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RESEARCH & DEBATE

PIER COMPETITOR TESTIMONY ON CHINA’S GLOBAL PORTS

Isaac Kardon

The United States–China Economic and Security Review Commission convened a daylong hearing on the global power-projection capabilities of the People’s Liberation Army (PLA) on 20 February 2020. What follows is a version of the testimony with which the author responded to the commission’s questions on Chinese bases and access points, drawing on an original data set of the ninety-five overseas port terminals that Chinese firms—primarily three entities, two of which are central state-owned enterprises—own, operate, or both.¹ These facilities are concentrated in the Indian Ocean and eastern Mediterranean Sea.

Some of the terminals in this expanding commercial network may serve dual-use functions as “strategic strongpoints” for the PLA to sustain overseas military operations of increasing complexity and duration. This strongpoint model is not suited for supporting high-end combat; rather, it is optimized for peacetime logistics and intelligence collection. Domestically, efforts are under way to achieve greater “military-civilian fusion,” such that PLA forces can use terminals operated by Chinese firms more readily. Internationally, the PLA Navy (PLAN)

engages in military diplomacy that advances the political relationships between China and host countries, including by conducting port calls at facilities owned and operated by Chinese firms.

The testimony concludes with analysis of Chinese firms’ terminals in the United States and several recommendations for U.S. policy makers to understand and mitigate security risks from China’s overseas port expansion.

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Where and how is China securing bases and other access points to facilitate its expeditionary capabilities?

The PLA's air- and sealift capabilities remain insufficient to supply and sustain complex military operations beyond the range of mainland logistics networks. Yet, with the notable exception of the sole military "support base" in Djibouti, these limited vessels and aircraft are the PLA's only organic mode of "strategic delivery" to project military power overseas.² Lacking a network of overseas bases, the PLA must rely on a variety of commercial access points to operate beyond the first island chain. Because the PLAN is the service branch to which virtually all these missions fall, this testimony focuses on port facilities.

The PLAN depends on commercial ports to support its growing operations overseas. Over the course of deploying thirty-five escort task forces since 2008 to perform an antipiracy mission in the Gulf of Aden, the PLAN has developed a pattern of procuring commercial husbanding services for fuel and supplies at hundreds of ports across the globe. All navies that operate abroad rely to some degree on such routine commercial arrangements. The distinctive aspect of the PLAN's efforts to support a growing overseas presence, however, is its access to a large and growing number of ports (partly) owned and operated by People's Republic of China (PRC) firms. PLA officers and Chinese analysts tout a variety of possible dual-use functions at these ports, which in some cases are dubbed China's overseas "strategic strongpoints."³

How does the PLAN use these facilities; where are the facilities located; who owns and operates them; and what, if any, military purposes do they serve? After summarizing the pattern of commercial activity, we will turn to the potential dual-use functions of Chinese-owned and -operated ports and the prospects for securing actual military bases.

China's Global Port Portfolio

Since the late 1990s, a handful of Chinese firms have seized considerable market share as international terminal operators. They have leveraged capital and expertise drawn from the extraordinary scale of China's own domestic port industry (which boasts thirty-one of the world's top fifty ports by total cargo tonnage, and seven of the top ten highest-throughput containerports) to expand overseas.⁴ As of July 2020, PRC firms (partly) owned or operated some ninety-five ports across the globe.⁵ At a far larger number of ports—on the order of hundreds—Chinese firms have built port works, upgraded equipment, or dredged harbors.⁶ However, such contracted projects do not leave a Chinese firm in control of the management or operations of the port, and thus are excluded from analysis here of how Chinese commercial facilities may support military operations.

Ownership is a major factor in unlocking dual-use potential. Of the ninety-five Chinese-operated/owned ports abroad, central state-owned enterprises (SOEs)

have operational roles, ownership stakes, or both in fifty-two of them, and eight involve local SOEs but no central SOEs.⁷ In thirty-five of the Chinese-operated/owned overseas ports, private firms have ownership stakes or operational roles and no SOEs are present. A Chinese firm is the majority shareholder in at least one terminal at fifty-six ports, and the 100 percent shareholder in twenty-three of those.

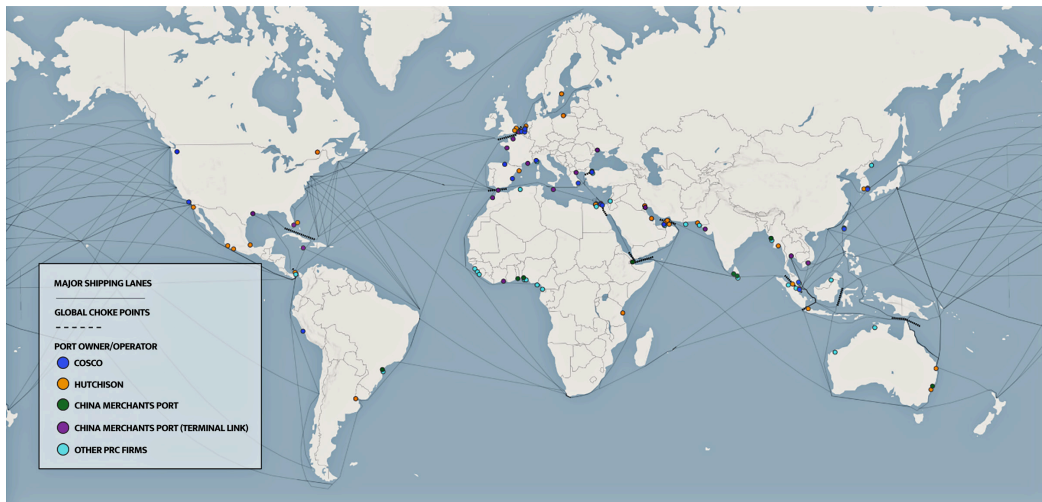
Of China's overseas port operations, 81 percent (seventy-seven of ninety-five) are accounted for by three Chinese firms: Hutchison Ports (Hutchison), COSCO Shipping Ports (COSCO), and China Merchants Port (CMPort). Each is a subsidiary of a larger enterprise group, with COSCO and CMPort answering to a central SOE led by an executive with vice-ministerial rank in government. Hutchison is a majority shareholder in thirty-six of its thirty-eight ports, including twenty in which it holds 100 percent stakes. COSCO holds majority stakes in seven of its nineteen overseas ports. CMPort holds majority stakes in three of its thirty-three overseas terminals; in twenty-nine of CMPort's terminals it maintains a minority partnership through a joint venture (with the French firm CMA CGM) in which CMPort has no managerial or operational role, only portfolio investment and board representation.⁸

The geography of these firms' holdings is represented in the figure. By ocean, there are thirty-one in the Atlantic, twenty-five in the Indian Ocean, twenty-one in the Pacific, and sixteen in the Mediterranean. Regionally, there are twenty-two in Europe, twenty in the Middle East and North Africa (MENA), eighteen in the Americas, eighteen in South and Southeast Asia, and nine in sub-Saharan Africa. Fifty-three of these ports are located proximate to key maritime choke points. Of these, ten are near the English Channel, nine are near the Malacca Strait, nine are near the Strait of Hormuz, six are near the Suez Canal, and four each are near the Panama Canal, the Gibraltar Strait, and the Turkish straits.⁹

Analysis

The "where" of prospective PLAN access points basically can be read off a map such as the figure. That spatial representation reveals more about the distribution than does a simple count of ports. While a plurality of China's overseas ports are on the Atlantic, their wide geographic dispersion (ten in the western Atlantic, ten in the eastern Atlantic, eleven in the northern Atlantic) makes that accounting misleading. But because the Atlantic ports lie across the ocean on different continents, the western Indian Ocean region, or MENA, should be considered the area of greatest concentration—and especially so if we include the seven ports on the eastern Mediterranean, which serve vital roles for traffic moving through the Suez Canal into or out of the Indian Ocean. South and Southeast Asia also host concentrations of Chinese ports at key locations along major sea lines of communication (SLOCs) and proximate to critical choke points.

