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Implications of a Coercive Quarantine of Taiwan by the People's Republic of China



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About This Report

The authors of this report examine how China might enact a quarantine of Taiwan and the potential U.S. and allied responses to the crisis. This strategic analysis of payoffs and options is intended to add a variety of economic and political moves to calculations concerning escalation. In particular, the authors examine several of the salient implications related to economic interdependencies and supply chain challenges that would arise with a quarantine scenario.

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Summary

China's coercive options for Taiwan range from routine violations of Taiwan's declared Air Defense Identification Zone to a full-scale invasion. Within the spectrum are efforts to isolate Taiwan to prevent it from sending exports or receiving imports. Typically, this would be a *blockade*, defined as "a belligerent operation to prevent vessels and/or aircraft of all nations, enemy and neutral, from entering or exiting specified ports, airports, or coastal areas belonging to, occupied by, or under the control of an enemy nation."¹ However, because the People's Republic of China (PRC) does not view the government on Taiwan as sovereign and thus rejects the idea that a state of war could exist, *blockade* is not the correct term. Therefore, in this report, we examine how China might implement a *quarantine* of Taiwan. Unlike in a blockade scenario, China's goals for the quarantine would not be to completely cut off food and supplies to Taiwan, but rather to demonstrate de facto sovereignty by controlling the air and maritime space around the island, as well as which cargo deliveries, ships, aircraft, and people have access to Taiwan.²

Findings

This report is an analysis of interests affecting three actors: Taiwan, China, and the United States. Any actors could choose a different path, with or without a careful evaluation of underlying interests.

- The economic balance of power between Taiwan and China favors the PRC. The PRC is heavily advantaged over Taiwan, and, if the confrontation were to go on for a prolonged period, the PRC would be in a much better position to endure whatever consequences might develop.
- Direct pressure will likely be necessary to break the quarantine. While there may be room to negotiate the movement of particular kinds of commodities, if the PRC declines to allow free shipment, no amount of indirect pressure is likely to result in the PRC abandoning its efforts.
- A counterblockade by the United States against the PRC is unlikely to be successful. The PRC's economy is too large and varied to be quickly affected by a blockade, and any quarantine on Taiwan is likely to have an effect much more rapidly.

¹ Wolff Heintschel von Heinegg, "Blockade," *Oxford Public International Law*, October 2015.

² Beginning with the Cuban Missile Crisis, the term *quarantine* has been offered as an alternate condition to *blockade*. Specifically, a quarantine implies that no state of war exists between belligerent nations.

- The force requirements for the United States are likely to be heavy. The majority of U.S. reactions require sizeable military forces. This force needs to be available shortly after the United States decides to react if the response is to be in any way effective.

Recommendations

Reducing the risk of escalation and increasing the probability of a favorable outcome depends on creating more time and more options for both sides. Neither side can count on a prolonged military campaign ending favorably. Both sides might agree to outcomes below their preferred outcomes, although Taiwan and the United States are hoping for nothing much greater than maintenance of the status quo. But compressed timelines rapidly force decisions that leave neither side significant room for alternate paths. This is a dangerous and unstable set of conditions. Accordingly, the risks of escalation and war can be reduced with several measures:

- Realistically evaluate the escalatory potential of asymmetric economic relationships. While Taiwan has a significant role in at least one key component of the global supply chain for manufactured goods—semiconductors—that role does not insulate it from the many other influences that the PRC could bring to bear not just on it but also on the rest of the world. A quarantine would very rapidly create shortages, which would likely accelerate the need for the United States to intervene in a direct way. Taiwan is in a far more vulnerable position than the PRC, which could promote instability and escalation.
- Encourage greater diversity of semiconductor production. Taiwan’s dominant position in worldwide semiconductor manufacturing makes it more vulnerable. Not only does the PRC have the political incentive to rein in what it views as a rogue province, but it also has the economic incentive to bring a critical industry directly under its control. Such dispersion might also serve to reduce the urgency to other nations of resolving the quarantine once imposed because a quarantine will have more-limited disruption effects on the worldwide semiconductor supply. Other nations can continue economic activity and thus do not have a strong incentive to demand prompt resolution of the crisis.
- Forward deploy U.S. military forces. Whether the United States is principally trying to deter the PRC from initiating a quarantine, actively trying to challenge the quarantine, or actively taking direct action against the PRC homeland, it benefits from already being in position.
- Communicate that quarantine is not a low-risk alternative. Quarantine is not a low-risk, slow-moving action, equivalent to imposing economic sanctions. Regardless of how it is imposed, such an action is likely to rapidly escalate to use of force. The PRC might perceive clear advantage to a quarantine and thus impose one, but the United States and allied countries should make clear that the risks are no less than those of other kinds of actions.

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1. Introduction

The Republic of China (ROC) on the island of Taiwan has functioned as a separate political entity since 1949. While the United States has continued its policy of “strategic ambiguity” and continues to assert a “One-China” policy, the United States also continues to state that it will oppose a forcible “unification” between Taiwan and the People’s Republic of China (PRC).^{3,4} The U.S. Department of Defense Joint Warfighting Concept has as its focus the U.S. and allied defense of Taiwan.⁵ While the concept itself is classified, its existence points to the centrality of Taiwan’s defense in U.S. strategic planning.

The PRC has been equally clear that it views “reunification” with the “rogue province” of Taiwan as an essential national goal. To quote testimony by David Keegan of the John Hopkins School of Advanced International Studies, “China by contrast has reverted to an increasingly brutal authoritarian government at the same time it has become the defining economic growth story of the twenty-first century. China has made the absorption of Taiwan into China a core prerequisite for achieving what it sees as its full national sovereignty. It is preparing a full spectrum of coercive strategies to persuade or force Taiwan and the United States to accede to Taiwan’s absorption.”⁶ Indeed, as this report was being written in late 2021, Taiwan’s President was declaring that Taiwan would not accede to “the PRC’s way for Taiwan,” and the People’s Liberation Army Air Force (PLAAF) was flying dozens of sorties in Taiwan’s declared Air Defense Identification Zone (ADIZ). While national actors in the process are urging avoidance of “rash action,” the tension is real, and conflict could easily occur at almost any time.^{7,8}

China’s coercive options for Taiwan run from full-scale invasion to the kind of routine airspace violations that we have witnessed over the past several years. Within the spectrum are efforts to isolate Taiwan to prevent it from sending exports or receiving imports. If we accept that Taiwan is a sovereign nation, this would be a *blockade*, defined as “a belligerent operation to prevent vessels and/or aircraft of all nations, enemy and neutral, from entering or exiting specified ports, airports, or coastal areas belonging to, occupied by, or under the control of an enemy nation.”⁹ Note the term *enemy nation*. However, because the PRC does not view the

³ “What is the ‘One China’ Policy?” BBC News, October 6, 2021.

⁴ U.S. Department of State, “U.S. Relations with Taiwan,” fact sheet, Washington, D.C., August 31, 2018.

⁵ Theresa Hitchens, “SecDef OKs Joint Warfighting Concept; Joint Requirements Due Soon,” *Breaking Defense*, June 16, 2021.

⁶ David J. Keegan, “US Policy Toward Taiwan and China: A Precarious Balance,” written testimony, hearing on ‘Deterring PRC Aggression Toward Taiwan,’ February 18, 2021.

⁷ Ramy Inocencio, “Taiwan ‘Very Concerned That China Is Going to Launch a War’ to Take Over, Foreign Minister Says,” *CBS News*, October 5, 2021.

⁸ Inocencio, 2021.

⁹ Wolff Heintschel von Heinegg, “Blockade,” *Oxford Public International Law*, October 2015.

government on Taiwan as sovereign and thus rejects the idea that a state of war could exist, *blockade* is not entirely the correct term. Rather, in this report, we examine how China might implement a *quarantine* of Taiwan. Unlike in a blockade scenario, China's goals for the quarantine would not be to completely cut off food and supplies to Taiwan, but rather to demonstrate de facto sovereignty by controlling the air and maritime space around the island, as well as which cargo deliveries, ships, aircraft, and people have access to Taiwan.¹⁰ We use the term *quarantine* in this report not as a judgment on legal status but to make clear that the steps are intended to be imposed in advance of armed conflict.

