CHINA'S MARITIME SILK ROAD INITIATIVE: IMPLICATIONS FOR THE GLOBAL MARITIME SUPPLY CHAIN

(116–37)

HEARING

BEFORE THE

SUBCOMMITTEE ON
COAST GUARD AND MARITIME TRANSPORTATION

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

OCTOBER 17, 2019

Printed for the use of the
Committee on Transportation and Infrastructure

Available online at: https://www.govinfo.gov/committee/house-transportation?path=/browsecommittee/chamber/house/committee/transportation

U.S. GOVERNMENT PUBLISHING OFFICE
41–367 PDF WASHINGTON : 2020

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U.S. House of Representatives
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OCTOBER 11, 2019

SUMMARY OF SUBJECT MATTER

TO:	Members, Subcommittee on Coast Guard and Maritime Transportation
FROM:	Staff, Subcommittee on Coast Guard and Maritime Transportation
RE:	Hearing on "China's Maritime Silk Road Initiative: Implications for the Global Maritime Supply Chain"

PURPOSE

The Subcommittee on Coast Guard and Maritime Transportation will meet on Thursday, October 17, 2019, at 2:00 p.m. in 2167 Rayburn House Office Building to examine the 21st Century Maritime Silk Road Initiative, one component of a formal global development strategy promoted by the Chinese government to enhance their trade networks. The Subcommittee will hear from the Office of the Secretary of Defense, United States-China Economic and Security Review Commission, Center for Security and International Studies, Naval War College, and Center for Naval Analysis about the impacts of this policy and strategic implication for American maritime commerce.

BACKGROUND

In 2013, China unveiled the concept for the 21st Century Maritime Silk Road Initiative (MSRI), the maritime component of the Belt and Road Initiative (BRI) published in both Chinese and English.[1] The BRI is widely regarded as Chinese President Xi Jinping's flagship project, and the MSRI is designed to expand the nation's blue economy and enhance infrastructure connectivity throughout Southeast Asia, Oceania, the Indian Ocean, and East Africa with Chinese-financed port, road, and energy infrastructure.[2] The MSRI's three "blue economic passages" (BEPs) include the China-Indian Ocean-Africa-Mediterranean Sea BEP, China-Oceania-South Pacific BEP, and China-Arctic Ocean-Europe BEP. As of April 2019, 126 countries have signed on to the BRI.[3]

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[1] The Silk Road Economic Belt and 21st Century Maritime Silk Road became "One Belt, One Road" for short. In late 2015, the central government issued guidelines on standardizing the English translation, specifically demanding that "initiative" should now be used in association with Belt and Road, whereas "strategy," "project," "program," and "agenda" should not be used. One Belt, One Road became Belt and Road Initiative in English, but its Chinese name remained "Yidai Yilu."

[2] Mathieu Duchâtel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," European Council of Foreign Relations, April 23, 2018.

[3] The Second Belt and Road Forum for International Cooperation, "List of Deliverables of the Second Belt and Road Forum for International Cooperation," [http://www.beltandroadforum.org/english/n100/2019/0427/c36-1312.html] April 27, 2019.

Figure 1—The MSRI will begin in Quanzhou in Fujian province, and visit Guangzhou (Guangdong province), Beihai (Guangxi), and Haikou (Hainan) before heading to the Malacca Strait. From Kuala Lumpur, the MSRI heads to Kolkata, India then crosses the rest of the Indian Ocean to Nairobi, Kenya (the Xinhua map does not include a stop in Sri Lanka, despite indications in February that the island country would be a part of the Maritime Silk Road). From Nairobi, the MSRI goes north around the Horn of Africa and through the Red Sea into the Mediterranean, stopping in Athens before meeting the land-based Silk Road in Venice. Reconnecting Asia, CSIS, June 20, 2019.

Command of the maritime transportation system has long acted as the stage on which great powers compete. Globally, over 90% of commercial goods travel by sea. The infrastructure facilitating their transport—ocean-going vessels, deep-water ports, high-speed railways, and fiber optic cables—descend from technologies that Western powers leveraged from the mid-19th century through World War I to expand their access to foreign markets. In some places along the BRI, China is literally replacing and retracing colonial projects, building railways in Africa and laying data cables under the sea.

The U.S. high seas presence (the Navy, Coast Guard, and international commercial fleet) has for decades secured American sea-power and access to materials and markets through existing trade lanes and strategic straits. This hearing will shed light on the degree to which the MSRI might co-opt the global maritime transportation system for Chinese industrial, commercial, and security gains, disable the remnant U.S. international trading fleet by monopolizing the transport of U.S. commerce, and destabilize both the U.S. Merchant Marine and maritime supply chain.

THE BELT AND ROAD INITIATIVE

"Hard" infrastructure projects occur mostly in the following sectors: transportation (ports, roads, railways), energy (pipelines, power grids, hydropower dams), and information technologies and communications (fiber-optic networks, data centers, satellite constellations). Rapidly emerging as the third major element is a "New Digital Silk Road" that will provide telecommunications and information connectivity for both maritime and land routes. According to official sources from within China's State-owned Assets Supervision and Administration Commission, 80 Chinese state-owned enterprises (SOEs) have undertaken over 3,100 BRI projects since 2013.[4] Of these, 288 projects are seaports and another 136 are dry ports connected to the MSRI.[5] Rapidly developing Asian economies alone will require $26 trillion in additional infrastructure investment by 2030 to maintain growth momentum.[6] Con-

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[4] Nadège Rolland, A Concise Guide to the Belt and Road Initiative [https://www.nbr.org/publication/a-guide-to-the-belt-and-road-initiative/], National Bureau of Asian Research, April 11, 2019.

[5] Reconnecting Asia Project, Mapping Continental Ambitions [https://reconnectingasia.csis.org/], Center for Strategic and International Studies.

[6] Asian Development Bank, Meeting Asia's Infrastructure Needs [https://www.adb.org/sites/default/files/publication/227496/special-report-infrastructure.pdf], February 2017.

sequently, infrastructure investments, and the strategic implications they carry, are likely to intensify in the coming years.

The Chinese People's Liberation Army Navy (PLAN) is already active in the Middle East and Western Indian Ocean and conducts a wide range of peacetime operations to protect Chinese maritime trade, assets, and personnel established, in part, under the auspices of the MSRI.[7] The development of BRI infrastructure near key strategic straits for the U.S. and other maritime trading states (e.g., the Strait of Hormuz, Bab el-Mandeb Strait, and Suez Canal) has enabled the Chinese commercial fleet to support PLAN operations in international waters outside Chinese jurisdiction while development is underway.[8]

The BRI also includes "soft" infrastructure, such as the creation of special economic zones and the negotiation of free trade agreements, currency swap agreements, and reduced tariffs. China's early plans for the BRI envision the Silk Road as a region of "more capital convergence and currency integration;" a region where currency exchanges are fluid and easy.[9] China's currency, the renminbi, is becoming more widely used in Mongolia, Kazakhstan, Uzbekistan, Vietnam, and Thailand.[10]

Skeptical scholars worry this may ensnare strategically located developing countries "in a debt trap that leaves them vulnerable to China's influence."[11] Echoing the same criticism, former U.S. Secretary of State Rex Tillerson in October 2017 described China's model of financing infrastructure projects as "predatory economics" resulting in "financing default and conversion of debt into equity."[12] For example, Pakistan, a key BRI partner, asked the International Monetary Fund earlier this year to help the country out of a balance of payments crisis.[13] In addition, Malaysia in August 2018 abandoned more than US$20 billion worth of Chinese-funded infrastructure projects, saying it could no longer afford them.[14]

DUAL-USE INFRASTRUCTURE

Dual-use infrastructure projects are developments that serve both commercial and military purposes. Through project financing tools (i.e., guarantees and conditions, controlling source funds, debt, etc.), design and construction standards, technology transfer, and intelligence acquisition through ownership and operation of infrastructure, states can advance both economic and non-economic objectives.[15] While the MSRI to date is mostly an economic and political program with military implications, dual-use facilities constructed under the banner of the BRI could enable the PLAN to incrementally expand operations regionally and globally to create potential new risks for militaries operating in the Indian Ocean basin and beyond.[16] Securing MSRI routes would require the PLAN to more regularly patrol the sea lanes that link China's far-flung port investments.

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[7] Jeffrey Becker et al., China's Presence in the Middle East and Western Indian Ocean: Beyond the Belt and Road [https://www.cna.org/CNA__files/PDF/DRM-2018-U-018309-Final2.pdf], CNAS, February 2019.

[8] Ibid.

[9] Shannon Tiezzi, "China's 'New Silk Road' Vision Revealed," [https://thediplomat.com/2014/05/chinas-new-silk-road-vision-revealed/] The Diplomat, May 9, 2014.

[10] Ibid.

[11] Brahma Chellaney, China's Debt Trap Diplomacy [https://www.project-syndicate.org/commentary/china-one-belt-one-road-loans-debt-by-brahma-chellaney-2017-01?barrier=accesspaylog], Project Syndicate, January 23, 2017.

[12] Rex Tillerson, Defining Our Relationship with India for the Next Century: An Address by U.S. Secretary of State Rex Tillerson [https://csis-prod.s3.amazonaws.com/s3fs-public/event/171018__An__Address__by__U.S.__Secretary__of__State__Rex__Tillerson.pdf], Center for Strategic and International Studies, October 18, 2017.

[13] James Mackenzie, IMF board approves $6 billion loan package for Pakistan [https://www.reuters.com/article/us-pakistan-imf/imf-board-approves-6-billion-loan-package-for-pakistan-idUSKCN1TY2JW], Reuters, July 3, 2019.

[14] James Suokas, "Chinese state enterprises undertake over 3,100 Belt & Road projects," [https://gbtimes.com/chinese-state-enterprises-undertake-over-3100-belt-and-road-projects] GBTimes, October 31 2018.

[15] Jonathan Hillman, Infrastructure and Influence: the Strategic Stakes of Foreign Projects [https://csis-prod.s3.amazonaws.com/s3fs-public/publication/190123__Hillman__Influenceand Infrastructure__WEB__v3.pdf], Center for Strategic and International Studies Reconnecting Asia Project, January 2019.

[16] Daniel Kilman and Abigail Grace, Power Play: Addressing China's Belt and Road Strategy [https://s3.amazonaws.com/files.cnas.org/documents/CNASReport-Power-Play-Addressing-Chinas-Belt-and-Road-Strategy.pdf?mtime=20180920093003], Center for a New American Security, September 2018.

Observers of the BRI are skeptical that its partnerships are anything more than market development for its cadre of SOEs.[17] As home to seven of the world's ten largest construction companies, China used more cement between 2011 and 2013 than the United States did during the entire 20th century. As such, China is motivated to invest in infrastructure projects regardless of military application.[18] Nonetheless, the potential for MSRI infrastructure to obstruct strategic U.S. overseas operations and create pinch-points in the maritime supply chain remain a concern for some security analysts.[19]

Stage	Finance	Design & Construction	Ownership & Operation
Strategic Objectives	Win political concessions Reward supporters Set standards Access resources Control operations	Set standards Transfer technology Collect intelligence	Collect intelligence Restrict access Adapt to disruptions Monopolize skills & technologies

Figure 2—SOE Infrastructure Cycle that treats infrastructure investment as statecraft. Jonathan Hillman, ''Infrastructure and Influence: the Strategic Stakes of Foreign Projects,'' CSIS Reconnecting Asia Project, January 2019.

Case Study in the Western Hemisphere

On the Pacific and Atlantic sides of the Panama Canal, Hutchinson Whampoa, a Chinese marine terminal operator, controls transshipment cargo bound for the United States and other countries. Another Chinese entity, the Landbridge Group, recently acquired the Margarita Island Port on the Atlantic end of the canal, a move that will give the Chinese additional influence on the movement of international trade through the canal. A special declaration at the Community of Latin American and Caribbean States (CELAC) Forum on the BRI identified that "Latin American and Caribbean countries are part of the natural extension of the Maritime Silk Route and are indispensable participants in international cooperation of the Belt and Road."[20] Ye Cheng, the President of Landbridge Group, noted, "Landbridge's ports in Asia and Oceania together with the Panama Colón Container Port (PCCP) on Margarita Island will be efficiently connected to exploit maritime cooperation, contributing to the economic development of all countries." The acquisition of these properties occur at the same time as Panama shifts its stance toward China, expediting the Margarita Port project award after signing a bilateral agreement.[21]

In line with China's BRI strategy, the plan for Margarita Port is to capitalize on the doubling of the capacity of the canal, which can now handle the New Panamax container ships that can transport up to 14,500 TEU (twenty-foot equivalent units). That work was completed in June 2016.[22] The Margarita Island Port is expanding its handling capacity to 11 million TEU, adding a Liquid Natural Gas terminal and control center, and deeper berths.[23] This integrated development approach has the potential to disadvantage other marine terminal operators on either end of the canal and undermine competition from other international carriers.

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[17] Thomas Eder, "Chinese companies are clearly the main beneficiaries of BRI projects," [https://www.merics.org/en/china-flash/chinese-companies-are-clearly-main-beneficiaries-bri-projects] Belt and Road Forum, Mercator Institute for China Studies, April 24, 2019; China Power Team. "How will the Belt and Road Initiative advance China's interests?" [https://chinapower.csis.org/china-belt-and-road-initiative/] China Power, May 8, 2017, Updated May 29, 2019.

[18] Jonathan Hillman, "Five myths about China's Belt and Road Initiative," [https://www.washingtonpost.com/outlook/five-myths/five-myths-about-chinas-belt-and-road-initiative/2019/05/30/d6870958-8223-11e9-bce7-40b4105f7ca0__story.html?utm__term=.e32b1fe47c0a] Washington Post, May 31, 2019.

[19] Kilman and Grace, Power Play, CNAS 2018.

[20] See http://www.itamaraty.gov.br/images/2ForoCelacChina/Special-Declaration-II-CELAC-CHINA-FORUM-FV-22.1.18.pdf.

[21] Gabriel Alvarado, "Beijing seeks to rapidly solidify its position in Latin America amidst spat with Washington," Global Americans, February 11, 2019.

[22] See http://www.globalconstructionreview.com/news/chinese-firm-starts-w7rk-1bn-panama7nian-meg7aport/.

[23] Ibid.

Figure 3—A poster for the PCCP. Image provided by anonymous source.

While the Margarita Island Port was purchased by a private company, the state-owned China Communications and Construction Corporation (CCCC) and its subsidiary, China Harbor Engineering Company (CHEC), have performed the expansion work.[24] In July 2018, CCCC and CHEC won a contract to build the fourth bridge over the canal.[25] CCCC also has a record of supporting the Chinese military and Beijing's broader geostrategic interests and is the same company that supplied dredging services for China's island building efforts in the South China Sea.[26]

While developing nations across the Indo-Pacific have thus far welcomed Chinese infrastructure investment, there are growing questions about the economic viability of MSRI port development projects and their potential dual-use as strategic military installations or avenues for foreign policy and leverage.[27] The potential monopolization of the Panama Canal by Chinese-owned entities, one crucial leg of the MSRI, illustrates the additional strategic value of key trade nodes in the Western Hemisphere and the potential for the Chinese to create a choke point for U.S. maritime commerce.