CHINESE FIRMS' GLOBAL PORT PORTFOLIO



The “how” of securing control over the operations of a port and using it is more complex. China’s lack of alliances means that there are no standing legal commitments for military use (with the exception of Djibouti), and each such access agreement will be negotiated ad hoc—and likely out of public view.¹⁰ The fact pattern above shows a significant incidence of Chinese SOE ownership and operation at foreign port facilities, concentrated in a small handful of firms. On its face, this suggests the potential for a high degree of coordination between firms and the military for use of a network of commercial port facilities. This assumption bears further scrutiny, though, as there are several other characteristics of port operations that may be more decisive than corporate ownership. There also are a large number of ports in countries in which the PLA is unlikely to enjoy the political favor of the host government. Analysis of these characteristics allows us to winnow down the list to a handful of ports that should be considered most likely candidates for fuller dual-use development as PLAN access points in critical regions.

The dominance of the political over the commercial in firm behavior cannot be assumed on the basis of ownership.¹¹ More significant than corporate ownership is the degree to which the firm itself controls the operations of the port, the physical capacity of the port to supply naval vessels, the specific conditions of the concession from the local port authority (e.g., lease term, responsibilities of various partners to a venture), and the nature and scope of China’s broader diplomatic and economic relations with the host country. In general, a terminal operator will have significant discretion in granting access to naval vessels seeking to call, warehousing and storage, and bunkering, as well as use of dry dock, medical, power, and other terminal facilities. Majority or sole ownership of the port operator is the condition that best positions a firm to guarantee logistical

support for naval operations. Such arrangements are more feasible in friendly countries in which low transparency is the norm in contracting (and governance generally) and where China accounts for a large proportion of their overall trade and investment.

Considering these factors at the firm level helps narrow the field. Of the major firms involved, Hutchison is a relatively unlikely candidate to make its ports accessible to the PLA. Of the fifty-six majority stakes Chinese firms hold, Hutchison holds thirty-six, including twenty of the twenty-three ports where a Chinese firm has sole ownership of a terminal. Nearly half its holdings are in advanced industrial democracies and tend to be single terminals within much larger port complexes. This private firm's senior management is from Hong Kong, Europe, and Latin America and the company is incorporated in the Cayman Islands (with subsidiaries scattered across other jurisdictions, including the British Virgin Islands and Singapore). Its major operations can be found in the United Kingdom, the Netherlands, and Mexico, but it also operates several ports in and around the Persian Gulf (the United Arab Emirates [UAE], Iraq, Saudi Arabia, and Pakistan), the eastern Mediterranean (Egypt), the Panama Canal, and East Africa (Tanzania) in which it holds majority or total ownership of one or more terminals. Hutchison's political and geographic distance from Beijing makes it a less likely candidate for the deep cooperation required to establish dual-use functions.¹² Its governance is more transparent than that of SOEs. Diversion of corporate resources toward noneconomic purposes likely would meet internal resistance and invite external scrutiny.

By contrast, COSCO is a central SOE that formerly was controlled directly by the PRC Ministry of Transport as the sole domestic and international shipping operator in China. It has undergone several rounds of corporate transformation and mergers to become a global transport and logistics behemoth.¹³ Its terminal-operating subsidiary, COSCO Shipping Ports, has taken a variety of notable positions in foreign ports, including majority control of the port authority at Piraeus, Greece, with a 100 percent ownership of development and operations at two of that port's terminals. Other notable projects include COSCO's first international greenfield port development, a 90 percent stake in the Khalifa port in Abu Dhabi, UAE, to set up the largest freight station in the Middle East; a second greenfield investment, at Puerto Chancay in Peru, is also a majority stake (60 percent). COSCO's notable lack of transparency and appetite for loss-making ventures owing to heavy subsidization and support from Beijing make it a most-likely candidate for facilitating military use of its port facilities—and also its shipping, container, and general logistics capacity.¹⁴

CMPort is also a central SOE, but with a political reputation and corporate strategy quite different from COSCO's. Firm representatives and industry

executives note its independent origins as a Hong Kong trading house founded during the “self-strengthening movement” in opposition to British occupation, and have taken somewhat more conservative positions in overseas ports (with major exceptions at Hambantota and Djibouti).¹⁵ The bulk of CMPort’s overseas ports (twenty-nine of thirty-three) are in fact portfolio investments—that is, minority stakes in a joint venture with the French firm CMA CGM’s terminal-operating subsidiary Terminal Link, in which CMPort has no operational or managerial role.¹⁶ CMPort has sought to distinguish itself with slick marketing and appeals to foreign investors on the strength of its “Shekou Model” for comprehensive development of a port site into a trade-and-commerce hub, drawing attention to its corporate strategy from the likes of Wharton and Harvard Business School.¹⁷ The firm’s executives are media-savvy (at least compared with COSCO’s) promoters who traffic in business jargon and explain their firm’s interests as maximizing “synergies” with “exposure to major trade flows and key resources.”¹⁸

However, CMPort operates the port adjacent to the Djibouti base, where it regularly has devoted commercial pier space to PLAN surface combatants.¹⁹ The comprehensive commercial ecosystem prescribed in its Shekou Model also establishes a large and diverse Chinese commercial presence, including ashore transport, logistics, industrial, and communications facilities. While less easily persuaded to crowd out its commercial business than COSCO or local SOEs, CMPort is demonstrably willing to coordinate with the PLAN and has pursued some projects in strategic areas despite their dubious commercial prospects (Hambantota, in Sri Lanka, stands out on this count).

Beyond those “big three” players, other PRC firms operate or own only a small handful of ports worthy of close scrutiny. China Overseas Port Holding Company is a state-owned firm that is the sole owner and operator of the Pakistani port of Gwadar. According to its chairman, Zhang Baozhong, the firm was “specially designed and purposely built for the construction of the Gwadar Port by the Chinese government.”²⁰ One unnamed PLA officer reportedly said of China’s military use of Gwadar as a base that “the food is already on the plate, we’ll eat it whenever we want.”²¹ Pakistan stands out as a country where China’s extraordinarily close political, military, and economic ties make it a prime candidate for expansion of PLAN operations. Provincial SOEs Guangxi Beibu Gulf International Port Group and Tianjin Union Development Group are developing port projects in Cambodia under an unusual land lease, and construction of a military-grade airfield and reported PLA activity in the area have raised hackles.²² Cambodia, like Pakistan and North Korea, is among the countries most likely to cooperate in nonpublic ways with the PRC to provide reliable military access to the PLA.

For the PLA to use any of these ports meaningfully, however, lines of communication and authorities for military appropriation of civilian facilities need to be established. This prompts the next question addressed in this testimony.

How do policies such as “military-civil fusion” and laws and regulations such as China’s 2017 National Defense Transportation Law improve the PLA’s expeditionary and force-projection capabilities?

Beijing’s energetic promotion of “military-civil fusion” has created wide avenues for cooperation between the PLA and industry.²³ Among the significant elements of this program for the military use of commercial port facilities are a series of reforms, as well as laws and regulations obligating firms to prepare actively for and accommodate military requests. A National Defense Mobilization Law, a National Defense Transportation Law, and two newly formed and upgraded organs under the Central Military Commission (CMC)—the National Defense Mobilization Department and the Logistics Support Department, created in a major round of PLA reforms in 2016—stand out as key indications of the desired trajectory of more-integrated dual-use capabilities.²⁴ Central policy is driving toward a more substantial role for the military and the state in defining the conditions under which civilian assets and resources are employed.²⁵

The mobilization law guarantees fiscal reimbursement to central and local budgets (art. 6) and further promises untold “rewards for citizens and organizations that have made outstanding contributions in national defense mobilization” (art. 7). Certain key construction projects, designated jointly by the State Council and CMC (art. 22), are to be built to military standards (art. 23), with the benefit of “subsidies or other preferential policies” (art. 24).²⁶ While the implementation of the law is left to lower-level authorities, the mandate is clear: “any organization or individual has the obligation to accept the expropriation of civil resources in accordance with the law” (art. 55).²⁷ The mobilization law also establishes a system for maintaining and transferring “strategic material reserves” from enterprises to the military (arts. 33–36). While administrative regulations are left to local military and civilian authorities (notably, the Transportation War Readiness Offices at the provincial level), those organs may task the enterprises with storing military supplies at overseas facilities. The prerogative to use civil transportation capacity—including port facilities, airports, rails, and roads—is granted expressly under standing defense-mobilization regulations issued by the CMC and State Council.²⁸

Under what circumstances will enterprises have the capacity and willingness to build and maintain facilities, equipment, and supplies to military standards, which diverts resources and space that otherwise might have commercial value? These considerations are closely held, so observable evidence of participation in

other military-civilian fusion programs is probably the best indicator. COSCO and CMPort containerships and roll-on/roll-off (RO/RO) vessels have participated in a number of military-civilian exercises, including transport of live ammunition and use of RO/RO vessels built to military specifications, so there is a basis for expecting cooperation on other matters.²⁹ Making this integration systematic and reliable in the event of domestic crisis, however, is a challenge. A foreign crisis would involve greater difficulty, by orders of magnitude, requiring the Chinese companies to overcome both distance and the acute political sensitivities of a host country that likely will prefer not to be drawn into a conflict.