Research Scope, Methodology, and Organization

This report examines how China might enact a quarantine of Taiwan and the potential U.S. and allied responses to the crisis. In particular, the authors examine several of the salient implications related to economic asymmetries and supply chain challenges that would arise with a quarantine scenario.

Our method is first to conduct an empirical analysis of economic factors that impact the overall balance of capability between the actors in the process. This is to provide context. We then provide a description of how China might carry out a quarantine, using Chinese sources as a basis for this assessment. Having made the assessment of relative capability, we then conduct a strategic analysis of payoffs and options, which then leads us to several recommendations for the consideration of the United States, Taiwan, and their allies.

¹⁰ Beginning with the Cuban Missile Crisis, the term *quarantine* has been offered as an alternate condition to *blockade*. Specifically, a quarantine implies that no state of war exists between belligerent nations.

2. A Quarantine of Taiwan and the Challenges of Interdependence

There are several actors in this potential conflict, all of whom have different strategic goals that would affect the responses to a potential Chinese quarantine of Taiwan. Taiwan has governed itself since 1949 but has not claimed independence, and, indeed, it continues to abide by an understanding that there is “one China” but two governments claiming legitimacy. However, the government of Taiwan has been very clear that it will not accede to PRC domination by force.¹¹ Xi Jinping, the president of the PRC and general secretary of the Chinese Communist Party (CCP), has stated that the reunification of Taiwan is one of China’s key goals that “must be fulfilled.”¹² The PRC would prefer to do this without war and is unlikely to try an armed invasion unless (1) it thinks it can invade and win easily and/or (2) it thinks that other options have been closed. As of now, an invasion would be an extremely risky and expensive undertaking.¹³ The economic and military costs to the PRC would take years to recover. Despite this, China is very likely to persist in its desire to establish sovereignty over Taiwan through use of military force or other means of coercion, if it cannot do so peacefully.

The United States has an interest in maintaining the current international system, and this involves honoring alliances in East Asia. While there is no formal alliance with Taiwan, there is an increasingly asserted U.S. commitment to its defense and strong reasons to believe that other partners in Asia—with which there are formal alliances—might view a U.S. failure to honor this commitment in the face of Chinese military aggression as equivalent to ignoring an alliance.¹⁴ Other common themes on the defense of Taiwan in U.S. official statements and discussions include that the United States should uphold respect for sovereignty and territorial integrity,

¹¹ For example, during Taiwan’s recent national day celebrations. President Tsai stated that the Taiwanese people would “not bow to pressure.” He said, “We will continue to bolster our national defense and demonstrate our determination to defend ourselves in order to ensure that nobody can force Taiwan to take the path China has laid out for us” (Bethany Dawson, “Taiwan Won’t ‘Bow to China’ and Will Fortify Its Defenses, Says President as Military Tensions Mount,” *Business Insider*, October 10, 2021).

¹² “China-Taiwan Tensions: Xi Jinping Says ‘Reunification’ Must Be Fulfilled,” BBC News, October 9, 2021.

¹³ For a discussion of the People’s Liberation Army’s (PLA’s) weaknesses and challenges in a Taiwan contingency, see Michael S. Chase, Jeffrey Engstrom, Tai Ming Cheung, Kristen Gunness, Scott W. Harold, Susan Puska, and Samuel K. Berkowitz, *China’s Incomplete Military Transformation: Assessing the Weaknesses of the People’s Liberation Army (PLA)*, Santa Monica, Calif.: RAND Corporation, RR-893-USCC, 2015.

¹⁴ The Taiwan Relations Act includes two obligations: one is to sell Taipei “weapons of a defensive nature.” The other is to regard any PRC coercive moves against Taiwan as a grave “breach of the peace” in East Asia. See U.S. Department of State, 2018.

adherence to international law, freedom of navigation and overflight, and a commitment to resolving territorial disputes peacefully.¹⁵

Beyond different strategic objectives, the United States and its allies (such as Japan and Australia), China, and Taiwan are all economically interdependent, and this interdependence would be one of the most significant challenges of a quarantine of Taiwan. Taiwan has a dense web of relationships with the PRC, and the consequences of disrupting these could be considerable. The PRC does not actually count transactions with Taiwan as being international trade, so the data are, to a degree, estimated. But, using Taiwanese reports, in 2019 the PRC accounted for roughly 20 percent of Taiwan's imports and 30 percent of its exports. The imports are primarily consumer electronic goods, and the exports are primarily semiconductors. Clearly, there are sources and markets for these commodities, but the essential point is that the economies of Taiwan and the PRC are highly connected.¹⁶ Of note, Taiwan has significant investments in the PRC—\$5.2 billion in 2016 (though the amount has been somewhat encumbered since by restrictions).¹⁷

Supply Chain Insecurity

What complicates the U.S. response to a Chinese quarantine of Taiwan is the degree of interdependence between the PRC and the rest of the world when it comes to global supply chains and finances. The world's supply chains are interconnected to an unprecedented degree. National power—across the spectrum of actual and potential capabilities—has come to rely on globally efficient and intertwined economies, which include highly interconnected supply chains. These highly interconnected sectors and supply chains are a fact of life and in many ways beneficial. However, such interdependence also creates challenges.

The PRC is deeply embedded in these supply chains as the largest trading nation and “the world's workshop.” The PRC is both a serious commercial competitor and a complementary economy to that of the United States, but it is also a state dominated by an ideology that does not sharply differentiate between public and private interest.

However, even without state intervention, supply chain disruptions can occur unexpectedly and have major impacts. For example, the coronavirus pandemic provides an example of a supply chain crisis in medical equipment and support infrastructure that involved no malign actors at all, simply a disease that impacted supply chains across the world in multiple ways.

What was particularly telling was that, in many cases, no one understood the origin of components within the supply chain and, thus, the pandemic's impact. As a result, nations throughout the world were faced with such unexpected dilemmas as shortages of nasal swabs or

¹⁵ Michael Mazza, “Why Defending Taiwan Is an American Political Consensus,” American Enterprise Institute, November 4, 2020.

¹⁶ U.S. International Trade Administration, “Taiwan—Market Overview,” webpage, September 13, 2021.

¹⁷ “Investment in PRC by Taiwanese Firm Down 12% in 2017,” *Taipei Times*, August 28, 2017.

chemicals for testing kits.¹⁸ Not knowing where the inputs for a product are made is not a problem for most users. If supplies move freely and production moves toward the places where these parts can be made at least expense, for the most part this is simply accepted as an efficient relationship. However, whether a crisis is man-made or externally imposed, not knowing the origins of materials can become a serious problem when normal flows cease.

Quarantine as a Less Escalatory Option

The PRC would likely see quarantine as a lower-cost or lower-risk means of coercing Taiwan than an invasion. Quarantine exploits Taiwan's economic vulnerability but also has consequences for the United States and other U.S. allies. While avoiding direct military confrontation, a quarantine, offered as nothing more than an attempt to regulate trade as opposed to invasion and occupation, could be a means by which the PRC can assert sovereignty without starting immediately at high levels of force. The PRC would show resolve and establish a precedent of imposing its will but would not necessarily provoke the United States to react as if Taiwan had been attacked. Beijing could conclude that quarantine offers opportunities for the United States to deescalate or for Taiwan to capitulate without either side resorting to high levels of military force.

