24. Dennis M. Gormley, Andrew S. Erickson, and Jingdong Yuan, *A Low Visibility Force Multiplier: Assessing China’s Cruise Missile Ambitions* (Washington, DC: National Defense University Press, 2014), 79.
 25. The three classes are Freedom-class littoral-combat ship (flight 0), Independence-class littoral-combat ship (flight 0), and Oliver Hazard Perry (FFH).
 26. The six classes of Chinese frigates are Jianghu I/V (053-H FFG), Jianghu III (Type 052 H2 FFG), Jiangkai I (Type 054 FFGHM), Jiangkai II (Type 054-A FFGHM), Jiangwei I (Type 053 FFGHM), and Jiangwei II (Type 053-H FFGHM).
 27. Christopher H. Sharman, “China Moves Out: Stepping Stones Toward a New Maritime Strategy,” *China Strategic Perspectives*, no. 9, National Defense University, 9–15, <http://inss.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-9.pdf>.
 28. Rear Admiral Michael McDevitt, quoted in Prashanth Parameswaran, “Will China Have a Mini U.S. Navy by 2020?” *Diplomat*, July 30, 2015, <http://thediplomat.com/2015/07/will-china-have-a-mini-us-navy-by-2020/>.
 29. Bernard D. Cole, “The People’s Liberation Army in 2020–30: Focused on Regional Issues,” in *The Chinese People’s Liberation Army in 2025*, edited by Roy Kamphausen and David Lai, (Carlisle Barracks, PA: U.S. Army War College Press, 2015), 165–206.
 30. “Richard Fisher: Chinese Aircraft Carriers May Achieve Global Deployment by the 2020s” [Fei Xueli: 2020 Niandai, Zhongguo Hangmu Quanqiu Bushu], *World Journal*, February 4, 2015, <http://www.worldjournal.com/1706347/article-費雪禮：2020年代-中國航母全球部署/?ref=首頁>.
 31. Wenwei Po [文汇报], “China May Build 5 Carriers and Become ‘Number Two in the World’” [Zhongguo Nijian 5 Hangmu, Chengqi “Shijie Di’er”], January 24, 2014, <http://news.wenweipo.com/2014/01/24/IN1401240002.htm>.
 32. Ryan Martinson, “China’s Second Navy,” *Proceedings Magazine* [U.S. Naval Institute], vol. 141/4/1,346 (April 2015), <http://www.usni.org/magazines/proceedings/2015-04-0/chinas-second-navy>.
 33. IISS, *The Military Balance 2015*, 45.
 34. These include A-10C, F-15C, F-15D, F-15E, F-16C, F-16D, F-22A, and F-35. U.S. Air Force, “USAF Almanac 2014,” 34.
 35. *Ibid.*, 52.
 36. USPACAF, “Info.”

37. These include J-7, J-7E, J-7G, J-8B, J-8F, J-8H, J-11, Su-27SK, Su-27UBK, J-10, J-10A, J-10S, J-11B/BS, JH-7A, Su-30MKK, and Q-5C/D/E Fantan.
38. Chinese combat-capable naval aviation aircraft number 332, of which 228 are fighters or attack aircraft. These include J-8F, JH-7/JH-7A, J-10A, J-10S, J-11B/BS, and Su-30MK2. IISS, *The Military Balance 2015*, 241.
39. The 2010 aircraft types were J-7, J-7E, J-7G, J-8B, J-8F, J-8H, J-11, Su-27SK, Su-27UBK, J-10, J-10S, J-11B, JH-7/JH-7A, Su-30MKK, and Q-5C/D/E Fantan. IISS, *The Military Balance 2011* (London: Routledge, 2011), 234.
40. Heginbotham and Heim, "Deterring Without Dominance," 187.
41. $R^2 = 0.881$; p value = 0.000278.
42. According to another set of regression analysis, based again on data between 2010 and 2015, naval aviation fighters and attack aircraft could number around 567 by 2040 ($R^2 = 0.48$, p value = 0.03).
43. J-10, including J-10A, and J-10S, first reached initial operational capabilities in 2004. J-11 includes J-11B/BS. J-7, including J-7E and J-7G, first entered service in 1965. JH-7A first entered service in 1998. J-8B, J-8F, and J-8H first entered service in 1990. Q-5C Fantan first entered service in 1985. Numbers of each type currently operated by the PLAAF come from *The Military Balance*. Year of initial operational capability and first year of service entry come from IHS Jane's, *All the World's Aircraft* database.