PLA analysts have studied aspects of this problem of integration and have flagged various issues concerning the suitability of commercial facilities for military use.³⁰ One 2019 study written by a member of the joint staff of the Eastern Theater Command with academics from the Army Transportation Academy and Tsinghua University argues that the relevant national-defense requirements have not been implemented properly for port construction. Enterprises need to build “combat-ready terminals,” with RO/RO berths built to a higher standard than those for passenger automobiles, and ensure a ten-meter minimum depth in berths; create assembly sites, storage facilities greater than 120,000 square meters, and cold-chain storage for overseas replenishment; and build high-quality roads serving the port that can bear heavy equipment.³¹ Commercial demand for these facilities is low, so better “top-level design” and subsidies are necessary for enterprises to properly construct ports—even domestically—that can support military use.³²

Military analysts from the PLA Navy Service College in Tianjin have attempted to model out how commercial cargo terminals can be used to provide emergency fuel and material support for the PLAN. Accepting that commercial piers and refueling facilities typically are not built to military standards, they address the complex protocol that would be required to conduct refueling safely using local power, fuel supplies, and military refueling vehicles that can provide the correct types and quantities of petroleum, oil, and lubricants for the varied classes of PLAN ships. In modeling processes for emergency wartime refueling at civilian piers, the paper tries to “accurately predict the emergency fuel support process that is in line with wartime naval vessels using civil port cargo terminals, fuel-equipment types, and quantity requirements to meet the number of ships and refueling flow requirements.”³³ This effort seeks only to model one replenishment prior to the arrival of supply ships and tankers, not the sustained access to secure fuel and supplies that would be required in a protracted conflict. The degree of difficulty here should be taken as evidence of a recognition within the PLAN that the service requires a more reliable way to ensure adequate support for combat vessels than emergency use of nonspecialized commercial ports.

The transaction for sourcing and procuring materials also is at issue. Authors from the Naval University of Engineering in Wuhan note that “since central state-owned enterprises’ main responsibility is certainly not replenishing the Chinese military overseas, procurement channels are limited,” which will lead to high costs and unsteady supply. They argue that options should be explored such that adequate “wartime pre-positioned materials” can be brought to the fight. They propose three such options: (1) the PLA operating overseas bases directly, (2) the PLA cooperating with Chinese companies already engaged commercially in the local economy, and (3) the PLA dealing directly with local governments to rent space and procure necessary supplies.³⁴

However desirable such an extensive network of bases might be to PLA operators, one is not going to materialize in the near future.³⁵ Therefore, the practical questions concern how to get the right supplies on time and at manageable prices. One article in the PLAN’s official newspaper estimated that it took over twenty days to execute a purchase of supplies overseas, giving rise to an “emergency foreign purchase plan” that permitted the task force commander to make the purchase directly from a Chinese firm within two days.³⁶ PLA logistics officers argue that civilian firms’ organic capabilities far exceed the PLA’s own, and that port calls to their facilities “provide a platform for the military to rely on corporate strengths, . . . use market economic means, and adopt commercial contract entrustment methods to give full play to the advantages of enterprises and realize resource sharing.”³⁷ Whether these savings will be achieved because of “sweetheart” deals, longer-term wholesale contracts, or outright expropriation is unclear.

From an operational effectiveness standpoint, the PLA would much prefer to operate its own dedicated facilities. For broader political reasons, however, the opportunity costs of overtly militarizing facilities likely will continue to make this option less attractive to civilian leadership—especially when commercial firms can service the PLA’s various functional needs adequately.³⁸ The military-civilian fusion program reflects and advances a clear leadership preference for leveraging growing overseas PRC commercial capacity.

Given the expected costs of militarizing commercial facilities, Chinese strategists have debated actively the highest-value locations for establishing access points for the PLAN. While the host country certainly gets a vote, prior to that Beijing must prioritize certain projects. These considerations lead to the next question.

What does China regard as the most important criteria for selecting future bases and access points for the PLA?

A burgeoning literature by Chinese military and civilian analysts on securing access to overseas bases and places provides insight into the several criteria that

make for desirable overseas bases and access points. Most of these criteria are intuitive and of long standing: geographic proximity to perceived security threats; hosting by friendly, stable countries; suitable natural conditions at the port (e.g., wide approach channels, deep harbors, unthreatening climate); and capability for adequate force protection.³⁹ An additional, more recent factor, based on the commercial developments addressed above, is the advantage offered by the presence of Chinese enterprises on or near the site.⁴⁰

Naturally, geostrategic considerations are paramount. China's armed forces seek to build the capability to defend vulnerable SLOCs, especially at key choke points.⁴¹ The authoritative PLA Academy of Military Science's 2013 *Science of Military Strategy* states as follows:

[W]e must build overseas strategic strongpoints that depend on the homeland, radiate into the periphery, and move us in the direction of the two oceans [i.e., the Pacific and Indian Oceans]. These sites are to provide support for overseas military operations or act as a forward base for deploying military forces overseas, exerting political and military influence in relevant regions. We should form a posture with the homeland strategic layout that takes account of both the interior and the exterior, connects the near with the far, and provides mutual support.⁴²

A staff officer and an academic from the PLA Navy Submarine Academy in Qingdao further posit that “[t]he line stretching from the Taiwan Strait through the South China Sea, Malacca Strait, Indian Ocean, and the Arabian Sea is China's ‘maritime lifeline.’”⁴³ Most analysts focus on this vulnerable lifeline and propose strategic strongpoints stretching across the Indian Ocean region, such that supply intervals between them are short enough to make one or more ports redundant in a crisis.⁴⁴

Some analysts are willing to make concrete recommendations about preferred locations. Academics at the Army Transportation Academy propose that “to protect our ever-growing overseas interests, we will progressively establish a logistics network in Pakistan, United Arab Emirates, Sri Lanka, Burma, Singapore, Indonesia, Kenya, and other countries based on various means—buying, renting, cooperating—to construct our overseas bases or overseas support strongpoints.”⁴⁵ A group of researchers from the PLA Naval Research Institute propose that China needs to establish at least one strategic strongpoint in the Bay of Bengal, one in the Persian Gulf region, and one in the Suez–Red Sea–Gulf of Aden region. They suggest Sittwe in Burma, Gwadar in Pakistan, and Djibouti or the Seychelles, respectively.⁴⁶ They argue that these are defensive positions to check India, but that a way to “further influence the entire Indian Ocean route and the African continent” would be to establish locations at Hambantota in Sri Lanka or Dar es Salaam in Tanzania. An Academy of Military Science analyst also is specific about locations, but strikes a more cautious note. “India is extremely sensitive

about China-Pakistan cooperation. Despite the fact that China has repeatedly emphasized that Gwadar port is a civilian project, India has long suspected that China will someday build Gwadar port into a military base.⁴⁷ Other proposed locations surrounding India (e.g., the Maldives, the Seychelles, Bangladesh) pose similar geopolitical problems for China in terms of balancing responses from India, Japan, and the United States.⁴⁸

Some analysts argue that military access should adhere more closely to economic development-focused PRC foreign policy. The “key nodes” should be “places where the flows of people, logistics, capital, and information are highly concentrated. . . . Reasonably determining and accelerating the construction of key nodes along strategic channels is of great practical significance . . . for improving our military’s strategic delivery capability.”⁴⁹ Authoritative sources further stress the importance of noncombat military operations to protect Chinese citizens from terrorism, unrest, and natural disasters.⁵⁰ This logic puts “trade before the flag” in suggesting that points suitable for military support should be determined by first-order considerations of securing China’s commercial interests.