THE CHINESE MARITIME INDUSTRY AND COMMERCIAL FLEET

China continues to rely on international trade as an important component of its economic growth. Roughly 20 percent of China's GDP is derived from the export of goods and services abroad.[28] China now ranks as the world's largest trading nation, with roughly 13 percent of all the world's exports and about 10 percent of the world's imports.[29] Moreover, roughly 90 percent of all world trade is carried by sea; unsurprisingly, most Chinese sources state that a similar percentage of Chinese trade is seaborne as well.[30] The five major Chinese carriers together controlled 18% of all container shipping handled by the world's top 20 companies in 2015, higher

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[24] Alvarado, "Beijing seeks to rapidly solidify its position in Latin America amidst spat with Washington," [https://theglobalamericans.org/2019/02/beijing-seeks-to-rapidly-solidify-its-position-in-latin-america-amidst-spat-with-washington/] Global Americans.

[25] Ibid.

[26] Greg Torode and Brenda Goh, "China's state firms cementing lucrative role in South China Sea, new research shows," [https://www.reuters.com/article/us-southchinasea-china/chinas-state-firms-cementing-lucrative-role-in-south-china-sea-new-research-shows-idUSKBN1KU0MJ?feedType=RSS&feedName=topNews.] Reuters, August 9, 2018.

[27] Daniel Kilman and Abigail Grace, Power Play: Addressing China's Belt and Road Strategy, [https://s3.amazonaws.com/files.cnas.org/documents/CNASReport-Power-Play-Addressing-Chinas-Belt-and-Road-Strategy.pdf?mtime=20180920093003] Center for a New American Security, September 2018.

[28] World Bank, "Exports of Goods and Services (% of GDP)," [https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?locations=US&type=points&view=map] 2017.

[29] World Trade Organization, "Country Profiles—China," [http://stat.wto.org/CountryProfile/WSDBCountryPFView.aspx?Language=E&Country=CN] WTO—Trade Profiles, 2017.

[30] International Chamber of Shipping, "Shipping and World Trade," [http://www.icsshipping.org/shipping-facts/shipping-and-world-trade] 2017.

than the next country, Denmark (the home nation of Maersk Line, the world's biggest container shipping group).[31]

China's growing dual-use merchant marine fleet has been developed according to regulations requiring certain civilian vessels, including roll on/roll off (RORO) vessels, tankers, and container ships, to be built to military specifications, and can be requisitioned during wartime, natural disasters, emergencies, or "special circumstances."[32]

The MSRI is a linchpin in China's dominance of international maritime trade and the trained labor to support its operation. The largest global operational shipping alliance, Ocean Alliance, principally comprised of Chinese owned and/or Chinese government-controlled carriers except for France's CMA CGM, is one of the three major carrier alliances formed over the last four years. The number of U.S. flagged vessels sailing in the international trade has dwindled from 183 ships in 1992 to 82 as of December 2017,[33] mostly due to policy changes limiting subsidies to only the vessels and labor necessary to maintain sealift in times of war. Conversely, China's investment in its national fleet has made China the most prolific shipbuilding nation to date and dramatically altered the dynamics of the global maritime trades. The development of China's foreign trade, domestic and distant water fisheries,[34] and oceanographicfleets,[35] which include icebreakers, have enhanced Chinese expertise in vessel construction (e.g., over 37% of global shipbuilding occurred in China alone, the most of any nation, in 2017)[36] and enabled the expansion of a Chinese high seas presence globally.

Powered by the world's largest shipbuilding industry, China's armed forces comprise three major organizations, each with a maritime subcomponent that is already the world's largest such sea force by number of ships.[37] By 2020, China's maritime armed forces ("gray-hulled" Navy units, "white-hulled" Coast Guard, and "blue-hulled" Maritime Militia) are projected to have a total of 1,300 ships to operate near-shore and worldwide.[38]

IMPLICATIONS FOR U.S. MARITIME INDUSTRY

1. *International commercial standards* will come under pressure as China races to execute infrastructure projects and moves to create a new legal architecture associated with BRI.
2. *Restricted access to important maritime chokepoints and supply routes*: China relies heavily on access to seaborne energy imports and maritime trade, the majority of which transit maritime chokepoints located in the Middle East and Southeast Asia.
3. *Restricted access to maritime infrastructure*: A larger Chinese military and civilian presence in the region also means that the U.S. Navy is likely to face greater competition for access to ports, airfields, and other infrastructure.
4. *Competition and risk*: Non-Chinese companies will compete for BRI contracts on an uneven playing field and participate in projects on Beijing's terms. China will attempt to externalize some of the financial risk associated with BRI projects by inviting Western investors.

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[31] Kynge et al.,"Beijing's global power play: How China rules the waves," [https://ig.ft.com/sites/china-ports/] Financial Times, January 12, 2017.

[32] Becker et al., China's Presence in the Middle East and Western Indian Ocean: Beyond the Belt and Road [https://www.cna.org/CNA__files/PDF/DRM-2018-U-018309-Final2.pdf], CNAS, February 2019.

[33] U.S.-Flag Share of Foreign Trade (2005–2015) Based on Cargo Weight [https://www.transportation.gov/content/state-us-flag-maritime-industry]. Maritime Administration Analysis based on Census data.

[34] Hongzhou, Zhang, "China's Fishing Industry: Current Status, Government Policies, and Future Prospects," [https://www.cna.org/cna__files/pdf/China-Fishing-Industry.pdf] CNA China as a Maritime Power Conference, July 2015.

[35] Martinson, Ryan and Peter Dutton, "China's Distant-Ocean Survey Activities: Implications for U.S. National Security," [https://dnnlgwick.blob.core.windows.net/portals/0/NWCDepartments/China%20Maritime%20Studies%20Institute/China%20Maritime%20Report%20%233__NOV%202018.pdf?sr=b&si=DNNFileManagerPolicy&sig=%2Fuy2RAjBuIGTqqfUw%2BJ%2BcPviM2cPLVTsqcXimocOjsw%3D] *China Maritime Report*, Volume 3 (2018).

[36] United Nations Conference on Trade and Development, "Ships built by country of building, annual, 2014–2017," [https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=89493] UNCTAD, Division on Technology and Logistics, based on data supplied by Clarkson Research Services, Accessed July 15, 2019.

[37] Andrew Erikson, "Maritime Numbers Game: Understanding and Responding to China's Three Sea Forces," [http://apdf-magazine.com/maritime-numbers-game/] Indo-pacific Defense Forum, January 28, 2019.

[38] Ibid.

5. *Increasing militarization of maritime routes*: International straits in the Arctic, South China Sea, and elsewhere might escalate geopolitical tension.

WITNESS LIST

PANEL I

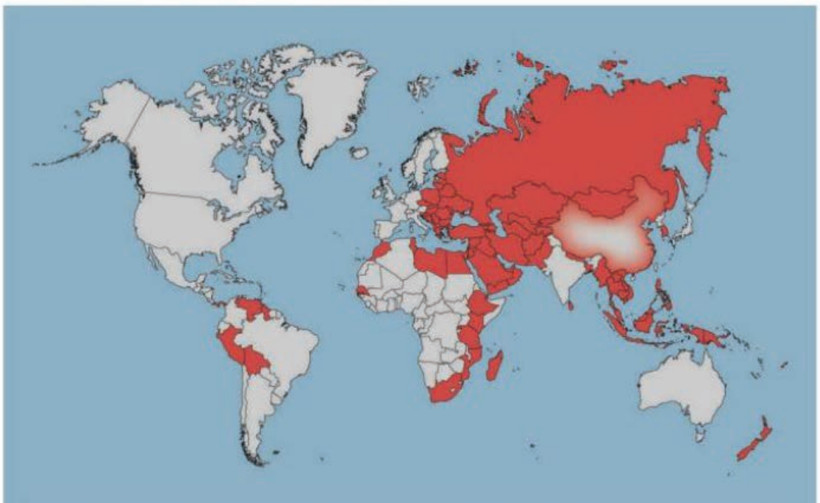
- Lieutenant General Giovanni K. Tuck, Director for Logistics, J4, Joint Chiefs of Staff
- Mr. Chad Sbragia, Deputy Assistant Secretary of Defense for China, Office of the Secretary of Defense
- Ms. Carolyn Bartholomew, Chairwoman, United States-China Economic and Security Review Commission

PANEL II

- Mr. Jonathan E. Hillman, Director, Reconnecting Asia Project, Center for Strategic and International Studies
- Dr. Jeffrey Becker, Research Program Director, Center for Naval Analysis
- Ms. Kathleen Walsh, Associate Professor of National Security Affairs, Naval War College

APPENDIX A: MAP OF COUNTRIES FORMALLY ENDORSING THE BRI (CNAS, 2019).

92 Countries Formally Endorse China's Belt and Road



AFRICA
Djibouti
Egypt
Ethiopia
Kenya
Libya
Madagascar
Mauritius
Morocco
Mozambique
Rwanda
Senegal
South Africa
Tanzania
Tunisia

ASIA
Afghanistan
Armenia
Azerbaijan
Bahrain
Bangladesh
Brunei
Cambodia
Georgia
Indonesia
Iran
Iraq
Israel
Jordan
Kazakhstan
Kuwait
Kyrgyzstan
Laos
Lebanon
Malaysia
Maldives
Mongolia
Myanmar
Nepal
Oman
Pakistan
Palestinian Territories
Philippines
Qatar
Saudi Arabia
Singapore
South Korea
Sri Lanka
Syria
Tajikistan
Thailand
Timor-Leste
Turkey
Turkmenistan
United Arab Emirates
Uzbekistan
Vietnam
Yemen

EUROPE
Albania
Belarus
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Estonia
Greece
Hungary
Latvia
Lithuania
Macedonia
Moldova
Montenegro
Poland
Romania
Russia
Serbia
Slovakia
Slovenia
Ukraine

NORTH AMERICA
Antigua and Barbuda
Panama
Trinidad and Tobago

PACIFIC ISLANDS
Cook Island
Federated States of Micronesia
Fiji
New Zealand
Niue
Papua New Guinea
Tonga

SOUTH AMERICA
Bolivia
Guyana
Peru
Venezuela

These endorsements generally indicate a country's political support for the Belt and Road but do not necessarily correlate with participation in actual projects. Source: YiDaiYiLuWang, One Belt, One Road Portal, https://yidaiyilu.gov.cn; and a comprehensive survey of a large number of official statements.

CHINA'S MARITIME SILK ROAD INITIATIVE: IMPLICATIONS FOR THE GLOBAL MARITIME SUPPLY CHAIN

THURSDAY, OCTOBER 17, 2019

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to notice, at 3:06 p.m. in room 2167, Rayburn House Office Building, Hon. Sean Patrick Maloney (Chairman of the subcommittee) presiding.

Mr. MALONEY. Let me begin by apologizing to our distinguished panelists, and to all of you who have been waiting for an hour. We were detained by a vote on the House floor and by a commemoration and memorialization of the service and life of our colleague, Elijah Cummings, who, as you all know, passed away overnight.

And I would also like to begin our hearing today just acknowledging our bipartisan shock and sorrow at the passing of one of this subcommittee's most valued members and a former chairman, Congressman Cummings. He was a great leader on this subcommittee, and a steadfast champion of our Coast Guard and of the U.S. merchant marine. His contributions to this body and to the House of Representatives cannot be understated. Truly, his leadership will be sorely missed. I know I speak for every member on this subcommittee in extending our deep condolences to his wife, Maya, his three children, and their entire family. We have placed flowers in Elijah's spot here on the dais.

And I just want to say, on a personal note, if you ever spent time with Congressman Cummings you knew you were just dealing with a deeper humanity than you encountered in a lot of people in this business. And there was something that I think all the Members were feeling today when they learned the news that we have just lost something very important in this body, and something that we all should aspire to.

So with those remarks, good afternoon. Welcome. I apologize again for beginning late. We will try to move it along. And I know we will be joined by other Members who are still leaving the House floor.

But I would like to extend a welcome to this afternoon's hearing, which will take stock of China's Maritime Silk Road Initiative and its implications for the United States maritime industry and military readiness.

This hearing comes at a critical moment in our relationship with the People's Republic of China, where we once found a willing international partner, or thought we did. We now face an increasingly aggressive and confrontational adversary.

Just last week, in fact, I and my bipartisan, bicameral congressional delegation from a different committee were denied visas to visit the U.S. Embassy in Beijing. This unprecedented step of barring a United States congressional delegation from the country occurred for one reason only: our planned visit to Taiwan. Chinese officials stated clearly that if we canceled our visit to Taiwan, the visas would be issued. When we made clear that canceling the delegation stop in Taiwan was not an option, the officials demanded that I issue a statement endorsing Beijing's version of the One China policy, delegitimizing Taiwan's political existence, and further isolating the island's 24 million people. I declined.

This incident is emblematic of the challenges the United States and private businesses and industries such as the NBA, the Apple Corporation, and Hollywood studios now face in confronting China's bullying and intimidation tactics which grow out of China's regional and global ambitions.

Moreover, as a Nation, we find ourselves at a fork in the road as to the best course to ensure American access to efficient, reliable, and secure global maritime commerce in this new geopolitical context.

The Maritime Silk Road Initiative is one component of an expansive foreign policy promoted by China, referred to as the Belt and Road Initiative. This overarching strategy intends to reshape the global economic and security landscape and seascape through Chinese investments in global infrastructure, including maritime infrastructure.

Command of the maritime transportation system has long acted as the stage on which great powers compete. Now, globally, over 90 percent of commercial goods travel by sea, and the competition is rightly intense. The infrastructure facilitating the transport of maritime commerce, oceangoing vessels, deepwater ports, high-speed railways, and fiber optic cables descend from technologies Western powers once leveraged in the 19th and 20th centuries to expand their access to foreign markets.

Today the Maritime Silk Road Initiative mimics these strategies, for example, by building railways and naval ports in Africa, or laying transatlantic data cables. In some locations new MSR projects are literally replicating former colonial projects.

The Maritime Silk Road, or MSR Initiative, is a strategic economic policy and security initiative intended to promote the Chinese workforce, build bilateral ties, foster dependence, and ensure near exclusive access to foreign ports for Chinese-controlled or affiliated vessels employing Chinese-built technologies, 5G just being the most obvious example.

Through MSR projects, China can advance both economic and security objectives simultaneously. These projects act as "dual-use infrastructure," developments that serve both commercial and military purposes. China deploys many different tools to cajole or coerce the cooperation of foreign states, including project finance tools like loan guarantees and conditions, or the control of source funds and debt service obligations.

In addition, design and construction standards, technology transfer requirements, and intelligence acquisition through ownership and operation of infrastructure enable China to gain favorable access and control of the Marine Transportation System.

The stakes are high. In an economically interconnected world, foreign-financed infrastructure investments can fuel both development and strategic competition. The MSR is a linchpin of China's dominance of international maritime trade, and the development of trained labor to support its operations.

China's investment in its national fleet has made China the most prolific shipbuilding nation to date, dramatically altering the dynamics of the global maritime trades. In fact, the five major Chinese carriers alone controlled 18 percent of the global volume of container shipping in 2015. At the same time, we in the United States have allowed our U.S.-flag fleet in the foreign trades, our maritime workforce, and our domestic commercial shipbuilding capacity to erode to their lowest points since before the Second World War. As a result, we have critically undermined our military readiness and a secure sealift capability.