The model the PRC could apply is the U.S. quarantine of Cuba in the 1962 Cuban missile crisis. The disagreement over the placement of missiles in Cuba was serious, especially in the wake of repeated efforts by the U.S. government to depose the Castro revolutionary government. The possibility of at least a major conventional war, followed by a nuclear exchange, was significant, with the perception that the United States and the Soviet Union were as close to a nuclear exchange as they had ever been. The U.S. quarantine made it very clear that it would not accept the status quo but also gave the Soviet Union ways to deescalate that did not involve effectively surrendering after an invasion or air strike. To quote an official history of the crisis:

The President [Kennedy] decided upon a middle course. On October 22, he ordered a naval "quarantine" of Cuba. The use of "quarantine" legally distinguished this action from a blockade, which assumed a state of war existed; the use of "quarantine" instead of "blockade" also enabled the United States to receive the support of the Organization of American States.¹⁹

A quarantine had the same practical effect as a blockade but was intended to convey peaceful interference with the movement of contraband rather than to be an act of war, which is how a blockade would have been interpreted.²⁰ The result was that the Soviet Union viewed the

¹⁸ Daniel Joseph Finkenzadt, Robert Handfield, and Peter Guinto, "Why the U.S. Still Has a Severe Shortage of Medical Supplies," *Harvard Business Review*, September 17, 2020.

¹⁹ U.S. Department of State, Office of the Historian, "Milestones: 1961–1968—The Cuban Missile Crisis, October 1962," webpage, undated.

²⁰ Paul A. Shneyer and Virginia Barta, "The Legality of the U.S. Economic Blockade of Cuba Under International Law," *Case Western Reserve Journal of International Law*, Vol. 13, No. 3, 1981.

quarantine as a serious enough signal of U.S. intent to cause it to remove missiles but was able at the same time to extract a guarantee of its client's security, with neither side required to use higher levels of military force.

There are other examples in the past 20 years of nations applying a variety of sanctions and quarantines, although these have not been in the context of a crisis as potentially devastating as the Cuban Missile Crisis or a potential quarantine of Taiwan. Many of these were undertaken by the United States via the imposition of economic sanctions, some of which involved the imposition of visit, board, search, and seizure (VBSS) regimes to prevent the movement of contraband. These were not defined as quarantines, but they were in practice effectively the same.²¹

Escalation Ladders and Historical Precedent

A framework that discusses instruments of coercion below the most extreme may be useful for our analysis. Herman Kahn is credited with the metaphor of the “escalation ladder” and puts this in the context of game theory.²² Game theory attempts to describe the behavior of multiple actors when the payoffs to each depend on the actions of others and can be used to model a variety of situations, including those in which there is a clear possibility of a dangerous outcome. In some of these situations, the structure of the game itself drives suboptimal behavior on both sides.

However, as a general matter, games are not played in single turns but in multiple iterations, the results of which set the stage for the next move. The ladder works as a metaphor because each side has choices that may take them to the next rung, which might be closer to the objective but is also further away from the ground. Being further away from the ground increases the difficulty of coming down from the ladder and also increases the danger if the climber slips.

This metaphor is not a perfect analytic construct, but it describes what the interaction over a quarantine of Taiwan might resemble. Taiwan and the PRC currently have a fundamental conflict of interest over the island's autonomy. The PRC knows that the United States has stated its intention to resist forcibly imposed unification with Taiwan, and the United States is aware that the PRC has multiple ways to influence the international system that could impact U.S. prosperity and security. Meanwhile, Taiwan has stated that it would resist an invasion, but it depends on a flow of goods, services, and investment from the PRC and relies on the PRC as a market.

We will discuss these steps in more detail, but, broadly, the ladder might be conceived as having the following rungs:

1. Taiwan states that it will under no circumstances accede to demands for unification.

²¹ Jonathan Masters, “What Are Economic Sanctions?” Council on Foreign Relations, webpage, August 12, 2019.

²² Michael Fitzsimmons, “The False Allure of Escalation Dominance,” *War on the Rocks*, November 16, 2017.

2. The PRC reacts with threats and sanctions.
3. The United States states its support of Taiwan, possibly imposes sanctions against the PRC, and announces expedited delivery of weapons and munitions to Taiwan.
4. The PRC declares a quarantine.
5. The United States reacts in ways that threaten the PRC more directly.
6. The PRC reacts.
7. And the upward climb continues.

3. How the PRC Would Impose a Trade Quarantine on Taiwan

As of the time this report was being written in late 2021, nothing existed in the publicly available Chinese literature (admittedly a constrained source) that discussed how China might implement a quarantine operation against Taiwan. The PLA has four campaign scenarios for Taiwan, one of which is a joint blockade operation aimed at cutting Taiwan off from the region and coercing Taipei to capitulate to Beijing's reunification demands by using PLA naval surface forces and submarines, missile and air strikes, and offensive mine warfare to control the maritime, air, and information space around Taiwan and through the Taiwan Strait. That operation also includes actions such as cyberattacks and electronic warfare to target key military and civilian infrastructure and communications on Taiwan.^{23,24} However, the joint blockade operation is a wartime campaign that would aim to cut off food and supplies to Taiwan and would be used as a precursor to a full invasion. It would therefore consist of highly aggressive kinetic actions and use of more PLA naval and air forces than would a quarantine, in which China's goals would be to demonstrate control and de facto sovereignty over the maritime and air space around Taiwan, while endeavoring to keep the operation below the level of armed conflict and manage the risk of escalation.

China could potentially conduct several actions to implement a quarantine of Taiwan. First, the quarantine would be successful only if China could establish maritime and airspace control around Taiwan. To do this, Beijing could start by declaring an Exclusive Economic Zone (EEZ) around Taiwan. The Chinese Coast Guard (CCG) could enforce the newly established EEZ through patrols, interdiction, and stop and search of ships entering into the waters near Taiwan. The PLAAF could similarly patrol the airspace around Taiwan to screen aircraft attempting to reach the island, intercept them, and possibly divert them to an airport in mainland China for screening. The screened ships and aircraft would then either be let through depending on their cargo and origin, turned around and prevented from reaching Taiwan, or diverted to airports or ports in China for further inspection.

Simultaneously, China could conduct large-scale maritime and air operations around Taiwan to establish presence in the area and deter Taiwan, U.S., and potentially Japanese responses.²⁵

²³ For a discussion of China's campaign plans against Taiwan, see Ian Easton, *China's Top Five War Plans*, Project2049.net, undated; and Lonnie Henley, "PLA Operational Concepts and Centers of Gravity in a Taiwan Conflict," testimony before the U.S.-China Economic and Security Review Commission hearing on cross-strait deterrence, February 18, 2021.

²⁴ Academy of Military Science, *The Science of Military Strategy*, Beijing, 2013.

²⁵ Japan has signaled potentially increased willingness to come to Taiwan's aid to counter Chinese aggression. For example, the situation in the Taiwan Strait was mentioned as a concern for the first time in a U.S.-Japan joint leadership statement in April 2021. See White House, "U.S.-Japan Joint Leaders' Statement: 'U.S.-Japan Global Partnership for a New Era,'" April 16, 2021.

The CCG could conduct frequent patrols around the area while the People's Armed Forces Maritime Militia (PAFMM) could adopt "swarming" tactics similar to those previously used around the Senkaku Islands in the East China Sea to further obstruct passage of ships in the vicinity of Taiwan.²⁶ Should Taiwan or U.S. and allied ships challenge the quarantine, the CCG and PAFMM would likely use ramming and obstruction actions to harass and deter incoming ships and could potentially fire warning shots to ships attempting to break through the cordon. China would also employ some nonconventional capabilities—including cyberattacks; electronic warfare; jamming; and space-based intelligence, surveillance, and reconnaissance (ISR), as well as potential surveillance from unmanned aerial vehicles or unmanned underwater vehicles to detect adversary forces.

Depending on the severity of the Taiwan, U.S., or allied response, China could choose to use People's Liberation Army Navy (PLAN) surface ships or PLAAF fighters to militarily engage adversary air and naval forces that contest the quarantine. Should the situation escalate further, or should China feel like its objectives were not being achieved with its paramilitary forces, the PLA could threaten to fire missiles into Taiwan to further coerce the leadership in Taipei into capitulating. However, this would likely be perceived by Taiwan and the United States as a precursor to an invasion or greater military actions and would therefore potentially escalate the crisis in a way that Beijing presumably undertook the quarantine to avoid.

