

# The Emerging Military Balance in East Asia

Michael Beckley

## How China's Neighbors Can Check Chinese Naval Expansion

For 70 years, the U.S. military has dominated the seas and skies of East Asia, enjoying almost total freedom of movement and the ability to deny such freedom to enemies. Now, however, China may be able to destroy U.S. ships, aircraft, and bases within 500 miles of China's territory and disrupt the satellite and computer networks that underpin U.S. military power throughout East Asia.<sup>1</sup> Many American analysts fear that China could use these antiaccess/area-denial (A2/AD) capabilities to hold the U.S. military at bay while enforcing its expansive territorial claims, which include most of the East and South China Seas.<sup>2</sup> Left unchecked, some analysts fear, China will eventually become the hegemon of East Asia and start projecting military power into other regions, including the Western Hemisphere.<sup>3</sup>

The debate about how the U.S. military should respond to China's A2/AD

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1. Andrew S. Erickson, *Chinese Anti-Ship Ballistic Missile Development: Drivers, Trajectories, and Strategic Implications* (Washington, D.C.: Brookings Institution Press, 2016); Evan Braden Montgomery, "Contested Primacy in the Western Pacific: China's Rise and the Future of U.S. Power Projection," *International Security*, Vol. 38, No. 4 (Spring 2014), pp. 115–149, doi:10.1162/ISEC\_a\_00160; and Eric Heginbotham et al., *The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996–2017* (Santa Monica, Calif.: RAND Corporation, 2015). On the limits of China's antiaccess/area-denial capabilities, see Stephen Biddle and Ivan Oelrich, "Future Warfare in the Western Pacific: Chinese Antiaccess/Area Denial, U.S. AirSea Battle, and Command of the Commons in East Asia," *International Security*, Vol. 41, No. 1 (Summer 2016), pp. 7–48, doi:10.1162/ISEC\_a\_00249.

2. Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People's Republic of China* (Washington, D.C.: U.S. Department of Defense, 2016), pp. 59–63; Robert Haddick, *Fire on the Water: China, America, and the Future of the Pacific* (Annapolis: Naval Institute Press, 2014); Roger Cliff et al., *Entering the Dragon's Lair: Chinese Antiaccess Strategies and Their Implications for the United States* (Santa Monica, Calif.: RAND Corporation, 2007); and Thomas J. Christensen, "Posing Problems without Catching Up: China's Rise and Challenges for U.S. Security Policy," *International Security*, Vol. 25, No. 4 (Spring 2001), pp. 5–40, doi:10.1162/01622880151091880.

3. Michael Pillsbury, *The Hundred-Year Marathon: China's Secret Strategy to Replace America as the Global Superpower* (New York: Henry Holt, 2015); Aaron L. Friedberg, *A Contest for Supremacy: China, America, and the Struggle for Mastery in Asia* (New York: W.W. Norton, 2012); and John J. Mearsheimer, *The Tragedy of Great Power Politics*, updated ed. (New York: W.W. Norton, 2014), chap. 10.

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capabilities has focused on two options. One option would be to gear up by preparing to wipe out China's offensive forces at the outset of a conflict.<sup>4</sup> The other would be to give up by withdrawing U.S. forces from East Asia, abrogating U.S. alliances in the region, and granting China a sphere of influence.<sup>5</sup>

Both options have drawbacks. The gear-up strategy would not only be expensive, but would also increase the risk of war by encouraging the United States and China to shoot first in a crisis.<sup>6</sup> The give-up option, on the other hand, would not only reduce U.S. influence in East Asia—the most economically vibrant area in the world—but also might embolden China to try to conquer parts of the region.

Does the United States have a third option? According to some analysts, the United States should split the difference between gearing up and giving up by adopting an “active denial” strategy.<sup>7</sup> Under this strategy, the United States would abandon efforts to command maritime East Asia and, instead, focus on helping China's neighbors deny China sea and air control in the region. In peacetime, the United States would bolster the A2/AD forces of China's neighbors by providing them with aid and arms. In wartime, the U.S. military

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4. U.S. Department of Defense, *AirSea Battle: Service Collaboration to Address Anti-Access and Area Denial Challenges* (Washington, D.C.: U.S. Department of Defense, May 2013); Michael E. Hutchens et al., “Joint Concept for Access and Maneuver in the Global Commons: A New Joint Operational Concept,” *Joint Forces Quarterly*, Vol. 84, No. 1 (January 2017), pp. 134–139; and U.S. Army and U.S. Marine Corps, “Multi-Domain Battle: Combined Arms for the 21st Century” (Fort Eustis, Va.: U.S. Army Training and Doctrine Command, 2017), [http://www.tradoc.army.mil/MultiDomainBattle/docs/MDB\\_WhitePaper.pdf](http://www.tradoc.army.mil/MultiDomainBattle/docs/MDB_WhitePaper.pdf).

5. Hugh White, *The China Choice: Why America Should Share Power* (Collingwood, Australia: Black, 2012); Eugene Gholz, “No Man's Sea: Implications for Strategy and Theory,” paper presented at the annual meeting of the International Studies Association, Atlanta, Georgia, March 16–19, 2016; and Charles L. Glaser, “A U.S.-China Grand Bargain? The Hard Choice between Military Competition and Accommodation,” *International Security*, Vol. 39, No. 4 (Spring 2015), pp. 49–90, doi:10.1162/ISEC\_a\_00199.

6. David Gompert and Terrence Kelly, “Escalation Cause: How the Pentagon's New Strategy Could Trigger War with China,” *Foreign Policy*, August 2, 2013, <http://foreignpolicy.com/2013/08/03/escalation-cause/>; Avery Goldstein, “First Things First: The Pressing Danger of Crisis Instability in U.S.-China Relations,” *International Security*, Vol. 37, No. 4 (Spring 2013), pp. 49–89, doi:10.1162/ISEC\_a\_00114; and T.X. Hammes, “Offshore Control: A Proposed Strategy for an Unlikely Conflict,” *Strategic Forum*, June 2012, pp. 1–14.

7. Eric Heginbotham and Jacob L. Heim, “Deterring without Dominance: Discouraging Chinese Adventurism under Austerity,” *Washington Quarterly*, Vol. 38, No. 1 (Spring 2015), pp. 185–199, doi:10.1080/0163660X.2015.1038189. See also William S. Murray, “Revisiting Taiwan's Defense Strategy,” *Naval War College Review*, Vol. 61, No. 3 (Summer 2008), pp. 13–38; James Holmes and Toshi Yoshihara, *Defending the Strait: Taiwan's Naval Strategy in the 21st Century* (Washington, D.C.: Jamestown Foundation, 2011); Toshi Yoshihara and James R. Holmes, “Asymmetric Warfare, American Style,” *Proceedings*, Vol. 138, No. 4 (April 2012), pp. 24–29; Toshi Yoshihara, “Sino-Japanese Rivalry at Sea: How Tokyo Can Go Anti-Access on China,” *Orbis*, Vol. 59, No. 1 (Winter 2015), pp. 62–75, doi:10.1016/j.orbis.2014.11.006; Andrew Krepinevich, “How to Deter China: The Case for Archipelagic Defense,” *Foreign Affairs*, Vol. 94, No. 2 (March/April 2015), pp. 78–86; and Terrence K. Kelly, David C. Gompert, and Duncan Long, *Smart Power, Stronger Partners*, Vol. 1: *Exploiting U.S. Advantages to Prevent Aggression* (Santa Monica, Calif.: RAND Corporation, 2016).

would back up China's neighbors by providing intelligence, logistics, and, if absolutely necessary, limited air and missile strikes on Chinese forces operating beyond China's shores.

This strategy, according to its proponents, would maintain deterrence by denying China the possibility of a decisive military victory while enhancing crisis stability by reassuring China that it will not suffer a massive attack on its homeland on the first day of a war. The potential Achilles' heel of the strategy, of course, is that it requires China's neighbors to hold the line against Chinese expansion for extended periods of time and perhaps indefinitely. Are they up to the task?

To date, there has been little rigorous research on this vital question. With few exceptions, American studies on the East Asian military balance suffer from a bilateral bias: they focus on U.S. and Chinese capabilities while ignoring the capabilities of China's neighbors.<sup>8</sup> For example, the most detailed studies of the military balance in the Taiwan Strait and South China Sea assume, implausibly, that Taiwan and Southeast Asian nations do nothing in their own defense and that the U.S. military has to save the day single-handedly.<sup>9</sup> As a result of this bilateral bias, it remains unclear whether the denial strategy described above is a viable option for the United States.

To address this shortcoming, this article assesses the local military balance in East Asia. Specifically, I analyze the extent to which China's neighbors can deny China sea and air control in the East and South China Seas and prevent China from conquering Taiwan.

Admittedly, this is a limited ambition, as I evaluate only the capabilities of China's neighbors, not their resolve to use them. China's neighbors have suggested, in both word and deed, that they would fight to defend their sovereignty and maritime claims, but one can imagine scenarios in which some of them shrink in the face of Chinese coercion. Without a systematic analysis of these nations' domestic politics, it is impossible to know how likely such scenarios are. That said, figuring out whether China's neighbors could repel Chinese military expansion is a vital first step in determining whether they would do so.

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8. Exceptions include Gholz, "No Man's Sea"; Roger Cliff, *China's Military Power: Assessing Current and Future Capabilities* (Cambridge: Cambridge University Press, 2015), chap. 9; Adam P. Liff, "Whither the Balancers? The Case for a Methodological Reset," *Security Studies*, Vol. 25, No. 3 (July 2016), pp. 420–459; James R. Holmes, "Strategic Features of the South China Sea: A Tough Neighborhood for Hegemons," *Naval War College Review*, Vol. 67, No. 2 (Spring 2014), pp. 30–51; Yoshihara, "Sino-Japanese Rivalry at Sea"; Holmes and Yoshihara, *Defending the Strait*; and Michael E. O'Hanlon, "Why China Cannot Conquer Taiwan," *International Security*, Vol. 25, No. 2 (Fall 2000), pp. 51–86, doi:10.1162/016228800560453.

9. Heginbotham et al., *The U.S.-China Military Scorecard*; and Kelly, Gompert, and Long, *Smart Power, Stronger Partners*, Vol. 1, chap. 5.

My main finding is that there is a budding balance of military power in East Asia, which the United States can reinforce at moderate risk to U.S. forces. Furthermore, this balance of power will remain stable for years to come, because China cannot afford the power-projection capabilities it would need to overcome the A2/AD forces of its neighbors. The main reasons are that power-projection forces are more expensive than A2/AD forces by an order of magnitude, China's economy is losing steam and has racked up massive debt, and homeland security operations consume large shares of China's military resources.

For the foreseeable future, therefore, China has little prospect of developing a force capable of conquering Taiwan or enforcing its maritime claims in the East or South China Seas—as long as China's neighbors remain willing to use their A2/AD forces and the United States continues to bolster and back-stop them.

This article proceeds in six sections. The first analyzes whether China can forge its own version of the Monroe Doctrine by establishing sea and air control throughout maritime East Asia. The second evaluates whether China can conquer Taiwan through an amphibious invasion, strategic bombing campaign, or naval blockade. The third considers whether China can establish sea and air control in parts of the East China Sea. The fourth analyzes the extent to which China can command the South China Sea. The fifth discusses constraints on future Chinese military modernization. The sixth considers implications for U.S. defense policy.

### *Regional Maritime Hegemony*

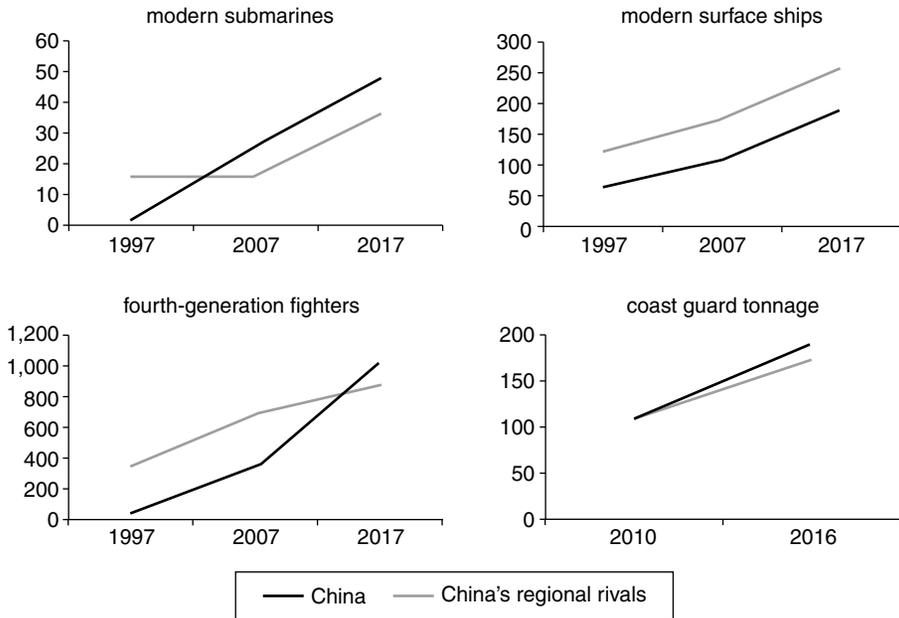
Only two nations in modern history have established regional maritime hegemony: the United States from the 1890s to the present and Japan in the 1930s and early 1940s. These cases suggest that China would need two things to enforce its own version of the Monroe Doctrine in East Asia: a regional monopoly of naval power and a military presence on the coasts surrounding the East and South China Seas. China, however, is nowhere close to achieving either of those objectives.

First, when the United States and Imperial Japan took control of their near seas, their navies accounted for 80 to 99 percent of the naval tonnage in their respective regions.<sup>10</sup> China's navy today, by contrast, accounts for less than 30 percent of Asia's naval tonnage and, as figure 1 shows, Asian nations that contest China's maritime claims have collectively matched China's procure-

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10. Brian Benjamin Crisher and Mark Souva, "Power at Sea: A Naval Power Dataset, 1865–2011," *International Interactions*, Vol. 40, No. 4 (2014), pp. 602–629, doi:10.1080/03050629.2014.918039.