The prospect of being unable to mobilize, support, and supply our Armed Forces for a sustained conflict, whether in the Taiwan Strait, the Middle East, or anywhere else in the world, should concern every Member of this body. And it is my experience this is an area of genuine bipartisan agreement and concern.

The number of U.S.-flag vessels sailing into international trade has dwindled from 183 ships in 1992 to just 82 ships as of December 2017, while over 3,000 Chinese-flagged vessels operate in the international trade today. In a world economy increasingly powered by maritime commerce and bluewater presence, we cannot continue to allow the United States deepwater fleet to decay on our watch.

This hearing will shed light on the degree to which the Maritime Silk Road Initiative might co-opt the global maritime transportation system for Chinese industrial, commercial, and security gains, disable the remnant U.S. international trading fleet by monopolizing the transport of U.S. commerce, and destabilize both the U.S. merchant marine and maritime supply chain.

[Mr. Maloney's prepared statement follows:]

Prepared Statement of Hon. Sean Patrick Maloney, a Representative in Congress from the State of New York, and Chairman, Subcommittee on Coast Guard and Maritime Transportation

Good afternoon, and welcome to this afternoon's hearing to take stock of China's Maritime Silk Road Initiative and its implications for the United States' maritime industry and military readiness.

This hearing comes at a critical moment in our relationship with the People's Republic of China. Where we once found a willing international partner, we now face an increasingly aggressive and confrontational adversary. Just last week, I and my bipartisan Congressional delegation were denied visas to visit the U.S. Embassy in China.

The unprecedented step of barring a U.S. Congressional delegation from the country occurred for one reason only—our planned visit to Taiwan. Chinese officials stated that if we cancelled our visit to Taiwan the visas would be issued.

When we made clear that canceling the delegation's stop in Taiwan was not an option, the officials demanded that I issue a statement endorsing Beijing's version of the "one China policy" delegitimizing Taiwan's political existence and further isolating the island's 24 million people. I declined.

This single incident is emblematic of the numerous challenges the United States now faces in confronting China's regional and global ambitions.

Moreover, as a Nation we find ourselves at a fork in the road as to the best course to ensure American access to efficient, reliable and secure global maritime commerce in this new geopolitical context.

The Maritime Silk Road Initiative, or "MSR", is one component of an expansive trade policy promoted by China referred to as the Belt and Road Initiative. This overarching strategy intends to reshape the global economic seascape through Chinese investment in foreign maritime infrastructure.

Command of the marine transportation system has long acted as the stage on which great powers compete. Now, globally, over 90 percent of commercial goods travel by sea, and the competition is intense.

The infrastructure facilitating the transport of maritime commerce—ocean-going vessels, deep-water ports, high-speed railways, and fiber optic cables—descend from technologies Western powers once leveraged in the 19th and 20th centuries to expand their access to foreign markets. Today, the MSR mimics these strategies, for example, by building railways in Africa or laying transoceanic data cables. In some locations, new MSR projects are literally replacing colonial projects.

The MSR is a strategic economic policy, intended to promote the Chinese workforce, build bilateral ties, foster dependence, and ensure near-exclusive access to foreign ports for Chinese controlled or affiliated vessels employing Chinese-built technologies, such as 5G.

Through MSR projects, China can advance both economic and non-economic objectives simultaneously. These projects act as "dual-use infrastructure," developments that serve both commercial and military purposes.

China deploys many different tools to cajole or coerce the cooperation of foreign states, including project finance tools like loan guarantees and conditions, or the control of source funds and debt service obligations. In addition, design and construction standards, technology transfer requirements, and intelligence acquisition through ownership and operation of infrastructure, enable China to gain favorable access and control of the marine transportation system.

The stakes are high: In an economically interconnected world, foreign-financed infrastructure investment can fuel both development and competition. The MSRI is a linchpin in China's dominance of international maritime trade and the development of trained labor to support its operation.

China's investment in its national fleet has made China the most prolific shipbuilding nation to date, dramatically altering the dynamics of the global maritime trades. In fact, the five major Chinese carriers alone controlled 18 percent of the global volume of container shipping in 2015.

At the same time, we in the United States have allowed our U.S. flag fleet in the foreign trades, our maritime workforce, and our domestic commercial shipbuilding capacity to erode to their lowest points since before the second World War. As a result we have critically undermined our military readiness and a secure sealift capability.

The number of U.S. flagged vessels sailing in the international trade has dwindled from 183 ships in 1992 to 82 as of December 2017, while over 3 thousand Chinese flagged vessels operate in the international trade today. In a world economy increasingly powered by maritime commerce and blue-water presence, we cannot continue to allow the United States deep-water fleet to decay on our watch.

This hearing will shed light on the degree to which the MSRI might co-opt the global maritime transportation system for Chinese industrial, commercial, and security gains, disable the remnant U.S. international trading fleet by monopolizing the transport of U.S. commerce, and destabilize both the U.S. Merchant Marine and maritime supply chain.

Mr. MALONEY. I would now like to call on the ranking member, Mr. Gibbs, for his opening remarks.

Mr. GIBBS. Thank you, Chairman Maloney, and I also concur with you that I am sorry to hear of the passing of former Coast Guard and Maritime Transportation Subcommittee Chairman Elijah Cummings. As chairman, he shepherded through Congress in 2010 the Coast Guard Authorization Act, which made significant improvements to the Coast Guard's acquisition program, and enhanced its maritime safety efforts.

When the Coast Guard frustrated him, he would eloquently use the chairman's seat to ensure that no witnesses ever left the subcommittee unclear of where he stood. As a member of the Committee on Oversight and Reform, I came to appreciate the passion he devoted to his chairmanship.

I pray for his family, friends, and staff, that they find peace and strength in his memory and legacy.

China has developed an industrial policy to align with its foreign policy, and it has now expanded that policy outward through efforts to control the means of conducting international maritime trade, the same means used to project military force.

China has developed an extensive shipbuilding and industrial base, and controls the third largest container line in the world. The Maritime Silk Road Initiative builds on those capabilities by financing port, road, and energy infrastructure in 126 countries in the Pacific Basin and routes to Europe.

There are two concerns about these investments: first, the dual commercial and military uses of these assets; second, the debt incurred by these countries will tie them to China in ways that will facilitate China's international pursuits, and potentially inhibit U.S. overseas operations.

The U.S.-flag fleet has retreated from the world stage. Only remnants remain, which survive to provide sealift capacity for the Department of Defense. However, for even that small fleet to be useful, it has to have access to port facilities throughout the world. I look forward to hearing from the witnesses today whether the access to such ports is jeopardized by China's efforts to extend its influence through the Maritime Silk Road Initiative.

I am also interested in China's efforts to gain a foothold in the Arctic. China has declared itself an Arctic-adjacent country, and has built two research icebreakers in the last decade. The United States, an actual Arctic nation, is only now beginning an icebreaker recapitalization program. In contrast to the Chinese Maritime Silk Road Initiative, after 5 years neither of the last two administrations have managed to produce a legislatively mandated national maritime strategy. Perhaps today's hearing will prompt MARAD to meet the latest statutory deadline next February for this plan.

Mr. Chairman, thank you for holding this hearing today, and I yield back.

[Mr. Gibbs' prepared statement follows:]

Prepared Statement of Hon. Bob Gibbs, a Representative in Congress from the State of Ohio, and Ranking Member, Subcommittee on Coast Guard and Maritime Transportation

First, let me note how sorry I was to hear this morning of the passing of former Coast Guard and Maritime Transportation Subcommittee Chairman Elijah Cummings.

As Chairman, he shepherded through Congress the 2010 Coast Guard Authorization Act, which made significant improvements to the Coast Guard's acquisition program and enhanced its marine safety efforts. When the Coast Guard frustrated him, he very eloquently used the Chairman's seat to ensure that no witness ever left the Subcommittee unclear of where he stood.

In this Congress, I served on the Committee on Oversight and Government where I came to appreciate the passion he devoted to his chairmanship.

I pray for his family, friends, and staff, that they find peace and strength in his memory and legacy.

Turning to today's topic, China has developed an industrial policy to align with its foreign policy and has now expanded that policy outward through efforts to control the means of conducting international maritime trade—the same means used to project military force.

China has developed an extensive shipbuilding industrial base and controls the third largest container line in the world. The Maritime Silk Road Initiative builds on those capabilities by financing port, road, and energy infrastructure in 126 countries in the Pacific basin and on routes to Europe.

There are two concerns about these investments: first, the dual commercial and military uses of these assets; second, that the debt incurred by these countries will tie them to China in ways that will facilitate China's international pursuits and potentially inhibit U.S. overseas operations.

The U.S.-flag fleet has retreated from the world stage. Only a remnant remains to provide sealift capacity for the Department of Defense. However, for even that small fleet to be useful it has access to port facilities throughout the world. I look forward to hearing from the witnesses today whether the access to such ports is jeopardized by China's effort to extend its influence through the Maritime Silk Road Initiative.

I am also interested in China's efforts to gain a foothold in the Arctic. China has declared itself an Arctic adjacent country and has built two research icebreakers in the last decade. The United States—an actual Arctic nation—is only now beginning an icebreaker recapitalization program.

In contrast to the Chinese Maritime Silk Road Initiative, after five years, neither of the last two administrations has managed to produce a legislatively mandated National Maritime Strategy. Perhaps today's hearing will prompt MARAD to meet the latest statutory deadline, next February, for this plan.

Mr. MALONEY. I thank the gentleman for his remarks.

I would also like to ask unanimous consent at this time to insert statements from the United Steelworkers, the Alliance for American Manufacturing, and the R Street Institute into the hearing record.

Without objection, so ordered.

[The information is on pages 73–79.]

Mr. MALONEY. At this time I would like to recognize the chairman of the full committee, Mr. DeFazio.

Mr. DEFAZIO. Thank you, Mr. Chairman, and I certainly support your spirited remarks and observations at the beginning of the hearing, so I won't restate a number of those arguments or concerns.

But before I make a brief statement, let me just say that my colleague of many years, Elijah Cummings, died last night. We have a little something here to remember him. I will just tell one story. There are a lot of stories about Elijah.

The Coast Guard screwed up the 110s. They were going to section them and make them longer, and the design didn't work. And we were trying to get to the bottom of what went wrong, how it could have gone that badly wrong, because this was a very, very, very expensive mistake. And Elijah began a hearing at 10 o'clock in the morning with a number of panels of experts and witnesses and the Coast Guard, and a lot of participation by Members during the day.

Then it got to dinner time and, yes, there is still more witnesses and a few people left here. And then, by 11 o'clock at night it was me and Elijah and Jim Oberstar still sitting here. And by midnight it was just Elijah. And I think shortly after midnight the hearing adjourned, and that brought about very significant reforms in the acquisition process at the United States Coast Guard and with the icebreaker's new coordination with the Navy.

So that was just one of many, many difficult issues he dealt with, drilled into, and resolved. He will be greatly missed.

So let me just say briefly—and I regret I can't stay, because I think this is an extraordinarily important hearing for this committee—that I have, unfortunately, because of the delay of the votes and commitments after this I can't avoid. But the U.S. has always been referred to as a great maritime nation.

If you think back to Captain Alfred Mahan and his theories, which were backed up by Teddy Roosevelt, we had to guarantee access to international markets as a maritime-dependent nation, and it required three things: a vibrant merchant fleet to carry American products to new markets, a great highway of the high seas; a battleship navy to deter or destroy our rivals who might attack our maritime ships; and a network of naval bases abroad.

Now, unfortunately, post-World War II, with the globalization—liberalization, so-called—of trade, the rise of the IMO and the chase around the world to the least regulation and the cheapest possible, most abusable labor in the merchant marine industry, most of requirement number 1 is gone, the vibrant merchant fleet.

We still are set on requirement number 2, we do have the most powerful navy, but the Chinese are building quickly to challenge that. Some of our naval assets, given new missile systems and others, may have become more vulnerable in the future. So not quite as big of a given.

And then, China has essentially adopted the policy and theories of Teddy Roosevelt and Captain Mahan with their very own principle of sea power to construct its own Maritime Silk Road. In addition to which they are building bases or ports in diverse nations around the world, and they are doing it in ways that are truly despicable. Often the construction is substandard. Often it is done under an extortionate agreement to the host country. But it is always done to the advantage of China.

Little notice has been taken of this, their growing dominance as they aggregate the merchant fleets to try and dominate our ports here. We finally got some minor action in the last Congress on that front, and some action out of MARAD, but more needs to be done.

So I think this is an incredibly important hearing. As Mahan once wrote, "Those who rule the waves rule the world." I don't think that has changed an awful lot these days, and we can't forget that.

So thank you, Mr. Chairman.

[Mr. DeFazio's prepared statement follows:]

Prepared Statement of Hon. Peter A. DeFazio, a Representative in Congress from the State of Oregon, and Chairman, Committee on Transportation and Infrastructure

Chairman Maloney, thank you for scheduling this afternoon's hearing to assess China's Maritime Silk Road Initiative and the implications for our national and economic security.

As our country and China recalibrate our relationship in the beginning of the 21st century, nothing could be more important. Allow me to provide some context to squarely frame the irony of how we got to where we are today, and the challenges before us if we seek to reclaim our mantle as a great maritime power.

First, a little history. In 1890, Captain Alfred Thayer Mahan, a lecturer in naval history and the president of the United States Naval War College, published The Influence of Sea Power upon History, 1660–1783.

In this seminal thesis, Mahan argued that British control of the seas paved the way for Great Britain's emergence as the world's dominant military, political, maritime and economic power.

Mahan and some leading American politicians of the time such as Theodore Roosevelt believed that these lessons could be applied to U.S. foreign policy, particularly in the quest to expand U.S. markets overseas.

To ensure that the U.S. Government could guarantee access to new international markets, the principal of Sea Power required three elements:

- A vibrant merchant fleet, which could carry American products to new markets across the "great highway" of the high seas;
- An American battleship navy to deter or destroy rival fleets; and,
- A network of naval bases abroad capable of providing logistical support for an enlarged, global navy, and maintaining open lines of communications between the United States and its new markets.

This policy, wholly adopted, resulted not only in the creation of Roosevelt's "Great White Fleet", but elevated the status of the United States as a global maritime and economic power.

For much of the first half of the 20th century, policymakers abided by the need to maintain both naval power and a globally competitive merchant marine.

But starting in the later part of the 20th century, globalization and the liberalization of trade began to undermine Sea Power's prevalence in U.S. maritime policy. Today, Sea Power has come to mean maintaining the world's most powerful navy, but paying little attention to the maintenance of a vibrant merchant fleet.

The irony I referred to earlier is the fact that the Chinese Government has coopted our very own principal of Sea Power to construct its Maritime Silk Road Initiative. China is using Sea Power to guide its rapid and unrelenting technological development, and is using expansion of its own maritime and shipbuilding industries to brazenly advance its own security interests, both economic and sovereign, abroad.

That is why this hearing is so important. The Chinese are literally beating us at our own game, and few people seem to care or even notice what this means for our national and economic security.

We can no longer remain ignorant, and I believe this hearing is a vital first step to pry open everyone's eyes. Mahan once wrote, "those who rule the waves, rule the world." I look forward to hearing from our witnesses this afternoon to better understand the dynamics of that competition, and what we need to do to win it.

Mr. MALONEY. And I thank the gentleman. I would like to now introduce our panel of witnesses.