The Military Capabilities That China Could Use for a Taiwan Quarantine

As discussed above, China would likely view a quarantine operation as a means to coerce Taiwan to accede to its demands through demonstrating control over Taiwan's maritime and air space, as well as controlling who has access to the island, while keeping the escalation costs manageable and without the need to resort to military force. While the PLA certainly has ample capacity for imposing a quarantine with its air and naval forces, use of these forces conveys the undesirable message that the PRC is invading another country, not attempting to use its law enforcement agencies to carry out ordinary domestic activity. While it is likely that elements of the PLA will be in close proximity, the PRC/CCP is most likely to prefer the use of forces other than its military.

Therefore, China would likely implement a quarantine operation using primarily its paramilitary maritime forces that it currently deploys for gray zone operations—to include the CCG and the PAFMM.²⁷ These forces are paramilitary but are increasingly well armed and could

²⁶ For example, in August 2016, China sent between 200 and 300 fishing vessels to amass in waters near the Senkaku Islands, and 15 CCG vessels entered the contiguous zone around the islands. More recently, Chinese fishing vessels have continuously entered into Japan's territorial waters ("Chinese Government Ships Enter Japanese Waters Near Senkakus," *Japan Times*, July 10, 2021).

²⁷ *Gray zone operations* broadly refers to operations that seek to achieve military goals with primarily nonmilitary means below the threshold of conflict (Lyle J. Morris, Michael J. Mazarr, Jeffrey W. Hornung, Stephanie Pezard, Anika Binnendijk, and Marta Kepe, *Gaining Competitive Advantage in the Gray Zone: Response Options for*

be used to interdict ships in a quarantine scenario. The CCG is responsible for maritime rights protection and maritime law enforcement missions, including enforcement of sovereignty claims and maritime surveillance.²⁸ The CCG has more than 130 large patrol ships, 70 fast patrol combatants, and 400 coastal patrol craft.²⁹ The CCG is well armed; many of its newer ships are equipped with helicopter facilities, high-capacity water cannons, and guns ranging from 30 mm to 76 mm.³⁰ As of 2018, the CCG falls under the People's Armed Police (PAP), which in turn falls directly under the Central Military Commission.³¹ This has allowed China to augment the CCG's ability to coordinate with the PLAN, which it would likely want to do in a quarantine operation.

The PAFMM includes government-sponsored armed fishing vessels that assist the CCG and PLAN in establishing Chinese presence in and around disputed waters, conduct surveillance, and provide logistical support to the CCG and PLAN.³² China typically deploys PAFMM vessels to swarm around disputed maritime territory in the East China Sea and South China Sea to harass rival claimant ships.³³ However, they could be used to assist the CCG in interdicting and harassing ships attempting to break the quarantine around Taiwan. CCG and PAFMM forces would likely be accompanied by the PLAN's surface ships in a quarantine scenario, but China would want to primarily rely on the paramilitary forces to reduce the risk of escalation.

In addition to paramilitary maritime forces, China would likely deploy PLAAF aircraft to conduct patrols around Taiwan's airspace. The PLAAF already conducts regular sorties and incursions across the median line of the Taiwan Strait and into Taiwan's ADIZ. For example, in September 2020, PLAAF fighter jets and bombers crossed the median line of the Taiwan Strait nearly 40 times during a U.S. official's visit to Taiwan.³⁴ In October 2021, the PLAAF flew 38 planes into Taiwan's ADIZ—the largest number to cross into the ADIZ in a single day.³⁵ In a

Coercive Aggression Below the Threshold of Major War, Santa Monica, Calif.: RAND Corporation, RR-2942-OSD, 2019, pp. 10–12).

²⁸ Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China 2020: Annual Report to Congress*, Washington, D.C.: U.S. Department of Defense, 2020, p. 70.

²⁹ Andrew S. Erickson, "Maritime Numbers Game," *Indo-Pacific Defense Forum*, January 28, 2019; Ronald O'Rourke, *U.S.-China Strategic Competition in South and East China Seas: Background and Issues for Congress*, Washington, D.C.: Congressional Research Service Report R42784, December 29, 2020, p. 12.

³⁰ U.S. Department of Defense, 2020, p. 71.

³¹ In 2018, China's Central Military Commission assumed direct control of the PAP and subordinated the CCG to the PAP (Erickson, 2019; U.S. Department of Defense, 2020, p. 29; and Japan Maritime Self-Defence Force Command and Staff College, "The Change in the China Coast Guard (CCG) Chain of Command," April 23, 2018.

³² U.S. Department of Defense, 2020, p. 72).

³³ See Andrew S. Erickson, "Tracking China's Little Blue Men—A Comprehensive Maritime Militia Compendium," *AndrewErickson.com*, April 24, 2021.

³⁴ Bonnie S. Glaser, "Maritime Security in the Indo-Pacific and the UN Convention on the Law of the Sea," statement before the House Committee on Foreign Affairs Subcommittee on Asia, the Pacific, Central Asia and Nonproliferation and the House Committee on Armed Services Subcommittee on Seapower and Projection Forces, April 29, 2021.

³⁵ Eric Cheung and Brad Lendon, "China Sends More Than Three Dozen Warplanes in Skies Near Taiwan in Largest Incursion Yet," *CNN*, October 2, 2021.

quarantine scenario, the PLAAF would likely increase these incursions as well as conduct regular patrols around the quarantine area.

China would also use information operations, including cyber, electronic warfare, and space-based surveillance and intelligence-gathering capabilities, as well as use of targeted disinformation and propaganda campaigns, to augment its maritime and air operations in a quarantine and shape Taiwan and U.S. decisionmaking on response options. Generally, China's information operations are meant to coerce an adversary's decisionmakers, shape regional public opinion, control the narrative on regional issues, and build support for Beijing's objectives.³⁶ Information operations constitute a key element of China's coercive strategy against Taiwan. China's previous actions against Taiwan in the information domain have involved the use of Chinese state media and social media platforms to disseminate propaganda and the use of cyber capabilities to spread false information to Taiwan's public and harvest data from Taiwan's government or commercial systems.³⁷

Several Chinese military doctrinal concepts embody this approach and would undergird China's use of information operations capabilities to support PLA and paramilitary forces in a quarantine of Taiwan. The first, the Three Warfares, comprises public opinion warfare, psychological warfare, and legal warfare. The Three Warfares is primarily aimed at shaping regional and international discourse and influencing perceptions to advance China's interests while hampering an adversary's response, deterring or breaking an adversary's will to fight and degrading decisionmaking, and mobilizing support for the Party's agenda.³⁸ Another key Chinese military concept is information dominance, which states that the side that dominates the information environment wins the war. The ability to control the information environment is one of the reasons why China has focused on increasing its ISR and data-gathering capabilities in the region, and in particular in areas where China has substantial national interests, including around Taiwan and the East China Sea.³⁹ In enacting a quarantine of Taiwan, China would likely use these information capabilities to shape the U.S. and Taiwan response and to complicate the operational picture for adversary forces.

While China's cyber activities against regional countries have primarily consisted of data harvesting through cyberattacks, Chinese military literature discusses the use of cyber

³⁶ Wu Jieming and Liu Zhifu [吴杰明, 刘志富], *An Introduction to Public Opinion Warfare, Psychological Warfare, Legal Warfare* [舆论战心理战法律战概论], Beijing: National Defense University Press [国防大学出版社], 2014.

³⁷ For a discussion of China's information operations activities against Taiwan, see Scott W. Harold, Nathan Beauchamp-Mustafaga, and Jeffrey W. Hornung, *Chinese Disinformation Efforts on Social Media*, Santa Monica, Calif.: RAND Corporation, RR-4373/3-AF, 2021.

³⁸ Elsa Kania, "The PLA's Latest Thinking on the Three Warfares," *China Brief*, Vol. 16, No. 13, August 22, 2016.