Figure 1. Major Platforms of China and Countries around the East and South China Seas That Have Territorial Disputes with China, 1997–2017



SOURCES: International Institute for Strategic Studies (IISS), *The Military Balance*, Vol. 117, No. 1 (London: IISS, 2017); and Lyle J. Morris, “Blunt Defenders of Sovereignty: The Rise of Coast Guards in East and Southeast Asia,” *Naval War College Review*, Vol. 70, No. 2 (Spring 2017), pp. 75–112.

NOTES: China’s rivals are defined as those states with an ongoing maritime dispute with China and include Brunei, Indonesia, Japan, Malaysia, the Philippines, South Korea, Taiwan, and Vietnam. For the chart on coast guard tonnage, data were available only for Indonesia, Japan, Malaysia, the Philippines, and Vietnam. Modern ships and submarines are defined as those that are armed with antiship cruise missiles.

ment of modern submarines, ships, aircraft, and coast guard cutters over the past two decades. China’s navy may be the most powerful in Asia, but it is no police power.

Second, the United States and Imperial Japan occupied the landmasses around their near seas, lined the shores with military bases, and barred neighboring states from building independent navies. At the turn of the twentieth century, the United States annexed Puerto Rico; turned Cuba, the Dominican Republic, Haiti, Nicaragua, and Panama into U.S. protectorates; and periodically occupied Veracruz, Mexico’s only port on the Gulf of Mexico. Today, the U.S. military operates from facilities in Antigua, Aruba, the Bahamas, Colombia, Cuba, Curaçao, El Salvador, Honduras, Panama, and Puerto Rico.

Imperial Japan's coastal empire was even more extensive, including present-day Burma, Cambodia, Indonesia, Korea, Laos, Malaysia, the Philippines, Taiwan, Thailand, Vietnam, most of China's east coast, and numerous islands in the Pacific Ocean.

China today has no prospect of controlling the coasts of East Asia.<sup>11</sup> Its maritime neighbors are densely populated and possess modern militaries, and amphibious invasions have become extremely difficult, if not impossible, in an age of precision-guided munitions, a point I elaborate on later.

Given these obstacles to outright conquest, China has sought to expand on the sly via a "cabbage strategy," in which it wraps disputed waters in layers of coast guard, maritime militia, and fishing vessels—all backed by warships loitering just over the horizon.<sup>12</sup> This tactic, however, is unlikely to enable China to command maritime East Asia.

One reason for this is that China's neighbors have countered China's actions by bolstering their own coast guard fleets (figure 1). China's fleet remains the largest in Asia, but it is spread thin defending China's expansive claims, which encompass an area of nearly 2 million square miles. China's neighbors, by contrast, can concentrate their fleets around their more limited claims.

More important, China's neighbors have shown that they are willing to use military force against China's civilian vessels. Indonesia and Malaysia, for example, announced in 2016 that they would sink foreign vessels that fish or drill in their claimed waters in the South China Sea, and Indonesia made good on this promise at least three times in 2016, firing on Chinese fishing vessels and blowing them up on national television—all while Chinese coast guard cutters watched from a distance.

In sum, China is not poised to overrun maritime East Asia. In the following sections, therefore, I analyze whether China could accomplish more limited objectives, including conquering Taiwan or establishing sea control over parts of the East or South China Seas.

### *Conquering Taiwan*

Of all the nations impeding China's military rise in East Asia, none is more important than Taiwan. Conquering Taiwan is the primary warfighting mission of China's People's Liberation Army (PLA), and preparations for this cam-

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11. Andrew J. Nathan and Andrew Scobell, "China's Overstretched Military," *Washington Quarterly*, Vol. 35, No. 4 (Fall 2012), pp. 135–148, doi:10.1080/0163660X.2012.726438.

12. Andrew S. Erickson and Conor M. Kennedy, "China's Maritime Militia: What It Is and How to Deal with It," *Foreign Affairs*, June 23, 2016, <https://www.foreignaffairs.com/articles/china/2016-06-23/chinas-maritime-militia>.

paign consume roughly one-third of China's defense budget.<sup>13</sup> If China conquered Taiwan, it would free up dozens of ships, hundreds of missile launchers and combat aircraft, thousands of personnel, and billions of dollars. Moreover, China could use Taiwan as an "unsinkable aircraft carrier" to project military power into the western Pacific and to impose blockades on Japan and the Philippines. Most important, China would end the Chinese civil war once and for all and eliminate the world's only Chinese democracy, thereby bolstering the Chinese Communist Party's legitimacy.

For all these reasons, many strategists consider Taiwan to be a center of gravity in East Asia: in Taiwanese hands, the island is a defensive barrier against Chinese expansion; in Chinese hands, Taiwan could become a launching pad for Chinese aggression.<sup>14</sup>

A war over Taiwan could take several forms. China could try to invade and occupy Taiwan outright. Alternatively, it could try to coerce Taiwan by bombing Taiwan's cities and infrastructure or strangling Taiwan's economy with a blockade. Later, I discuss all three of these options.

First, however, I discuss whether China could destroy Taiwan's air, naval, and missile forces in a surprise air and missile attack. Such an attack would enable China to establish air superiority over and sea control around Taiwan—two crucial ingredients, if not outright prerequisites, for a successful invasion, strategic bombing campaign, or blockade.

#### SURPRISE AIR AND MISSILE STRIKES

According to PLA strategy documents, China would initiate a war with Taiwan by bombarding its air and naval bases, missile batteries, and command centers with salvos of ground- and air-launched missiles.<sup>15</sup> The goal would be to destroy most of Taiwan's air defenses and offensive forces before they have a chance to fight back.

This tactic would constitute China's only hope of establishing air and sea command in the Taiwan Strait, which in turn would be vital to a successful invasion, strategic bombing campaign, or blockade. If Taiwan retained substantial air defenses and offensive strike platforms, a Chinese amphibious invasion would be impossible, because Taiwan could pick off PLA landing craft as they motored across the Taiwan Strait. Similarly, a sustained bombing campaign would be impossible, because Taiwan's air force and air defenses could

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13. Paul V. Kane, "To Save Our Economy, Ditch Taiwan," *New York Times*, November 10, 2011.

14. Alan M. Wachman, *Why Taiwan? Geostrategic Rationales for Chinese Territorial Integrity* (Stanford, Calif.: Stanford University Press, 2007).

15. Guangqian Peng and Youzhi Yao, eds., *The Science of Military Strategy* (Beijing: Military Science Publishing House, 2005), p. 327.

decimate China's bombers. A submarine blockade might be possible even without air and sea dominance, but it would be difficult to sustain if Taiwan can attack the blockade force. The bottom line is that conquering a developed island nation is difficult, so China would probably need to destroy most of Taiwan's military in the first few hours or days of a war to prevail.

What are China's prospects? In 2000, the PLA had only a few hundred inaccurate missiles and a few dozen advanced aircraft and clearly could not carry out a disarming first strike.<sup>16</sup> Today, however, China has 1,500 accurate missiles pointed at Taiwan and more than 1,000 advanced fighter aircraft.<sup>17</sup> If China catches Taiwan off guard—with its missile batteries, aircraft, and ships parked in the open—China potentially could wipe out Taiwan's long-range air defenses, temporarily ground Taiwan's air force, and sink Taiwan's large naval ships.

The above scenario presupposes that Taiwan had no advanced knowledge of the Chinese attack. In reality, Taiwan probably would have some notice, because it has one of the best early warning systems in the world, consisting of at least 20 fixed early warning radars; 10 ground-mobile radars; 6 E-2 Hawkeye aircraft; thousands of spies embedded on the mainland; and satellite and aircraft intelligence provided by the United States.<sup>18</sup> Historically, Taiwanese intelligence has provided advanced warning of PLA actions. In 2013, for example, spies forewarned the Taiwanese government about China's decision to announce an air defense identification zone in the East China Sea.<sup>19</sup> If China planned an all-out assault on Taiwan—an operation that would involve tens of thousands of personnel—the Taiwanese military would probably discover it.

If Taiwan detected an impending PLA attack, it would quickly deploy its navy and disperse its combat aircraft among 36 airfields scattered around the island. Some of these locations have aircraft hangars built inside mountains. Others have aircraft shelters with 6-foot-thick concrete walls.<sup>20</sup> If PLA missiles cratered the runways at Taiwan's air bases, Taiwanese aircraft could operate from ten civilian airstrips and five highways that double as emergency air bases, all of which have fuel and supplies prepositioned for the air force.<sup>21</sup> Meanwhile Taiwan's runway repair teams, which currently hold the world

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16. O'Hanlon, "Why China Cannot Conquer Taiwan."

17. Heginbotham et al., *The U.S.-China Military Scorecard*, p. xxiii.

18. Ian Easton, "Able Archers: Taiwan Defense Strategy in an Age of Precision Strike" (Arlington, Va.: Project 2049 Institute, 2014).

19. *Ibid.*, p. 31.

20. Ian Easton, "Taiwan, Asia's Secret Air Power," *Diplomat*, September 25, 2014, <http://thediplomat.com/2014/09/taiwan-asias-secret-air-power/>.

21. *Ibid.*

speed record for runway repair (3 hours), would start patching the tarmac at the main air bases.<sup>22</sup>

Taiwan also would try to shoot down Chinese missiles and aircraft and perhaps strike Chinese bases and missile batteries. For air defense, Taiwan has 524 long-range surface-to-air missile launchers, 80 percent of which are road-mobile; thousands of short-range surface-to-air missile launchers mounted to vehicles or carried by ground troops; and 400 road-mobile anti-aircraft guns.<sup>23</sup> For offensive strike, Taiwan has at least 12 road-mobile cruise missile launchers; 50 short-range ballistic missile launchers in underground silos; 300 howitzers located on offshore islands (Jinmen and Mazu) just a few miles from the Chinese mainland; roughly 400 fighter aircraft, 73 ships, and 2 submarines that can fire long-range cruise missiles; and several thousand special operations troops embedded on the mainland that could blitz Chinese bases.<sup>24</sup>

History suggests that at least some of Taiwan's major weapons systems would survive a Chinese air and missile attack. In the 1990–91 Gulf War, for example, the U.S.-led coalition pummeled Iraq with 88,500 tons of ordnance and shredded Iraq's airfields with cluster bombs, yet most of Iraq's air force and all of Iraq's road-mobile missile launchers survived and fought on.<sup>25</sup> In 1999, NATO pounded Serbian air defenses in Kosovo for 78 days with 7,000 tons of ordnance, but destroyed only 3 of Serbia's 22 mobile missile batteries.<sup>26</sup>

Given that China's short-range ballistic missiles could deliver only 700 total tons of ordnance on Taiwan—not to mention that Taiwan's air defenses and strike platforms are more numerous, mobile, and advanced than Iraq's or Serbia's were—China would have even more trouble than the United States did in Iraq and Kosovo in disarming its adversary with air and missile strikes alone.<sup>27</sup> Recent Chinese studies bolster this conclusion. For example, computer simulations in a 2013 PLA study found that China's missile inventory could knock out only a few Taiwanese air bases for a few hours.<sup>28</sup>

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22. Ibid.

23. Michael J. Lostumbo et al., *Air Defense Options for Taiwan: An Assessment of Relative Costs and Operational Benefits* (Santa Monica, Calif.: RAND Corporation, 2016), p. 4.

24. Easton, "Able Archers," pp. 35–45; and Ian Easton and Randall Schriver, "Standing Watch: Taiwan and Maritime Domain Awareness in the Western Pacific" (Arlington, Va.: Project 2049, 2014), p. 9.

25. William Rosenau, *Special Operations Forces and Elusive Enemy Ground Targets: Lessons from Vietnam and the Persian Gulf War* (Santa Monica, Calif.: RAND Corporation, 2001), chap. 3.

26. Martin Andrew, "Revisiting the Lessons of Operation Allied Force," *Air Power Australia Analyses*, Vol. 6, No. 4 (June 2009), <http://www.ausairpower.net/APA-2009-04.html>.

27. Joshua Shapiro, "1,000 Paper Tigers: China's Conventional Missile Forces," *War on the Rocks*, October 9, 2013, <https://warontherocks.com/2013/10/1000-paper-tigers-chinas-conventional-missile-forces/>.

28. Cited in Easton, "Able Archers," pp. 13–14.

Assume nonetheless for the sake of conservatism that China could destroy most of Taiwan's air and naval forces in a surprise attack and quickly establish air and sea dominance. Would China then be able to conquer Taiwan via amphibious invasion or coerce it via a naval blockade or strategic bombing? Below, I consider each of these scenarios.

#### AMPHIBIOUS INVASION

An amphibious invasion is the most difficult mission in warfare and requires three vital elements.<sup>29</sup> First, an attacker must achieve air superiority. Second, the attacker must land forces in a place where they outnumber the defender. Third, the attacker must surge reinforcements to the landing zone faster than the defender. In the successful amphibious invasions of World War II and the Korean War, the United States and its allies enjoyed all three advantages—and still suffered huge losses.

Assuming that China already has air superiority, could it land enough troops on Taiwan's shores to secure a beachhead and then reinforce that position faster than Taiwan's defenders could converge on the landing site? China currently has 89 amphibious ships.<sup>30</sup> If all of them survived the 8-hour trip across the Taiwan Strait, the PLA could land a maximum of 26,000 troops and 640 armored vehicles on Taiwan's shores.<sup>31</sup> Taiwan's army has 150,000 active-duty troops and 1.5 million reservists.<sup>32</sup> With that force, Taiwan theoretically could station 2,000 defenders per mile along its shores and have more troops over any stretch of 13 miles than China could deploy using its entire amphibious fleet.

In reality, Taiwan will have many more troops at the point of attack, because only 10 percent of Taiwan's coastline is suitable for an amphibious landing.<sup>33</sup> The east coast is off limits, because it consists of steep cliffs, and PLA landing craft would have to sail an extra day around Taiwan to reach it, a journey during which they might encounter rough seas—20-foot waves and torrential rain are common in Taiwan's waters—and attacks from any surviving Taiwanese ships, aircraft, or shore-based missile batteries.<sup>34</sup> The west coast, on the other hand, consists mostly of mud flats that extend 2 to 5 miles out to sea and are buffeted by severe tides. To avoid getting stuck in the mud, PLA units would

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29. O'Hanlon, "Why China Cannot Conquer Taiwan," pp. 54–56.