The lower estimate of China's land-based fighter fleet is derived by assuming a retirement age of twenty-five years for all types of fighters. The upper estimate assumes that currently operational aircraft would still be operational by 2040.
44. IHS Jane's, *All the World's Aircraft*.
45. Dave Majumdar, "China vs. America in the Sky: A Stealth-Fighter Showdown Is Brewing," *National Interest*, November 14, 2014, <http://nationalinterest.org/feature/china-vs-america-the-sky-stealth-fighter-showdown-brewing-11676?page=2>.
46. IHS Jane's, *All the World's Aircraft*. Delays in F-35 delivery are of particular concern because currently, the Super Hornet is being used for air-to-air refueling in the carrier air wing, but the heavy takeoff weight when the aircraft is operating as a tanker is straining the F/A-18 fleet, and delays in F-35 delivery have already stretched out the lifespan of the F/A-18 fleet. Green et al., "Asia-Pacific Rebalance 2025," 129–130.
47. Chris Osborn, "Report: Chinese Air Force Closes Gap With U.S.," *Defense Tech*, December 4, 2014, <http://defensetech.org/2014/12/04/report-chinese-air-force-closes-gap-with-u-s/>.
48. T. X. Hammes, "Future War: Why Quantity Will Trump Quality," *Diplomat*, November 20, 2014, <http://thediplomat.com/2014/11/future-war-why-quantity-will-trump-quality/>.
49. IHS Jane's, *All the World's Aircraft*.
50. Dave Majumdar, "America's F-35 Stealth Fighter vs. China's New J-31: Who Wins?" *National Interest*, September 25, 2015, <http://nationalinterest.org/blog/the-buzz/americas-f-35-stealth-fighter-vs-chinas-new-j-31-who-wins-13938>.
51. Majumdar, "China vs. America in the Sky."

52. Green et al., “Asia-Pacific Rebalance 2025,” 120–21. Similarly, China’s DF-21D anti-ship ballistic missile, with a range of 1,087 miles, outranges the combat radius of F-35C by 400 miles, according to the 2013 “USAF Almanac,” which means that the carriers “may not be able to move close enough to targets to operate effectively or survive in an era of satellite imagery and long-range precision strike missiles.” Capt. Henry J. Hendrix, “At What Cost a Carrier?,” quoted in U.S. Air Force, “USAF Almanac 2013,” vol. 96, no. 05 (May 2013), 32, <http://www.airforcemag.com/MagazineArchive/Pages/TableOfContents.aspx?Date=05/2013>.
53. Ibid.
54. IISS, *The Military Balance 2015*, 241, 237.
55. Intermediate-range ballistic missiles refer to the DF-3A (CSS-2). Medium-range ballistic missiles are the DF-21 (CSS-5) and its variants (DF-21A, DF-21C, DF-21D). Short-range ballistic missiles refer to DF-11A (CSS-7) and DF-15/M-9 (CSS-6).
56. Data from *The Military Balance* before the 2010 edition has huge discrepancies with the 2010 edition and editions after that. For instance, in 2010, China possessed 204 SRBMs, but in 2009, the reported number was 725. Similarly, in 2010, China had 116 MRBMs, but the reported number in 2009 was 21. Data from the most recent five years is chosen, therefore, to reflect more current trends in growth.
- Linear regressions for intermediate-range ballistic missiles: $R^2 = 0.68$, p value = 0.043; for medium-range missiles: $R^2 = 0.88$, p value = 0.00013; for short-range missiles: $R^2 = 0.85$, p value = 0.0035.
57. There is also an unknown number of HQ-61A and HN-5A/-B/-C (SA-7 Type), QW-1, QW-2, and FN-6 in use. The exact number, however, is not available through *The Military Balance*, and IHS Jane’s database does not have any information on production, order, or delivery of these missiles.
58. Including HQ-12 (KS-1/2), HQ-15 (S-300), HQ-10, HQ-9, HQ-18, and HQ-19.
59. “Main Defense Product Range,” Almaz-Antey, http://www.almaz-antey.ru/en/catalogue/military_catalogue/.
60. Jeffrey Lin and P. W. Singer, “HQ-17: A Classic Russian Missile With a New Chinese Twist,” *Popular Science*, April 23, 2014, <http://www.popsci.com/blog-network/eastern-arsenal/hq-17-classic-russian-missile-new-chinese-twist>.
61. Duncan S. Lennon, *Jane’s Strategic Weapons Systems* (Coulsdon, UK: IHS Jane’s, 2011), 233.
62. Ibid., 233.
63. Ibid., 241.
64. Ibid., 237.
65. Catherine Putz, “Sold: Russian S-400 Missile Defense Systems to China,” *Diplomat*, April 14, 2015, <http://thediplomat.com/2015/04/sold-russian-s-400-missile-defense-systems-to-china/>.
66. Franz-Stefan Gady, “China to Receive Russia’s S-400 Missile Defense Systems in 12–18 Months,” *Diplomat*, November 17, 2015, <http://thediplomat.com/2015/11/china-to-receive-russias-s-400-missile-defense-systems-in-12-18-months/>.
67. “Hongqi-10 (HQ-10),” *Missile Threat*, November 8, 2012, <http://missilethreat.com/defense-systems/hongqi-10-hq-10/>.