First we are joined by Mr. Chad Sbragia, Deputy Assistant Secretary of Defense for China in the Office of the Secretary of Defense; Lieutenant General Giovanni K. Tuck, Director for Logistics J4, for the Joint Chiefs of Staff; and Ms. Carolyn Bartholomew, Chairwoman of the United States-China Economic and Security Review Commission.

Thank you all for being here today. I apologize again for keeping you waiting. I know you are busy, but we appreciate it. We know you have prepared statements, I have reviewed those statements, and thank you. They are excellent. Without objection, our witnesses' full statements will be included in the record. And since we have that written testimony, and it has been made part of the record, we do request that you limit your oral testimony to 5 minutes to allow maximum time for Members' questions.

With that, thank you again. Mr. Sbragia, you may proceed.

TESTIMONY OF CHAD SBRAGIA, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR CHINA, OFFICE OF THE SECRETARY OF DEFENSE; LIEUTENANT GENERAL GIOVANNI K. TUCK, DIRECTOR FOR LOGISTICS, J4, JOINT CHIEFS OF STAFF; AND CAROLYN BARTHOLOMEW, CHAIRWOMAN, UNITED STATES-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

Mr. SBRAGIA. Chairman Maloney, Ranking Member Gibbs, distinguished members of the subcommittee, thank you for this opportunity to testify. Before I begin, and to echo the comments already made, please allow me to express my condolences on the passing of Representative Cummings. We recognize his historic place in this chamber, and his longstanding service, including in this subcommittee. Our thoughts and prayers are with his family at this time.

As for the business in front of us today, China's Maritime Silk Road is exactly the type of issue in which we need to communicate across traditional lines of effort because of the unique challenge that China presents—echoing your comments. We welcome the chance to do so at this hearing.

My remarks are going to focus on China's strategy and how the Department of Defense is supporting the whole-of-Government competitive response. China's leaders certainly believe that they can and must contend for global leadership in a "new era for socialism with Chinese characteristics," heralded most authoritatively at the 19th Congress of the Communist Party of China in October of 2017.

In the maritime domain this means building China into a maritime great power, which the Chinese Communist Party made an official national priority at its 18th party congress as early as 2012.

In 2017, President Xi Jinping linked this maritime great power status to China's goals for national rejuvenation by 2049. Maritime great power status includes access to resources, a developed maritime economy, and protection of perceived maritime rights and interests. This is well-served by China's One Belt, One Road and Maritime Silk Road Initiatives, which focus on policy coordination and building transportation infrastructure globally to expand developmental ties to China.

In this context, while we do not oppose China's contributions to high-quality development based on international standards, we must recognize that China is also competing for strategic advantage. While in the past China's leaders have disavowed any direct connection between OBOR, or the One Belt, One Road, and the People's Liberation Army, or their security interests, there is clear evidence that this is changing.

For example, China's 2019 national defense white paper identified the need to build China's far seas forces and a need for overseas logistical facilities. In January of this year President Xi Jinping called for the completion of a security system for OBOR to ensure the security of major overseas projects.

In July, China's Defense Minister openly declared that China is willing to deepen military exchanges in cooperation with Caribbean and Pacific Island countries under the framework of OBOR.

Finally, as an example, the PLA Navy has recently argued for a long-term strategy to obtain bases overseas, using methods such as constructing, purchasing, and long-term leasing of foreign ports. Lieutenant General Tuck will go into more detail on the military implications of China's activities, but I would like to quickly stress that OBOR projects could also increase other countries' exposures to pressure, and affect the security of digital infrastructure, as well.

Overlapping with China's Maritime Silk Road is the 21st-century Digital Silk Road, in which Chinese companies are building infrastructure in areas like 5G, fiber optic links, undersea cables, and infrastructure connected to satellite navigation.

For example, this past June, Huawei, a Chinese company, announced an agreement with a Chinese container operator, the sixth largest in the world, to establish a 5G innovation hub. Because China lacks an independent judiciary, and the extensive security vulnerabilities in Huawei products, we are concerned critical sectors could be vulnerable as China links port developments with its technology exports and its diplomatic engagements.

So how are we responding to this challenge? DoD's response is guided by our National Defense Strategy, which identifies great power competition as our principal priority. Increasing lethality and strengthening alliances and partnerships are long-term undertakings for competing with China. And I am glad to be leading a new office within the Defense Department dedicated to assisting in this role.

Critically, the National Defense Strategy also states that the Defense Department will support interagency approaches and work by, with, and through our allies and partners.

The most important takeaway from our discussion is this: we need economic, diplomatic, and security efforts to respond to China's Maritime Silk Road activities. DoD supports this whole-of-Government response in three ways.

The first is: we provide assessments to our interagency counterparts to identify which of China's investments have national security implications from the Maritime Silk Road.

Second, we work to deepen security partnerships and underwrite stability, enabling economic and diplomatic tools to succeed. We don't seek to counter China dollar for dollar here, but to play to our strengths by promoting shared principles, developing high-standard alternatives for acute needs, and working with our allies and partners hand-in-hand.

Finally, we share best practices with other countries for engaging with China's military. We encourage carefully scoped defense engagements, hard discussions on the risks of China's military presence, national security-based investment screening, and a risk-based security framework for issues like 5G. This helps build long-term principles-based approaches to address this risk.

We welcome the subcommittee's continued attention to this issue, and look forward to your questions. Thank you.

[The joint prepared statement of Mr. Sbragia and Lieutenant General Tuck follows Lieutenant General Tuck's oral statement.]

Mr. MALONEY. I thank the gentleman.

General Tuck?

General TUCK. Good afternoon, Chairman Maloney, Ranking Member Gibbs, and distinguished members of the committee. Thank you for your invitation to be here today.

I would like to add my condolences on the passing of your fellow committee member, Representative Elijah Cummings, an icon who will be missed.

I appreciate your time and willingness to discuss China's Maritime Silk Road Initiative, and the implications of the global maritime supply chain. Our ability to project and sustain power globally at a time and place of our choosing remains our strategic comparative advantage, and it is imperative to our ability to ensure the balance of power remains in our favor. Logistics underwrites deterrence.

I will focus my comments today on the impact of China's Maritime Silk Road Initiative to that of the Department of Defense, specifically to the global transportation system and logistics.

I will begin with just a comment on background and context of where our maritime industry is today, impact to the National Defense Strategy, and then what the future may look like and our opportunities to shape it.

I would like to provide the context of today versus where we were in the Gulf War, Chairman, where you started us today in your conversation.

In 1990, we had hundreds of U.S.-flag ships. Depending on what metric you are looking at, 400 or so, and 29,000-plus mariners. Today, 82 is the number, sir, that you quoted, which is accurate, for international trade. And if you take a look at 11,700 or so mariners, just under 12,000, that is a whopping number less than what we had back just a few years ago.

So what does this dwindling fleet mean to the Department of Defense? We rely very heavily on the commercial maritime sector to transport a lethal and ready force and sustain our operations. As the age of the sealift fleet continues to increase, and the readiness continues to drop, fewer ships are available to provide steady jobs for our mariners, and which also impacts our shipyards.

Many of today's mariners are dual hatted, as you know, both commercial mariners and reservists. The results of this combination leaves some uncertainty as to whether a wartime demand can be satisfied. The Maritime Administration estimates the shortage of about 1,800 or so during sustained military operations. And it will be impacting.

We are increasingly concerned, as we see China continue to maneuver geopolitically, economically, militarily, pursuing its goal to become the regional leader and a great power. In doing so the Maritime Silk Road Initiative may affect our ability to execute the National Defense Strategy in the future if we don't change our trajectory, specifically our ability to project power and sustain combat operations.

The expanding Chinese influence could limit our ability to use ports, access ships, expose data, and the like. Additionally, it could strain or change our relationships with partners and allies.

The U.S. Transportation Command pays particular attention to dozens of ports across the globe, monitoring potential threats to the joint deployment and distribution enterprise. I point you to the

Port of Djibouti as just an example. The strategic location, crossroads of shipping lanes of Africa, Asia, and Europe, our military camp that is there—and the Chinese have an operation there, as well. There is tension between these two bases, and that is just one example that I will leave you with.

One significant impact to DoD operations in cyberspace domain is shipping data—support and subsequent IT systems are at risk of being exposed, compromised, contributing to the Chinese artificial intelligence industry.

Chinese influence can limit our footprint, reduce our throughput, or jeopardize access. Our partners may not be able to assist or work with us when we need them due to Chinese influence.

So, given the picture, where to go from here? We need to take a proactive approach and seek opportunities to shape our future with the whole-of-Government approach.

To minimize the effects of the Maritime Silk Road Initiative by China we really have to pay attention to recapitalizing our sealift fleet, which is U.S. Transportation Command's number-one priority; ensure sufficient workload for U.S.-flag vessels; and create incentives to develop and retain our mariners.

I truly appreciate your time today. Thank you for this opportunity. I hope you will find this to be informative, and I look forward to your questions.

[The joint prepared statement of Mr. Sbragia and Lieutenant General Tuck follows:]

Joint Prepared Statement of Chad Sbragia, Deputy Assistant Secretary of Defense for China, Office of the Secretary of Defense and Lieutenant General Giovanni K. Tuck, Director for Logistics, J4, Joint Chiefs of Staff

INTRODUCTION

Chairman Maloney, Ranking Member Gibbs, distinguished members of the Subcommittee, thank you for your invitation to testify on China's Maritime Silk Road Initiative, its implications for the Department, and our contributions to a whole-of-government response. We appreciate the opportunity to engage this Subcommittee on an important topic for collaboration and information sharing in order to compete effectively with China.

CHINA'S STRATEGY AND THE ONE BELT, ONE ROAD INITIATIVE

China's leaders believe they can and must contend for global leadership in a "New Era for Socialism with Chinese Characteristics," heralded at the 19th Congress of the Communist Party of China in October 2017. China's leaders have consistently sought to expand China's comprehensive national power to achieve the Party's strategic objectives by promoting what they see as the advantages of their authoritarian model and reshaping the international order to their liking.

China's leaders have set major economic and political milestones for 2021, 2035, and 2049 in the lead up to the 100th anniversary of the founding of the People's Republic of China. China's military ambitions are linked to these milestones. By 2035, China's military leaders seek to complete military modernization, and, by 2049, they seek to become a "world-class" military. In this regard, China's efforts are designed with a clear purpose in mind: to displace the United States in the Indo-Pacific region; to expand the reaches of China's state-driven economic model; to reorder the region in its favor; and ultimately to compete for global leadership.

President Xi Jinping's signature "One Belt, One Road" (OBOR) initiative also serves these goals. Made public in 2013, this initiative aims to use economic instruments to expand economic and commercial ties to China by developing transportation infrastructure, natural gas pipelines, hydropower projects, technology, and industrial parks. The initiative has transformed since its announcement in 2013 from a regional economic initiative centered along China's periphery, to an economic and foreign policy strategy that spans Asia, Africa, Latin America, Europe, the Arctic, and even into the digital and space domains.

Ultimately, China's leaders intend OBOR to facilitate greater political, diplomatic, and even military connectivity between China and other countries. Specifically, they seek to use OBOR to shape other countries' interests to align with the Communist Party's and to deter confrontation and criticism of China's behaviors that do not comport with international rules and norms. China claims that more than 120 countries are participating in OBOR and has pressured other countries and international organizations—including the United Nations—to include language endorsing OBOR in policy documents.[1]

Regrettably, some OBOR projects do not meet acceptable standards. Although we welcome China's contributions to sustainable high-quality development in accordance with international standards, too often OBOR projects are characterized by corruption, lack of public oversight, opaque and excessive lending, and nonviable projects that do not adequately account for the needs of partnering nations' populations. For example, China built a new wharf for Vanuatu at the cost of $100 million that failed to meet the specifications needed for visiting cruise ships, resulting in more than a 50 percent decline in port usage and negative impacts on the local economy.

China has also failed to perform risk assessments for some OBOR projects and inflated project costs to the benefit of its state-owned firms. Moreover, to facilitate the growth of China's statist economic model, Chinese policy banks have overburdened some countries with debt and jeopardized the economic viability of projects. In Kyrgyzstan, for example, Chinese firms engaged in corrupt practices that inflated project costs, forcing the Kyrgyzstan Government to launch a corruption investigation. In the Maldives, China made a series of inflated loans to the country's former administration that were so opaque that the current Maldivian administration is still struggling to calculate the more than $1.4 billion in debt it has inherited.

CHINA'S MARITIME INITIATIVES UNDER OBOR

In 2017, China released a "Vision of Maritime Cooperation under the Belt and Road Initiative," which lays out three maritime corridors and emphasizes the importance of maritime security cooperation. One of these corridors extends from China through the Indian Ocean to Africa and the Mediterranean Sea. Another corridor extends from China to Oceania and the South Pacific, and the last corridor extends from China to Europe and through the Arctic Ocean.

Today, China is the world's largest exporter of goods, and its state-owned shipping firms carry more cargo than any other country. In fact, six of the top ten container ports in the world are in China. China's maritime industry, therefore, has extensive experience in port operations, upon which China increasingly relies to develop the Maritime Silk Road (MSR). China's commercial capabilities are matched by its growing military emphasis on the maritime domain and increasing demands on the People's Liberation Army Navy (PLAN).

In recent years, China's party-state regime has grown more vocal about increasing China's role in the global maritime industry. President Hu Jintao first declared at the 18th Party Congress in 2012 that the Communist Party of China should "build China into a strong maritime power." His successor, Xi Jinping, made the same declaration five years later at the 19th Party Congress, adding that China needed to "pursue coordinated land and marine development," reflecting its efforts to develop roads, railways, and economic zones to link ports with inland resources and facilitate the transport of goods in China. In April 2019, President Xi called for building a "maritime community of common destiny," describing maritime connectivity and development of the "blue economy" as MSR objectives. This scheme is especially notable across the Indo-Pacific and Africa. In Africa alone, China has nearly 50 commercial port projects either complete or in various stages of execution.

In addition to MSR, China has increased its activities and engagement in the Arctic region since gaining observer status on the Arctic Council in 2013. In January 2018, China published its first Arctic strategy that promoted a "Polar Silk Road" and self-declared China to be a "Near-Arctic State." The strategy identifies access to resources, securing Arctic sea lines of communication, and promoting an image of a "responsible major country" in Arctic affairs as specific interests, and highlights China's icebreaker vessels and research stations as integral to its implementation.

[1] https://www.bloomberg.com/news/articles/2019-09-11/china-s-belt-and-road-plan-fuels-debate-over-un-s-afghan-mission

MILITARY IMPLICATIONS OF OBOR AND MSR

PLA Posture and Access

China is competing for access and influence at the global level. This past August our office met with counterparts from China's military for a brief on China's 2019 *National Defense White Paper*, which they explained defines China's national defense aims to include "safeguard[ing] China's overseas interests" and identifies a need to build its far seas forces and a need for "overseas logistical facilities." China's *Science of Military Strategy*, an official military document published in 2013, indicates its military strategists have also long been concerned with safeguarding China's maritime industry and the ability of Chinese ships to transit strategic sea lines of communication.