30. Heginbotham et al., *The U.S.-China Military Scorecard*, p. 203.

31. *Ibid.*

32. International Institute for Strategic Studies (IISS), *The Military Balance 2017*, Vol. 117 (London: IISS, 2017), p. 331.

33. David L. Shambaugh, *Modernizing China's Military: Progress, Problems, and Prospects* (Berkeley: University of California Press, 2002), pp. 324–327.

34. *Ibid.*, pp. 325–326.

have to land at high tide at one of a few suitable locations. Taiwan's military leaders know these locations well and would concentrate defenders at them.

In addition, Taiwanese intelligence would see the PLA armada approaching and tell the army where to mass. Even if Taiwan's intelligence systems failed, Taiwanese soldiers would see the PLA armada at least 30 minutes before it reached the shoreline, providing time for Taiwan's army to mass at the landing site.<sup>35</sup> For all these reasons, China could not achieve even a temporary numerical advantage at the landing zone. China would therefore lack the second necessary element of a successful amphibious invasion.

China also lacks the third crucial element of a successful invasion—the ability to reinforce the initial assault faster than Taiwan can strengthen its defenses at the point of attack. The PLA could ferry a maximum of 18,000 troops per day to the landing zone, assuming that none of its amphibious ships are destroyed or break down.<sup>36</sup> Taiwan, by contrast, could surge at least 50,000 troops per day to battlefield via roads, railways, and aircraft.<sup>37</sup> After 48 hours, therefore, at least 100,000 Taiwanese troops would face, at most, 44,000 PLA attackers—and from there the military balance would shift increasingly in Taiwan's favor.

China could transport additional troops across the Strait using fishing boats and coast guard ships. These vessels, however, cannot hold large numbers of personnel or armored vehicles and, crucially, cannot carry landing craft, so troops ferried by them would have to swim or trudge through mud to get ashore at the landing site. Moreover, with no heavy armor and few or no weapons, civilian ships would be vulnerable to attack from Taiwanese coastal artillery.

China could supplement its invasion with an airlift of two brigades (roughly 6,000 troops and some light vehicles).<sup>38</sup> Even if all 6,000 paratroopers landed safely on Taiwan, however, they would be isolated and outnumbered. More important, China probably could not get anywhere close to 6,000 paratroopers on Taiwan, because PLA transport aircraft would encounter heavy fire from Taiwan's air defenses. Modern surface-to-air missiles are extremely effective against large, low-flying transport aircraft. As noted earlier, Taiwan has thousands of surface-to-air missile launchers and 400 anti-aircraft guns. Even if Chinese air and missile strikes eliminated half of these, attrition rates

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35. David A. Shlapak et al., *A Question of Balance: Political Context and Military Aspects of the China-Taiwan Dispute* (Santa Monica, Calif: RAND Corporation, 2009), p. 101.

36. Heginbotham et al., *The U.S.-China Military Scorecard*, p. 205.

37. O'Hanlon, "Why China Cannot Conquer Taiwan," p. 68.

38. Cliff, *China's Military Power*, p. 161.

of Chinese transport aircraft flying over Taiwan could exceed 50 percent per sortie.<sup>39</sup>

In sum, the PLA could land a maximum of 26,000 troops on Taiwan's shores on the first day of a war and 18,000 troops each day thereafter. These numbers, however, do not account for attrition to PLA forces, which would be enormous.

For starters, unless China destroyed all of Taiwan's antiship missile launchers, Taiwan could "thin the herd" of PLA amphibious ships as they load in Chinese ports or transit the Taiwan Strait. Computer simulations suggest that Taiwan would need to fire only 50 precision-guided missiles to destroy a dozen Chinese amphibious ships, losses that would end all hopes of a successful invasion.<sup>40</sup> Taiwan also could bombard PLA landing craft with short-range artillery fire as they made their final 20-minute run into the beach.<sup>41</sup>

Past operations suggest that the PLA would lose many ships. During the 1982 Falklands War, when the United Kingdom carried out the world's only major amphibious assault in the past 40 years, an Argentine military with only 95 combat aircraft, 5 antiship cruise missiles, and some World War II era "dumb" bombs (half of which failed to explode) sank 15 percent of Britain's naval task force (5 ships out of 33), and damaged an additional 35 percent, even though British ships never came within 400 miles of the Argentine mainland.<sup>42</sup> Chinese naval losses would almost certainly be greater than 15 percent, as China's ships would be operating within 100 miles of Taiwan from the moment they left Chinese ports and would spend substantial time within the range of Taiwan's artillery.

PLA ships and aircraft could provide covering fire for the landing craft, but blanketing a battlefield with artillery is an onerous task. According to U.S. Navy standards, an attacker needs to saturate every 1,000-square-yard zone of land with 25 5-inch rounds per minute to prevent defenders from approaching the battlefield.<sup>43</sup> Given that all of China's destroyers and frigates combined have fewer than 200 large guns, and most of China's combat aircraft carry only small cannons and a handful of missiles, the PLA Navy could cover, at most, 2 square miles of land with 25 heavy rounds per minute.<sup>44</sup> An invasion force of 26,000 troops, however, would need 4 to 6 miles of coastline to disembark.<sup>45</sup>

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39. O'Hanlon, "Why China Cannot Conquer Taiwan," p. 71.

40. Shlapak et al., *A Question of Balance*, p. 115.

41. *Ibid.*, p. 113.

42. *Ibid.*, pp. 98–99.

43. O'Hanlon, "Why China Cannot Conquer Taiwan," p. 64.

44. *Ibid.*, pp. 63–64; and IISS, *The Military Balance 2017*.

45. O'Hanlon, "Why China Cannot Conquer Taiwan," pp. 63–64.

Taiwan's defenders, therefore, would almost surely be able to approach the landing site and fire at the incoming amphibious ships.

If PLA ships somehow landed on Taiwan's shores, Chinese troops would then need to run up the beaches and attack Taiwanese defenses—actions that essentially guarantee mass casualties. During the D-Day assault of 1944, the United States lost roughly 10 percent of its troops on the beaches while attacking a severely overstretched German army defending thin positions on foreign soil with small arms and mortars.<sup>46</sup> (Most German units, including all of Germany's most highly trained units, were fighting the Soviet Union in Eastern Europe.) If the PLA invaded Taiwan today, it would be attacking massed forces defending home soil with precision-guided munitions, helicopter gunships, tanks, and smart mines. PLA losses during each wave of attack, therefore, would likely be much higher than 10 percent.

Adding the most conservative loss rates together suggests that China would lose at least 25 percent of its forces each time its amphibious fleet approached Taiwan. China therefore could not hope to land more than 20,000 troops in its initial assault and 15,000 troops the day after—assuming the initial wave of troops could hold the beachhead in the first place.

China, therefore, probably could not conquer Taiwan, despite the absence of U.S. intervention. Even if China's prospects are better than I have suggested, the PLA clearly would have its hands full just dealing with Taiwan's defenders. Consequently, the United States would only need to tip the scales of the battle to foil a Chinese invasion, a mission that could be accomplished in numerous ways without exposing U.S. surface ships or non-stealth aircraft to China's A2/AD forces.

Specifically, American defense planners estimate that it would take 10,000 to 20,000 pounds of ordnance to decimate a PLA invasion force on the beaches of Taiwan.<sup>47</sup> The U.S. military could deliver that payload many times over with a single B-2 bomber or an Ohio-class submarine firing cruise missiles from an underwater location hundreds of miles away. Alternatively, the United States could unleash its attack submarines on the PLA invasion fleet; computer simulations show that 8 U.S. submarines could sink 40 percent of the PLA's amphibious ships during any given transit across the Taiwan Strait while losing perhaps one submarine.<sup>48</sup>

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46. Carl Bialik, "The Challenge of Counting D-Day's Dead," *FiveThirtyEight*, June 6, 2014, <https://fivethirtyeight.com/features/the-challenge-of-counting-d-days-dead/>.

47. Shlapak et al., *A Question of Balance*, p. 112.

48. Heginbotham et al., *The U.S.-China Military Scorecard*, p. 211.

#### BLOCKADE

If China cannot invade Taiwan, could it coerce Taiwan into submission instead? China's most promising coercive tactic is a blockade in which the PLA tries to strangle Taiwan's economy by preventing commercial ships from reaching Taiwan's ports. Taiwan is vulnerable to a blockade: it imports 60 percent of its food and 98 percent of its energy resources; maintains only a four-month emergency supply of key agricultural products and a 90-day supply of oil; and has a small coastline that forces large container ships to take predictable paths to seven major ports, four of which are located on Taiwan's west coast facing China.<sup>49</sup>

China could blockade Taiwan in several ways. The most aggressive approach would be for China to destroy Taiwan's air and naval forces, commercial port facilities, and offshore oil terminals in a surprise missile and air attack and then send PLA submarines to sink cargo ships and deploy mines near Taiwan's harbors. If China's surprise attack destroyed all of Taiwan's offensive forces and port infrastructure—an unlikely outcome, as explained earlier—Taiwan's economy would grind to a halt, because Taiwan would have no way to unload large cargo containers or oil tankers.<sup>50</sup> Given such dire circumstances, would life on Taiwan become so unbearable that Taipei would submit to Beijing's authority?

The answer would depend on two main factors: China's ability to choke Taiwan off from basic survival levels of food and energy resources; and the resolve of the Taiwanese people to endure hardship.

Regarding the first factor, China probably could not cut Taiwan off entirely from critical supplies, because Taiwan could ferry limited amounts of cargo to small harbors using shuttle tankers and barges.<sup>51</sup> China, of course, would try to sink merchant ships supplying Taiwan, but computer simulations suggest that the PLA could sink only 1 to 6 percent of Taiwan's shipping, and these results are based on assumptions that heavily favor the PLA: specifically, these results assume a Chinese submarine force of 63 boats (China currently has only 53 attack submarines), and that Chinese submarines always find targets to attack, achieve historically high kill rates, experience no maintenance problems, and encounter no enemy resistance.<sup>52</sup>

China might hope that sinking a few merchant ships would deter others

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49. Michael C. Grubb, "Merchant Shipping in a Chinese Blockade of Taiwan," *Naval War College Review*, Vol. 60, No. 1 (Winter 2007), pp. 81–102.

50. *Ibid.*

51. *Ibid.*, p. 89.

52. Michael A. Glosny, "Strangulation from the Sea? A PRC Submarine Blockade of Taiwan," *International Security*, Vol. 28, No. 4 (Spring 2004), pp. 125–160, doi:10.1162/0162288041588269.

from supplying Taiwan. Historically, however, shipping companies and privateers have operated in wartime; in fact, many have volunteered to enter dangerous areas so that they could charge higher premiums. For example, the lure of profits kept seaborne commerce going throughout both world wars and the 1980–88 Iran-Iraq War, wars in which shipping losses were several times greater than what China could hope to inflict on Taiwan.<sup>53</sup> If money failed to motivate merchants to dock in Taiwan, the Taiwanese government could commandeered some of the 23 oil tankers and 326 large cargo ships registered under the Taiwanese flag and compel them to keep operating.<sup>54</sup>

Assume for the sake of conservatism, however, that China succeeds in completely cutting Taiwan off from external supplies. Would China then be able to conquer Taiwan?

The first thing to note is that no blockade in the past 200 years has coerced a country into surrendering its sovereignty. The reason is that modern states can adapt to supply shortages, and civilian populations are usually willing to endure enormous punishment to defy a foreign enemy.<sup>55</sup> The most comprehensive blockade in history was the U.S. blockade of Japan in the early 1940s (code-named Operation Starvation), which slashed Japan's imports by 97 percent. Japan, however, surrendered only after the United States decimated Japan's military, leveled most of its major cities, dropped atomic bombs on Hiroshima and Nagasaki, and got the Soviet Union to declare war on Japan in 1945.<sup>56</sup>

For China to buck this historical trend, the Taiwanese people would need to be abnormally weak-willed or strongly predisposed toward reunification with the mainland. Given Taiwan's Chinese heritage, the latter possibility can never be discounted. At present, however, the Taiwanese people do not give the impression that they would cave quickly to Chinese coercion: 60 percent of Taiwan's population (and 85 percent of the 20 to 30-year-old population) identifies solely as Taiwanese, whereas only 3 percent identify solely as Chinese;<sup>57</sup> the Democratic Progressive Party, which leans toward Taiwanese

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53. Martin Doughty, *Merchant Shipping and War: A Study in Defence Planning in Twentieth-Century Britain* (London: Royal Historical Society, 1982), p. 19; and Martin S. Navias and E.R. Hooton, *Tanker Wars: The Assault on Merchant Shipping during the Iran-Iraq Crisis, 1980–1988* (New York: I.B. Tauris, 1996), p. 86.

54. United Nations (UN) Conference on Trade and Development Statistics, "Merchant Fleet by Flag of Registration and by Type of Ship, 1980–2017" (Geneva: UN Conference on Trade and Development, 2017), <http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=93>.

55. Mearsheimer, *The Tragedy of Great Power Politics*, pp. 90–96.

56. Glosny, "Strangulation from the Sea?" pp. 145–146.

57. Election Study Center, National Chengchi University, "Taiwanese/Chinese Identification Trend Distribution" (Taipei: Election Study Center, National Chengchi University, July 31, 2017), <http://esc.nccu.edu.tw/course/news.php?Sn=166#>.

independence, won both the presidency and a majority in the legislature in the 2016 elections, in part because voters felt that the previous Kuomintang regime was getting too cozy with China; and the Taiwanese government maintains a massive network of underground shelters stocked with food, fuel, and medical supplies.<sup>58</sup>

Therefore, if China did blockade Taiwan, and the United States decided to intervene, the United States would probably have several weeks, if not months, to rally an international coalition and explore options, some of which would pose little or no risk to the U.S. military. For example, the United States could impose financial sanctions on China or cut China off from 80 percent of its oil imports by blockading the Strait of Malacca, near Singapore, beyond the range of most of China's military forces.<sup>59</sup>

Alternatively, U.S. antisubmarine warfare forces could attack China's submarines and escort merchant ships to Taiwan. Such attacks obviously would entail risks for American sailors and pilots, but they also would capitalize on considerable U.S. advantages: U.S. attack submarines are faster, quieter, and have far greater endurance than Chinese submarines; the United States has a robust underwater sensor array in the waters east of Taiwan; the United States has recently developed submarine-hunting drones that can patrol areas of 10,000 nautical miles for up to seventy days;<sup>60</sup> China's antisubmarine forces are weak (its diesel-powered submarines lack the speed and endurance necessary to sweep large areas; China has only a dozen surface ships with towed sonar arrays and 7 fixed-wing antisubmarine warfare aircraft; and its 44 antisubmarine warfare helicopters cannot operate from surface ships, so they can patrol only limited areas near China's coasts),<sup>61</sup> and whereas U.S. submarines could loiter silently in the waters near Taiwan, Chinese submarines would have to expose their positions to enforce the blockade (as soon as a Chinese submarine fires on a merchant ship, U.S. sensors can pinpoint its location).<sup>62</sup>

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58. Easton, "Able Archers," p. 49.