Still, both a geoeconomic and a geostrategic set of criteria dictate that various ports between Suez and the South China Sea should be priorities for military access; points farther afield are less attractive from either standpoint. Yet opportunism is a powerful motivation, and the chance to establish more-substantial military access to a commercial port off the major strategic SLOCs—in, say, the Gulf of Guinea or the South Pacific—also yields a certain operational logic. In addition to providing capacity to operate in distant theaters, such off-center sites might trigger less-aggressive balancing from the United States, India, and Japan than would a Chinese base in Sri Lanka or Pakistan.

How does China use military diplomacy, foreign assistance, military training, and military sales to secure agreements with other countries to provide the PLA with basing and other access rights?

PLA interactions with foreign governments and militaries are an important component of China’s overall foreign policy.⁵¹ China’s military diplomacy has provided ample opportunities for PLAN units to call at ports owned or operated by PRC firms. PLAN vessels (including the hospital ship *Peace Ark*) have visited at least thirty-one of those ninety-five sites.⁵² Such visits are likely a prerequisite to more-significant military use, and might be used to familiarize PLAN officers and crews with the facilities and firm personnel operating the Chinese terminals.

Notably, though, at fifty-seven of the ninety-five PRC ports overseas, the PLAN has called at a *different* port in the same country, forgoing the opportunity to call at a terminal owned and operated by a PRC firm. In thirty-six

of those fifty-seven forgone port calls, PRC firms held a majority share in a terminal operation. While some of those facilities are not ideally suited for a PLAN call, virtually any facility has at least rudimentary capacity to support a naval ship. If the facility were being prepared for more-substantial naval use, the PLAN likely would have opted to visit the Chinese-owned and -operated terminal. This observation implies that diplomatic rather than operational factors are determinative. China either defers to the host country's preferences or seeks to downplay the military implications of its commercial enterprises' presence in the country, or both. That being the case, the data do not establish a definite link between PLA visits and the establishment of bases or access points. Conversely, bases and access points cannot be reliably established in advance of a PLA visit to the site. Therefore, while observing and analyzing such visits is a valuable exercise, it cannot predict definitively an intent to militarize a commercial facility.

Other components of military diplomacy, such as foreign assistance, military sales, and military training or education, are consequential for forging relationships conducive to allowing Chinese military access to ports on foreign shores. Increasingly, senior-level leadership interactions and training are undertaken "off-site," in mainland China.⁵³ Although foreign students report having very little interaction with their PLA counterparts (except with instructors in the classroom), this combined educational programming establishes personal ties among senior officers and forges institutional links between militaries.⁵⁴ Functional exchanges on specialized subjects such as logistics and military medicine also are a part of the PLA's outreach package to foreign militaries. These opportunities, like training and education, allow China to showcase its growing capabilities, confidence, and professionalism—a valuable impression to leave with foreign militaries that may consider affording greater access to a powerful PLA deemed capable of benefiting their own national security.

Arms sales, typically paired with other military diplomacy, offer material benefits that can serve as further inducement for a foreign country to be receptive to PLA access. Such sales are concentrated disproportionately among South Asian states; Pakistan, Burma, and Bangladesh were the top three recipients of Chinese arms in the period 2008–18, together accounting for 61 percent of PRC arms transfers.⁵⁵ Given the growing sophistication of some of these exports (such as submarines, surface combatants, and unmanned aerial vehicles), they also invite ongoing Chinese technical assistance.⁵⁶ China's sale of two Ming-class Type 035B diesel-electric submarines to Bangladesh illustrates this process. While these affordable but obsolete submarines were not capable platforms, they came packaged with Chinese personnel to "supervise the construction" as well as PLAN crews to train the Bangladeshi submariners.⁵⁷ PLAN vessels began calling in

Bangladesh in 2016 once the submarines were delivered, and by 2019 Bangladesh was negotiating with China to build it a submarine base—although it expressly denied that the PLA would use the facility.⁵⁸

China's military diplomacy repertoire has grown, and the PLA's increasing capability presents China as a more attractive partner to many states. Yet to date, only Djibouti has provided anything recognizable as a secure basing arrangement. This is not necessarily a sign of the failure of the program but rather an indicator of its more incremental and unpublicized nature. According to one researcher at the Academy of Military Science's Foreign Military Studies Institute, it may be the establishment of commercial access that leads to military diplomacy. "Military diplomacy must obey and serve overall national diplomacy. Therefore, in the process of building strategic strongpoints China should not overemphasize the role of military diplomacy. Military diplomacy should play a supporting role. Moreover, it should place civil affairs and economics front and center. It should mix the military among the civilians to conceal the military."⁵⁹ Observation of military diplomacy, especially PLAN port calls, may then be a lagging indicator of the practical military support afforded by China's growing portfolio of overseas ports.

A final consideration concerns Chinese firms' holdings in the United States.

Please describe Chinese state-owned enterprises' investments in U.S. ports; the rationale behind choosing those particular ports; and how U.S. policy makers can assess whether Chinese investments in such ports pose security risks to the United States.

Chinese state-owned enterprises hold ownership stakes in terminals at five U.S. ports. COSCO has established joint ventures at Long Beach, Los Angeles, and Seattle, and CMPort holds a minority stake in a French firm's terminals at Miami and Houston. Neither PRC firm wholly owns or directly operates an American terminal. In contrast to the strategic strongpoint approach to developing dual-use port facilities in the Indian Ocean, Chinese port investment in the United States appears to be commercially driven. Augmented U.S. restrictions on foreign investment in critical infrastructure diminish plausible risks posed by such investment. In particular, robust enforcement of the new Foreign Investment Risk Review Modernization Act (FIRRMA) by the Committee on Foreign Investment in the United States (CFIUS) will diminish further the control a Chinese firm can have over a U.S. port asset, and thus limit such investments from posing acute national-security risks.

COSCO

COSCO was the earliest Chinese SOE player in the U.S. maritime sector, beginning cargo shipments shortly after normalization in 1979 and gradually establishing a shipping presence at West Coast ports.⁶⁰ As the scale of U.S.-China trade

increased in the 1990s, COSCO sought a commercial foothold in its biggest market, in part by establishing its own terminal. In November 1996, the City of Long Beach and COSCO signed a lease for the abandoned Long Beach Naval Station to develop and operate it as a cargo port. After public objections, including from Congress, the city canceled the lease in April 1997. A subsequent CFIUS review of the deal did not find national-security risks, but further congressional action ensured that COSCO would not be eligible to use any closed U.S. military facilities.⁶¹ COSCO subsequently established joint ventures to operate at three terminals on the West Coast.

COSCO at Long Beach, Pier J (Pacific Container Terminal). By 2001, COSCO had moved on to form a joint venture with Seattle-based Stevedoring Services of America (SSA). Together they took over a lease vacated by the Danish shipping and logistics firm Maersk. Their joint venture, Pacific Maritime Services LLC, is a private, Delaware-registered corporation that operates the Pacific Container Terminal at Pier J in Long Beach. COSCO is the majority shareholder (51 percent, through its New Jersey-based subsidiary COSCO Terminals America, Inc.), but decisions by the corporate board require an “affirmative vote of at least 70 percent of the ownership shares of the members,” meaning COSCO does not have an effective majority. SSA operates the terminal itself, with COSCO providing cargo and shipping services.⁶² COSCO’s huge volumes of cargo and aggressively low pricing tend to distinguish it from rival firms, and make it a valued tenant at Long Beach.⁶³

COSCO at Los Angeles, West Basin Container Terminal. Also in 2001, China Shipping Group (which merged with COSCO in 2016) entered a joint venture with the Taiwanese shipping and logistics firm Yang Ming.⁶⁴ China Shipping / COSCO owns 40 percent of the joint venture to operate the West Basin Container Terminal (Yang Ming owns 40 percent and Ports America later bought the other 20 percent). China Shipping operates three of the fourteen berths at the terminal; Yang Ming operates the rest, with Ports America providing stevedoring services.⁶⁵ Xi Jinping visited a China Shipping berth (number 100) at the terminal in February 2012 (when he was PRC vice president), accompanied by California governor Jerry Brown and Los Angeles mayor Antonio Villaraigosa. On site, Xi praised the terminal’s role in facilitating huge volumes of Sino-U.S. trade, lauded the contributions of Chinese firms to U.S. employment and tax revenues, and called attention to the terminal’s use of clean energy.⁶⁶ At the time, an expansion of the terminal was entering its final stages after encountering lawsuits over its environmental impact and practices. The terminal was built, but controversy persists today, with new mitigation measures demanded owing to the Chinese firm’s “languishing compliance” with emissions regulations.⁶⁷