Although China's senior leaders for many years disavowed any direct connection between OBOR and the PLA, Beijing has now explicitly linked China's global development framework with its overseas military ambitions. At a January 2019 Communist Party study session, Xi Jinping called for completion of a "security system" for OBOR to "strengthen protection of [China's] interests and ensure the security of major overseas projects," without elaborating on the PLA's role or how the concept will account for the sovereignty concerns of partnering countries. And in July 2019, China's Defense Minister openly declared that "China is willing to deepen military exchanges and cooperation with the Caribbean countries and Pacific island countries under the framework of OBOR."

There are more signs China will seek to use OBOR to expand its international military cooperation. China's policymakers may believe that by leading with economic and technology exchanges in their interactions with partnering countries, they can subsequently generate opportunities for defense cooperation or military access. For example, in 2017, the PLAN deployed its Navy Task Group 150 on a cruise from Shanghai to Europe, not coincidentally along the pathway of the Maritime Silk Road. Along the way, Task Group 150 made numerous goodwill port calls and conducted at-sea exercises with OBOR partnering nations.

Furthermore, it is becoming increasingly clear China is aggressively seeking opportunities for military access and basing. The PLAN has argued in its publications for a long-term strategy to obtain bases overseas, using methods such as constructing, purchasing, and long-term leases to obtain rights to foreign ports. The PLA already opened China's first overseas military facility in Djibouti, and has operated there since late 2017. International press reporting has indicated China is seeking to expand its military basing and access in the Middle East, Southeast Asia, and the western Pacific, and may be considering additional locations in Africa. In the Arctic, civilian research could also support a strengthened Chinese military presence.

Exposure to Influence

China's maritime infrastructure activities could also be leveraged to exert political influence. OBOR is more than an economic initiative—it is a strategic program with strategic implications for partnering nations. Given China's demonstrated history of using economic leverage to exact political retribution against other countries, we are concerned these projects will increase partner nations' concessions from or exposure to Chinese influence or pressure. For example, the Chinese government is restricting trade and tourism with Australia and Canada, and detaining Canadian citizens, in an effort to interfere in their political and judicial processes. After the Dalai Lama visited Mongolia in 2016, the Chinese government closed its border with the land-locked country, effectively crippling Mongolia's economy. Beijing consistently incentivizes and pressures elites, usually in an opaque manner, to toe the CCP line on issues such as Taiwan, Hong Kong, human rights, etc.

Technology Challenges

Alongside OBOR, President Xi has promoted the "21st Century Digital Silk Road," an initiative that includes cooperation in frontier technology areas and building information and communications technology infrastructure, particularly in developing countries. This has overlapped with the MSR as Chinese state-owned shipping enterprises seek to link their shipping operations and port developments with Chinese technology exports. Huawei has also identified the digitalization of ports as an emerging sector for its 5th Generation (5G) telecommunications equipment. For example, in June this year, Huawei announced an agreement with China Merchants Port Group (CMPort), the sixth-largest container operator in the world, to establish a 5G innovation hub. CMPort has stated the hub will demonstrate the integration of Huawei 5G into port operations and predicted these innovations would support the development of OBOR-affiliated ports in foreign countries.[2]

The presence of Huawei 5G equipment in Chinese-operated foreign ports would present new risks due to the inherent security vulnerabilities associated with Chinese telecom vendors. Future 5G networks will underpin critical infrastructure, including automated systems that will support industrial and maritime infrastructure, and systems that track shipping containers and products through the global supply chain. The presence of low-assurance components—such as equipment from Huawei or ZTE—would compromise the integrity of these vital sectors.

Of particular concern are China's laws that compel Chinese companies to cooperate with its security and intelligence services, even when operating abroad. In addition, independent analyses have identified extensive security vulnerabilities in Huawei products compared to those of competitors.[3] Maritime infrastructure reliant on Chinese 5G services would therefore be vulnerable not only to Beijing's influence, but also to any other State or non-State actor with basic cyber capabilities. The presence of equipment from high-risk vendors in our allied and partner 5G networks could also affect the means and manner of U.S. information sharing.

Lastly, China's ability to aggregate vast amounts of SOE-furnished shipping data across entire regions or continents poses threats to the competitiveness of global markets and maritime economies. Chinese overseas port operations, working in concert from centralized data stores and enabled by artificial intelligence and big data analytics, could evolve to predict supply and demand at a scale beyond what we currently understand.

Department of Defense Approach

The U.S. *National Defense Strategy* (NDS) states that DoD will "support U.S. interagency approaches and work by, with, and through our allies and partners" to counter coercion by revisionist powers. The challenges presented by China's expanding global access cannot be solved primarily or exclusively in the military "lane." The Department therefore views our response as supporting a whole-of-government approach, primarily through the first two lines of effort of the NDS.

The first line of effort is *preparing a more lethal and resilient joint force*. The NDS takes into account the scope and pace of our competitors' ambitions and capabilities, and prioritizes investment in modernizing key U.S. capabilities, including nuclear forces; space and cyberspace capabilities; Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR); missile defense; capabilities to strike diverse targets inside adversary air and missile defense networks; smaller, dispersed, resilient, and adaptive basing; and autonomous systems. The Secretary of Defense designated the Chairman of the Joint Chiefs as the global integrator, which allows him to work across the Combatant Commands to ensure a lethal and resilient joint force is available at the right time, place, and scale. Within the Office of the Secretary of Defense, the Department established the Office of the Deputy Assistant Secretary of Defense for China in June to drive alignment on our strategic competition with China as we carry out NDS implementation.

The second line of effort is *strengthening alliances and attracting new partners*, which the NDS identifies as a crucial and durable asymmetric advantage no other country can match. This has been a key focus in our support to the *Indo-Pacific Strategy*,[4] as strengthening and evolving U.S. partnerships into a networked security architecture helps uphold a "free and open" order characterized by 1) respect for sovereignty and independence of every nation, no matter its size; 2) peaceful dispute resolution without coercion; 3) free, fair, and reciprocal trade and investment; and 4) adherence to international rules and norms. Select efforts include integrating NDS implementation with Japan's National Defense Program Guidelines; implementing Major Defense Partner status with respect to India; reinvigorating our alliances with Thailand and the Philippines; pursuing access and training opportunities in Singapore; investing in emerging partnerships with Indonesia, Vietnam, and Malaysia; and enhancing our engagement in the Pacific Islands to maintain access and promote our status as a security partner of choice. DoD is also investing $521 million over the next five years in programs like the Maritime Security Initiative to build the capacity of our allies and partners in the region, including developing part-

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[2] https://www.porttechnology.org/news/chinese__port__and__huawei__to__develop__5g__innovation__lab/; https://lloydslist.maritimeintelligence.informa.com/LL1127403/Huawei-makes-inroads-in-smart-ports; https://container-news.com/cmport-huawei-build-5g-innovation-lab/

[3] https://finitestate.io/wp-content/uploads/2019/06/Finite-State-SCA1-Final.pdf

[4] https://media.defense.gov/2019/Jul/01/2002152311/-1/-1/1/DEPARTMENT-OF-DEFENSE-INDO-PACIFIC-STRATEGY-REPORT-2019.PDF

ners' ability to conduct maritime security and maritime domain awareness operations, and advancing interoperability with U.S. forces. The United States is also working closely with Australia, Canada, France, Japan, New Zealand, and the United Kingdom to enforce UN Security Council Resolutions that seek to prevent North Korea from exporting coal and importing refined petroleum in the maritime domain. DoD is also engaging on these challenges beyond the Indo-Pacific region, as seen by recent senior leader trips to Europe and the Middle East, for example.

To "drill down" on the subject of this hearing, there are three specific ways the Department is responding to challenges presented by China's Maritime Silk Road activities: evaluating access, supporting targeted responses, and shaping high standards for engagement with China's military.

Evaluating Access

First, DoD will continue to assess Beijing's efforts to contend for influence and access globally, including by identifying where specific investments have security implications. Importantly, the Department does not view every one of China's expanding global activities as problematic. Many countries have genuine economic development needs, particularly for infrastructure, and U.S. policy does not oppose China's investment activities as long as they respect sovereignty and the rule of law, use sustainable financing, and operate in a transparent and economically sustainable manner in accordance with international standards. Instead, we promote the principles of a "free and open Indo-Pacific," where countries can determine their own economic interests and needs. We are concerned, however, by actions China's party-state has taken that are out-of-step with international norms, diminish countries' sovereignty, or undermine U.S., allied, or partner security. To that end, we have set up a framework for evaluating where China's investments in ports and other infrastructure could impact DoD equities, and have provided specific information to our interagency counterparts, recognizing this is one variable in our whole-of-government decision-making.

Targeted Responses

Second, and informed by our assessments, the Department has supported interagency counterparts and our allies and partners to respond in cases where there are acute needs. Our multilateral response to China's state-driven initiatives has emphasized upholding shared principles and promoting high standards for trade and investment. The Department does not support a plan to counter China dollar-for-dollar or emulate its state-backed approach and the accompanying costs to host countries. Rather, DoD welcomes the development of new tools by our interagency and Congressional counterparts to increase our competitiveness: the Better Utilization of Investment Leading to Development (BUILD) Act which doubled our development finance capacity; targeted State Department initiatives like the Digital Connectivity and Cyber Security Partnership and Infrastructure and Transaction Assistance Network; and strengthened U.S. contributions to regional institutions—we believe these are exactly the type of actions needed to promote quality alternatives. Although DoD may not be the appropriate Department to employ such tools, we provide support through our own tools: deepening security engagements with allies and partners, underwriting the stability needed for partnerships to thrive, and providing timely assessments, as when DoD identified concerns about potential Chinese investment in a deep water port in the Indo-Pacific.

Allies and partners have promoted high-standard alternatives as well. Last year Australia worked to fund a military base for Fiji's armed forces, for example. In September 2019, the European Union and Japan signed a deal for a 60 billion-Euro fund to coordinate infrastructure, transportation, and digital projects linking Europe and Asia.

Shaping Engagement with China's Military

Finally, DoD shares our best practices with other countries for engaging with China, and with China's military in particular. As China's military is increasingly present around the globe and seeks to build bases in other countries, we encourage hard discussions regarding the risks associated with this presence. The Department stands ready to assist any country in its assessments. The Department also continues to engage with China to build a constructive, results-oriented defense relationship focused on building the communications necessary to de-escalate crisis and reduce risk to forces. DoD has worked to scope our own engagements with the PLA carefully to avoid contact that would constitute a national security risk while welcoming cooperation from China on issues of mutual interest.

DoD has also joined interagency counterparts in promoting national security-based investment screening mechanisms as a best practice for evaluating offers that could compromise maritime and digital infrastructure, and in advocating for a risk-based security framework for 5G infrastructure contracts in particular. DoD specifically emphasizes the defense risks presented by the lack of an independent judiciary between China's vendors and its security and intelligence services. Continued outreach on these issues will further deepen our cooperation with allies and partners and build a long-term foundation for addressing risks to our critical infrastructure.

CONCLUSION

Your Department of Defense will continue supporting these and other whole-of-government actions to respond to China's efforts to influence the maritime domain in ways that are inconsistent with U.S. national interests and values. To that end, we will continue to field a Joint Force that can compete, deter, and win in this increasingly complex security environment. We welcome Congress's continued attention to these vital issues.

Mr. MALONEY. Thank you, General.

Ms. Bartholomew?

Ms. BARTHOLOMEW. Thank you. Thank you very much. And I join everybody in condolences on the loss of Mr. Cummings. The arc of his life really is an example of the promise of this country and the best that we have to offer. He will be really missed.

Chairman Maloney, Ranking Member Gibbs, members of the subcommittee, thank you for the opportunity to testify today. It is an honor to appear before you and to serve on this panel with such distinguished witnesses. The views in this testimony are informed by the Commission's body of work. They are, however, my own, and do not necessarily reflect the full U.S.-China Economic and Security Review Commission.

Our Commission was created by the Congress in 2000 as China acceded to the WTO to advise you on the national security implications of the U.S.-China economic relationship, and to make recommendations to Congress on our findings. Our 2019 report is in print. It has gone to press right now, and will be released in November.

The Commission first discussed China's Belt and Road Initiative in our 2015 annual report. Much has changed since then.

The BRI is the signature foreign policy of General Secretary of the Chinese Communist Party, Xi Jinping, and it has become a pillar of China's expanding presence on the global stage. Chinese leaders want to use BRI, of which the Maritime Silk Road is a critical component, to revise the global political and economic order to align with Chinese interests. In my testimony I would like to situate China's Maritime Silk Road activities in the bigger economic picture, focusing on two key aspects: China's industrial policies for its shipping and shipbuilding industries, and China's investment in ports around the world.

First, on China's industrial policies. Like other industries the Chinese Government has focused on and built, China's shipping and shipbuilding firms benefit from industrial policies to the detriment of U.S. companies. China's largest shipping and shipbuilding companies are all state-owned enterprises. A 2017 Harvard University study found evidence that China had significantly subsidized shipyard costs, leading to substantial misallocation of global production. Subsidies for Chinese shipbuilding SOEs have harmed the U.S. shipbuilding industry's ability to compete in the global market, and have led to shipyard closings and a reduced U.S. vendor base over the past several decades.

Second, to the very important issue of ports, China is the world's largest exporter and second largest importer, so its investment in ports helps facilitate China's global trade footprint. Today at least two-thirds of the world's top 50 container ports are Chinese owned or invested, up from about one-fifth almost a decade ago. China's investments include U.S. ports such as Los Angeles and Seattle, and four Chinese SOEs are among the world's leading port operators.

Chinese control of ports can be used as a form of market creation through which China can leverage its port control to strengthen their economic relationships with certain countries. By owning and/or operating a network of logistical nodes across Asia, Europe, and Africa, China can control a significant portion of its inbound supply chain for essential commodities and outbound trade routes for its exports. In the event of conflict, China could use its control over these and other ports to hinder trade access to other countries.

Additionally, Chinese port investment can translate into increased political leverage. Chinese investments in the Port of Piraeus in Greece, for example, have influenced Athens' response to China's claims and activities in the South China Sea and human rights abuses, with Athens blocking an EU consensus in 2017 by refusing to endorse an EU statement critical of China's human rights records in the U.N. Human Rights Council.

Finally, control of ports could also allow for economic and traditional espionage, as China can install surveillance equipment in ports to monitor foreign companies and U.S. military activity or that of our allies and partners.

Mr. Chairman, you mentioned standards. A couple of other people have mentioned that. This is an issue that we think people really need to be paying more attention to. It is really critically important for the U.S. to participate actively in standard-setting bodies, including the IMO and the ISO.

In the IMO, China is a 2018–2019 member of the Council, which is the country body elected by the Assembly, and it serves as the executive body of the IMO. It also serves the Assembly's role between sessions of the Assembly, which generally meets once every 2 years.

In the ISO, in addition to its leadership position on the Technical Committee on Ships and Maritime Technology, China is currently a member of the 20-member Council which is the core governing body of the ISO. Membership on the Council rotates. The U.S. is also currently a member.

In 2015 to 2017, the ISO president was from China, but within the ISO, the Technical Committee on Ships and Maritime Technology, ISO/TC8, is responsible for the standardization of design, construction, structural elements, outfitting parts, equipments, method and technology, and marine environmental matters used in shipbuilding and the operation of ships, comprising seagoing ships, vessels for inland navigation, offshore structures, ship-to-shore interface, and all other marine structures subject to IMO requirements. ISO/TC8's Secretariat is China's Standardization Administration.