68. IISS, *The Military Balance 2015*.
69. Hans M. Kristensen and Robert S. Norris, "Chinese Nuclear Forces, 2015," *Bulletin of the Atomic Scientists*, 77–80, <http://bos.sagepub.com/content/71/4/77.full.pdf>. Kristensen and Norris are both at the Federation of American Scientists.
70. Office of the Secretary of Defense, *Annual Report to Congress*, 8, http://www.defense.gov/Portals/1/Documents/pubs/2015_China_Military_Power_Report.pdf.
71. These are Oyashio (SSK) and Souryu (SSK).
72. Sentaku Magazine, "Japan's Crack Submarine Fleet," *Japan Times*, November 26, 2015, <http://www.japantimes.co.jp/opinion/2015/11/26/commentary/japan-commentary/japans-crack-submarine-fleet/#.Vrj5yDbtg4M>.
73. Australia Government, Department of Defence, "Defending Australia in the Asia Pacific Century: Force 2030," 64.
74. "Special Report: Big but Brittle," *Economist*, April 30 –May 7, 36–37.
75. The two types are Chang Bogo (Type 209/1200 SSK) and KSS-2 (Type 214 SSK).
76. The five types are Akula (Schuka-B SSN), Arihant (SSBN/SSGN), Scorpene (SSK), Shishumar (Type 209/1500 SSK), and Sindhughosh (Kilo Project 877EKM SSK).
77. Saunders, *IHS Jane's Fighting Ships 2015–2016*.
78. The nine classes are Akizuki (DDHM), Asagiri (DDGHM), Atago (DDGHM), Hatakaze (DDGHM), Hatsuyuki (DDGHM), Kongou (DDGHM), Murasame (DDGHM), Shirane (DDHM), and Takanami (DDGHM).
79. Andrew Shearer, "Australian Defense in the Era of Austerity: Mind the Expectations Gap," in *A Hard Look at Hard Power*, edited by Gary J. Schmitt (Carlisle Barracks, PA: U.S. Army War College Press, 2015), 35–66.
80. The three classes are KDX-2 (DDGHM), Kwanggaeto Daewang (KDX-1 DDGHM), and Sejong Daewang (KDX-3 DDGHM).
81. The three classes are Delhi (Project 15 DDGHM), Kolkata (Project 15A DDGHM), and Rajput (Kashin II Project 61ME DDGHM).
82. "Possible Transfer to the Philippines."
83. IISS, *The Military Balance 2015*, 240.
84. Ridzwan Rahmat, "Australia Retires Adelaide-Class Frigate HMAS Sydney," *IHS Jane's 360*, November 9, 2015, <http://www.janes.com/article/55843/australia-retires-adelaide-class-frigate-hmas-sydney>.
85. "Australia's Hazard(ous) Frigate Upgrades: Done at Last," *Defense Industry Daily*, March 16, 2014, <http://www.defenseindustrydaily.com/australias-hazardous-frigate-upgrade-04586/>.
86. These are: Brahmaputra (Project 16A FFGHM), Godavari (Project 16 FFGHM), Shivalik (Project 17 FFGHM), and Talwar (Project 1135.6 FFGHM).
87. Vikram Nehru, "The Reluctant Giant," in Tellis, Szalwinski, and Wills, *Strategic Asia 2015–2016*, 191–224.
88. *The Military Balance* specifies the Pillar-class frigate as a patrol and coastal combatants rather than a principal surface combatant or a frigate, but IHS Jane's classifies it as a frigate.