COSCO at Seattle, Terminal 30. Two COSCO subsidiaries hold a collective 33.33 percent stake in Terminal 30 at the Port of Seattle in a joint venture in place since 2007.⁶⁸ As in Long Beach, SSA is the operator, and COSCO's role as a minority shareholder is to drive cargo traffic through the terminal. Officials at the Northwest Seaport Alliance (the port authority for Seattle and Tacoma ports) describe COSCO's massive cargo volumes in glowing terms, viewing the firm as a reliable and influential client.⁶⁹

China Merchants Port

China Merchants Port arrived in the U.S. market considerably later, in 2013 acquiring 49 percent of the public shares in Terminal Link, the terminal-operating subsidiary of the French firm CMA CGM.⁷⁰ According to industry professionals, CMA CGM was cash poor and cargo rich, while CMPort was the reverse and looking to diversify away from squeezed margins resulting from increasing labor costs at its Chinese terminals.⁷¹ CMPort in 2013 had substantial cash holdings and cash flow from its port operations in China.⁷² CMPort thus was able to offer CMA CGM much-needed capital, as well as favorable financing for shipbuilding, distinguishing its bid from that of a Japanese consortium also interested in acquiring stakes in Terminal Link.⁷³ CMPort sought access to global markets and made a portfolio investment in a firm that held stakes (mostly



Xi Jinping visits COSCO's West Basin Container Terminal, in Los Angeles.

Source: David Starkopf / Office of Mayor Antonio R. Villaraigosa, *Xi Jinping Visit-1*, <https://www.flickr.com/photos/37176081@N02/6922069517/>, licensed under CC BY-NC 2.0, creativecommons.org/licenses/by-nc/2.0/.

minority) in fifteen terminals scattered around Europe, Africa, North America, and Asia.⁷⁴ This same commercial logic drove an additional CMPort investment, in the form of a one-billion-dollar loan to CMA CGM that secured 49 percent ownership of Terminal Link's stakes in an additional ten ports across the globe in December 2019.⁷⁵

Under the terms of the share acquisition, Terminal Link remains in charge of management and operations and appoints four of the seven board members.⁷⁶ With a minority position on the board and no CMPort managers involved in the terminals, the firm is an equity investor—an associate, not an operating partner—at the two U.S. ports in the Terminal Link portfolio. One industry executive described the Chinese role in Terminal Link as being contentious at first, as CMPort sought more say in corporate governance, but indicated that the firm's presence now is limited to “a couple of China Merchants marketing executives in Marseille” (the Terminal Link headquarters).⁷⁷

CMPort at Houston (Bayport). The Bayport terminal is a joint venture between Terminal Link Texas (51 percent) and Ports America (49 percent), meaning that the CMPort equity stake in the entity is 25 percent. The facility handles tankers and a large portion of the containerized cargo in the Gulf of Mexico.⁷⁸

CMPort at Miami (South Florida Container Terminal). This terminal is a joint venture between Terminal Link (51 percent) and A.P. Moller–Maersk Terminals (49 percent), again giving CMPort a roughly 25 percent equity stake in the revenues from the terminal. As in Houston, this is a modern, upgraded facility with access to major U.S. and Latin American markets.

The Wider Context

The commercial motivations underlying these two firms' entry into the U.S. market are not difficult to grasp. The potential security externalities from the presence of Chinese SOEs at critical U.S. infrastructure, however, are worth considering—and indeed, senior U.S. policy makers have considered them, through the CFIUS mechanism. While there is not public reporting on each deal that this interagency body reviews, parties involved with submitting CFIUS briefs for COSCO and CMPort confirm that all their transactions concerning U.S. port terminals have been reviewed and conditions have been placed on the terms of their ownership.⁷⁹ The CMPort disclosure on its 2013 share acquisition noted that CFIUS approval was still in question, but that contingency agreements had been reached to remove the Houston and Miami terminals from the agreement if CFIUS was not satisfied by the closing date.⁸⁰

Since its failed 1996 bid to lease the former Navy facility at Long Beach, COSCO has been chastened in its approach to the U.S. market.⁸¹ Beginning in 2017, COSCO sought to acquire the Hong Kong shipping firm Orient Overseas

(International) Limited, whose assets included a wholly owned terminal at Long Beach.⁸² COSCO submitted the transaction for antimonopoly review in China and the United States, and also filed with CFIUS. In its consultations with CFIUS COSCO was conciliatory, offering to place the Long Beach Container Terminal (Pier E) at the Port of Long Beach into a U.S. trust pending final sale.⁸³ This facility was a rare prize: fully automated, with extraordinary efficiency in use, zero emissions, and 100 percent ownership by a foreign firm on a long-term lease.⁸⁴ COSCO completed the sale in 2019 to an Australian firm, Macquarie, for \$1.78 billion, exceeding the expected sale price of \$1.5 billion.⁸⁵

Moving forward, any further Chinese interest in U.S. terminals will face an even more stringent regulatory environment. The CFIUS mechanism has been strengthened considerably, with new FIRRMA regulations entering into effect in 2020.⁸⁶ They bring about a significant expansion of CFIUS jurisdiction over real estate transactions, detailed in section 802. In addition to covering all real estate transactions that involve property in proximity to military facilities, the new regulations cover real estate transactions at any of the top twenty-five ports in the United States and those designated “commercial strategic seaport[s] within the National Port Readiness Network” (as defined by the Department of Transportation).⁸⁷ The regulations also establish a lower threshold to trigger CFIUS scrutiny when a foreign entity is judged to “control” a U.S. business.⁸⁸ According to Proskauer Rose LLP, a U.S. law firm, special attention must be paid in structuring joint ventures such that foreign partners do not receive “control” rights that will trigger CFIUS review.⁸⁹ Given these expanded authorities and the increased political sensitivity to Chinese investment in the United States, it is highly unlikely that a Chinese firm will win a concession to operate a U.S. port in the foreseeable future, thus mitigating most (if not all) the risks analyzed earlier in this testimony.

While it is premature to claim that PLA logistics arrangements overseas rely on PRC firms, there is a growing body of evidence that the commercial facilities owned or operated by those firms are a key component of Chinese efforts to project power abroad. A few further implications and recommendations flow from this conclusion.

Over the long term, PLA planners believe they will require a network of overseas bases.⁹⁰ For the short to medium term, however, the dual-use strategic strongpoint model is ascendant. This model provides significant peacetime logistics capability and intelligence value. However, unless and until China establishes alliances or security agreements that ensure reliable military access in a conflict, the wartime utility of these facilities will be limited.

Properly equipped and used, commercial ports may perform valuable military functions—not only for logistics, but for intelligence and communications—that do not require establishment of formal PLA facilities and permissions. Further research and analysis of the characteristics of China’s commercial port facilities and activities is necessary.

Economic influence is the leading instrument of Chinese efforts to achieve security abroad. The Chinese firms building and operating infrastructure overseas are on the front lines of the nascent great-power competition. There is no viable method of preventing their commercial entry into most foreign markets. U.S. failure to roll back the concession won by Shanghai International Port Group at the Port of Haifa in Israel should be a cautionary tale.⁹¹ If a close security partner such as Israel is not persuaded that the security risks outweigh the commercial benefits, it is highly improbable that other states will forgo Chinese involvement in their critical infrastructure.⁹²

Neither U.S. firms nor the U.S. government is prepared to offer direct substitutes for Chinese firms building, financing, or operating ports and other transport infrastructure. More useful than insisting that other states refuse Chinese largesse is empowering them to exploit it. U.S. firms and government agencies could provide anticipatory consultation with governments and businesses engaging with PRC firms on port projects, providing legal and managerial advice on how best to retain control over important operational elements and rights to their infrastructure. Helping other states maintain open bidding and nondiscriminatory commercial access to Chinese projects will limit prospective harms to U.S. national security.

Given the number and geographic distribution of ports under full or partial PRC ownership and operational control, all regional combatant commanders should be tasked to specify to the Secretary of Defense which ports are essential to U.S. joint forces in carrying out assigned missions in their areas of responsibility. When there are Chinese facilities at these ports, robust risk-mitigation measures must be adopted.