59. On sanctions, see David C. Gompert and Hans Binnendijk, "The Power to Coerce: Countering Adversaries without Going to War" (Santa Monica, Calif.: RAND Corporation, 2016). On a blockade, see T.X. Hammes, "Offshore Control"; Llewelyn Hughes and Austin Long, "Is There an Oil Weapon? Security Implications of Changes in the Structure of the International Oil Market," *International Security*, Vol. 39, No. 3 (Winter 2014/15), pp. 152–189, doi:10.1162/ISEC\_a\_00188; and Sean Mirski, "Stranglehold: The Context, Conduct, and Consequences of an American Naval Blockade of China," *Journal of Strategic Studies*, Vol. 36, No. 3 (February 2013), pp. 385–421, doi:10.1080/01402390.2012.743885.

60. Lyle J. Goldstein, "How China Sees the U.S. Navy's Sea Hunter Drone," *National Interest*, January 31, 2017.

61. IISS, *The Military Balance 2017*.

62. Owen R. Coté Jr., "Assessing the Undersea Balance between the United States and China," in

Historically, antisubmarine warfare forces have been able to disrupt blockades.<sup>63</sup> Germany's attempted blockade of Allied shipping in World War II, for example, collapsed in two months once the Allies launched a dedicated anti-submarine warfare campaign, and attempts by Iran and Iraq to blockade each other in the 1980s floundered because neither side could maintain sea control.<sup>64</sup> The U.S. blockade of Japan in World War II, by contrast, was enforced only after the United States won command of the seas around Japan; and even in this extreme case, it remains unclear if the blockade played a decisive role in the outcome of the war.

In sum, a PLA blockade of Taiwan would be a protracted operation with a low probability of success. Should the United States choose to intervene, it would have time to consider an array of options, the most aggressive of which would play to U.S. strengths. A submarine blockade might be China's best option for forcing Taiwan's reunification with the mainland, but it is hardly a reliable one.

#### STRATEGIC BOMBING

An alternative coercive tactic would be a strategic bombing campaign, in which the PLA tries to force cross-strait reunification by leveling Taiwan's cities and infrastructure. The historical record, however, suggests that this tactic would be even less effective than a blockade. There have been only fourteen strategic bombing campaigns in history, and none decisively affected the outcome of the wars in which they were used.<sup>65</sup> The best that can be said of any of these campaigns is that they hastened the surrender of countries that were already going down to defeat. In short, no country has ever conquered another with strategic bombing alone, largely for the same reasons that no country has ever conquered another with a blockade in the past 200 years: modern states can adapt to the loss of critical infrastructure, and civilian populations usually react to foreign bombing by digging in and rallying around their home government.<sup>66</sup> As noted above, Taiwan does not give the impression that it will be the first nation to break the historical pattern.

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Thomas G. Mahnken, ed., *Competitive Strategies for the 21st Century: Theory, History, and Practice* (Stanford, Calif.: Stanford University Press, 2011), pp. 184–205; and Biddle and Oelrich, "Future Warfare in the Western Pacific," pp. 30–33.

63. Hughes and Long, "Is There an Oil Weapon?" pp. 174–178.

64. *Ibid.*, p. 175.

65. Mearsheimer, *The Tragedy of Great Power Politics*, pp. 99–110; and Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y.: Cornell University Press, 1996).

66. Seven cases took place during the world wars, but both wars were won on the ground. Italy bombed Ethiopia in 1936, but had to invade it to conquer the country. The Soviet Union bombed Afghanistan throughout the 1980s, but withdrew in defeat in 1989. The U.S. military bombed North Korea during the Korean War and conducted two bombing campaigns against North Viet-

China might be able to use strategic bombing to reinforce the political status quo in Taiwan. Opinion polls show that most Taiwanese are willing to court conflict with China to maintain Taiwan's de facto independence, but not to achieve de jure independence.<sup>67</sup> Thus, China could potentially deter Taiwan from officially declaring independence by threatening to bomb it (arguably, China has already done so for decades) and perhaps even force Taiwan's government to retract a hasty declaration of independence by carrying out a partial bombing campaign.

China, however, probably cannot compel Taiwan to give up its de facto sovereignty by raining hell on Taiwan's cities. Strategic bombing is not only historically ineffective; it also does not neatly serve China's ultimate political objectives. In most of the past bombing campaigns cited above, the attacker simply wanted the defender to desist from some action, a goal that conceivably could be achieved by bombing the defender into oblivion. China, by contrast, wants to reincorporate Taiwan as a prosperous Chinese province and turn Taiwan's people into loyal Chinese citizens. Reducing Taipei to a smoldering ruin and incinerating hundreds of thousands of Taiwanese civilians would not achieve that end.

### *Sea Control in the East China Sea*

Roughly 100 miles northeast of Taiwan, China is in a showdown with Japan over eight islets, which the Japanese call the Senkakus and the Chinese call the Diaoyutai. The islets themselves are insignificant—none is inhabited or larger than 2 square miles—but they are the symbolic epicenter of a broader struggle between China and Japan for control of the East China Sea.

This conflict is rooted in geography. China and Japan are two great powers packed into a small space and sit astride each other's vital sea-lanes. The Japanese home islands are only 500 miles across the East China Sea from

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nam during the Vietnam War, but failed to win either conflict. In the Gulf War, a U.S.-led coalition bombed Iraq, but had to invade Iraq to accomplish its aims. In the 1999 Kosovo War, NATO bombed Yugoslavia for 78 days, but other factors ultimately impelled Yugoslavia's surrender, including the threat of a NATO ground invasion; pressure from Russia, Yugoslavia's vital ally; financial sanctions on Serbian political elites; and concessions by NATO that eventually made the terms of surrender more palatable. Moreover, the Kosovo case cannot be neatly applied to a China-Taiwan war, as NATO was not seeking to conquer Yugoslavia, and Yugoslavia was a weak nation led by an especially vulnerable regime. On these points, see Daniel R. Lake, "The Limits of Coercive Airpower: NATO's 'Victory' in Kosovo Revisited," *International Security*, Vol. 34, No. 1 (Summer 2009), pp. 83–112, doi:10.1162/isec.2009.34.1.83.

67. Election Study Center, National Chengchi University, "Taiwan Independence vs. Unification with the Mainland Trend Distribution in Taiwan" (Taipei: Election Study Center, National Chengchi University, July 31, 2017), <http://esc.nccu.edu.tw/course/news.php?Sn=167>.

Shanghai, a distance that could be traversed in a day by a ship, in half an hour by a fighter plane, and in minutes by a missile. Japan also controls the Ryukyus, a chain of more than 100 islands that stretch from the Japanese home islands to within 70 miles of Taiwan. All of China's most direct routes to the Pacific Ocean run through choke points between these islands.

China claims sovereignty over the Senkakus and exclusive rights, including the right to control military traffic, throughout most of the East China Sea.<sup>68</sup> China also maintains an air defense identification zone (ADIZ) over most of the Sea and refers to the skies in this zone as "Chinese airspace," a claim that implies that China has sovereignty over the waters and land below.<sup>69</sup>

If China could enforce these claims, it would gain direct access to the Pacific, a secure coastline stretching from Beijing to Shanghai to Fuzhou, lucrative fishing grounds and oil deposits, and a staging area for blockades of Japan and Taiwan. Given these stakes, not to mention the historical grievances generated by Japan's brutal occupation of China in the 1930s, it is understandable why China is determined to dominate the East China Sea—and why Japan is equally determined to resist Chinese expansion and defend its own claims, which include sovereignty over the Senkakus and exclusive rights and an ADIZ over roughly half of the Sea.

In theory, China could enforce its East China Sea claims nonviolently using economic coercion and the cabbage strategy described earlier. In practice, however, China will probably have to decimate Japan's air and naval forces, because Japan has made clear it will fight to defend its East China Sea claims. Since 2010, China has conducted regular patrols around the Senkakus with hundreds of coast guard cutters, fishing vessels, and military aircraft. Japan, however, has responded in kind, maintaining a sizable coast guard and naval presence in contested waters and scrambling fighters to the Senkakus hundreds of times per year.<sup>70</sup>

What are China's prospects of destroying Japan's air and naval forces? In the 1990s, the Japanese Self-Defense Force enjoyed insurmountable qualitative superiority over the PLA and could essentially command the East China Sea. Today, however, China has numerous surface ships, submarines, shore-based missile batteries, and combat aircraft all armed with advanced missiles and

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68. Ben Dolven, Mark E. Manyin, and Shirley A. Kan, *Maritime Territorial Disputes in East Asia: Issues for Congress* (Washington, D.C.: Congressional Research Service, 2014).

69. James Holmes, "China's East China Sea ADIZ Represents a Thinly Veiled Grab for Sovereignty," *National Interest*, April 21, 2017, <http://nationalinterest.org/feature/chinas-east-china-sea-adiz-represents-thinly-veiled-grab-20298>.

70. Lyle J. Morris, "The New 'Normal' in the East China Sea," *Diplomat*, February 27, 2017, <http://thediplomat.com/2017/02/the-new-normal-in-the-east-china-sea/>.

backed by a defense budget nearly four times larger than Japan's.<sup>71</sup> Japan has almost twice as many advanced destroyers as China (35 vs. 21), but some analysts predict that by 2030 China will have 34 destroyers and a 500-ship navy.<sup>72</sup>

The balance of naval tonnage, therefore, is clearly shifting in China's favor. Nevertheless, Japan retains enduring geographic and technological advantages that will allow it to deny China sea and air control throughout much of the East China Sea for the foreseeable future.

First, Japan has announced plans to string a line of missile launchers along the Ryukyu Islands that can target all naval and air traffic across a 200-mile to 300-mile band stretching north to south between mainland Japan and Taiwan, an area that includes the Senkaku Islands.<sup>73</sup> As discussed earlier, it is extremely difficult to destroy mobile missile launchers with air and missile strikes or amphibious assaults. Thus, Japan will soon have a resilient missile force running the length of the East China Sea.

Second, Japan is expanding its submarine fleet from 17 to 22 boats and maintains an extensive network of underwater sensors in the Yellow and East China Seas that is integrated with the U.S. undersea surveillance system and can track Chinese ships and submarines as they leave port.<sup>74</sup> During the Cold War, Japan's diesel-electric boats helped contain Soviet submarines in the Sea of Japan. Today, Japan can do the same to China's navy by attacking Chinese ships as they pass through the narrow seas along the Ryukyus.<sup>75</sup> And whereas Japanese submarines could attack Chinese surface ships largely unmolested by China's weak antisubmarine forces, Chinese submarines would have to contend with Japan's world-class antisubmarine warfare forces, which include 75 fixed-wing aircraft and 85 helicopters that can operate from bases on the Ryukyus or from the decks of dozens of Japanese surface ships.<sup>76</sup>

Third, Japan retains robust mine warfare capabilities, including mines that can target specific ships and be laid by surface ships, submarines, and aircraft.<sup>77</sup> China's navy has almost no mine-clearing capabilities, so Japan could mine China's harbors or block the path of Chinese ships through the Ryukyus. To clear these minefields, Chinese minesweepers and their escorts would

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71. IISS, *The Military Balance 2017*.

72. James A. Fannell and Scott Cheney-Peters, "Defending against a Chinese Navy of 500 Ships," *Wall Street Journal*, January 19, 2017.

73. "Playing Chicken in the East China Sea" (Washington, D.C.: Asia Maritime Transparency Initiative, CSIS, April 28, 2017), <https://amti.csis.org/playing-chicken-east-china-sea/>.

74. Desmond Ball and Richard Tanter, *The Tools of Owatatsuni: Japan's Ocean Surveillance and Coastal Defence Capabilities* (Canberra: Australia National University Press, 2015).

75. Yoshihara, "Sino-Japanese Rivalry at Sea."

76. IISS, *The Military Balance 2017*.

77. *Ibid.*

need to cross several hundred miles of contested waters and airspace, a journey many of them might not survive.

Finally, if the shore-based missiles, submarines, and mines discussed above failed to deny China control of the East China Sea, Japan could commit its surface fleet and air force to the battle. China has a larger surface fleet overall than Japan, but 75 percent of China's ships are small coastal patrol craft and another 15 percent are frigates with limited range, endurance, and armaments.<sup>78</sup> As noted, Japan currently has nearly twice as many large surface combatants as China, and Japan's 15 smaller coastal patrol craft and frigates, though outnumbered by China's 57 frigates, would be able to refuel and reload at ports along the Ryukyus and thus maintain a higher tempo of operations than China's missile boats and frigates, which would have to transit hundreds of miles between the Ryukyus and the Chinese mainland to refuel and reload.<sup>79</sup> Japan also has more than 200 fourth-generation fighter aircraft, and in November 2016, the United States began shipping 42 F-35A fighter aircraft to Japan, so Japan will soon become only the second country in the world with operational fifth-generation fighters.<sup>80</sup> These stealth aircraft could approach Chinese naval armadas in the East China Sea undetected and without refueling and launch missiles at Chinese ships.

China could try to knock Japan's air and naval forces out of a war by striking Japanese ports and airfields. Japan, however, has 20 air bases, 11 naval bases, and 14 naval aviation bases dispersed across more than 2,000 miles of territory.<sup>81</sup> China currently has only 100 to 300 ballistic missiles, 500 cruise missiles, and 100 aircraft (slow, non-stealthy H-6 bombers) that could reach these bases. Given Japan's advanced missile and air defense systems, it is unlikely that China could disable many of Japan's bases for long, if at all.