³⁹ Jeffrey Engstrom, *Systems Confrontation and System Destruction Warfare: How the Chinese People's Liberation Army Seeks to Wage Modern Warfare*, Santa Monica, Calif.: RAND Corporation, RR-1708-OSD, 2018, p. 15. See also Yu Zhifeng, "New Network-Electronic Combat Methods Are Currently Disrupting the Rules of Warfare," *China Military Online*, December 19, 2017.

capabilities (1) to degrade or shape an adversary's decisionmaking through injecting false information, accessing information systems, and controlling or destroying data or (2) to negatively affect an adversary's economy.⁴⁰ The Chinese military's organizational reform agenda has focused on the advancement of offensive cyber capabilities that would be integral in paving the way to information dominance during peacetime and in the early stages of a conflict, and the PLA would likely rely on these capabilities to target Taiwan's government and military systems and support other Chinese military actions during a quarantine. The PLA also has electronic warfare and jamming capabilities that can threaten U.S. and allied satellite communications and navigation systems, which China could use to undermine U.S. and Taiwan ISR and frustrate their responses to the quarantine.⁴¹ China has also augmented its space-based ISR and intelligence gathering capabilities. For example, China has recently launched a number of surveillance and dual-use oceanographic and hydrological satellites and has several Beidou navigation satellites that have bolstered its intelligence collection and surveillance, which would be critical for information dominance and detection of adversary forces during a quarantine of Taiwan.⁴²

China's Assessments of Escalation Risk for a Quarantine of Taiwan

How China views its ability to control escalation in this scenario is critical to assessing whether the crisis would escalate into a full-blown armed conflict. China would likely have several key considerations when assessing the escalation risk of a quarantine operation.

First, by enacting a quarantine of Taiwan rather than a full blockade, China would likely attempt to place the burden of escalation on the responding adversarial forces—the United States, Taiwan, and potentially Japan and Australia. Because the quarantine operation would not aim to fully cut off Taiwan's food and supplies but would instead focus on controlling the air and maritime space around Taiwan and access to the island, China would attempt to use paramilitary forces and activities that fall below the threshold of armed conflict and would make it politically difficult for Taiwan and the United States to respond with conventional forces or kinetic actions and risk being the first to escalate the conflict. China has used this approach with some success in its gray zone operations in the East China Sea and South China Sea, where it has deployed the

⁴⁰ Chinese authors discuss the use of cyber capabilities in economic coercion in general, acknowledging that the cyber and economic domains are intertwined in hybrid warfare operations. See Tianjiao Jiang [天骄 江], "Cross-Domain Deterrence and Strategic Stability in Cyberspace" [跨域威慑与网络空间], *China Information Security* [战略稳定中国信息安全], No. 8, 2019, pp. 36–39; and Engstrom, 2018.

⁴¹ Kathleen Hicks, Joseph Federici, and Connor Akiyama, "Strategic Analysis 4/2019: China in the Gray Zone," Helsinki: European Centre of Excellence for Countering Hybrid Threats (Hybrid COE), 2019, p. 4.

⁴² Mark A. Stokes, "China in Space: A Strategic Competition?" statement before the U.S.-China Economic and Security Review Commission on April 25, 2019, Washington, D.C., 2019.

types of paramilitary and informational capabilities discussed in this report to coerce regional states on disputed maritime territorial claims.⁴³

Second, Chinese writings on escalation control indicate that the PLA's actions should be in service of broader strategic and political goals and that escalatory actions should always be gradual and compliment broader national goals.⁴⁴ While the potential for an unintended escalation to kinetic conflict in a Taiwan quarantine scenario certainly exists, the themes discussed in PLA writings indicate that the potential for escalation could be greater should U.S. and Taiwan responses threaten China's strategic goals and objectives. Beyond the obvious threat to China's interests regarding Taiwan that a U.S. response would pose, this could include U.S. military responses that could significantly threaten interests such as China's physical security, regime security, or its economy.⁴⁵

Third, as discussed above, China will likely use information operations, space, cyber, and electronic warfare capabilities to gain information dominance in a quarantine of Taiwan and complicate the operating picture and decisionmaking for the United States and allied response. However, it is unclear how much China has considered the unintended escalation effects of use of these capabilities in a conflict or crisis. For example, many Chinese writings on information dominance and information operations discuss the positive aspects of these capabilities and the need to gain and maintain information superiority prior to and during a conflict, but they do not address the limitations or potential unintended consequences of these actions.⁴⁶ This could create a situation in which China's actions or reactions are unintentionally escalatory, though Beijing would potentially seek to balance the use of these capabilities to support its maritime and air operations with the risk of escalating to a kinetic conflict.

Fourth, Chinese assessments of the escalation potential and possible U.S. responses of a Taiwan quarantine would also depend on Beijing's analysis of how likely the United States is to come to Taiwan's aid and how far it is likely to go to defend Taiwan against Chinese aggression. For example, changes to U.S. Taiwan policy or the Taiwan Relations Act, posture enhancements or U.S. military activities directly involving Taiwan, or U.S. and allied leadership statements demonstrating clear support for the defense of Taiwan would likely engender more caution on China's part when assessing how to enact the quarantine and potential responses to U.S. and Taiwanese actions. On the other hand, actions that illustrate a decrease in commitment to the defense of Taiwan or to U.S. allies and partners in the region could lead China to assess that the United States would not respond aggressively to coercive Chinese actions.

⁴³ For a discussion of China's gray zone actions and the challenge in responding to them, see Morris et al., 2019.

⁴⁴ Alison A. Kaufman and Daniel M. Hartnett, *Managing Conflict: Examining Recent PLA Writings on Escalation Control*, Arlington, Va.: CNA, February 2016, pp. 60–61.

⁴⁵ For a discussion on China's strategic interests, see Andrew Scobell, Edmund J. Burke, Cortez A. Cooper III, Sale Lilly, Chad J. R. Ohlandt, Eric Warner, and J.D. Williams, *China's Grand Strategy: Trends, Trajectories, and Long-Term Competition*, Santa Monica, Calif.: RAND Corporation, RR-2798-A, 2020.

⁴⁶ Chase et al., 2015, p. 117.

4. Responses: Options and Risks

In this chapter, we develop the escalation ladder we discussed in Chapter 2 as it applies to PRC quarantine of Taiwan. The past two U.S. administrations have made it clear that the United States will resist forcible unification of Taiwan and the PRC and has oriented its posture and capability development toward that end. The United States cannot effectively react to a quarantine on its own. At a minimum, Taiwan has to view the action as an infringement on its autonomy and as being sufficient to warrant a response. If Taiwan views the quarantine as an inconvenience and allows Chinese customs inspections and diversions, there may be little point in the United States trying to contest the action. Other nations would have to agree to call the quarantine illegitimate and continue to attempt to ship goods into Taiwanese ports and airports, as well as receive goods on ships from Taiwan. The United States has to be particularly aware of the points of leverage the PRC may have over countries throughout the region and overseas that export to or import from Taiwan, as well as places where the United States can exert equal leverage.

Points of Leverage over Taiwan

A major point of vulnerability for Taiwan is its reliance on imports for basic commodities and its lack of reserves in the event of disruption. Taiwan pharmaceutical industry leaders assess its pharmaceutical and raw material stockpiles to be insufficient for a pandemic.⁴⁷ While this is different than readiness for a war, the point is that Taiwan is not planning for a major disruption. Chip manufacturers have begun heavily stockpiling material.⁴⁸ But the leverage point is far more basic than ability to import materials and export finished products. Necessities such as fuel and food could be in short supply, or possibly allowed but at a steep markup, hobbling every other economic activity.

Just focusing on fuel as an example, in 2018, Taiwan consumed 971,000 barrels per day of refined petroleum products and imported 886,000 barrels per day of crude oil and lease condensates, while producing 23,000 barrels per day of crude oil.⁴⁹ This oil did not generally come from the PRC, but it is clear that a quarantine limiting oil shipments into Taiwan would have an immediate effect. Turning to food, in 2019, Taiwan imported \$5.8 billion of agricultural commodities, with 30 percent coming from the United States. Taiwan had negligible food

⁴⁷ PharmaBoardroom.com, “Louis Cheng—CEO, Leadgene Biomedical, Taiwan,” webpage, May 18, 2020.

⁴⁸ Aaron Klotz, “Chip Manufacturers Stockpile Record Amount of Raw Materials to End Shortage,” *Tom’s Hardware*, August 23, 2021.