NOTES

All views expressed in written and spoken testimony are those of the author alone and not of the U.S. Naval War College, U.S. Navy, or U.S. government.

1. *Hearing on China’s Military Power Projection and U.S. National Interests: Hearing before the U.S.-China Economic and Security Review Commission*, 116th Cong. (2020), available at www.uscc.gov/. The author’s

submitted testimony is on pages 132–51, 216–20. This piece reproduces that written testimony, with slight amendments, edits, and data updates.

2. The facility is sometimes called a 后勤补给基地 (logistics and supply base), a 保障基地 (support base), or simply a 军事基地 (military base), in both official and nonofficial sources.

3. See Conor Kennedy, "Strategic Strong Points and Chinese Naval Strategy," Jamestown Foundation *China Brief* 19, no. 6 (22 March 2019), available at jamestown.org/. PLA scholars from the Academy of Military Science have written on the subject; for a good example of civilian writing on the subject, see 刘琳 [Liu Lin], "一带一路"沿线战略支点与军事外交建设 ["Strategic Strongpoints along the 'Belt and Road' and Building Military Diplomacy"], *世界知识* [*World Affairs*], no. 17 (2017), pp. 62–64 [CMSI translation]. Civilian scholars also have pursued the idea. See 张杰 [Zhang Jie], 海上通道安全与中国战略支点的构建——兼谈21世纪海上丝绸之路建设的安全考量 ["Sea-Lane Security and the Construction of China's Strategic Strongpoints—Also, an Assessment of the Security of 21st Century Maritime Silk Road"], *国际安全研究* [*International Security Studies*], no. 6 (2015), available at www.globalview.cn/.
4. Data from IHS Markit, ihsmarkit.com/.
5. Author's database. The information consists of data collected and purchased from industry and news sources, as well as data shared by the Institute for National Strategic Studies at the U.S. National Defense University. The database covers the levels and types of PRC firm ownership and operations down to the individual terminal level, including the technical characteristics and capacity of each terminal, its proximity to choke points and airfields, its use by the PLAN, etc. Unless otherwise noted, all data discussed derive from this proprietary database.
6. Data collection is incomplete on such construction projects, which largely are conducted by a small handful of central SOEs: China Communications Construction Corporation, its subsidiaries China Harbour Engineering Corporation and China Road and Bridge Corporation, and China State Construction Engineering Corporation.
7. 企业 (central SOE) designates any of the ninety-seven companies directly supervised and administered by the PRC State Council's State-Owned Assets Supervision and Administration Commission. See 企业名录 ["Central SOE Directory"], SASAC, 5 June 2020, www.sasac.gov.cn/.
8. China Merchants Port Holdings Company Limited, "Preliminary Offering Memorandum," fundsUPERMART.COM, 24 July 2018, secure.fundsUPERMART.COM/.
9. Defined as *proximate* when within 480 nautical miles of the choke point (i.e., one day's travel steaming at twenty knots).
10. NB: A Chinese firm operates one port in erstwhile ally North Korea that is a likely candidate for PLA use, but according to a different set of political and economic factors from the rest of its port investments. See 中国获朝港口30年使用权 韩媒称中国利用朝鲜 ["China Wins 30-Year Concession to Use North Korean Port"], *环球时报* [*Global Times*], 12 September 2012, world.huanqiu.com/.
11. While the designation *state-owned* implies a greater degree of state control over firm activities than might be expected in private firms, this is not always the case. In fact, there are reasons to think that some large SOEs with politically empowered managers and directors are able to act with greater autonomy than their private counterparts, which depend on the goodwill and patronage of the state and thus may be even more responsive to its requests. (The controversy over Huawei, a private firm, and its relationship to the state should be instructive here.) For a careful analysis of the state-owned vs. private distinction and its limitations, see Curtis J. Milhaupt and Zheng Wentong, "Beyond Ownership: State Capitalism and the Chinese Firm," *Georgetown Law Journal* 103, no. 3 (2015), pp. 665–722.
12. There has been some speculation about the degree to which the firm's owner, Hong Kong tycoon 李嘉诚 (Li Ka-shing), is cooperative with the PRC party-state—for example, during hearings before the U.S. Senate Armed Services Committee after Hutchison acquired stakes in two ports on the Panama Canal. *Security of the Panama Canal: Hearing before the S. Comm. on Armed Servs.*, 116th Cong., p. 40 (2000) (statement of Rep. Dana Rohrabacher). Li's level of coordination with Beijing is not likely to be high, and his case is a likely example of the relative autonomy of some private firms. Mainland and Hong Kong media often cover his public disagreements with Beijing. See, for example, Eddie Lee, "Chinese State Media Continues Tirade against Hong Kong Tycoon Li Ka-shing in

- People's Daily*," *South China Morning Post*, 21 September 2015, scmp.com/. More recently, mainland media and social media have been criticizing Li for alleged support for Hong Kong democracy and protesters. 何鼎鼎 [He Dingding], "解决住房问题, 香港不能再等了" ["Hong Kong Cannot Wait Any Longer to Solve the Housing Problem"], *人民日报* [*People's Daily*], 12 September 2019; see also "李嘉诚"被人民日报点名了! ["Li Ka-shing' Criticized by Name in the *People's Daily*!"], 互联网 [*Hulian Net*], 16 September 2019, www.sohu.com/.
13. Yu Zheng and Chris Smith, "New Voyages in Search of Treasure: China Ocean Shipping Company (COSCO) in Europe," in *Chinese Investment in Europe: Corporate Strategies and Labour Relations*, ed. Jan Drahoukoupil (Brussels: ETUI, 2017), pp. 231–50.
 14. Greg Knowler, "Boosted by Beijing Subsidy, COSCO Expects Hefty 2017 Profit," *JOC.com*, 30 January 2018; industry executives in New York, Los Angeles, and Hong Kong, interviews by author, June 2019 to January 2020.
 15. "History," *China Merchants Port Holdings Company Ltd.*, www.cmpport.com.hk/.
 16. These terminals include four in France, three in northern Europe, one in India, and two in the United States (Houston and Miami).
 17. Meg Rithmire and Li Yihao, "Chinese Infrastructure Investments in Sri Lanka: A Pearl or a Teardrop on the Belt and Road?," Harvard Business School Case Study 719-046, *Harvard Business School Faculty & Research*, January 2019, www.hbs.edu/; "Cruising Ahead: China Merchants Group's Shekou Prince Bay Project," *Knowledge@Wharton*, 18 February 2019, knowledge.wharton.upenn.edu/.
 18. CMPort executive in Hong Kong, interview by author, June 2019. A strong commercial position in coal imports, for example, is the commercial motivation for a ninety-eight-year CMPort lease at the Australian port of Newcastle. See "CMPort Completes Its Acquisition of the Port of Newcastle in Australia Achieving a Full Coverage of the Six Continents," *China Merchants Port Holdings Company Ltd.*, 14 June 2018, www.cmpport.com.hk/.
 19. NB: Now that the naval pier appears to be complete on open-source satellite imagery, it may cease to provide this service.
 20. Yasir Habib Khan, "China Overseas Port Holding Company Was Made Specifically to Build the Gwadar Port: Chairman," *Geo News*, 14 May 2019, geo.tv/.
 21. "那已经是盘中的菜, 想什么时候吃就什么时候吃" 金吴 [Jin Wu], 吉布提: 人民解放军首个海外基地 ["Djibouti: The PLA's First Overseas Base"], 凤凰军事 [*Phoenix Military*], 22 April 2016, news.ifeng.com/.
 22. See Liam Cochrane, "Chinese Military Officials Made Secret Visit to Cambodia Weeks before Mysterious Drone Crashed," *ABC News (Australian Broadcasting Corporation)*, 4 February 2020, abc.net.au/; Jeremy Page, Gordon Lubold, and Rob Taylor, "Deal for Naval Outpost in Cambodia Furthers China's Quest for Military Network," *Wall Street Journal*, 22 July 2019, wsj.com/; and Kenji Kawase, "Cambodia's Biggest Port Sees China Coveting Japan's Dominant Role," *Nikkei Asian Review*, 3 August 2018, asia.nikkei.com/.
 23. See, for example, 房永智 [Fang Yongzhi], 基础设施建设如何实现深度军民融合 ["How to Realize Deeper Military-Civilian Fusion in Infrastructure Construction"], *中国青年报* [*China Youth Daily*], 24 January 2014, theory.people.com.cn/; and 张才毕 [Zhang Caibi], 加速推进沿海地区国防动员准备 ["Accelerate National Defense Mobilization Preparation in Coastal Areas"], *国防* [*National Defense*], no. 1 (2005), pp. 29–31.
 24. 中华人民共和国国防动员法 [National Defense Mobilization Law of the People's Republic of China] (promulgated by the Standing Comm. Nat'l People's Cong., 26 February 2010), available at www.gov.cn/; 中华人民共和国国防交通法 [National Defense Transportation Law of the People's Republic of China] (promulgated by the Standing Comm. Nat'l People's Cong., 3 September 2016), available at www.npc.gov.cn/. For PLA commentary on these developments, see Qu Baichun, Liao Pengfei, and Gao Zhiwen, 军民融合加快推进战略投送能力建设 ["Military and Civilian Integration Accelerates the Development of Strategic Delivery Capabilities"], *解放军报* [*PLA Daily*], 5 September 2016, www.81.cn/; and 原总后军交运输部副部长白忠斌任军委后勤保障部运输投送局局长 ["Former Deputy Director of the Military General Logistics Department Transportation Department Bai Zhongbin Appointed