In sum, although the balance of naval tonnage is shifting in China's favor, geographic and technological factors give Japan an enduring A2/AD capability that can plausibly deny China sea and air control in the East China Sea.

### *Sea Control in the South China Sea*

China claims ownership of more than 80 percent of the South China Sea based on a nine-dash line sketched on a 1947 Republic of China map. This claim has

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78. Ibid.

79. Ibid.

80. "Japan," *Jane's World Air Forces*, December 23, 2016, <https://www.ihs.com/products/janes-world-air-forces.html>.

81. "Japan," *Jane's World Navies*, March 29, 2017, <https://www.ihs.com/products/janes-world-navies.html>; and "Japan," *Jane's World Air Forces*, March 29, 2017, <https://www.ihs.com/products/janes-world-air-forces.html>.

no international standing—in July 2016, an international tribunal in The Hague explicitly rejected China's historical claims to the South China Sea—but it appears on all Chinese maps and passports. The nine-dash line encloses waters through which roughly 40 percent of the world's trade and 90 percent of China's imported oil passes.

If China could enforce its claims in the South China Sea, it would achieve the greatest territorial expansion by any power since Imperial Japan. China would gain greater security for its supply lines, exclusive access to rich fishing areas and undersea oil deposits, and unfettered access to the Western Pacific. Most important, China would effectively become the maritime hegemon of Southeast Asia, as other countries around the Sea would be confined to narrow bands of water along their coastlines.

China, however, cannot enforce its South China Sea claims.<sup>82</sup> The Sea is a hotly contested zone, with five other countries laying claims to portions of it.<sup>83</sup> China has a more powerful military than these Southeast Asian states, but they are closer than China to the areas of the Sea that they claim.<sup>84</sup> In a war, Chinese forces would need to cycle between the combat theater and a few bases hundreds of miles away in southern China to refuel and reload, a commute that would severely limit the amount of combat power China could sustain on the battlefield. Southeast Asian forces, by contrast, could operate from home bases bordering the combat theater and would have their full arsenals at their disposal.

Some Southeast Asian nations have capitalized on these geographic advantages by developing A2/AD capabilities, including shore-based missile batteries, diesel-powered attack submarines, swarms of small surface combatants, and fighter aircraft armed with antiship missiles and mines. As a result, the western and southern sections of the South China Sea are now bordered by forces capable of denying China sea and air command. Only in the northeastern quarter of the Sea, near the Philippines, could China easily defeat local opposition and establish sea control.

#### WEST

The west side of the South China Sea is claimed by Vietnam, which can credibly threaten to destroy ships and aircraft within 200 miles of the Vietnamese

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82. Toshi Yoshihara and James R. Holmes, "Can China Defend a 'Core Interest' in the South China Sea?" *Washington Quarterly*, Vol. 34, No. 2 (Spring 2011), pp. 45–59, doi:10.1080/0163660X.2011.562082.

83. Robert D. Kaplan, *Asia's Cauldron: The South China Sea and the End of a Stable Pacific* (New York: Random House, 2014).

84. This paragraph draws on Michael Beckley, "Enforcing International Law in the South China Sea: Can Southeast Asian Nations Keep China in Check?" *RSIS Commentary*, October 5, 2016, <https://www.rsis.edu.sg/wp-content/uploads/2016/10/CO16247.pdf>.

coast—an area that encompasses the western third of the South China Sea and China’s military base on Hainan Island, where China stations roughly one-third of its navy.

Most notable, Vietnam has purchased from Russia at least two mobile shore-based antiship cruise missile batteries that can target ships 200 miles away.<sup>85</sup> China could try to destroy these batteries with air or missile strikes, but such strikes would have a low probability of success, even if China enjoyed air superiority over Vietnam—as noted, the United States dominated the skies above Iraq and Kosovo in the 1990s but still failed to eliminate most of Iraq’s and Yugoslavia’s missile batteries.

More important, China probably could not establish air superiority over Vietnam in the first place. Vietnamese air defenses have a reputation as “giant killers,” having shot down more than 1,700 U.S. aircraft between 1961 and 1968 with simple antiaircraft artillery and no early warning radar.<sup>86</sup> Today, Vietnam fields some of the most advanced early warning radars and surface-to-air missile batteries in the world, having purchased the SPYDER system from Israel and S-300 batteries from Russia that can shoot down aircraft 90 miles away. Vietnam is currently in negotiations with Russia to purchase four S-400 batteries, which have a range of 250 miles and would enable Vietnam to target Chinese aircraft over mainland China.<sup>87</sup>

Even if China destroyed Vietnam’s shore-based cruise missile batteries, Vietnam would retain many platforms that could deny China sea control in the western third of the South China Sea. The Vietnamese air force has more than 100 fighters, including 35 Su-30MK2Vs that are as advanced as any aircraft currently operational in China’s air force.<sup>88</sup> These aircraft can be armed with multiple Kh-31 supersonic antiship cruise missiles that could overwhelm the limited missile defense systems on China’s ships.

China could try to nullify this threat by engaging Vietnam in an all-out air war. With more than 1,000 fighters, China’s air force vastly outnumbers Vietnam’s. Vietnam’s air force, however, would be backed by ground-based air defenses and would operate from 18 air bases on home soil, whereas Chinese

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85. Richard D. Fisher, “Vietnamese Military Trains Deployment of Bastion-P Coastal Defence System,” *Jane’s Defence Weekly*, August 16, 2016, <http://www.janes.com/article/62969/vietnamese-military-trains-deployment-of-bastion-p-coastal-defence-system>.

86. Kenneth P. Werrell, *Archie, Flak, AAA, and SAM: A Short Operational History of Ground-Based Air Defense* (Maxwell Air Force Base, Ala.: Air University Press, 1988), p. 112.

87. “Vietnam Receives First Israeli-made SPYDER Air Defense Missile System,” *Defence Blog*, July 18, 2016, <http://defence-blog.com/news/vietnam-receives-first-israeli-made-spyder-air-defense-missile-system.html>; and “Vietnam Is Negotiating to Buy S-400 Triumph Anti-aircraft Missiles,” *Defence Blog*, July 4, 2016, <http://defence-blog.com/news/vietnam-is-negotiating-to-buy-s-400-triumph-anti-aircraft-missiles.html>.

88. IISS, *The Military Balance 2017*.

aircraft would have to contend with anti-aircraft fire and commute several hundred miles from 9 air bases in southern China.<sup>89</sup> China could operate a few aircraft from an airfield on Woody Island, which is 200 miles east of Vietnam in the Paracel archipelago. This airfield, however, would not last long in a war; the island is less than 1 square mile in size, so personnel and platforms there would have nowhere to hide from enemy missiles. In sum, China could potentially destroy Vietnam's air force in a protracted air war, but only at great cost.

Even if China destroyed Vietnam's air force, Vietnam's navy could still contest Chinese sea control using 6 Kilo-class diesel-powered submarines that have better range, endurance, sensors, and acoustics than China's diesel submarines and carry torpedoes, mines, and Klub-S submerged-launch cruise missiles that accelerate to supersonic speeds and perform evasive maneuvers as they approach their targets, making them extremely difficult to shoot down.<sup>90</sup> Vietnam lacks experience with submarine operations and maintenance, so it is doubtful that it could maintain more than 2 submarines ready for operations at any given time.<sup>91</sup> However, even a single Vietnamese submarine operated by a mediocre crew could pose a persistent threat to a Chinese naval armada. During the Falklands War, for example, a lone Argentinian midget submarine operated by a crew of junior petty officers evaded the British fleet throughout the war—even though the British Navy expended nearly all of its antisubmarine ordinance trying to destroy the submarine—and successfully tracked and targeted several British warships. Only a torpedo malfunction saved the targeted British ships from destruction.<sup>92</sup>

Vietnam also has 26 warships armed with antiship missiles, including 6 new stealthy Gepard-class frigates, purchased from Russia, 12 corvettes, and 8 smaller missile boats.<sup>93</sup> These surface ships are not nearly as capable as China's modern destroyers and frigates, but they carry advanced missiles with ranges between 70 to 100 miles and may soon carry the BrahMos missile, jointly developed by Russia and India, which is the most lethal cruise mis-

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89. "Vietnam," *Jane's World Air Forces*, May 18, 2016, <https://www.ihs.com/products/janes-world-air-forces.html>; and Heginbotham et al., *The U.S.-China Military Scorecard*, pp. 90–95.

90. Lyle J. Goldstein, "China's Nightmare: Vietnam's New Killer Submarines," *National Interest*, March 29, 2015, <http://nationalinterest.org/feature/chinas-nightmare-vietnams-new-killer-submarines-12505>.

91. Carlyle A. Thayer, "Background Briefing: Vietnam—Evaluating Its Fleet of Six Kilo-Class Submarines" (Australia: Thayer Consultancy, February 25, 2017), [http://www.viet-studies.net/kinhte/Thayer\\_VN\\_subs.pdf](http://www.viet-studies.net/kinhte/Thayer_VN_subs.pdf).

92. Sebastien Roblin, "How the Falklands War (Thanks to a Stealthy Submarine) Could Have Gone Very Differently," *National Interest*, November 27, 2016, <http://nationalinterest.org/blog/how-the-falklands-war-thanks-stealthy-submarine-could-have-18495>.

93. "Vietnam," *Jane's World Navies*, May 18, 2016, <https://www.ihs.com/products/janes-world-navies.html>.

sile in the world: the BrahMos has a range of 190 miles; skims just above the sea; performs evasive S-maneuvers shortly before impact; and is four times faster (2,300 miles per hour) and several times heavier (6,000 pounds) than U.S. Tomahawk missiles. In tests, the BrahMos obliterated large ships even when its warhead failed to explode.<sup>94</sup>

In sum, Vietnam has developed a small but formidable A2/AD force. Vietnam cannot enforce its own claims in the South China Sea, but it can threaten to destroy Chinese ships and aircraft operating in the western third of the South China Sea. Given the bloody history between the two countries—the 1974 naval battle over the Paracels; the 1979 border war that killed tens of thousands of troops on both sides; the 1988 naval battle in the Spratly Islands in which Chinese forces killed 70 Vietnamese sailors; and the deadly anti-Chinese riots in Vietnam in 2014—Vietnam seems unlikely to allow China to command the western South China Sea without a fight.<sup>95</sup>

#### SOUTH

China also has little hope of establishing sea control anywhere in the southern portions of the South China Sea, by which I mean the waters south of Vietnam on one side and the Spratly Islands on the other.

The countries that claim this area—Indonesia and Malaysia—are much weaker than China militarily, but they border contested areas, whereas China is more than 1,000 miles away. In a conflict there, China's navy would have to transit several days each way between the combat theater and China's naval base on Hainan. Consequently, China probably could not maintain more than a dozen ships and submarines in the combat theater at any given time, even if China redeployed vessels from the East China Sea and the Yellow Sea, an unlikely proposition given that China has to keep tabs on Japan and Taiwan.

China also probably could not sustain major air operations in the southern portion of the South China Sea, because China has only 13 midair refueling tankers and 16 airborne early-warning and control aircraft, which Chinese combat aircraft would need for targeting, and its two aircraft carriers carry only 24 fighters each, and these aircraft have to fly with half their normal capacity of fuel and armaments given the carriers' ski-jump takeoff systems.<sup>96</sup>

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94. Sebastien Roblin, "BrahMos: India's Supersonic Mega Missile That China Should Fear," *National Interest*, August 27, 2016, <http://nationalinterest.org/feature/brahmos-indias-supersonic-mega-missile-china-should-fear-17491>.

95. Kaplan, *Asia's Cauldron*, chap. 3.

96. Andrew S. Erickson, "How Does China's First Aircraft Carrier Stack Up?" interview for China Power Project (Washington, D.C.: Center for Strategic and International Studies, 2016), <http://chinapower.csis.org/aircraft-carrier/>.

The nature of a war in the southern South China Sea would depend on where China made its stand. If China tried to establish sea control in the center of the area, it might find itself in a war with Indonesia, which occupies the Natuna Islands and claims territorial waters and a 200-nautical-mile exclusive economic zone around them. If China tried to control the waters to the east or west of Indonesia's exclusive economic zone, it would come into conflict with Malaysia, whose exclusive economic zone and territorial seas begin where Indonesia's end.

Indonesia and Malaysia could plausibly deny sea and air control to a restricted Chinese task force. Indonesia's navy has 12 frigates, 20 corvettes, and 30 fast-attack patrol boats all armed with antiship missiles.<sup>97</sup> In addition, Indonesia operates 2 submarines armed with torpedoes and has procured 3 stealthy diesel-powered submarines made in South Korea that will carry antiship missiles and cutting-edge electronic defense and radar signal detection systems.<sup>98</sup> The first of these new submarines began sea trials in 2016, and all three are expected to be operational by 2020. Indonesia's submarine crews have never been tested in wartime, so it is unclear how proficient they would be at targeting Chinese ships. That said, Indonesia has operated submarines for more than 35 years and thus has more experience than most countries in basic submarine operations and maintenance.<sup>99</sup>

Indonesia has declared it will have a "green water" navy by 2024 with a minimum operational force of 110 warships, 66 patrol ships, 98 support ships, and 12 submarines.<sup>100</sup> That goal is unrealistic, but even with a quarter of this fleet, Indonesia's navy would enjoy numerical superiority over a Chinese task force near the Natunas, because Indonesia's ships could operate from two bases within 300 miles of the combat theater and from a new base on the Natunas themselves and another at Mempawah less than 200 miles away.<sup>101</sup>

For similar reasons, Indonesia also would probably enjoy a local superiority in fighter aircraft. Indonesia's air force has 49 fourth-generation fighters, including 33 F-16s, 11 Su-30s, and 5 Su-27s, and it is in negotiations with Russia to buy 10 Su-35S fighters, which feature fifth-generation avionics

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97. IISS, *The Military Balance 2017*.

98. Franz-Stefan Gady, "South Korea Launches First Indonesian Stealth Submarine," *Diplomat*, March 29, 2016, <http://thediplomat.com/2016/03/south-korea-launches-first-indonesian-stealth-submarine/>.

99. "Indonesia," *Jane's World Navies*, March 29, 2017, <https://www.ihs.com/products/janes-world-navies.html>.