⁴⁹ U.S. Energy Information Administration, “Taiwan: Natural Gas Data,” webpage, undated.

exports. While its total market for food processing was \$19.9 billion and for food sales \$38.8 billion, there is little indication that Taiwan produced a significant portion of its own food.⁵⁰

The arguments for Taiwan to procure more capable armaments for its defense are well known.⁵¹ Such measures may very well improve deterrence against attack and be useful in stopping an invasion. However, a quarantine would be intended to deprive Taiwan of critical materials over a period of months, and basic commodities could be in short supply. Having reserves would be a first step.

Another point of leverage is that Taiwan's very dominance in the semiconductor market may leave it open to greater pressure to capitulate in the event of supply disruption. While the world may hold various views about the behavior of the PRC and the legitimacy of Taiwan's claims to autonomy, the world's major economies depend on a ready supply of semiconductor chips manufactured largely in Taiwan. In the event that the PRC disrupts the delivery of these chips, nations might react by pressuring the PRC to end the quarantine or might as easily encourage the PRC to step up pressure on Taiwan and discourage other nations from supporting Taiwan. The end point is that nations would be wishing Taiwan's rapid capitulation to get the chip market back to normal, whether or not the PRC or Taiwan is left controlling the fabrication facilities.

Points of Leverage over the PRC

The PRC's economy and trade are magnitudes larger than Taiwan's and can thus absorb trade disruption for longer. If a quarantine is imposed and enforced, Taiwan will suffer more deeply and immediately than the PRC. But, while the PRC is in a relatively strong position relative to Taiwan, it is not in an impregnable position relative to the rest of the world. While the PRC does not receive large numbers of imports from Taiwan, the items it does import are important, including semiconductors, and if Taiwan stops production, the PRC will eventually feel the impact., although it will certainly stockpile in anticipation of this shortage.

Moreover, the U.S. dollar remains the world banking system reserve currency, with roughly 90 percent of the world's foreign exchange transactions done in dollars.⁵² The United States still has nearly unlimited access to the world's financial system, while the PRC does not and would likely suffer bars to entry and use if it were to conduct an effort to dominate that the world viewed as illegitimate.

More importantly, however, the PRC will have to face the judgment of the rest of the world, on which the PRC depends on trade to fuel its economy. If other nations view its actions as

⁵⁰ Cleo Fu, "Exporter Guide, Taiwan," U.S. Department of Agriculture Foreign Agricultural Service and Global Agricultural Information Network, August 5, 2020.

⁵¹ Lee Hsi-min and Eric Lee, "Taiwan's Overall Defense Concept, Explained," *The Diplomat*, November 3, 2020.

⁵² Kimberly Amadeo, "Why the U.S. Dollar Is the World Currency," *The Balance*, webpage, updated March 16, 2022.

illegitimate and impose sanctions of their own on Chinese goods, everyone will be affected, but the PRC may be affected in fundamental ways.

The United States and other economies have become aware of the impacts resulting from supply chain disruptions resulting from the coronavirus pandemic and thus have the opportunity to learn about and mitigate such disruptions. The PRC also responded to the challenge, but with measures such as shutting down industries and sequestering whole cities—measures that may not work when the cause of disruption is some other nation imposing sanctions. Moreover, some of the areas where the PRC is counting on leverage may not be available. If nations already know how to do without some Chinese-manufactured commodity or have found other markets for products normally consumed in the PRC, the PRC's leverage decreases.

If the response escalates to the point of a counterblockade, where the United States attempts a level of trade interdiction equivalent to what Taiwan has imposed on China, the success of this effort will depend heavily on the actions of other countries. The PRC has significant vulnerabilities in its trade relationships and financial flows. If nations honor the counterblockade, the PRC would at some point experience trade and financial disruption. While it is undeniable that Taiwan will be more significantly impacted than the PRC under any circumstance, the PRC does not have unlimited resilience.

U.S. Reactions to the Quarantine

While the United States has pursued a policy of strategic ambiguity with respect to its commitment to Taiwan, once a quarantine is imposed, ambiguity is no longer a possibility. Although the United States does not have a defense treaty with Taiwan, inaction is tantamount to accepting the PRC's actions. There are several actions that the United States could attempt once the PRC announces the quarantine. All depend on a policy stance that denies the legality and appropriateness of the PRC's actions and states that the movement of commerce to and from Taiwan is something that Taiwan has the right to regulate. The policy holds as illegitimate the PRC imposing any kind of trade or customs regime over the movement of commerce into or out of Taiwan. All the possible actions below must be accompanied by a clear demarche stating the actions, the rationale, and the consequences of challenges.

Economic and Trade Sanctions

If the PRC has imposed a heavily restrictive quarantine on Taiwan, it is unlikely that other nations would continue to trade with the PRC in a business-as-usual fashion. Trade sanctions, as well as actions to exclude the PRC from the global financial system, are possible early in the process and could have a significant impact over time. As a general matter, the PRC is more

dependent on access to international markets than the United States, and the United States has stronger political and diplomatic ties with the rest of the world than the Chinese.⁵³

Nevertheless, the PRC has tremendous leverage over other economic actors and considerable ability to control activity within its own country. It is aware of its vulnerabilities and has taken action to mitigate them. The PRC can impose sanctions or other economic pressure actions of its own, which could have a major impact on other nations in the region. While these sanctions might not fatally impact the U.S., Japanese, or EU economies, economic coercion goes both ways, and the key feature may be not just ability to inflict pain but also to stand the pain inflicted by others.

Testing the Quarantine Directly

The United States could act as if the quarantine has not been imposed and simply permit the redesignation of shipping to the U.S. flag, accompanying this with a statement that interfering with this shipping will draw a response from the U.S. government. If forces from the PRC attempt to approach or board one of these ships, they would be carrying out an action against the United States. Such reflagging has recent precedent in the U.S. reflagging of tankers and gas carriers during Operation Earnest Will in the Arabian Gulf from 1987 to 1989. This action would presuppose the availability of vessels compliant with U.S. Coast Guard safety and crewing requirements, with crews and owners willing to undertake the risk of sailing into a declared quarantine.

Simply allowing flagged merchants to sail into Taiwan in defiance of a quarantine invites a crisis over these vessels being boarded and diverted, so adding armed escorts might reduce the chance of such interference. The United States could use surface and air assets to prevent Chinese boarding teams from stopping or boarding flagged vessels and threaten the use of force if such interference should occur. While such action involves a higher level of force and could possibly result in direct confrontation with forces from the PRC, it is also a clearer demonstration of commitment and greatly reduces the chances of a “hostage situation” in which crews are detained pending resolution of claims.

The most dramatic test of the quarantine would be a large-scale armed demonstration or direct action against the forces imposing the blockade. This could include capturing small vessels, shooting down aircraft, and sinking ships to neutralize quarantine forces and enable the flow of commerce into and out of Taiwan. These actions would be confined to forces directly involved in support of the quarantine and would specifically exclude attacks on the PRC’s homeland.

The United States would also have to assure the ability of commercial aircraft to fly safely into and out of Taiwan. If the PRC simply required aircraft to check in with PRC authorities and

⁵³ Frank Tang, “China’s Economic Vulnerabilities to Be Focus of 2021 Work Conference Amid Strong GDP Forecast, Analysts Say,” *South China Morning Post*, December 11, 2020.

receive permission to transit airspace, that might be largely an inconvenience, albeit still acceptance of the PRC's right to demand such a procedure. If some more-assertive policy were imposed, such as a requirement for aircraft to land in the PRC first, that might require U.S. air escort of traffic. In any case, the United States would have to take steps to ensure that resupply flights could occur.

Disabling Quarantine Forces

In order to neutralize the ability of the PRC to impose a quarantine, the United States could focus on the forces supporting the operation rather than the forces directly imposing the quarantine. Specific U.S. actions could include

- disabling ISR that enables the interception of flagged vessels and escorts
- disabling command and control networks or processes that enable quarantine operations
- neutralizing forces that provide direct fire support or protection to quarantine units. This could be done by a variety of forces, to include submarines against other submarines or surface forces.