- Director of Central Military Commission Logistics Support Department Transport and Projection Department”, 澎湃新闻 [The Paper], 5 September 2016, www.thepaper.cn/. See also a wide-ranging analysis of this and other elements of the 2016 PLA reforms in Joel Wuthnow and Phillip C. Saunders, *Chinese Military Reform in the Age of Xi Jinping: Drivers, Challenges, and Implications*, China Strategic Perspectives 10 (Washington, DC: National Defense Univ. Press, 2017).
25. For a rich analysis of the transportation elements of this program, including discussion of the vehicles, ships, and industry-level organizations involved, see Conor Kennedy, *Civil Transport in PLA Power Projection*, China Maritime Report 4 (Newport, RI: China Maritime Studies Institute, December 2019), p. 12, available at digital-commons.usnwc.edu/.
 26. Scholars from the PLA Army Transportation Academy suggest that the PLA will disburse these subsidies and incentives directly, which will “establish an incentive mechanism for the requisition of overseas Chinese-funded enterprises, and fully mobilize the enthusiasm of relevant institutions and enterprises.” 王天泽 [Wang Tianze], 齐文哲 [Qi Wenzhe], and 海军 [Hai Jun], 海外军事基地运输投送保障探讨 [“An Exploration into Logistical Support of Transportation and Projection for Military Bases Abroad”], 国防交通工程与技术 [Defense Transportation Engineering and Technology], no. 1 (2018), p. 34.
 27. The mobilization law further enumerates legal liabilities for failure to cooperate (arts. 68–71).
 28. 见 民用运力国防动员条例 [Civilian Capacity Defense Mobilization Regulations] (promulgated by the St. Council & Cent. Military Comm'n, 11 September 2003), available at www.mod.gov.cn/; minor amendments were adopted in 2011 and 2019. Also see Decision of the State Council on Amending Certain Administrative Regulations (promulgated by the St. Council, 2 March 2019), available at www.gov.cn/.
 29. See Kennedy, *Civil Transport in PLA Power Projection*, pp. 6–22, esp. pp. 9, 12, for a detailed discussion on the extensive industry cooperation on transport capacity for strategic lift in the formation of 战略投送支援舰队 (“strategic projection support ship fleets”) organized into transport units of various sizes. These activities are supported by vessels from COSCO and CMPort shipping fleets.
 30. A good overview from authors at PLA Naval Aviation University is 王瑞奇 [Wang Ruiqi], 顾钧元 [Gu Yuyuan], and 李志强 [Li Zhiqiang], 港口物流军民融合体系构建研究 [“Research on Building Civil-Military Integration Systems in Port Logistics”], 探讨与研究 [Discussion and Research], no. 10 (2018), pp. 105–107.
 31. RO/RO berths unsuitable for heavy wheeled and tracked equipment will need to own and configure heavy-duty loading and unloading machinery that meets military specifications. See 张静 [Zhang Jing], 张智慧 [Zhang Zhihui], and 周江寿 [Zhou Jiangshou], 中美港口建设贯彻国防要求对标分析 [“Comparison between China and America in Implementation of National Defense Requirements in Port Construction”], 军事交通学院学报 [Journal of Military Transportation Academy] 21, no. 4 (2019), pp. 32–36. At least an eleven-meter draft will be necessary, however, to accommodate the largest vessels in the PLAN surface fleet, the Type 001 and Type 002 carriers, as well as the new Type 901 supply ship. See “China Navy,” *IHS Jane's Fighting Ships*, 2019, www.janes.com/.
 32. Zhang, Zhang, and Zhou, “Comparison between China and America,” pp. 33–35.
 33. 邵海永 [Shao Haiyong] and 马龙邦 [Ma Longbang], 展示海军舰艇利用民用港口货运码头实施应急游客保障装备需求预测模型 [“Prediction Model for Wartime Use of Civil Port Cargo Terminals to Realize Requirements for Emergency Fuel Supply and Material Support”], 军事运筹与系统工程 [Military Operations Research and Systems Engineering], no. 1 (2019), pp. 52–57.
 34. 罗朝晖 [Luo Zhaohui], 万捷 [Wan Jie], and 李弘扬 [Li Hongyang], “Research on the Factors for Selecting Overseas Naval Bases [in Chinese],” 军事物流 [Logistics Technology] (2019), pp. 141–45.
 35. Several authors from the PLAN's Naval Research Institute are highly critical of the progress to date in establishing this necessary support, arguing that “China's serious lack of strategic strongpoints and outposts in the Indian Ocean can be called a form of ‘malnutrition.’ The long-standing no-basing policy of

- the PRC has caused the navy's capacity to lag the expansion of national interests." 李剑 [Li Jian], 陈文文 [Chen Wenwen], and 金晶 [Jin Jing], 印度洋海权格局与中国海权的印度洋拓展 ["Indian Ocean Sea-Power Structure and the Expansion of China's Sea Power into the Indian Ocean"], *太平洋学报 [Pacific Journal]* 22, no. 5 (2014), p. 74.
36. 余永华 [Yu Yonghua], 托举战舰向深蓝: 某支队岸勤部探索远洋后勤保障模式纪事 ["Lifting Warships toward the Deep Blue: A Record of a Detachment's Shore Logistics Unit Exploring a Far-Ocean Logistics Guarantee Model"], *人民海军 [Renmin Haijun]*, 30 September 2010, p. 2.
 37. 刘大雷 [Liu Dalei], 于洪敏 [Hu Yongmin], and 张浩 [Zhang Hao], 我军海外军事行动装备保障问题研究 ["Equipment Support in Overseas Military Actions"], *军事交通学院学报 [Journal of Military Transportation Academy]* 19, no. 9 (2017), p. 25.
 38. For elaboration of this argument, see the author's prior testimony on this subject. *Hearing on a "World-Class" Military: Assessing China's Global Military Ambitions; Hearing before the U.S.-China Economic and Security Review Commission*, 116th Cong. (2019) (statement of Isaac Kardon), available at www.uscc.gov/.
 39. For example, see 梁芳 [Liang Fang], 海上战略通道论 [*On Maritime Strategic Access*] (Beijing: 时事出版社 [Fact Publishing], 2011); 郑崇伟 [Zheng Chongwei] et al., 岛礁跑道设计中的气候特征分析 ["Wind Climate Analysis under the Demand of Reef Runway Construction"], *海洋预报 [Marine Forecasts]* 34, no. 4 (2017), pp. 52–57; and 许可 [Xu Ke], 构建“海上丝路”上的战略支点——兼议迪戈加西亚基地的借鉴作用 ["Building Strategic Strong Points on the 'Maritime Silk Road'—with Reference to the Role of the Diego Garcia Base"], *亚太安全与海洋研究 [Asia-Pacific Security and Maritime Affairs Research]*, no. 5 (2016), pp. 9–21.
 40. In 2010, the deputy chief of the PLAN Operations Department lamented the “uncertainties of foreign berthing facilities” as “limiting factors in the long-term regularization of overseas operations” and looked to “Chinese enterprise facilities in overseas ports as the next step in building an 海外保障体系 [overseas support system].” 王滨 [Wang Bin], 护航行动海外保障点建设思考 ["Thoughts on the Construction of Overseas Support Points for Escort Operations"], *海军杂志 [Navy Magazine]*, no. 12 (2010), p. 2. Cited and translated in Kennedy, “Strategic Strong Points.”
 41. A military professor from the PLA National Defense University analyzes the Malacca, Hormuz, Gibraltar, Suez, Panama, Mandeb, and Black Sea straits as the principal 海上战略通道 (strategic maritime corridors). Liang, *On Maritime Strategic Access*, pp. 213–50.
 42. 寿晓松 [Shou Xiaosong], 战略学 [*Science of Military Strategy*] (Beijing: 军事科学出版社 [Military Science Publishing], 2013), p. 254.
 43. 胡冬英 [Hu Dongying], 黄锐 [Huang Rui], and 蔡广友 [Cai Guangyou], 推进潜艇兵力走向远洋的几点思考 ["Several Thoughts on Advancing the Submarine Force to Distant Oceans"], *舰船电子工程 [Ship Electronic Engineering]*, no. 1 (2017), p. 2.
 44. 郑崇伟 [Zheng Chongwei] et al., 经略21世纪海上丝绸之路: 综合应用平台建设 ["The Strategy of Maritime Silk Road in the 21st Century: Construction of Integrated Application Platform"], *海洋开发与管理 [Ocean Development and Management]*, no. 2 (2017), pp. 52–57; 郑崇伟 [Zheng Chongwei] et al., 经略21世纪海上丝路: 重要航线、节点及港口特征 ["Strategy of the 21st Century Maritime Silk Road: On the Important Routes, Crucial Nodes, and Characteristics of Ports"], *海洋开发与管理 [Ocean Development and Management]*, no. 1 (2016), pp. 4–13; Zhang, “Sea-Lane Security and the Construction of China's Strategic Strongpoints,” pp. 100–18.
 45. Wang, Qi, and Hai, “An Exploration into Logistical Support,” p. 32. A Chinese Academy of Social Sciences researcher proposed Indonesia's Sumatra and Kalimantan as appropriate targets; see Zhang, “Sea-Lane Security and the Construction of China's Strategic Strongpoints.”
 46. Li, Chen, and Jin, “Indian Ocean Sea-Power Structure,” pp. 74–75.
 47. Liu, “Strategic Strongpoints along the ‘Belt and Road,’” p. 64 [CMSI translation].
 48. 郗笃刚 [Xi Dugang] et al., “一带一路”建设在印度洋地区面临的地缘风险分析郗 ["Geopolitical Risks for the 'One Belt One Road' Construction in the Indian Ocean"], 世