100. "Indonesia," *Jane's World Navies*, April 20, 2016, <https://www.ihs.com/products/janes-world-navies.html>.

101. *Ibid.*

and radar technologies and thrust-vectoring engines.<sup>102</sup> In a conflict with China, Indonesia's fighters could operate without aerial refueling from 4 air bases within 500 miles of the Natunas and an expanded air base on the islands themselves.<sup>103</sup>

Malaysia has fewer platforms than Indonesia, but its sailors and pilots are generally better trained, so its A2/AD forces may be more capable than they seem on paper. For example, Malaysia has only 2 submarines, but both of these boats are advanced diesel-powered submarines made in France. Malaysian maintenance crews have shown that they can keep 1 submarine operational at any given time, and Malaysian submarine crews collectively spent more than 9,000 hours in submerged training exercises between 2009 and 2017, making them among the most experienced crews in Southeast Asia.<sup>104</sup>

Malaysia also has 10 frigates and 12 patrol boats, all armed with French- and Italian-made antiship cruise missiles.<sup>105</sup> In addition, Malaysia's frigates carry 16 surface-to-air missiles, torpedoes, and cannons, and have deck space for antisubmarine warfare helicopters. In 2019, Malaysia will add 6 stealth frigates with similar armaments and towed sonar arrays.<sup>106</sup> In a conflict with China, these ships could operate from at least 12 bases around the southern shore of the South China Sea.

Malaysia's air force enjoys similar proximity to potential combat theaters, with at least 8 airfields within the unrefueled range of the southern South China Sea. Malaysia has 36 fourth-generation fighters, including 18 Su-30s that can launch Kh-31 supersonic antiship missiles from beyond the range of the air defenses of China's ships.<sup>107</sup>

#### EAST

The east side of the South China Sea is the most contested area, with six countries laying claims to various portions of it. Territorial disputes center on the Spratly Islands, an archipelago of 100 small features spread across 160,000 square miles of sea. These features collectively have less than 2 square miles of natural land above the water, but China is reclaiming land and placing airstrips and docks on the seven features in the Spratlys that it currently occupies.

China hopes to take over the Spratlys without firing a shot by creating facts

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102. "Indonesia," *Jane's World Air Forces*, May 13, 2016, <https://www.ihs.com/products/janes-world-air-forces.html>.

103. Ibid.

104. "Malaysia," *Jane's World Navies*, March 29, 2017, <https://www.ihs.com/products/janes-world-navies.html>.

105. IISS, *The Military Balance 2017*.

106. "Malaysia," *Jane's World Navies*, January 5, 2017, <https://www.ihs.com/products/janes-world-navies.html>.

107. IISS, *The Military Balance 2017*.

on the ground—that is, by flooding the zone with Chinese ships and steadily occupying and turning tiny features into habitable islands that ultimately gain international acceptance, if not recognition, as Chinese territory.

China's plan faces two obstacles, however: the 2016 ruling by the tribunal in The Hague dashed China's legal claims to the area;<sup>108</sup> and four other countries militarily occupy features in the Spratlys and are unlikely to budge unless China uses force. Vietnam occupies twenty-one features and has built airstrips on two of them, reclaimed land on at least ten others, and placed mobile rocket launchers on at least five features that can target ships and installations within 90 miles—an area that includes all of China's outposts in the Spratlys.<sup>109</sup> Taiwan occupies and maintains an airstrip on the largest natural feature in the Spratlys, Itu Aba, which accounts for roughly half of the natural land above the water in the archipelago. Malaysia occupies five features and has placed military outposts on three of them, one of which has an airstrip. In addition, the Philippines occupies nine features and maintains small military outposts on eight of them and a community of about 300 civilians and 40 military personnel on the remaining feature.

In short, China's neighbors are firmly ensconced in the Spratlys and are backed by international law. To enforce its claims to the area, therefore, China would need to use force. What are its prospects?

To control the Spratlys, China first would need to establish air superiority over them. The Spratlys, however, are nearly 700 miles away from China's nearest air base on Hainan and more than 800 miles from its air bases in southern China. China has only 500 combat aircraft capable of making this journey, and these aircraft would be able to spend only a few minutes near the Spratlys before returning home to refuel.<sup>110</sup> As a result, China would have, at most, a few dozen combat aircraft near the Spratlys at any given time.<sup>111</sup> Vietnam and Malaysia, by contrast, have numerous air bases within the unrefueled range of the archipelago and thus would have the full strength of their combat air fleets available for an air war.

China could fly a few fighters from airstrips on Fiery Cross, Subi, and Mischief Reefs and 48 additional fighters from its two aircraft carriers.<sup>112</sup> China also could conduct midair refueling operations using its 13 tanker aircraft.

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108. Mira Rapp-Hooper, "Parting the South China Sea: How to Uphold the Rule of Law," *Foreign Affairs*, Vol. 95, No. 5 (September/October 2016), pp. 76–82.

109. Greg Torode, "Vietnam Moves New Rocket Launchers into Disputed South China Sea," Reuters, August 10, 2016, <http://www.reuters.com/article/us-southchinesea-vietnam-idUSKCN10K2NE>.

110. Heginbotham et al., *The U.S.-China Military Scorecard*, p. 88.

111. *Ibid.*

112. "Airpower in the South China Sea" (Washington, D.C.: Asia Maritime Transparency Initiative, Center for Strategic and International Studies, 2015), <https://amti.csis.org/airstrips-scs/>.

These assets, however, have limited defenses and probably would not last long in a major war. Vietnam and Malaysia have several submarines and dozens of aircraft and naval ships armed with advanced missiles, and Vietnam has highly accurate rocket launchers installed within range of China's airstrips in the Spratlys.

Given these obstacles, China is unlikely to try to take the Spratlys all at once and incur the wrath of the whole region. Instead, China is more likely to pick off its rivals one-by-one and carve out a limited section of the South China Sea. The easiest target for such limited expansion is the northeast quarter of the Sea, which is claimed by the Philippines, a country with no missile-armed ships or aircraft. If China imposed itself in this area, there is little the Philippine military could do in response, and other Southeast Asian countries would probably stay out of the fight as long as China did not try to take over the areas that they claim. Given that the Philippines has signed a defense pact with the United States, these waters also are the most likely site of a U.S.-China war in the South China Sea.

Fortunately for the United States, the area is far from China. Unlike in a Taiwan scenario, China's shore-based surface-to-air missiles cannot target aircraft near the Philippines, so China would have to rely on its combat aircraft and sea-based air defenses to establish air superiority. As noted, however, China has only about 500 combat aircraft capable of reaching the east side of the Sea, and these aircraft could loiter for only a few minutes near the Spratlys before returning to China to refuel.<sup>113</sup>

The United States, by contrast, could keep hundreds of aircraft over the islands at all times, because U.S. forces could operate from air bases in the southern Philippines beyond the range of all but 100 to 200 of China's conventional ballistic missiles.<sup>114</sup> China could try to attack these bases with H-6 bombers armed with long-range DH-10 cruise missiles, but the slow speed of these bombers and missiles exposes them to intercepts by U.S. fighters and air and missile defense systems.<sup>115</sup>

The Philippines, of course, might deny the U.S. military access to its bases, but such an outcome is unlikely: since 1945, more than 90 percent of U.S. requests for contingency base access have been granted; and in many of these cases, the United States had no preexisting bases in the country in question (unlike in the Philippines today), and the host country was not under attack or otherwise involved in the conflict. Given this sterling record of U.S. base access, it seems unlikely that the Philippines would respond to a Chinese inva-

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113. Heginbotham et al., *The U.S.-China Military Scorecard*, p. 88.

114. *Ibid.*, p. 48.

115. *Ibid.*, p. 66.

sion of Filipino waters by denying the U.S. military access to Filipino airfields.<sup>116</sup> Yes, the president of the Philippines, Rodrigo Duterte, has repeatedly threatened to downgrade the U.S.-Filipino alliance, but he also has authorized the United States to upgrade its military facilities in the Philippines, ordered further reclamation of Philippine-held islands in the Spratlys, instructed Filipino troops to “fight to the death” to defend these islands against China, and threatened to ride out to Chinese-claimed features on his jet ski and plant Philippine flags on them.<sup>117</sup> Furthermore, recent polls show that more than 80 percent of Filipinos favor defending Philippine-held features in the Spratlys from Chinese annexation, and recent Filipino government and military elites (most notably, the defense minister) have publicly pressured Duterte to confront China’s navy and coast guard.<sup>118</sup>

Even if the Philippines does expel the U.S. military, U.S. aircraft could still operate from carriers east of the Philippines, beyond the range of most of China’s A2/AD forces, or with the help of aerial refueling from U.S. bases in Australia, Guam, and Japan and from additional airfields in the Marianas. The United States also could request contingency access at some of the 100 airfields maintained by other Southeast Asian states that have maritime disputes with China.<sup>119</sup>

Computer simulations show that a single U.S. air wing operating only from bases in Guam and Japan could destroy more than half of China’s strike aircraft in three weeks in a Spratly Islands scenario, and two U.S. air wings could do the same in less than a week.<sup>120</sup> If China attacked these bases, the U.S. military could respond in kind by cratering the runways at China’s 9 air bases within range of the Spratlys, actions that would knock China’s air force out of a Spratly Islands war within hours.<sup>121</sup>

Without air cover, China’s 19 destroyers and 57 frigates would be exposed to U.S. missiles launched by aircraft as well as ships and submarines. China’s cruise missiles currently outrange those of the United States, but by 2019 the U.S. military will regain the advantage: new U.S. sea-launched antiship cruise missiles have a range of 1,000 miles, and new U.S. air-launched anti-

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116. Stacie L. Pettyjohn and Jennifer Kavanagh, *Access Granted: Political Challenges to the U.S. Overseas Military Presence, 1945–2014* (Santa Monica, Calif.: RAND Corporation, 2016), pp. 138–139.

117. Robbie Gramer, “Philippines to Deploy Troops to Disputed Islands in the South China Sea,” *Foreign Policy*, April 6, 2017, <http://foreignpolicy.com/2017/04/06/philippines-duterte-to-deploy-troops-disputed-south-china-sea-spratly-islands-geopolitics-beijing/>.

118. Richard Javad Heydarian, “Duterte Is Under Pressure to End the Philippines-China Honeymoon,” *National Interest*, April 13, 2017, <http://nationalinterest.org/feature/duterte-under-pressure-end-the-philippines-china-honeymoon-20174>.

119. Stacie L. Pettyjohn and Alan J. Vick, *The Posture Triangle: A New Framework for U.S. Air Force Global Presence* (Washington, D.C.: RAND Corporation, 2013), pp. 26–27.

120. Heginbotham et al., *The U.S.-China Military Scorecard*, p. 92.

121. *Ibid.*, p. 91.

ship cruise missiles have a range of 570 miles; China's newest sea- and air-launched cruise missiles, by contrast, have ranges of 330 miles and 250 miles, respectively.<sup>122</sup>

China could escort its surface ships with submarines. China's 5 nuclear-powered attack submarines are noisier than U.S. submarines from the 1960s, however; and China's diesel-powered submarines would need to deploy their snorkels during the long journey to the combat theater (making the submarines easily detectable) and would be able to operate in the area for only a few weeks before returning to China's naval base on Hainan Island to refuel—assuming that the United States did not disable this base with missile strikes. U.S. submarines, by contrast, could remain in the combat theater for months.<sup>123</sup> Moreover, if the United States had air superiority, it could deploy hundreds of antisubmarine warfare aircraft to hunt for Chinese submarines throughout the area.<sup>124</sup> Even without air superiority, the U.S. navy could attack China's fleet with submarines and its emerging fleet of drones armed with torpedoes.<sup>125</sup> In such a contested environment, China's submarines and surface ships would do well to survive for more than a few weeks.<sup>126</sup>

#### NET ASSESSMENT

In sum, local actors can plausibly deny China sea and air control in the western and southern portions of the South China Sea, and the United States could deny China control of the northeast quarter of the Sea at moderate risk to U.S. forces. China therefore faces a formidable containment barrier and cannot command major portions of its near seas—at least for now.

#### *Constraints on Future Chinese Military Modernization*

The previous sections focused on China's current capabilities, but what about China's future capabilities? Will China soon be able to overcome the A2/AD

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122. Franz-Stefan Gady, "U.S. Navy Tests New Long-Range Anti-Ship Missile," *Diplomat*, April 6, 2017, <http://thediplomat.com/2017/04/us-navy-tests-new-long-range-anti-ship-missile/>; Thomas Gibbons-Neff, "Navy Ships and Submarines to Carry New Anti-Ship Tomahawk Missile, Report Says," *Washington Post*, February 18, 2016.

123. Kris Osborn, "'Acoustic Superiority': U.S. Navy's Secret Submarine Plan to Dominate the Seas," *National Interest*, June 20, 2016, <http://nationalinterest.org/blog/the-buzz/acoustic-superiority-us-navys-secret-submarine-plan-dominate-16659>.

124. Heginbotham et al., *The U.S.-China Military Scorecard*, pp. 186–189.

125. Megan Eckstein, "Navy: Future Undersea Warfare Will Have Longer Reach, Operate with Network of Unmanned Drones," *U.S. Naval Institute News*, March 24, 2016, <https://news.usni.org/2016/03/24/navy-future-undersea-warfare-will-have-longer-reach-operate-with-network-of-unmanned-vehicles>.

126. Heginbotham et al., *The U.S.-China Military Scorecard*, pp. 192–198, 222–224.

forces of its neighbors? Available evidence suggests not, because the state of military technology heavily favors the defense, China's economic growth is slowing, and homeland security operations drain China's military resources. Below, I elaborate on these three points.

#### DEFENSE DOMINANCE

The military balance between two nations depends not just on their relative strength, but also on the state of technology. This is the key insight of offense-defense theory, which holds that changing technology shifts the relative ease of attack and defense (the "offense-defense balance") over time for all states.<sup>127</sup> For example, in World War I, the machine gun made attack difficult, if not suicidal, for all sides; hence fighting on the western front got bogged down in trench warfare. In World War II, by contrast, the tank shifted the balance back to the offense by allowing attackers to "blitzkrieg" static defenses.