I have been reading recently "The Guns at Last Light: The War in Western Europe, 1944–1945," by Rick Atkinson, which describes the extensive level of logistics that went into preparing for D-Day. Our sailors, merchant marines, longshoremen, and factory workers, as well as our soldiers, were critical to that mission and to helping win the war. I hope that we never face a task like that again. But I worry that, if we do, we no longer have the manufacturing capacity, the shipbuilding capacity, and the elements of the shipbuilding industry that would be necessary to meet the challenge.

China has built its economy and its military power under the U.S. security umbrella. It is gaining long-term economic and strategic influence through subsidizing its shipping and shipbuilding industries and investing in overseas ports. We must develop and run a whole-of-Government approach to addressing the challenges that it presents.

In my written testimony I have included a list of recommendations the Commission has previously made on maritime security, as well as a map illustrating the global scope of BRI and China's quest for influence.

Thank you for the opportunity to testify, and I look forward to any questions you may have.

[Ms. Bartholomew's prepared statement follows:]

Prepared Statement of Carolyn Bartholomew, Chairwoman, United States-China Economic and Security Review Commission

Chairman Maloney, Ranking Member Gibbs, Members of the Subcommittee, thank you for the opportunity to testify today. It is an honor to appear before you and to serve on this panel with such distinguished witnesses. The views in this testimony are informed by the Commission's body of work. They are, however, my own and do not necessarily reflect those of the full U.S.-China Economic and Security Review Commission.

I. Overview of the Commission and its Study of BRI

The U.S.-China Commission was created by the Congress in 2000, as Congress voted to grant China Permanent Normal Trade Relations (PNTR), which paved the way for China's accession to the World Trade Organization (WTO). We were established to advise Congress on the national security implications of the U.S.-China economic relationship and to make recommendations to Congress on our findings.

There are 12 Commissioners—six Democrats and six Republicans—three each appointed by the House and Senate Democratic and Republican leaders. Commissioners are backed up by an excellent professional staff. We do an annual report to the Congress based on eight hearings, meetings with government officials and other experts, outside research, and, generally, one trip to the Indo-Pacific region. Our 2019 report, which has 38 recommendations to the Congress on a range of economic and national security issues, has gone to press and will be released on November 14. I have included, as an attachment, a list of some of the Commission's previous recommendations which may be of interest to the Subcommittee's members (see Appendix 1).

The Commission first discussed China's Belt and Road Initiative (BRI), originally called One Belt One Road (OBOR), in our 2015 Annual Report in a section on China and Central Asia. Indeed, when BRI was first introduced, most of its focus was on Asia. Much has changed since then.

II. The History and Current State of the Belt and Road Initiative

The BRI, formally launched in 2013, is the signature foreign policy of General Secretary of the Chinese Communist Party (CCP) Xi Jinping, and has become a pillar of China's expanding presence on the global stage. BRI is not a new concept. It is a culmination and rebranding of previous policies and projects aimed at linking China with its trading partners. It is, however, so important now that Chinese leaders call it the "Project of the Century" and have written it into China's constitution. The BRI marks the end of Deng Xiaoping's era of "hide your capabilities and bide your time" and underscores China's move onto the global stage, with economic, diplomatic, geopolitical, and national security implications.

Chinese leaders want to use BRI to revise the global political and economic order to align with Chinese interests. In a speech marking BRI's fifth anniversary in August 2018, General Secretary Xi emphasized that the initiative serves as a solution for China to participate in global opening up and cooperation, improve global economic governance, promote common development and prosperity," and build a "community of common human destiny.[1]

Broadly, BRI's land-based "Belt" crosses from China to Central and South Asia, to the Middle East, and then to Europe. The sea-based "Road" connects China with South Asia, the Middle East, East Africa, and Europe via sea lanes traversing the South China Sea, Indian Ocean, Red Sea, Suez Canal, and Eastern Mediterranean.[2] (See map in Appendix 2.)

China's ambitions for BRI are not confined to just two geographic paths. China's vision for BRI includes Latin America and the Caribbean, the Arctic, space, and cyberspace (the so-called "Digital Silk Road"). The most visible manifestations of BRI are economic and official Chinese communiqués focusing on economic objectives. But BRI has clear strategic intent, including increasing China's influence over global politics and governance.

According to the Chinese government, it has signed 171 BRI cooperation agreements with 29 international organizations and 123 countries.[3] Others estimate around 70 countries.[4] The second Belt and Road Forum took place in Beijing in late April. A reported 5,000 delegates, including leaders from 37 countries, delegations from more than 150 countries and 90 international organizations, participated. One-third of the participating heads of state were from Europe.[5]

III. The Economic Background on the Maritime Silk Road

The witnesses from the Department of Defense are focusing on the national security implications of the Maritime Silk Road, a critical component of BRI. I would like to situate China's Maritime Silk Road activities in the bigger economic picture.

China is the world's largest exporter and second-largest importer, so its investment in ports helps facilitate China's global trade footprint. By owning and/or operating a network of logistical nodes across Asia, Europe, and Africa, China can control a significant portion of its inbound supply chain for essential commodities and outbound trade routes for its exports. About 90 percent of the world's trade is carried by sea.[6] China's growing investments in ports increases Beijing's ability to influence and control global supply chains, which could affect the United States' ability to maintain reliable cross-border trade volumes. China has focused its port investments in countries where the interruption of its own trading routes would be most costly, based on the amount of trade that would be diverted, or the extra distance that would have to be traveled, if shipping were interrupted.[7]

The Maritime Silk Road rebrands existing maritime policies and directs investment toward key strategic blue economy sectors, which include traditional marine industries (e.g., shipbuilding and fisheries), emerging strategic industries (e.g., maritime engineering and maritime renewable energies), and maritime services (e.g., maritime transport and finance).[8] According to a 2018 report from the European Council of Foreign Relations,

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[1] *Xinhua*, "Xi Pledges to Bring Benefits to People Through Belt and Road Initiative," August 27, 2018. http://www.xinhuanet.com/english/2018-08/28/c_137423397.htm; *Xinhua*, "Xi Jinping: Promote the Successful Implementation of One Belt, One Road to Benefit the People," August 27, 2018. Translation.

[2] National Development and Reform Commission, China's Ministry of Foreign Affairs, and *China's Ministry of Commerce, Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road*, March 28, 2015.

[3] *China Daily*, "China has Signed 171 B&R Cooperation Documents," March 7, 2019. https://eng.yidaiyilu.gov.cn/qwyw/rdxw/81686.htm.

[4] U.S.-China Economic and Security Review Commission, *Hearing on A 'World-Class' Military: Assessing China's Global Military Ambitions*, written testimony of Isaac B. Kardon, June 20, 2019, 5.

[5] Shannon Tiezzi, "Who Is (and Who Isn't) Attending China's 2nd Belt and Road Forum?" Diplomat, April 27, 2019. https://thediplomat.com/2019/04/who-is-and-who-isnt-attending-chinas-2nd-belt-and-road-forum/.

[6] International Chamber of Shipping, "Shipping Facts." http://www.ics-shipping.org/shipping-facts/shipping-facts.

[7] *Economist*, "China's 'Maritime Road' Looks More Defensive than Imperialist," September 28, 2019. https://www.economist.com/graphic-detail/2019/09/28/chinas-maritime-road-looks-more-defensive-than-imperialist.

[8] Mathieu Duchatel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," *European Council on Foreign Relations*, April 2018, 4, 10. https://

> Concretely, today the Maritime Silk Road consists of a set of flagship projects in port infrastructure [e.g., Piraeus in Greece, Hambantota and Colombo Port City in Sri Lanka, Gwadar in Pakistan, and Djibouti], financial investment in port management, and acquisitions of container management companies across Europe, the MENA region, and east Africa.[9]

The Chinese Communist Party (CCP) has repeatedly highlighted the importance of its maritime economy and shipbuilding industry in recent high-level meetings and policy documents, including the 13th Five-Year Plan, the 19th Party Congress, and the Made in China 2025 Plan.

A major goal of BRI is to open more markets for Chinese goods, displacing goods and services currently provided by the U.S. and other countries. While BRI is characterized as a boon to global development, it is, in large part, designed to boost the competitiveness and innovative capacity of Chinese companies. China's "marine GDP" (which includes marine industries, services such as transport and tourism, and exploitation of ocean resources) made up about 10 percent of its total GDP in 2017, according to China's State Oceanic Administration.[10] BRI provides ripe opportunities to expand those activities.

IV. Chinese Investments in Ports and Related Infrastructure

Chinese state-owned enterprises (SOEs) play a major role in BRI activities. China's largest shipping and shipbuilding companies are all SOEs. Four Chinese SOEs are among the world's leading port operators: COSCO Ports, China Merchants Ports, Shanghai International Port Group, and Qingdao Port International.[11] These companies are backed by Chinese state-owned banks. For example, in 2017 state-owned China Development Bank provided COSCO a $26 billion credit facility to develop its shipping interests.[12]

The total amount of Chinese port investment is difficult to determine because of the lack of transparency around deals. According to estimates by London-based investment bank Grisons Peak, between mid-2016 and mid-2017, Chinese investments in overseas ports reached $20 billion.[13] Nearly two-thirds of the world's top 50 container ports were Chinese owned or invested in by 2015, up from about one-fifth in 2010, according to research from the *Financial Times*.[14] Chinese investments in overseas ports have mostly been outside of the world's top 25 container ports (ten of the top 25 container ports in the world are in China).[15] According to the *Financial Times*, of the top 10 port operators worldwide, Chinese companies handled 39 percent of all volumes, nearly double the next largest nation group (Singapore).[16]

Chinese port investments range from building the port to managing and operating the port. They include:

- *Landlord ports*: China Merchants Port Holding's 99-year lease on Hambantota Port in Sri Lanka is an example of Chinese ownership through a "landlord port" model. In this model, "the port authority acts as regulatory body and as land-

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www.ecfr.eu/page/-/Blue__China__Navigating__the__Maritime__Silk__Road__to__Europe.pdf.

[9] Mathieu Duchatel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," *European Council on Foreign Relations*, April 2018, 14. https://www.ecfr.eu/page/-/Blue__China__Navigating__the__Maritime__Silk__Road__to__Europe.pdf.

[10] Mathieu Duchatel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," *European Council on Foreign Relations*, April 2018, 3. https://www.ecfr.eu/page/-/Blue__China__Navigating__the__Maritime__Silk__Road__to__Europe.pdf; *Xinhua*, "China Focus: China's Maritime Economy Expands by 7.5 Percent in Recent Five Years," January 21, 2018. www.xinhuanet.com/english/2018-01/21/c__136913316.htm.

[11] Mathieu Duchatel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," *European Council on Foreign Relations*, April 2018, 15. https://www.ecfr.eu/page/-/Blue__China__Navigating__the__Maritime__Silk__Road__to__Europe.pdf.

[12] Costas Paris, "China Shipping Giants Seek Control of 'Maritime Silk Road,'" *Wall Street Journal*, April 7, 2017. https://www.wsj.com/articles/chinese-shipping-giants-seek-control-of-maritime-silk-road-1491557405.

[13] James Kynge, "Chinese Purchases of Overseas Ports Top $20 billion in Past Year," *Financial Times*, July 16, 2017. https://www.ft.com/content/e00fcfd4-6883-11e7-8526-7b38dcaef614.

[14] James Kynge, Chris Campbell, Amy Kazmin, and Farhan Bokhari, "How China Rules the Waves," *Financial Times*, January 12, 2017. https://ig.ft.com/sites/china-ports/.

[15] World Shipping Council, "Top 50 World Container Ports." http://www.worldshipping.org/about-the-industry/global-trade/top-50-world-container-ports.

[16] James Kynge, Chris Campbell, Amy Kazmin, and Farhan Bokhari, "How China Rules the Waves," *Financial Times*, January 12, 2017. https://ig.ft.com/sites/china-ports/.

lord, while port operations . . . are carried out by private companies." This model is dominant in larger and medium-sized ports around the world.[17] Under the concession agreement, China Merchants Port Holding holds a 70 percent stake in the Sri Lankan joint venture running the commercial operations of the port.

- *Fully privatized ports*: In fully privatized ports, the ownership of port land is transferred from the public to the private sector. In addition, "some governments may simultaneously transfer the regulatory functions to private successor companies."[18] For example, in 2016, COSCO acquired a 51 percent stake in the Piraeus Port in Greece. The Greek government agreed to privatize the port in 2015 as part of its bailout deal with the European Union. Piraeus is the only port in Europe where a Chinese company owns the port authority.[19]

China also has port investments in the Western Hemisphere. COSCO has minor investments in U.S. ports, including at the ports of Los Angeles and Seattle.[20] In 2013, China Merchant Holdings acquired a 49 percent stake in commercial container operator Terminal Link, which owns 15 container terminals around the world, including in Miami and Houston.[21] In April 2019, Hong Kong-based Orient Overseas sold its ownership stake in the Long Beach Container Terminal to comply with an agreement reached with CFIUS to mitigate national security concerns; the agreement allowed COSCO to acquire Orient Overseas in July 2018.[22] Panama Ports Company (a subsidiary of the Hong Kong-based firm Hutchinson Whampoa Ltd.) operates the two main ports—Balboa and Cristobal—located on either side of the Panama Canal. In addition, Chinese firms are acquiring and constructing port facilities on both sides of the canal.[†]

China's shipping giants see investment in the port terminal business as an important source of growth. According to researchers from the European Council on Foreign Relations,

> Operating port terminals is a source of predictable and stable return on investment for Chinese conglomerates, unlike shipping, which depends on oil prices. As a result there is an incentive for Chinese state-owned enterprises to expand into business areas surrounding shipping, including investment in port infrastructure and other logistical components of maritime trade.[23]

The chairman of COSCO Shipping said in a 2016 interview he expects the company's investment in the port terminal business to significantly increase in the coming years and become an important source of growth. He added the port terminal

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[17] World Bank, "Port Reform Toolkit: Alternative Port Management Structures and Ownership Models." https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/Portoolkit/Toolkit/module3/port__functions.html.

[18] World Bank, "Port Reform Toolkit: Alternative Port Management Structures and Ownership Models." https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/Portoolkit/Toolkit/module3/port__functions.html.

[19] Joanna Kakissis, "Chinese Firms Now Hold Stakes in Over a Dozen European Ports," *NPR*, October 9, 2018. https://www.npr.org/2018/10/09/642587456/chinese-firms-now-hold-stakes-in-over-a-dozen-european-ports; George Georgiopoulos, "China's Cosco Acquires 51 Percent Stake in Greece's Piraeus Port," *Reuters*, August 10, 2016. https://www.reuters.com/article/greece-privatisation-port/chinas-cosco-acquires-51-pct-stake-in-greeces-piraeus-port-idUSL8N1AR252.

[20] Costas Paris and Joanne Chiu, "China's Cosco Puts Long Beach Container Terminal Up for Sale," *Wall Street Journal*, November 20, 2018. https://www.wsj.com/articles/chinas-cosco-puts-long-beach-container-terminal-up-for-sale-1542736508.

[21] Eleanor Albert, "China's Global Port Play," *Diplomat*, May 11, 2019. https://thediplomat.com/2019/05/chinas-global-port-play/; Journal of Commerce, "CMA CGM Sells Stake in Ports Unit to China Merchants," January 25, 2013. https://www.joc.com/maritime-news/container-lines/cma-cgm/cma-cgm-sells-stake-ports-unit-china-merchants__20130125.html.