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49. 苑德春 [Yuan Dechun], 吴洋 [Wu Yang], and 张昕 [Zhang Wei], 加强战略通道关键节点建设的思考 [“Thoughts on Strengthening the Construction of Key Nodes on Strategic Channels”], *军事交通学院学报 [Journal of Military Transportation Academy]* 18, no. 2 (2016), p. 2.
 50. The PLA National Defense University's 2015 *Science of Military Strategy* adopts the approach prescribed in the PRC's broader diplomacy, linking military presence to protection of “overseas interests”—that is, China's citizens and commercial assets abroad. “Under the new situation, with the in-depth development of economic globalization and the continuous advancement of China's reform and opening-up policy, the pace of ‘going out’ of domestic enterprises has been accelerating, overseas investment has grown substantially, international trade has developed rapidly, and overseas interests have become more widespread. The scale is getting greater and greater, and it is still expanding to deeper and broader levels. At the same time, international terrorism has become increasingly rampant, conflicts in local areas have been raging, and social unrest has caused various security threats to overseas personnel, overseas assets, investment markets, resource supply sites, and maritime strategic channels. Therefore, there is a strong demand for China to send military forces to go overseas to safeguard national interests.” 肖天亮 [Xiao Tianliang], ed., *战略学 [Science of Military Strategy]* (Beijing: PLA National Defense Univ. Press, 2015), p. 302.
 51. For in-depth analysis of this phenomenon, see Kenneth Allen, Phillip C. Saunders, and John Chen, *Chinese Military Diplomacy, 2003–2016: Trends and Implications*, INSS China Strategic Perspectives 11 (Washington, DC: National Defense Univ. Press, 2017), and Phillip Saunders and Jiunwei Shyy, “China's Military Diplomacy,” in *China's Global Influence: Perspectives and Recommendations*, ed. Scott D. McDonald and Michael C. Burgoyne (Honolulu, HI: Daniel K. Inouye Asia-Pacific Center for Security Studies, 2019), pp. 207–27.
 52. These visits occurred at one or more terminals at fourteen of the thirty-eight ports operated by Hutchison, eleven of the thirty-three ports owned or operated by CMPort, and six of the nineteen owned or operated by COSCO. Author database, including data shared by the U.S. National Defense University's Center for the Study of Chinese Military Affairs.
 53. Phillip C. Saunders, “China's Global Military-Security Interactions,” in *China and the World*, ed. David Shambaugh (New York: Oxford Univ. Press, 2020), pp. 195–200.
 54. Participants, interviews by author, October 2018.
 55. “Importer/Exporter TIV Tables,” *Stockholm International Peace Research Institute*, www.sipri.org/.
 56. U.S. Defense Dept., *Assessment on U.S. Defense Implications of China's Expanding Global Access* (Washington, DC: 2018), p. 5, available at media.defense.gov/.
 57. “Why China's Submarine Deal with Bangladesh Matters,” *The Diplomat*, 20 January 2017, thediplomat.com/.
 58. Kamran Reza Chowdhury, “China to Help Bangladesh Build Submarine Base, Senior Official Says,” *Benar News*, 12 September 2019, www.benarnews.org/.
 59. Liu, “Strategic Strongpoints along the ‘Belt and Road,’” p. 64.
 60. The *Liu Lin Hai* cargo ship from COSCO Shanghai was the first PRC merchant ship to arrive in a U.S. port (Seattle) after normalization. See Li Xing, “COSCO Melds Pieces of US-China Success,” *China Daily*, 14 January 2011, usa.chinadaily.com.cn/.
 61. According to a Congressional Research Service report on the episode, the CFIUS review found “no credible evidence” that (1) COSCO has reasons other than commercial ones for operating at U.S. ports; (2) COSCO's planned expansion in Long Beach could threaten U.S. national security; or (3) COSCO is engaged in espionage, smuggling, or other crimes in the United States.” See Shirley Kan, *Long Beach: Proposed Lease by China Ocean Shipping Co. (COSCO) at Former Naval Base*, CRS Report 97-476 F (Washington, DC: Congressional Research Service, 11 August 1999), pp. 5–6.
 62. “Pacific Maritime Services Cooperative Working Agreement,” FMC Agreement

- 201122-002, *Federal Maritime Commission*, 26 November 2012, www2.fmc.gov/. Although CMA CGM, through its terminal-operating subsidiary Terminal Link California LLC, bought an undisclosed stake in this joint venture in 2012, Drewry reports that COSCO's ownership stake remains 51 percent. See Neil Davidson et al., *Global Container Terminal Operators Annual Review and Forecast 2019* (London: Drewry Maritime Research, 2019), p. 111.
63. Port of Long Beach management, interviews by author, March 2020.
64. Lee Hong Liang, "Cosco Shipping—a Guide to the Merger of Cosco and China Shipping," *Seatrade Maritime News*, 17 January 2017, www.seatrade-maritime.com/.
65. IHS Markit, "Los Angeles," *Sea-Web Ports*, maritime.ihs.com/.
66. 习近平参观考察中海运洛杉矶码头 ["Xi Jinping Visits China Shipping Los Angeles"], *Embassy of the PRC in the United States*, 17 February 2012, www.china-embassy.org/.
67. The Port of Los Angeles released an environmental-impact report about the Chinese berths at the terminal in September 2019; it covers the whole sequence of events in detail. See "Final Supplemental Environmental Impact Report for the Berths 97–109 (China Shipping) Container Terminal Project," Executive Director's Report to the Board of Harbor Commissioners, *Port of Los Angeles Environmental Management*, 26 September 2019, kentico.portoflosangeles.org/.
68. IHS Markit, "Seattle," *Sea-Web Ports*, maritime.ihs.com/; Davidson et al., *Global Container Terminal Operators Annual Review and Forecast 2019*, p. 112.
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