What is the offense-defense balance today? Many scholars argue that defense is dominant, at least within maritime East Asia, because precision-guided munitions enable even relatively weak countries to sink surface ships and shoot down aircraft near their homelands.<sup>128</sup> In past eras, China's neighbors might have had to contest Chinese sea control symmetrically, by sending battleships to blast away at China's fleet, a contest they would almost surely have lost. Today, by contrast, China's neighbors can counter Chinese naval expansion asymmetrically, by launching precision-guided munitions from a variety of relatively cheap platforms.

China will have trouble overcoming these local A2/AD forces, because power projection is fundamentally platform-centric, and therefore extremely expensive, whereas A2/AD is munitions-centric, and thus comparatively cheap.<sup>129</sup> To command its near seas, China would need to be able to maintain naval armadas in contested areas indefinitely, a mission that would require a panoply of pricey platforms (and skilled personnel to operate them), including aircraft carrier battle groups, nuclear-powered submarines, antisubmarine warfare forces, surveillance aircraft and ships, refueling tankers, replenishment vessels, and amphibious forces.<sup>130</sup> China's neighbors, on the other hand, could hold these platforms at risk at a fraction of the cost by stocking up on ad-

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127. Sean M. Lynn-Jones, "Offense-Defense Theory and Its Critics," *Security Studies*, Vol. 4, No. 4 (Summer 1995), pp. 660–691, doi:10.1080/09636419509347600.

128. Gholz, "No Man's Sea."

129. Kelly, Gompert, and Long, *Smart Power, Stronger Partners*, Vol. 1, pp. 77–84.

130. On platforms needed for sea control, see Barry R. Posen, "Command of the Commons: The Military Foundation of U.S. Hegemony," *International Security*, Vol. 28, No. 1 (Summer 2003), pp. 5–46, doi:10.1162/016228803322427965.

vanced missiles, offensive cyber capabilities, and basic launch-platforms, including corvettes, trucks, midget submarines, and short-range aircraft. These A2/AD platforms require far less skill, coordination, and maintenance to employ effectively than power-projection forces.

According to a recent study, the average cost of an A2/AD capability is about one-fiftieth of the cost of the power-projection capability that it could neutralize in war.<sup>131</sup> A 50-to-1 cost ratio may be hard to believe, but U.S. experience suggests it is not wildly off the mark: since 2000, the United States has outspent China militarily by more than \$7 trillion (not including spending on the wars in Iraq and Afghanistan), yet most defense analysts believe China has successfully extended its defensive perimeter by acquiring A2/AD capabilities that threaten U.S. surface ships, non-stealth aircraft, and military bases within 500 miles of Chinese territory.<sup>132</sup> Now China's neighbors are copying China's playbook and placing the PLA on the expensive side of the offense-defense balance. To project power in East Asia and enforce its expansive territorial claims, therefore, China will have to outspend its neighbors militarily by an order of magnitude or more. Can it afford to do so?

#### SLOWING ECONOMIC GROWTH AND MASSIVE DEBT

China probably will not be able to afford resilient power-projection forces anytime soon, because its fiscal future is bleak. According to Chinese government statistics, China's economic growth rates have been cut in half over the past decade, dropping from 15 percent in 2007 to 6.7 percent in 2016. A growth rate of 6.7 percent would still be spectacular, of course, but China's statistics are almost surely exaggerated. Dozens of studies show that Chinese officials systematically inflate China's gross domestic product (GDP) numbers, and top Chinese leaders have admitted as much.<sup>133</sup> Many economists believe that China's true GDP growth rate is roughly half the government-listed rate, and some analysts argue that China's economy has not grown since the 2008 financial crisis.<sup>134</sup>

Even if China's economy grows 6 percent annually in the coming years, China still might struggle to pay for a major upgrade to its power-projection capabilities, because GDP growth is not necessarily a sign of expanding

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131. Kelly, Gompert, and Long, *Smart Power, Stronger Partners*, Vol. 1, pp. 88–93.

132. Stockholm International Peace Research Institute (SIPRI), "Military Expenditure Database" (Stockholm: SIPRI, 2016), <https://sipri.org/databases/milex>; and Montgomery, "Contested Primacy in the Western Pacific."

133. Christopher Balding, "Further Questions about Chinese GDP Data," *Financial Times*, August 2, 2016.

134. Mark Magnier, "China's True Growth Is a Mystery; Economists Weigh the Clues," *Wall Street Journal*, April 26, 2015.

wealth. If a country spends billions of dollars building bridges to nowhere, its GDP will rise but its stock of wealth will remain unchanged or even decline. To accumulate wealth, a country needs to increase the output it produces per unit of input, a metric that economists call “total factor productivity.” Mere increases in input, without an increase in the efficiency with which those inputs are used, will suffer diminishing returns and wrack up debt.

How productive is China’s growth? Remarkably, 90 to 97 percent of China’s economic growth since 1990 has stemmed from growth in inputs: the expansion of employment and relentless investment in physical capital.<sup>135</sup> China’s productivity has not only been unspectacular; it has been virtually nonexistent, accounting for only 3 to 10 percent of China’s growth during that time.<sup>136</sup> As a point of comparison, productivity improvements have accounted for 20 to 25 percent of U.S. economic growth for the past century.<sup>137</sup>

Since 2006, China has tried to boost its productivity by tripling its spending on research and development, employing more scientists and engineers than any other country, and mounting the most extensive corporate espionage campaign in history.<sup>138</sup> So far, however, innovation decrees, resource infusions, and espionage have failed to transform China’s input-driven growth model. Since 2007, investment spending has climbed to nearly 50 percent of GDP, a level “unprecedented in world economic history,” and accounted for nearly all of China’s economic growth.<sup>139</sup> Meanwhile China’s growth rate has plummeted, and its productivity growth rate has turned negative, meaning that China is producing less output per unit of input each year (figure 2).

The volume of waste in China’s economy is staggering. China has built more than fifty “ghost cities”—entire metropolises composed of empty office buildings, apartment complexes, shopping malls, and, in some cases, airports.<sup>140</sup> In industry after industry, from refining to shipbuilding to aluminum to cement,

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135. Conference Board, “Total Economy Database,” May 2017 update, original version, <https://www.conference-board.org/data/economydatabase/>; and Harry X. Wu, “China’s Growth and Productivity Performance Debate Revisited: Accounting for China’s Sources of Growth with a New Dataset,” report No. EPWP1401 (New York: Conference Board, February 2014).

136. Wu, “China’s Growth and Productivity Performance Debate Revisited.”

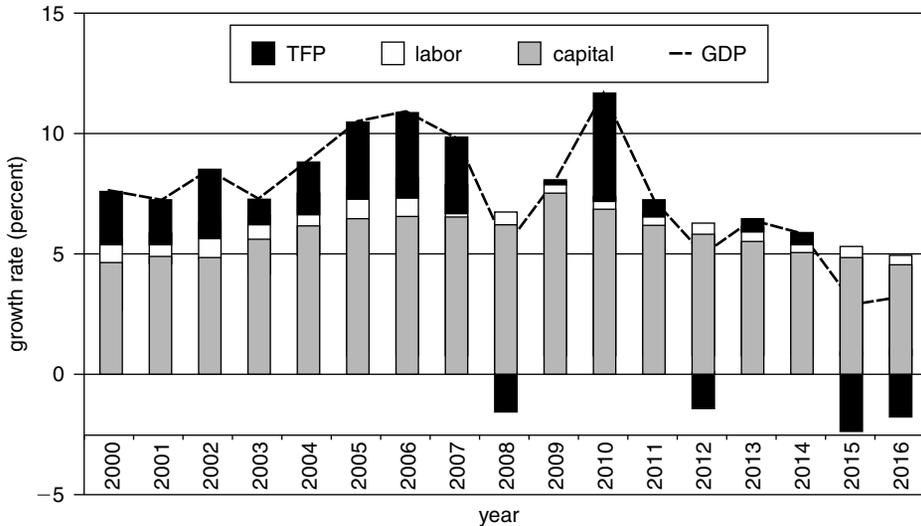
137. Dale W. Jorgenson, Mun S. Ho, and Jon D. Samuels, “Long-Term Estimates of U.S. Productivity and Growth,” paper prepared for presentation at the Third World KLEMS Conference, Tokyo, Japan, 2014.

138. Kathleen McLaughlin, “Science Is a Major Plank in China’s New Spending Plan,” *Science*, March 7, 2016, doi:10.1126/science.aaf4155; and U.S. Commission on the Theft of American Intellectual Property, *The IP Commission Report* (Washington, D.C.: National Bureau of Asian Research, 2013).

139. Barry Naughton, “Economic Rebalancing,” in Jacques deLisle and Avery Goldstein, eds., *China’s Challenges* (Philadelphia: University of Pennsylvania Press, 2015), p. 108.

140. Wade Shepard, *Ghost Cities of China: The Story of Cities without People in the World’s Most Populated Country* (London: Zed, 2015).

Figure 2. Growth Rates of Chinese Total Factor Productivity (TFP), Capital and Labor Inputs, and Gross Domestic Product (GDP), 2000–2016



SOURCE: The Conference Board Total Economy Database, May 2017. © 2017 The Conference Board, Inc. Content reproduced with permission.

the picture is the same—supply far outpaces demand—and still expansion continues.<sup>141</sup> China’s unused capacity in steelmaking, for example, is greater than the total steel production capacity of Japan, the United States, and Germany combined.<sup>142</sup> All told, the Chinese government estimates that it blew more than \$6 trillion on “ineffective investment” from 2009 to 2014.<sup>143</sup>

The unsurprising result of this waste has been a dramatic rise in China’s debt, from 121 percent of GDP in 2000 to nearly 300 percent in 2016.<sup>144</sup> At \$28 trillion and counting, China’s debt is not only the largest ever recorded by a developing country, but it has risen faster than any country’s, nearly quadrupling in size from 2007 to 2014 and igniting a lending surge three times greater

141. “Industry in China: The March of the Zombies,” *Economist*, February 27, 2016, <https://www.economist.com/news/business/21693573-chinas-excess-industrial-capacity-harms-its-economy-and-riles-its-trading-partners-march>.

142. *Ibid.*

143. Brenda Goh, “Lovely Airport, Where Are the Planes? China’s White Elephants Emerge,” *Reuters*, April 10, 2015, <http://www.reuters.com/article/us-china-infrastructure-insight-idUSKBN0N02AT20150410>.

144. Simon Rabinovitch, “Finance in China: Big but Brittle,” *Economist*, May 7, 2016, <https://www.economist.com/news/special-report/21697983-china-needs-free-up-its-financial-system-even-if-it-hurts-says-simon-rabinovitch-big>.

than the credit binge that sparked the 2008 U.S. financial crisis.<sup>145</sup> In 2015, roughly 20 percent of China's 1,000 largest firms owed more money in interest payments than they earned in gross profits; and 45 percent of all new loans in China were used to pay interest on old loans, a phenomenon that analysts call "Ponzi finance."<sup>146</sup>

China may avoid a full-blown financial crisis—the state owns both the banks and their biggest corporate borrowers, and Chinese citizens have little choice but to keep their savings in state-owned banks—but writing off these bad loans will cost China dearly. How much, exactly, is difficult to say, but estimates range from \$1.5 trillion to \$10 trillion, the latter figure nearly equal to China's entire GDP.<sup>147</sup>

Theoretically, China could free up money for military modernization by gutting social spending. In reality, such cost cutting will be impossible, because China is about to experience the most rapid aging crisis in human history, with the ratio of workers-to-retirees shrinking from 8-to-1 today to 2-to-1 by 2040.<sup>148</sup> By that point, China will have \$10 trillion to \$100 trillion in unfunded pension liabilities.<sup>149</sup> Add to this pension shortfall the rising medical costs associated with having one of the oldest societies on the planet (by the 2050s, nearly one-third of China's population will be older than sixty-five), and it becomes clear that China would do well to maintain current levels of military spending, let alone increase them.<sup>150</sup>

China has \$3 trillion of foreign exchange reserves, but they are not a treasure trove that the Chinese government can use to bankroll military modernization. The Chinese government purchased these reserves with money taken from state-owned banks, most of which was deposited there by Chinese citizens. If the government were to spend that money on the military, it would be stealing \$3 trillion from the Chinese people. At the very least, such a drastic action would collapse the banking system, because people probably would not deposit more money in banks that just expropriated their life savings. At worst, it might spur a massive revolt.

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145. Ruchir Sharma, "How China Fell Off the Miracle Path," *New York Times*, June 3, 2016.

146. "China's Financial System: The Coming Debt Bust," *Economist*, May 7, 2016, <https://www.economist.com/news/leaders/21698240-it-question-when-not-if-real-trouble-will-hit-china-coming-debt-bust>.

147. "Breaking Bad," *Economist*, May 7, 2016, <https://www.economist.com/news/special-report/21697979-dud-loans-much-higher-reported-banks-must-brace-trouble-breaking-bad>.

148. UN, "World Population Prospects: The 2015 Revision Population Database" (New York: UN, 2015).

149. David L. Shambaugh, *China's Future* (Cambridge, Mass.: Polity, 2016), p. 83.

150. UN, "World Population Prospects."

HOMELAND INSECURITY

Even if China's economic situation were not so dire, China still might lack funds for power projection, because homeland security costs drain a substantial portion of its military resources.

All major political risk indices show that China is bedeviled by domestic unrest to a greater extent than most countries.<sup>151</sup> For example, the World Bank's political stability and absence of violence index, which aggregates political risk data from more than thirty sources, ranks China 157 out of 212 countries, just ahead of Azerbaijan and Honduras. Chinese government data paint a similar picture. So-called mass incidents (public protests or riots involving 100 or more people) increased from 9,000 in 1993 to 280,000 in 2010;<sup>152</sup> and so-called social order violations, which refer to fights or cases in which large groups of citizens obstructed police from their duties, have risen from 3.2 million in 1995 to 13.9 million in 2012.<sup>153</sup>

This unrest emanates from multiple sources. In Tibet and Xinjiang, which account for almost one-third of China's landmass, non-Han ethnic groups are waging low-level insurgencies against the central government. In Hong Kong, residents maintain a separate political system and periodically stage large protests against Beijing's attempts to dilute their political autonomy. And throughout China, citizens harboring a variety of grievances (e.g., pollution, corruption, and government land seizures) stage demonstrations that occasionally turn violent.