89. One Izumo-class carrier was commissioned in 2015, and another will be commissioned in 2017.
90. IHS Jane's, *Fighting Ships 2015–2016*.
91. Jung Sung-ki, "South Korea Envisions Light Aircraft Carrier."
92. IHS Jane's, *Fighting Ships 2015–2016*.
93. IISS, *The Military Balance 2015*, 260.
94. $R^2 = 0.85$, p value = 0.00069.
95. R^2 is very low, at only 0.03, but the p value, at 2.48E-10, is low enough to indicate statistical significance.
96. R^2 is very low, at only 0.44, and p value, at 0.42, is too high for this set of projections to be statistically significant.
97. Stockholm International Peace Research Institute, *SIPRI Trade Register*, http://armstrade.sipri.org/armstrade/page/trade_register.php.
98. Ibid.
99. IHS Jane's, *Fighting Ships 2015–2016*.
100. IHS Jane's, *All the World's Aircraft*. IISS, *The Military Balance 2015*, records 8 F-5E Tiger II.
101. IISS, *The Military Balance 2015*, 256.
102. Green et al., "Asia-Pacific Rebalance 2025," 129–130.
103. IISS, *The Military Balance, 1992 to 2015* (London: Routledge, 1992–2015).
104. The thirty-four classes of Japanese patrol and coast guard ships are Shikishima class (PLH/PSOH), Mizuho class (PLH/PSOH), Soya class (PLH/PSOH), Izu class (PL/PSOH), Miura class (PL/PSOH), Kojima class (PL/PSOH), Hida class (PL/PSO), Nojima class (PL/PSOH), Shiretoko class (PL/PSO), Ojika class (PL/PSOH), Aso class (PL/PSO), Hateruma class (PL/PSO), Kunigami class (PL/PSOH), Iwami class (PL/PSO), Taketomi class (PL/PSOH), Takatori class, Teshio class (PM/PSO), Amami class (PM/PBO), Tokara class (PM/PBO), 750-ton class (PM/PBO), Takatsuki class (PS/PBF), Mihashi and Raizan class (PS/PBF), Tsuruugi class (PS/PBOF), Yodo class (PC/YTR), Hayagumo class (PC/PBF), Kotonami class (PC/PB), Murakumo class (PC/PB), Akizuki class (PC/SAR), Asogiri class (PC/PB), Hayanami class (PC/PB/YTR), Matsunami class (PC/PB), Shimagiri class (PC/PB), coastal patrol and rescue craft (214 in total, no specified class), and Natsugiri class (PC/PB).
105. Hill, "Chinese Coast Guard to Build World's Largest Offshore Patrol Vessel."
106. Australia Government, Department of Defense, "Defending Australia in the Asia Pacific Century: Force 2030"; Mead, "On Track to Deliver Even More."
107. The twelve classes of South Korean Coast Guard ships are 1,200-ton class (PG), 430-ton class (PBO), inshore patrol craft, Bukhansan class (PBO), Hyundai Type, salvage ship (ARSH) (of various classes), Daewoo Type (PSO), Sambongho class (patrol ship PSO), P127 class (PB), Gunsan class (salvage ships), Tae Geuk class (PB), and Hae Uri class (PB).
108. The eleven classes of Indian Coast Guard ships are Sankalp class (offshore patrol vessels WPSOH), Samudra (UT 517) class pollution control vessels (WPSOH), Samar class (offshore patrol vessels WPSOH), Vikram class (offshore patrol vessels WPSOH), Priyadarshini

class (coastal patrol craft WPBO), Rani Abbakka class (PBO), Sarojini Naidu class (WPBO), interceptor craft (WPBF), Rajshree class (PBO), Aadesh class (PBO), and coastal interception craft (PBF). *The Military Balance* Coast Guard section excludes Vishwast class (WPSOH), Timblo class (patrol craft PB), Bristol class (inshore patrol craft WPBF), and Griffon 8000 TD(M) class Hovercraft, while IHS Jane's includes these. If these classes are included, the commissioning would be around 5.5, and would result in around 240 to 280 patrol craft by 2040.

109. The nine classes of Indonesian Coast Guard ships are disaster response ships (WPSO), buoy tender (WABU), Damen 6210 (offshore patrol ships WPSO), Damen 4810 (buoy tenders WABU), Damen 5811 (buoy tender WABU), KCR-40 class (patrol craft PB), Kujang class (WPB), Golok class (WSAR), and harbor patrol craft (WPB) (first six built in 1978 and 1979).
110. The fourteen types of Philippine Coast Guard ships are OCEA OPV 270 class (PBO), San Juan class (WPBO), Rodman 38 class (PB), Corregidor class (buoy tender ABU), Salsam class (tender AKLH), large patrol craft, PCF 46 class coastal patrol craft (PB), PCF 50 (Swift MK 1 and MK 2) class coastal patrol craft (PB), PCF 65 (Swift MK 3) class coastal patrol craft (PB), De Havilland class (PB), Rodman 101 class (PB), cutters (PBR), OCEA FPB 72 MK II (patrol craft PB), and Ilocos Norte class.
111. The four types are Damen 9014 class (PSO), Sea Wolf/Shark class (PBO), Patrol Ship, TT400TP class (PBO), and Mazinger class (PSO).

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