[22] Chester Yung, "Cosco Shipping Units to Sell U.S. Long Beach Container Terminal for $1.78 Billion," *Wall Street Journal*, April 30, 2019. https://www.wsj.com/articles/cosco-shipping-units-to-sell-u-s-long-beach-container-terminal-for-1-78-billion-11556595995/; Costas Paris and Joanne Chiu, "China's Cosco Puts Long Beach Container Terminal Up for Sale," *Wall Street Journal*, November 20, 2018. https://www.wsj.com/articles/chinas-cosco-puts-long-beach-container-terminal-up-for-sale-1542736508.

[†] For a map of Chinese firms' role in Panamanian port construction and a full list of Chinese port projects in Latin America and the Caribbean, see Katherine Koleski and Alec Blivas, "China's Engagement with Latin America and the Caribbean," *U.S.-China Economic and Security Review Commission*, October 17, 2018, 26, 33–34. https://www.uscc.gov/Research/chinas-engagement-latin-america-and-caribbean.

[23] Mathieu Duchatel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," *European Council on Foreign Relations*, April 2018, 13–14. https://www.ecfr.eu/page/-/Blue__China__Navigating__the__Maritime__Silk__Road__to__Europe.pdf.

business is more stable and often more profitable than shipping because it has a fixed rate of return on investment, generally between 8 to 10 percent.[24]

Port investments can give Beijing significant economic leverage as well as advance its geostrategic goals. Analysts have pointed to a number of ports where China is invested and, if converted to include a military presence or function, would significantly improve China's ability to project naval power. Indeed, the requirements in China's 2017 National Defense Transportation Law to "embed military in civilian" suggest commercial ports could be utilized by military personnel if Beijing were to decide it was in its interests to do so.[25] Chinese investment in civilian ports can also pave the way for military visits to rest crews, refuel, repair ships, or for joint exercises—even if China does not have a base there.[26]

We can already see examples of where Chinese control of ports can be used as a form of market creation, through which China can leverage its port control to strengthen their economic relationships with certain countries. The ports in Hambantota, Gwadar, and Djibouti, for example, all include plans for free trade zones. Those three ports, as well as Piraeus and Colombo, also include plans for additional investment in the transportation sector, including airports, additional flight routes, roads, and railways.[27]

Nearly two-thirds of global container traffic flows through Chinese-owned or -invested ports. China has significant investments in two of the world's top 30 busiest container ports by volume: Colombo, at #24, with 7.05 million TEU,[‡] and Piraeus, at #30, with 4.91 million TEU. In the event of conflict, China could use its control over these and other ports to hinder trade access to other countries. Beijing could provide Chinese vessels preferential berthing rights,[28] potentially leading to delays for U.S. companies getting goods in and out of Chinese-invested or owned ports.[29] It could also use control over ports to set higher prices and dictate onerous terms of engagement to trade partners.[30]

Chinese port investment can translate into increased political leverage. Chinese investments in the port of Piraeus in Greece, for example have influenced Athens' response to China's claims and activities in the South China Sea and human rights abuses, with Athens in 2017 blocking an EU consensus by refusing to endorse an EU statement critical of China's human rights record in the UN Human Rights Council.[31]

Even if countries try to reduce their dependence on trade with China in order to lessen their exposure to economic coercion, Chinese ownership of ports worldwide could complicate these efforts. For instance, companies moving operations to Viet-

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[24] Mathieu Duchatel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," *European Council on Foreign Relations*, April 2018, 14. https://www.ecfr.eu/page/-/Blue_China_Navigating_the_Maritime_Silk_Road_to_Europe.pdf.

[25] U.S.-China Economic and Security Review Commission, *Hearing on A 'World-Class' Military: Assessing China's Global Military Ambitions*, written testimony of Isaac B. Kardon, June 20, 2019, 10; U.S.-China Economic and Security Review Commission, *Hearing on A 'World-Class' Military: Assessing China's Global Military Ambitions*, oral testimony of Isaac B. Kardon, June 20, 2019,132, 188; People's Republic of China National Defense Transportation Law, 2017.

[26] U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*, May 2019, 11. https://media.defense.gov/2019/May/02/2002127082/-1/-1/1/2019_CHINA_MILITARY_POWER_REPORT.pdf.

[27] Mathieu Duchatel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," *European Council on Foreign Relations*, April 2018, 16. https://www.ecfr.eu/page/-/Blue_China_Navigating_the_Maritime_Silk_Road_to_Europe.pdf.

[‡] TEU (Twenty-Foot Equivalent) is a measurement of a ship's carrying capacity.

[28] Costas Paris, "China Shipping Giants Seek Control of 'Maritime Silk Road,'" *Wall Street Journal*, April 7, 2017. https://www.wsj.com/articles/chinese-shipping-giants-seek-control-of-maritime-silk-road-1491557405.

[29] Tony Padilla, Senior Advisor, U.S. Department of Transportation Maritime Administration, briefing to Commission, Washington, DC, February 14, 2018.

[30] Mathieu Duchatel and Alexandre Sheldon Duplaix, "Blue China: Navigating the Maritime Silk Road to Europe," *European Council on Foreign Relations*, April 2018, 13–14. https://www.ecfr.eu/page/-/Blue_China_Navigating_the_Maritime_Silk_Road_to_Europe.pdf.

[31] *Reuters*, "Shanghai Port Teams up with Greece's Piraeus to Boost Container Traffic," June 12, 2018; Thorsten Benner et al., "Authoritarian Advance: Responding to China's Growing Political Influence in Europe," *Global Public Policy Institute and Mercator Institute for China Studies*, February 2018, 16; Theresa Fallon, "The EU, the South China Sea, and China's Successful Wedge Strategy," *Center for Strategic and International Studies Asia Maritime Transparency Initiative*, October 13, 2016.

nam could still be susceptible to Chinese coercion if a Chinese company controls their ability to ship their goods.[32]

Control of ports also could allow for economic and traditional espionage, as China can install surveillance equipment in ports to monitor foreign companies and U.S. military activity or that of our allies and partners.[33] Shortly after gaining control of the port of Piraeus, for example, China replaced the network infrastructure of the port with internet routers, firewalls, and switches for the data center with technology from Huawei.[34]

V. The Role of Industrial Policy in Advancing China's Shipping Industry

The Chinese economy is not a free market. It is a state-managed economy with an industrial policy. The Chinese government is transparent in its plans and goals. When it identifies strategic sectors, it uses a whole-of-government approach to build them up. The government's toolkit includes subsidies to boost domestic firms; tariff and non-tariff barriers to limit foreign access to the Chinese market; and acquisition, licit and illicit, of foreign technology to drive domestic development. The Chinese shipping and shipbuilding industries are the beneficiaries of this policy, to the detriment of the U.S. industries.

Like other industries the Chinese government has focused on and built, China's shipping and shipbuilding firms benefit from industrial subsidies.[35] The dominant firms in both industries have undergone a wave of consolidations over the past few years. For example:

- *Shipping*: In 2016, China's two largest shipping corporations, China Ocean Shipping Company (COSCO) and China Shipping Group, merged into a new company, China COSCO Shipping Group. In 2018, the China COSCO Shipping Group acquired Hong Kong-based Orient Overseas (International) Limited,[36] and is now the third-largest container shipping company in the world, behind APM-Maersk (Denmark) and Mediterranean Shipping Company (Switzerland).[37]
- *Shipbuilding*: In July 2019, China's two largest shipbuilding corporations, China Shipbuilding Industry Corp. (CSIC) and China State Shipbuilding Corp. (CSSC), announced plans to merge. This merger would form the second's largest shipbuilding company, after the planned merger of South Korea's Hyundai Heavy Industries Co. and Daewoo Shipbuilding & Marine Engineering Co.[38] In addition, the state-run shipbuilding company China Merchants Industry Holdings Co. Ltd. (CMIH) is reportedly in negotiations to merge the shipbuilding and marine engineering operations of shipbuilding firms China International Marine Containers (Group) Ltd. (CIMC) and AVIC International Holding Group (AVIC INTL) under the CMIH umbrella.[39]

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[32] Christopher R. O'Dea, "How China Weaponized the Global Supply Chain," *National Review*, June 20, 2019. https://www.nationalreview.com/magazine/2019/07/08/how-china-weaponized-the-global-supply-chain/.

[33] Christopher R. O'Dea, "How China Weaponized the Global Supply Chain," *National Review*, June 20, 2019. https://www.nationalreview.com/magazine/2019/07/08/how-china-weaponized-the-global-supply-chain/.

[34] Christopher R. O'Dea, "How China Weaponized the Global Supply Chain," *National Review*, June 20, 2019. https://www.nationalreview.com/magazine/2019/07/08/how-china-weaponized-the-global-supply-chain/.

[35] Myrto Kalouptsidi, "China's Shipbuilding Industry: Measuring the Effect of Industrial Policy," LSE Business Review, April 15, 2019. https://blogs.lse.ac.uk/businessreview/2019/04/15/chinas-shipbuilding-industry-measuring-the-effect-of-industrial-policy/.

[36] Brenda Goh. "COSCO Shipping's Takeover of OOCL to Complete by End-June: Vice Chairman," *Reuters*, April 3, 2018. https://www.reuters.com/article/us-ooil-m-a-cosco-ship-hold-idUSKCN1HA0VB.

[37] "10 Largest Container Shipping Companies in the World," *Marine Insight*, July 8, 2019. https://www.marineinsight.com/know-more/10-largest-container-shipping-companies-in-the-world/.

[38] Costas Paris, "Merger of Yards in South Korea, China Will Control Global Shipbuilding," *Wall Street Journal*, August 1, 2019. https://www.wsj.com/articles/merger-of-yards-in-south-korea-china-will-control-global-shipbuilding-11564653601; Yujie Bai, Bao Zhiming, Jason Tan, and Tang Ziyi, "Exclusive: Three More Chinese Shipbuilders in Merger Talks," *Caixin*, July 10, 2019. https://www.caixinglobal.com/2019-07-10/exclusive-three-more-chinese-shipbuilders-in-merger-talks-101437571.html.

[39] Jon Grevatt, "China's AVIC in Talks to Merge Shipbuilding Business," *Janes Defense Weekly*, July 10, 2019. https://www.janes.com/article/89813/china-s-avic-in-talks-to-merge-shipbuilding-business; Yujie Bai, Bao Zhiming, Jason Tan, and Tang Ziyi, "Exclusive: Three More Chinese Shipbuilders in Merger Talks," *Caixin*, July 10, 2019. https://www.caixinglobal.com/2019-07-10/exclusive-three-more-chinese-shipbuilders-in-merger-talks-101437571.html.

A 2017 study by Myrto Kalouptsidi of Harvard University on the impact of industrial subsidies in Chinese shipbuilding found evidence that China had subsidized shipyard costs by between 13 and 20 percent between 2006 and 2012.[40] The study concluded Chinese government subsidies in the shipbuilding industry "have led to substantial misallocation of global production."[41]

U.S. leadership in maritime engineering equipment and high tech maritime vessels is under threat. Ocean engineering and high-tech ships are one of the 10 target areas of Made in China 2025. There is evidence that some of the U.S. companies are being targeted. In July 2019, Shan Shi, a U.S. citizen originally from China, was convicted of stealing trade secrets from a U.S. company by poaching employees of other companies and enticing them to bring to his company data on syntactic foam technology for the benefit of CBM-Future New Material Science and Technology Co., Ltd., a Taizhou-based Chinese company. The U.S. government alleged that Shan did so in order to benefit China as part of China's plan to close its gap in buoyancy technology, which has both military and commercial shipping uses.[42]

While many of the traditional shipping financiers (largely European banks) are scaling back their exposure, Chinese state-owned banks are ramping up their investments.[43] In 2008, no Chinese bank ranked in the top 15 shipping lenders.[44] As of 2017, Bank of China is the world's largest shipping lender and China Eximbank the second largest, with China Development Bank also ranking in the top 20.[45] While entry into the shipping industry was based on market factors, lending has also been used to subsidize Chinese shipyards and expand China's merchant fleet.[46] Industry experts expect China will control about half of the total financing market for the shipping industry by 2025.[47]

VI. BRI and China's Promotion of its Technology Standards

BRI is intended to advance the adoption of Chinese technology standards. BRI can create new barriers to U.S. exports and investment to the extent that China is able to get participating countries to accept Chinese technical standards, for example in high-speed rail, telecommunication, and energy. If these efforts are successful, they will create long-term reliance on Chinese intellectual property and technology, while disadvantaging U.S. and other foreign companies.

It is critically important for the U.S. to participate actively in standard-setting bodies, including the International Maritime Organization (IMO) and International Organization for Standardization (ISO). In the IMO, China is a 2018–2019 member of the Council, a 40-country body that is elected by the Assembly (the highest governing body, consisting of all members) and serves as the executive body of the IMO. It also serves the Assembly's role between sessions of the Assembly, which generally meets once every two years.[48] In the ISO, in addition to its leadership position on the Technical Committee on Ships and Maritime Technology, China is currently a member of the 20-member Council, which is the core governing body of the ISO. Membership on the Council rotates (the U.S. is also currently a member).[49] In

[40] Myrto Kalouptsidi, "Detection and Impact of Industrial Subsidies: The Case of Chinese Shipbuilding," *VoxEU*, September 9, 2017. https://voxeu.org/article/chinas-hidden-shipbuilding-subsidies.

[41] Myrto Kalouptsidi, "Detection and Impact of Industrial Subsidies: The Case of Chinese Shipbuilding," *VoxEU*, September 9, 2017. https://voxeu.org/article/chinas-hidden-shipbuilding-subsidies.

[42] U.S. Department of Justice, "Texas Man Convicted of Conspiracy to Commit Theft of Trade Secrets," July 29, 2019. https://www.justice.gov/opa/pr/texas-man-convicted-conspiracy-commit-theft-trade-secrets; Spencer S. Hsu, "Houston Businessman Convicted of Conspiring to Steal Trade Secrets, Acquitted of Economic Espionage for China," *Washington Post*, July 29, 2019. https://www.washingtonpost.com/local/legal-issues/houston-businessman-convicted-of-conspiring-to-steal-trade-secrets-acquitted-of-economic-espionage-for-china/2019/07/29/92418df2-b245-11e9-8f6c-7828e68cb15f__story.html.

[43] [Ms. Bartholomew's prepared statement did not list a footnote for reference no. 43.]

[44] [Ms. Bartholomew's prepared statement did not list a footnote for reference no. 44.]

[45] [Ms. Bartholomew's prepared statement did not list a footnote for reference no. 45.]

[46] [Ms. Bartholomew's prepared statement did not list a footnote for reference no. 46.]

[47] [Ms. Bartholomew's prepared statement did not list a footnote for reference no. 47.]

[48] International Maritime Organization, "Structure of the IMO." http://www.imo.org/en/About/Pages/Structure.aspx#2.

[49] International Organization for Standardization, "ISO Council." https://www.iso.org/committee/55010.html; International Organization for Standardization, "ISO Structure." https://www.iso.org/structure.html; ISO, "ISO/TC8 Ships and Marine Technology." https://www.iso.org/committee/45776.html.