This clearly constitutes significant escalation. Beyond insisting that shipping not be hampered and acting directly to prevent interference, the United States would be employing force against PRC military assets that may not be in the vicinity of the blockade and might indeed have other employment.

We assume that initially such action would not be taken against forces in the PRC's mainland, as this would be an even greater level of escalation. However, such attacks were carried out by the U.S. Navy against elements of the Iranian Navy in Operation Praying Mantis in 1988 as a response to Iran's mining and disruption of Earnest Will convoy routes. In this operation, not only did the U.S. Navy escort tankers and destroy direct threats, it also sank ships and destroyed oil platforms that were providing surveillance and staging areas for ship attacks.⁵⁴ Attacking the PRC's mainland is clearly a step further than attacking Iran's ships and offshore infrastructure. But, if the quarantine were to begin imposing hardship on Taiwan, more-direct attacks might appear attractive.

Operational Quandary of the U.S. Response

Disrupting the PRC's attempt to impose a quarantine likely involves putting forces close to Taiwan, close enough to be readily targeted in the event the PRC should decide that conditions for the dispute has deteriorated to the point that an invasion of Taiwan is necessary. In effect, if the United States were to put too many naval and air forces within range of Chinese offensive capabilities, they could invite a preemptive strike.

⁵⁴ Naval History and Heritage Command, "Operation Praying Mantis," webpage, undated.

U.S. forces would be vulnerable, while at the same time asserting claims about Taiwan's autonomy that the PRC has stated it cannot accept. The incentives to strike U.S. forces might be very difficult for the PRC to resist. The resulting situation would be highly unstable and risky for both sides, with the United States needing to be close to thwart the quarantine but creating for the PRC a strong incentive for it to end a long-troubling impediment to a national goal. The situation would be anything but a slow-moving campaign allowing both sides time to consider exit ramps.

Counterblockade

A counterblockade would go beyond financial and economic sanctions and attempt to impose a set of restrictions equivalent to what the Chinese have imposed on Taiwan. Such action is clearly a blockade by one nation against another rather than a quarantine and, as such, qualifies as an act of war.

The PRC is a much larger nation with orders of magnitude more trade and shipping than Taiwan. Trying to impose such a blockade immediately outside its ports would be very hazardous, as the PRC possesses overwhelming capability to defend its littoral. Blockading forces would immediately be at risk. The U.S. Navy does have the capability to mine and carry out submarine warfare in this area and could offer to the PRC that its forces and shipping are in persistent danger of being sunk. While the PRC can clear mines, it likely cannot do much against the submarine threat for the next several years. If the United States were to carry out such actions, it would without question slow Chinese commerce. However, such actions would also be a severe provocation, amounting to an attack on the Chinese homeland.

The United States could also impose a "distant blockade," where it could attempt to carry out interdiction at chokepoints well removed from the PRC's territory. This would be a very resource-intensive effort, as it would involve stationing forces to carry out VBSS at chokepoints worldwide. While the PRC's military likely lacks the worldwide reach to directly challenge the U.S. blockade forces, the United States would have to station forces at chokepoints, keep them resupplied and rotate them at intervals, and also be in a position to provide prize crews⁵⁵ for diverted vessels, possibly numbering in the dozens. Such action would also not interfere with overland trade and would have to deal with mixed cargo and with merchants changing flags with relative ease. So, besides being resource intensive and possibly not slowing the maritime flow significantly, it might not affect the air and overland flow at all.

However, even if the distant blockade were effective in interdicting trade, the effects on Taiwan from the PRC quarantine would likely be more rapid than the effects on the PRC from the U.S. and allied blockade. No matter how committed the international community might be to protecting Taiwan's autonomy, there would likely be no significant impetus toward continuing punitive action against the PRC once Taiwan decided to capitulate.

⁵⁵ A *prize crew* is "a detail of officers and men from the captor placed aboard a naval prize to take her into port for adjudication" (Merriam-Webster, "Prize Crew," webpage, undated).

General Attacks on PRC Military Forces and National Power

This is clearly the highest stage of escalation, involving actions against forces generally, not just those specifically associated with the quarantine. Within this, there are additional escalatory steps, but it would be fair to conclude that when the United States and the PRC have reached this step, the initial reasons for the conflict will have receded in importance.

The Risks and Consequences

The PRC views Taiwan as its sovereign territory and does not accept that any other nation has the right to interfere with its attempts to regulate its trade or customs arrangements. While it has not attempted to resolve the issues by force, it has been clear that it views such action as being wholly within its rights.

The Quarantine May Have an Impact Very Rapidly

A quarantine might be attempted as a way to force resolution without a major war. However, this could be a serious miscalculation. In most cases, quarantines take time to have an impact, and, as a result, there is time for all to formulate proportionate responses. However, Taiwan is in fact in a precarious position relative to the PRC, so impacts might be felt very rapidly, as might the impacts on the world of Taiwan's curtailed exports. The PRC might be inducing a crisis that could escalate more quickly than expected, due largely to its preponderance of economic leverage.

While China's economic leverage over Taiwan might make the option attractive in terms of likely success, it also increases the need for a quick and forceful U.S. response. Although it is in no one's interest for the crisis to rapidly escalate, the PRC's very success in establishing asymmetry may in fact reduce the choices available to the United States.

The United States Could Be Forced into Dire Choices

The urgency for getting resupply shipping into Taiwan might require that the United States forego temperate responses and proceed immediately to more-forceful options. The choices for the United States might rapidly devolve into those requiring highest levels of force. While the amount and kind of force the PRC would use for a quarantine would be considerably less than that required for an invasion, the United States might need to bring a major naval force to perform escort and defense close to what it might require to counter an invasion. Put another way, for a relatively small expenditure of available resources, the PRC might force the United States into a more major investment.

The Choices Available to All Sides Promote Rapid Escalation

There are likely ways that the PRC could impose the quarantine such that the impacts are gradual and, thus, the opportunities to react somewhat measured. However, one lesson of the coronavirus pandemic is that supply chain disruptions rarely emerge as manageable crises but instead begin to threaten vital national sectors quickly. Both Taiwan and the PRC are heavily dependent on trade and capital flows. While the PRC is, due to sheer size, better able to absorb shocks than Taiwan, neither economy is oriented toward resiliency in the face of disruption.

This means first that Taiwan might be facing debilitating shortages within days, which drives it either toward capitulation or a request to the United States for more forceful intervention. This in turn drives the United States toward levels of force likely to be directly challenging to the PRC. The result is thus unlike the Cuban Missile Crisis, where one nation could deny another the ability to take military cargo to a third country; it is instead an effort to rescue a beleaguered ally under siege and in danger of losing the basics of life support.

It may not be easy to simply dial this pressure up or down. For Taiwan, simply accepting even a PRC demand for a customs union amounts to ceding Taiwanese autonomy. The PRC attempting to target specific sectors would likely have broad and unpredictable effects, to the point of being indistinguishable from a general quarantine. The United States and Taiwan would rapidly face a requirement for a more forceful response. From the PRC's point of view, abrupt removal of quarantine provisions may look like defeat, particularly if done in the face of U.S. threats. It may be impossible to use a quarantine to achieve a gradual impact. Rather than creating de-escalation options, a quarantine, tailored or general, might simply result in rapid U.S. intervention.

5. Findings and Recommendations

The United States and its allies should view the possibility of a quarantine of Taiwan by the PRC as a highly destabilizing course of action that could become dangerous very quickly. Taiwan would be affected quickly, with the asymmetry between Taiwan and the PRC making Taiwan's ability to function economically precarious. The United States would face a requirement to move forces close to the contested area, increasing vulnerability. Taiwan's status as a supplier of components and high-technology items might in fact increase the world's incentives to urge rapid resolution, while at the same time creating incentives for the PRC to seek domination over key industries. This would likely not be a slow-moving conflict but a rapidly escalating crisis.