Dealing with this unrest strains the PLA's resources.<sup>154</sup> China spends more on internal security than on its military, and at least 20 percent of the PLA's budget—as reported by the Stockholm International Peace Research Institute—actually funds the People's Armed Police, an internal security force charged with suppressing riots and guarding China's leaders, duties performed by civilian agencies in other countries.<sup>155</sup> Moreover, the PLA itself reg-

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151. For examples, see "Political Stability and Absence of Terrorism/Violence," Worldwide Governance Indicators database (Washington, D.C.: World Bank, 2016); J.J. Messner et al., *The Fragile States Index 2016* (Washington, D.C.: Fund for Peace, 2016); Monty G. Marshall and Benjamin R. Cole, *Global Report 2014: Conflict, Governance, and State Fragility* (Vienna, Va.: Center for Systemic Peace, 2014); Mark Gibney et al., "The Political Terror Scale 1976–2015," *Political Terror Scale*, 2016, <http://www.politicalterror scale.org/>; and *International Country Risk Guide* (East Syracuse, N.Y.: PRS Group, 2016).

152. Murray Scott Tanner, "China's Social Unrest Problem," testimony before the U.S.-China Economic and Security Review Commission, May 15, 2014 (Washington, D.C.: Government Publishing Office, 2014), [https://www.uscc.gov/sites/default/files/Tanner\\_Written%20Testimony.pdf](https://www.uscc.gov/sites/default/files/Tanner_Written%20Testimony.pdf).

153. *Ibid.*, p. 3.

154. Nathan and Scobell, "China's Overstretched Military."

155. Adam P. Liff and Andrew S. Erickson, "Demystifying China's Defence Spending: Less Mysterious in the Aggregate," *China Quarterly*, December 2013, pp. 805–830, doi:10.1017/S0305741013000295; and George J. Gilboy and Eric Heginbotham, *Chinese and Indian Strategic Behavior: Growing Power and Alarm* (Cambridge: Cambridge University Press, 2012), chap. 4.

ularly performs internal security missions. For example, in 2008 the PLA rolled into Tibet to put down mass riots, and in 2009 PLA forces imposed martial law in Xinjiang to quell an outbreak of violence that killed 197 people.

In addition to internal security, the PLA is tasked with securing China's continental periphery, which stretches 14,000 miles and includes boundaries with fifteen countries.<sup>156</sup> Most of these borders have been conflict zones at some point in China's history. Some of them remain so today.

Most notable, China shares a 1,400-mile border with India that remains bitterly contested.<sup>157</sup> In the northern section of the border, China occupies an area of Indian-claimed territory the size of Switzerland. In the eastern part, India occupies an area of Chinese-claimed territory the size of Austria. Both sides press their territorial claims by maintaining a sizable military presence near the border: China has built air bases, roads, and railways capable of rushing thirty divisions (450,000 troops) to the border; India keeps four divisions on the border armed with long-range cruise missiles and backed up by two squadrons of Su-30MKI fighters. As of the fall of 2017, Chinese and Indian forces were locked in their most bitter standoff in 30 years near the Doka La pass, where China accused Indian soldiers of trespassing across the disputed border.<sup>158</sup>

China's 800-mile border with Vietnam also remains tense.<sup>159</sup> When anti-Chinese protests erupted in Vietnam in 2014 (after China had placed an oil rig inside Vietnam's exclusive economic zone), China deployed thousands of troops, tanks, missile launchers, and other heavy artillery to Pingxiang city, where the Sino-Vietnamese war started in 1979. In 2014 and 2015, Chinese and Vietnamese forces exchanged fire on at least two occasions, and both countries withdrew from border peace talks in 2017.<sup>160</sup>

Russia and China formally resolved their border dispute in 2008, but both countries have modernized their forces and conduct regular military exercises in the border region, where the two countries fought a war in 1969.<sup>161</sup>

China also stations three Group Armies (comprising roughly 150,000 troops)

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156. M. Taylor Fravel, "Securing Borders: China's Doctrine and Force Structure for Frontier Defense," *Journal of Strategic Studies*, Vol. 30, No. 4 (August 2007), pp. 705-737, doi:10.1080/01402390701431790.

157. Jeff M. Smith, *Cold Peace: China-India Rivalry in the Twenty-First Century* (New York: Lexington, 2015).

158. Steven Lee Meyers, Ellen Barry, and Max Fisher, "How India and China Have Come to the Brink over a Remote Mountain Pass," *New York Times*, July 26, 2017.

159. Joshua Kurlantzick, "A China-Vietnam Military Clash," contingency planning memorandum No. 26 (New York: Council on Foreign Relations, September 23, 2015).

160. *Ibid.*

161. Jeffrey Mankoff, "The Wary Chinese-Russian Partnership," *New York Times*, July 11, 2013; and Jeffrey Mankoff, "Russia's Asia Pivot: Confrontation or Cooperation?" *Asia Policy*, January 2015, pp. 65-87, doi:10.1353/asp.2015.0009.

near its 880-mile border with North Korea and added another border defense brigade there in 2017.<sup>162</sup> The PLA maintains 24-hour video and aerial drone surveillance of the border, has built bunkers to protect its border guards there against nuclear and chemical blasts, and has surged additional troops to the border on several recent occasions, including in 2010 when North Korea shelled South Korea's Yeonpyeong island; in 2013 after the purge of Jang Song Thaek, a high-ranking North Korean official who was China's main point of contact with North Korea; and in August 2015 after an outbreak of hostilities between North and South Korea in the demilitarized zone.<sup>163</sup>

Finally, the PLA is engaged in a counterterrorism campaign on its borders with Central Asian states, where Uighur separatists have established safe havens.<sup>164</sup>

All told, the PLA devotes more than 1 million troops (roughly 45 percent of the active-duty force) to internal security and border defense: 660,000 troops in the People's Armed Police, 128,000 troops in border defense units, and 239,500 ground troops based near major cities in border regions.<sup>165</sup>

The personnel costs alone of China's border defense forces consume at least 15 percent of the PLA's budget.<sup>166</sup> All told, then, at least 35 percent of China's military budget, as reported by the most popular source for military spending data, goes to homeland security operations: 20 percent for the People's Armed Police and an additional 15 percent for border defense troops. These costs act as a persistent "domestic drag" on China's military modernization, putting robust power projection forces further out of reach for the PLA.<sup>167</sup>

## Conclusion

China's neighbors can check Chinese maritime expansion and will remain capable of doing so for the foreseeable future. Given this regional balance of power, the United States should adopt an "active denial" strategy to preserve

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162. Jeremy Page, "China Prepares for a Crisis along North Korea Border," *Wall Street Journal*, July 24, 2017.

163. "China," *Jane's World Armies*, December 24, 2016, <https://www.ihc.com/products/janes-world-armies.html>.

164. "Spreading the Net," *Economist*, August 9, 2014, <https://www.economist.com/news/china/21611110-new-episodes-violence-and-repression-have-heightened-tensions-xinjiang-spreading-net>; and "A Chechnya in the Making," *Economist*, August 9, 2014, <https://www.economist.com/news/leaders/21611067-iron-fist-xinjiang-fuelling-insurrection-chinas-leadership-must-switch-tactics>.

165. Fravel, "Securing Borders."

166. Peter E. Robertson and Adrian Sin, "Measuring Hard Power: China's Economic Growth and Military Capacity," *Defence and Peace Economics*, Vol. 28, No. 1 (January 2017), pp. 91–111, table 1, doi:10.1080/10242694.2015.1033895.

167. Nathan and Scobell, "China's Overstretched Military," pp. 137–138.

the territorial status quo in East Asia. The strategy would aim to raise the costs of military aggression for China, without backing it into a corner, and would have three main elements.

First, the United States would bolster the A2/AD capabilities of China's neighbors by providing them with loans, arms, training, and intelligence. The goal would be to turn China's neighbors into prickly "porcupines," capable of denying territory to China but not of taking and holding territory themselves.<sup>168</sup>

Second, the United States would create buffers between U.S. and Chinese forces by stationing most U.S. forces in hardened bases scattered around the East Asian periphery, where they could be called upon in the event of war but otherwise kept beyond the reach of most of China's forces.<sup>169</sup> Decreasing the number of U.S. forces near China's borders would reduce the likelihood of air and naval clashes, help reassure China that the United States does not intend to launch massive strikes on the Chinese mainland at the outset of a crisis, and increase the resilience of U.S. forces in the region by reducing their exposure to Chinese preemptive attacks.

Third, the United States would backstop the local balance of power in wartime, but would plan to do so gradually. In minor conflicts, the United States would try to convince China to back down by using nonmilitary forms of coercion.<sup>170</sup> The United States is uniquely empowered to impose financial sanctions and embargoes on hostile countries (and to deny enemies the ability to respond in kind) because of its central role in global banking, plentiful energy resources, and unparalleled ability to disrupt international shipping and communications networks.<sup>171</sup> In the initial stages of a conflict, therefore, the United States could use financial sanctions, embargoes, or cyber operations to try to achieve "victory without violence," as it did in compelling Iran to negotiate curbs on its nuclear program and in deterring Russia from annexing eastern Ukraine.<sup>172</sup>

If the conflict escalated to war, the United States could initially "lead from behind," supporting local forces with logistics, intelligence, and, if absolutely necessary, limited air and missile strikes on Chinese forces operating in the combat theater rather than those stationed on the Chinese mainland. These

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168. Murray, "Revisiting Taiwan's Defense Strategy," p. 15; Holmes and Yoshihara, *Defending the Strait*; Yoshihara, "Sino-Japanese Rivalry at Sea"; and Kelly, Gompert, and Long, *Smart Power, Stronger Partners*, Vol. 1.

169. Pettyjohn and Vick, *The Posture Triangle*.

170. Gompert and Binnendijk, "The Power to Coerce."

171. *Ibid.*

172. *Ibid.*

strikes could be conducted from submarines, stealth aircraft, or road-mobile shore-based missile batteries strung along the first island chain—all of which are far less vulnerable to Chinese A2/AD forces than surface ships and non-stealth aircraft. If the United States needed to ratchet up the pain, it could escalate horizontally before doing so vertically—that is, by opening new geographic fronts (e.g., by blockading the Strait of Malacca) rather than pouring U.S. forces into the main combat theater.

This strategy obviously sacrifices military effectiveness for the sake of enhancing crisis stability. The U.S. military could gain a major advantage over the PLA if it simply unloaded on China's bases, missile batteries, satellites, and radar installations at the outset of a conflict. The U.S. military generally favors this type of knock-out-punch strategy and for good reason: pinprick strikes and gradual escalation invite a grinding war of attrition. Why give the enemy a chance to fight back?

Offensive doctrines make sense against weak states that do not have nuclear weapons. Against China, however, a military posture primed for rapid escalation could be a recipe for disaster.

For starters, an offensive posture risks turning minor disputes into major wars. China might be tempted to shoot first during a crisis, in a desperate attempt to stun the United States before the U.S. military wipes out the PLA's offensive forces.<sup>173</sup> The Japanese attack on Pearl Harbor and China's intervention in the Korean War are just two examples of this "use it or lose it" logic in action. In the years ahead, many events can, and almost surely will, spark crises between the United States and China; the two countries have long-standing disputes over freedom of navigation, North Korea, Taiwan, and human rights, among other issues. A sensible U.S. security policy, therefore, must balance the need to deter China with the need to prevent disputes from escalating.

Second, an offensive U.S. posture vis-à-vis China risks turning conventional wars into nuclear wars.<sup>174</sup> Some of the systems that support China's conventional military forces—missile batteries, radars, satellites, submarines—also support its nuclear arsenal, so Chinese leaders might mistake U.S. strikes on these systems as a preemptive attack on China's nuclear deterrent. Moreover, some PLA officials have suggested that China would use nuclear weapons to retaliate against a conventional attack on its homeland. Perhaps these declara-

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173. Goldstein, "First Things First"; and Gompert and Kelly, "Escalation Cause."

174. Caitlin Talmadge, "Would China Go Nuclear? Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States," *International Security*, Vol. 41, No. 4 (Spring 2017), pp. 50–92, doi:10.1162/ISEC\_a\_00274.

tions are bluffs, but is it really so hard to imagine that, in the heat of battle and when facing the potential loss of its offensive forces, China might fire off a nuclear weapon in the hopes of shocking the United States into a cease-fire?

If China were poised to overrun East Asia, then it might make sense for the United States to risk nuclear war to check Chinese expansion. Better to address the problem than repeat the mistakes of the interwar period and appease aggressors. China, however, is incapable of going on an Imperial Japan-style rampage across East Asia, so the stakes for the United States in a war between China and its neighbors would be moderate, and the main danger would be in doing too much rather than too little.<sup>175</sup> Instead of rushing into a war with China, therefore, the United States should pick its battles selectively, escalate gradually, and let local actors do most of the heavy lifting.

Some scholars argue that the United States should simply pull U.S. forces out of East Asia and hand over all responsibility for balancing China to local actors.<sup>176</sup> Retrenchment, however, not only would reduce U.S. influence in the region, but also degrade crisis stability by undermining deterrence. China might be emboldened by a U.S. withdrawal from East Asia and ramp up coercive pressure on its demoralized neighbors. As Thomas Christensen has shown, successful security policy requires a balance of reassurance and deterrence.<sup>177</sup> Retrenchment is skewed too heavily toward the former.

An active denial strategy, therefore, remains the United States' best defense policy toward China. The strategy maintains deterrence, by reducing China's ability to achieve a quick military victory, while enhancing crisis stability, by reassuring China that it will not be cold-cocked on the first day of a war.

Compared to slaying the forces of fascism and communism, stabilizing East Asia is an admittedly underwhelming call to greatness. It is not a mission that Americans are any more eager to undertake than the great geopolitical campaigns of the twentieth century. But it is just as virtuous and just as vital.

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175. On the argument that structural constraints deter Chinese revisionism, see Joshua R. Itzkowitz Shiffrin, "The United States and the Rise of China: Structural Reasons for Optimism," Texas A&M University, 2017.

176. White, *The China Choice*; and Gholz, "No Man's Sea."

177. Thomas J. Christensen, *The China Challenge: Shaping the Choices of a Rising Power* (New York: W.W. Norton, 2015).