Findings

This report is an analysis of interests affecting three actors (the United States, Taiwan, and the PRC). Any actors could choose a different path, with or without a careful evaluation of underlying interests. Nevertheless, some general findings do apply:

The Economic Balance of Power Between Taiwan and China Favors the PRC

If reduced to a simple question of who would ultimately prevail in an economic or military conflict, the PRC has effectively every advantage over Taiwan, and if the confrontation were to go on for a prolonged period, the PRC is in a much better position to endure whatever consequences might develop. This would likely be the case even if the United States were to attempt economic pressure on the PRC.

Direct Pressure Will Likely Be Necessary to Break the Quarantine

Whether such pressure derives from ignoring the quarantine with unescorted shipping—unlikely given escalation of insurance rates and reluctance of ocean carriers to risk their ships and crews—by escorting shipping, or by attacking the forces imposing the quarantine, direct pressure will be required to allow shipping to flow. While there may be room to negotiate the movement of particular kinds of commodities, if the PRC declines to allow free shipment, no amount of indirect pressure is likely to result in the PRC abandoning its efforts.

A Counterblockade Is Unlikely to Be Successful

The PRC's economy is too large and varied to be quickly affected by a blockade, and, as the blockade progresses, it will affect other nations. More to the point, however, is that the quarantine on Taiwan is likely to have an effect much more rapidly. A counterblockade might be

useful in conjunction with direct action, but it is unlikely to work rapidly enough on its own to change the PRC's behavior.

The Force Requirements for the United States Are Likely to Be Heavy

Whether the United States decides to escort or carry out more direct actions, it will need a sizeable military force, specifically VBSS teams; platforms to support the teams; combatant ships and aircraft to protect the teams and platforms; and wide-area ISR support. This force needs to be available shortly after the United States decides to react if the response is to be in any way effective.

Recommendations

Reducing the risk of escalation and increasing the probability of favorable outcomes depends on creating more time and more options for both sides. Neither side can count on a prolonged military campaign ending favorably. Both sides might agree to outcomes below their preferred outcomes, although Taiwan and the United States are hoping for nothing much greater than maintenance of the status quo. But compressed timelines rapidly force decisions that leave neither side significant room for alternate paths. This is a dangerous and unsustainable set of conditions.

Realistically Evaluate the Escalatory Potential of Asymmetric Economic Relationships

While Taiwan has a significant role in at least one key component of the global supply chain for manufactured goods—semiconductors—that role does not insulate it from the many other influences that the PRC can bring to bear not just on it but also on the rest of the world. A quarantine would very rapidly create shortages, which would likely accelerate the need for the United States to intervene in a direct way. Taiwan is in a far more vulnerable position than the PRC, which may in fact promote instability and escalation. Measures to disengage itself from the PRC's markets will not prevent the PRC from damaging Taiwan's economy if it decides to physically interdict imports, but it does reduce the degree of financial dependence on the PRC, particularly if these are replaced by stronger relationships with other potential partners. We noted earlier that Taiwan has significant investments in the PRC, \$5.2 billion in 2016. The PRC simply seizing these assets would have a major impact on Taiwanese companies and would contribute to Taiwan's rapid economic isolation. Diminishing the degree of interdependence, asymmetrically held by the PRC, would create one less point at which the PRC could push Taiwan toward collapse.

This is, to a degree, counterintuitive to years of belief that commonality of interest promotes conflict resolution. In the case of the PRC and its partners, interdependence creates asymmetric costs that the PRC is better able to bear and thus reduces its reasons for caution. However, even beyond this destabilizing influence, the fact that the PRC might be able to rapidly exert overwhelming economic influence rapidly makes military response the only credible option for

the United States and its allies. Taiwan almost immediately faces a cessation of most economic activity, even before the PRC begins interdicting the flow of goods in a quarantine. In the face of a quarantine, Taiwan begins to face a humanitarian challenge absent some action to restore the flow of goods.

For Taiwan in particular, it not only needs to diversify its trading partners and recover its investments in the PRC, but it also needs domestic sources, or at least robust stockpiles, of fuel, water, foodstuffs, and military materiel. Even if the PRC elected to not impose restrictions on these commodities, merely the threat of doing so creates pressure. Reducing dependence on external sources decreases Chinese leverage and adds time for each side to consider options.

Seek Greater Diversity of Semiconductor Production

The dominant place Taiwan has in worldwide semiconductor manufacturing has the ironic effect of making it more vulnerable. Not only does the PRC have the political incentive to rein in what it views as a rogue province, but it also has the economic incentive to bring a critical industry directly under its control. Again, while it may appear counterintuitive for a nation to divest itself from a profitable industry, wider dispersion may in fact reduce its vulnerability and be in its interest.

Such dispersion might also serve to reduce the urgency of resolving the quarantine once imposed. Other nations can continue economic activity and thus do not have a strong incentive to demand prompt resolution of the crisis.

Wider dispersion of semiconductor production may be occurring independent of security concerns. Taiwan has experienced a drought, which impacts its ability to operate fabrication facilities, and the Taiwan Semiconductor Manufacturing Corporation (TSMC) is already seeking fabrication facilities in other countries, including Japan.⁵⁶

A general point is that having a dominant position in some market does not confer influence if the nation is otherwise vulnerable. Powerful opponents already possess the means, and the market dominance provides the incentive, to seize the thing of value. If the PRC were to challenge Taiwan's autonomy, nothing about Taiwan's market position in semiconductors works to its advantage.

Forward Deploy U.S. Military Forces

Whether the United States is principally trying to deter the PRC from initiating a quarantine or actively trying to challenge the quarantine or actively taking direct action against the PRC homeland, it benefits from already being in position. Such a forward posture need not imply aggressive intent but does communicate readiness to act. We have not discussed the readiness

⁵⁶ Cheng Ting-Fang and Lauly Li, "TSMC Announces Plans to Build First Chip Plant in Japan," *Nikkei Asia*, October 14, 2021.

challenges associated with such forward deployment, which are considerable, but if these can be overcome, there is considerable value in having forces forward and readily available.

Communicate That Quarantine Is Not a Low-Risk Alternative

Quarantine is not a low-risk, slow-moving action, equivalent to imposing economic sanctions. Regardless of how imposed, such action is likely to rapidly escalate to use of force. All parties must understand that escalation is a strong possibility, absent any of the parties simply abandoning long-held stances on sovereignty, autonomy, and the international order. The PRC might perceive clear advantage to a quarantine and thus impose one, but the United States must clearly indicate to the PRC that the risks of such a course are high.

Abbreviations

ADIZ	Air Defense Identification Zone
CCG	Chinese Coast Guard
CCP	Chinese Communist Party
EEZ	Exclusive Economic Zone
ISR	intelligence, surveillance, and reconnaissance
PAFMM	People's Armed Forces Maritime Militia
PAP	People's Armed Police
PLA	People's Liberation Army
PLAAF	People's Liberation Army Air Force
PLAN	People's Liberation Army Navy
PRC	People's Republic of China
ROC	Republic of China
TSMC	Taiwan Semiconductor Manufacturing Corporation
VBSS	visit, board, search, and seizure

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China's coercive options for Taiwan range from routine violations of Taiwan's declared Air Defense Identification Zone to a full-scale invasion. Within the spectrum are efforts to isolate Taiwan to prevent it from sending exports or receiving imports. Typically, this would be called a *blockade*. However, because China does not view the government on Taiwan as sovereign and thus rejects the idea that a state of war could exist, blockade is not the correct term. Therefore, in this report, the authors examine how China might implement a quarantine of Taiwan. Unlike in a blockade scenario, China's goals for the *quarantine* would not be to completely cut off food and supplies to Taiwan, but rather to demonstrate de facto sovereignty by controlling the air and maritime space around the island, as well as which cargo deliveries, ships, aircraft, and people have access to Taiwan.

Reducing the risk of escalation and increasing the probability of a favorable outcome depends on creating more time and more options for both sides. Neither side can count on a prolonged military campaign ending favorably. Both sides might agree to outcomes below their preferred outcomes, although Taiwan and the United States are hoping for nothing much greater than maintenance of the status quo. But compressed timelines rapidly force decisions that leave neither side significant room for alternate paths; this is a dangerous and unstable set of conditions.

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