2015–2017 the ISO president was from China (the president is elected by all member countries).[50]

Within the ISO, the Technical Committee on Ships and Marine Technology (ISO/TC8) is responsible for the standardization of design, construction, structural elements, outfitting parts, equipment, methods and technology, and marine environmental matters, used in shipbuilding and the operation of ships, comprising seagoing ships, vessels for inland navigation, offshore structures, ship-to-shore interface and all other marine structures subject to IMO requirements. ISO/TC8's Secretariat is China's Standardization Administration.[51]

VII. Conclusion

Through the Maritime Silk Road, China is gaining long-term economic and strategic influence by financing, building, operating, and owning overseas ports. While doing so, it is edging out shipping companies owned by U.S. allies and partners. China's increasing role in shipping finance could result in other shipping companies to relocate to Asia.

Subsidies for Chinese shipbuilding SOEs have harmed the U.S. shipbuilding industry's ability to compete in the global market, and have led to shipyard closings and a reduced U.S. vendor base over the past several decades.[52]

I have been reading *The Guns at Last Light: The War in Western Europe, 1944–1945*. The prologue to this book by Rick Atkinson describes the extensive level of logistics that went into preparing for D-Day. It was astonishing. Our sailors, merchant marines, longshoremen, and factory workers, as well as our soldiers, were critical to that mission and, indeed, critical to helping to win the war. I hope that we never face a task like that again. I worry that, if we do, we no longer have the manufacturing capacity, the shipbuilding capacity, and the elements of the shipping industry that would be necessary to meet the challenge. The U.S. economy and the U.S. military are vulnerable to disruptions in the global supply chain. We are, for example, 100 percent import-reliant on 18 key mineral commodities, many of which are critical to our defense industrial base.[53]

China is clearly moving into a stronger position on the global stage and is determined to remake global institutions to reflect its interests and values. The Belt and Road Initiative is a major component of its efforts and the Maritime Silk Road is an important component of BRI. We must develop a whole-of-government approach to addressing the challenges it presents.

Thank you for the opportunity to testify today. I look forward to answering any questions.

APPENDIX 1: U.S.-CHINA COMMISSION RECOMMENDATIONS ON MARITIME SECURITY

2018

Chapter 3, Section 1: Belt and Road Initiative

- Congress require the Director of National Intelligence to produce a National Intelligence Estimate (NIE), with a classified annex, that details the impact of existing and potential Chinese access and basing facilities along the Belt and Road on freedom of navigation and sea control, both in peacetime and during a conflict. The NIE should cover the impact on U.S., allied, and regional political and security interests.

2017

Chapter 2, Section 3: Hotspots along China's Maritime Periphery

- Congress require the executive branch to develop a whole-of-government strategy for countering Chinese coercion activities in the Indo-Pacific coordinated through the National Security Council that utilizes diplomatic, informational,

[50] International Organization for Standardization, "Past Principle Officers of ISO." https://isotc.iso.org/livelink/livelink/fetch/-15620321/15620323/15620665/ISO__past__Officers.pdf?nodeid=18595424&vernum=-2.

[51] ISO, "ISO/TC8 Ships and Marine Technology." https://www.iso.org/committee/45776.html.

[52] U.S. House of Representatives Committee on Transportation and Infrastructure, *Hearing on U.S. Maritime and Shipbuilding Industries: Strategies to Improve Regulation, Economic Opportunities and Competitiveness*, oral testimony of Mark H. Buzby, March 6, 2019. https://www.transportation.gov/content/us-maritime-and-shipbuilding-industries-strategies-improve-regulation-economic-opportunities.

[53] U.S. Department of the Interior and U.S. Geological Survey, "Mineral Commodity Summaries 2019," February 28, 2019, 7–8. https://prd-wret.s3-us-west-2.amazonaws.com/assets/palladium/production/atoms/files/mcs2019__all.pdf.

military, economic, financial, intelligence, and legal instruments of national power.

2016

Chapter 4: China and the U.S. Rebalance to Asia

- Congress direct the U.S. Department of Defense to include a permanent section in its Annual Report on Military and Security Developments Involving the People's Republic of China on the role and activities of China's maritime militia and the implications for U.S. naval operations.

2015

Chapter 3, Section 2: China and Southeast Asia

- Congress direct the U.S. Government Accountability Office to prepare a report assessing the effectiveness of recent U.S. efforts to enhance the maritime security capabilities of allies and partners in Southeast Asia and identifying the remaining challenges and opportunities.
- Congress urge the Administration to enhance its support for regional information sharing institutions focused on maritime security in Southeast Asia.

2014

Chapter 2, Section 2: China's Military Modernization

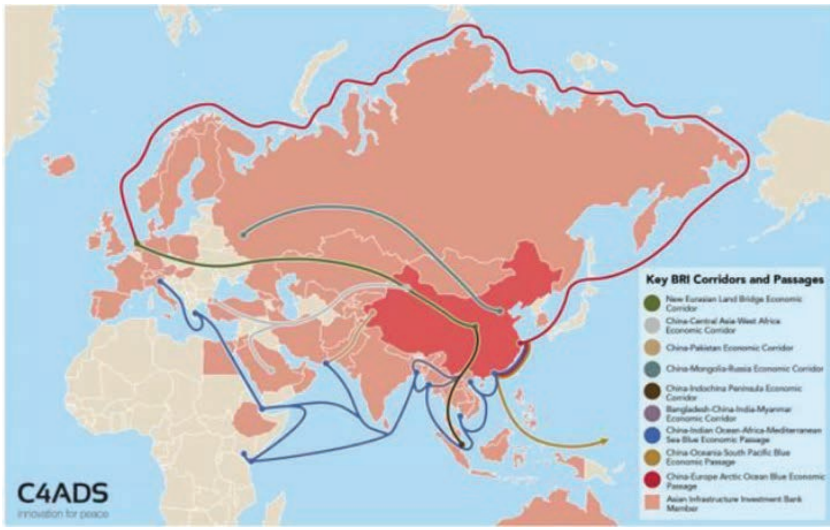
- Congress fund the U.S. Navy's shipbuilding and operational efforts to increase its presence in the Asia Pacific to at least 67 ships and rebalance homeports to 60 percent in the region by 2020 so that the United States will have the capacity to maintain readiness and presence in the Asia Pacific, offset China's growing military capabilities, and surge naval assets in the event of a contingency.

2013

Chapter 2, Section 3: China's Maritime Disputes

- Congress fund the U.S. Navy's shipbuilding and operational efforts to increase its presence in the Asia Pacific to at least 60 ships and rebalance homeports to 60 percent in the region by 2020 so that the United States will have the capacity to maintain readiness and presence in the Western Pacific, offset China's growing military capabilities, and surge naval assets in the event of a contingency.
- Congress fund Departments of Defense and State efforts to improve the air and maritime capabilities of U.S. partners and allies in Asia, particularly with regard to intelligence, surveillance, and reconnaissance, to improve maritime domain awareness in the East and South China Seas.
- Congress urge the Department of Defense to continue to develop the U.S.-China maritime security relationship in order to strengthen strategic trust. The relationship should be within the bounds of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65) and based on the principles of reciprocity and transparency.
- Congress fund U.S. Coast Guard engagement efforts with coast guard and maritime law enforcement agencies in the Western Pacific to increase understanding among civilian maritime bodies in the Asia Pacific.

APPENDIX 2: MAP OF BRI CORRIDORS AND PASSAGES



Source: Devin Thorne and Ben Spevack, ''Harbored Ambitions: How China's Port Investments are Strategically Reshaping the Indo-Pacific,'' C4ADS, 2017, 13. https://static1.squarespace.com/static/566ef8b4d8af107232d5358a/t/5ad5e20ef950b777a94b55c3/1523966489456/Harbored+Ambitions.pdf.

Mr. MALONEY. Thank you, Ms. Bartholomew. We will now proceed to Member questions, observing the 5-minute rule. I begin by recognizing myself for 5 minutes.

This question is a general question for the panel, but it may be best directed at General Tuck.

Just back from the region, I know you have to think about worst-case scenarios. In a situation where we had an active conflict develop in the South China Sea, on the Korean Peninsula, or on the island of Taiwan, and we had to move large numbers of American forces to the region in a hurry, what would that look like? What would you be up here telling us? What would the realities of that challenge be, given the state of our maritime infrastructure?

General TUCK. Sir, thanks. Thanks for the question. I think what is different today when previously we could set the conditions and arrive in a place like Saudi with hundreds of thousands of troops, and actually just build up that sustainment to do the things that we needed to do, now you are talking about fighting a near-peer adversary. Dropping and going to either fighting tonight or bringing a decisive force into a highly contested environment. So that in and of itself is going to present a challenge.

Mr. MALONEY. Well, just so we are clear, this is not some esoteric scenario. I mean we have all read, I assume, President Xi's statements about Taiwan. We all understand the realities of what is going on in the Korean Peninsula. This is a real possibility. We see what is happening in Hong Kong.

So what does that look like? So we are talking about a worst-case scenario. None of us wants or hopes to find ourselves there. But in that event, when we turn and say, "How are we going to move these forces to that region in a hurry," what are we looking at?

General TUCK. Yes, so what you are looking to do is mobilize the Department to be able to activate ships that belong to the Maritime Administration, put them under the Military Sealift Command. So a quantity of those ships that reside in the Navy Sealift Command, added with the maritime community on top of that, leveraging vessels that are in the commercial sector, which you are going to have to need to do this, and then have the mariner pool available to be able to do this, and start sending all of these forces to a coast to get on vessels and then start moving to where they are intended to go.

Mr. MALONEY. I appreciate that. And if you look at each of those elements that you just specified, how would you describe the status of each of those components of that response?

General TUCK. OK, so from——

Mr. MALONEY. Are we ready? Are they robust?

General TUCK. So——

Mr. MALONEY. Is it everything you could hope for? Or is it something else?

General TUCK. Yes, sir. U.S. Transportation Command, just within the last few weeks, activated 33 ships out of the Navy Sealift Command, which was—Military Sealift Command, 6 of those ships, 27 out of the Maritime Administration, to get them out of a reduced status, put some port activity together, do sea trials. And so we hadn't done something of that size and magnitude in years, and it gave us an opportunity to take a look at a scorecard and see how we did from a readiness perspective. And we are still cranking through what that might look like, from a report perspective, to be able to share that information with our leadership.

But just the significance of doing something like that that we hadn't done before, we are taking readiness very seriously, as you know.

Then you transfer to the commercial industry. And I take a look at the commercial industry, and I put them in, basically, four bins. What strategic impact? What is the strategic value of our commercial industry base? What is their readiness, their performance? And then, lastly, if we needed to take a look at cost, that would factor in.

But based on that, we take a look at the fact that in the past we were really good at rotating forces in on top of brigade combat teams. Now we are deploying brigade combat teams across the globe. And so that muscle memory of what we used to do early in the 1990s, we now have attained, and we are very successful in that sphere.

Mr. MALONEY. And what are the risks you see, then? Ms. Bartholomew or Mr. Sbragia, feel free to weigh in.

But tell me about the risks, sir. What should we be focused on here? And what kind of one-two-three investments would you recommend if this committee were going to get active on that subject?

General TUCK. So the risk is that we are operating on old ships. And so Navy sealift recapitalization is very important.

The mariner pool that we have today is being used both in commercial and in its Reserve capacity. So you are using both sectors, if you will, with one pool to get that done. And so that is important.

I think advocating for a maritime security program, and funding it, and having the ability to not only resources but signal to industry that we have a plan for you to keep these ships viable, U.S.-flag ships, to be able to use at the time and place that we need to is also critical.

But those are just three examples of where I think we should put the weight of this committee.

Mr. MALONEY. I thank the gentleman and I see my time has expired. I am going to yield to Mr. Gibbs, but I appreciate that the others may have something to say on that subject.

Go ahead, sir.

Mr. GIBBS. Thank you. You know, this is real—to me, it is alarming testimony, what is happening. Because when you talk—like Ms. Bartholomew, you talk about the economic and the military, and those are intertwined. I have always said in this country if we have a strong economy, a strong military, the world is safer. But if one of those isn't there, there are issues.

And then, of course, now, with the negotiations with China and trade, this all kind of fits together into what is going on in Hong Kong and, of course, Taiwan, as the chairman mentioned.

I guess to start off, General, thank you for your service. But back in—what was it, 1991, when we kicked Saddam Hussein out of Kuwait, we mobilized some of our maritime fleet to move equipment over there. Correct? And I think you said in your testimony we have gone from 400 ships down to 84, something like that.

When we did that, how much capacity did we use of our capacity to get that armament over to Kuwait, over to the Middle East? And then what is our ability to do something like that today?

General TUCK. So, sir, I will take your question as one on scale.

What we were asked to do back in the 1990s was to support an effort based on plans back then that were related to square foot, square foot required to do day-to-day operations and square feet required to surge. So far, if you take a look at the plans today to do the things that we need to across the globe, there is a certain amount of square feet that is required to be able to move the U.S. military where it needs to be. And right now, we have enough to do what we need to do. The only difference in conversation between back then and now is the inventory of capabilities that we have to be able to prosecute the National Defense Strategy. It is much limited today versus—and you know this—versus what we had back then.

And so, for us to shift from one combatant commander's resources and move them to another part of the globe adds to this discussion.

Mr. GIBBS. And, of course, our assets today on the maritime side to do that, the assets—the ships are much older, right, and that is an issue?

General TUCK. Yes, sir.

Mr. GIBBS. So we are really in a very precarious position, right?

General TUCK. We really are. Some of the vessels are approaching their end-of-use life. So the strategy would be you are either going to extend some of these ships, you are going to buy used to get some of them faster at a lower rate—not taking away, hopefully, shipyard business, because you are going to maintain and modify ships, so put the yards to use to do that—and then buy new. And with this approach, I think we can help the delta of the gap that we are seeing. But unless we do something very soon, we are going to find ourselves just widening the gap of capacity that we need.

Mr. GIBBS. And I know I am really concerned. I see the map with all the countries that were—like, almost 130 countries—where China has a foothold in there because they put investments in there. And I know when you invest in a business or create a partnership with a person to do a business, you usually have some say-so, you have got some clout.

And so I guess, Mr. Sbragia, what are your concerns about what is going on there, and what can we do, as a country, to try to offset some of that, those initiatives that China is doing?

And, obviously, they can do some of this because of their system of government, it is easier for them to do it. But how concerned are you, moving forward, if they stay on the same track?

Mr. SBRAGIA. Thank you. That is a great question. I will tell you I certainly refer you to the written statement that we submitted, and then a little bit of my opening comments, as well.

But to underscore Lieutenant General Tuck's comments, which is, I think we understand China pretty well, that by 2050 they have aspirations to achieve a world-class military. And when I talk to them and ask them about what that means, their single aspiration is to elevate their own status and capacity on a global scale, even if they haven't figured out in quite detail.

What it does mean is that they will have a global military where the U.S. essentially may have no safe harbors, to echo General Tuck's comment, which is it will not look like it did in the past. We will have to move across the space an entire way that could be contested, both for ourselves and our allies, from the start and in all domains, and we need to take that seriously.

The challenge for the United States is to set conditions in our favor, certainly both for deterrence and of necessity to prevail. Our advocacy is internally, as we laid out, but certainly here is, while we applaud this subcommittee addressing this challenge, which is—it branches out across multiple lanes, and you can't artificially bifurcate this issue into one single element. It is going to take all of us working together to do this.

Certainly I would call for further advocacy with our allies and partners to make them aware of this, and understand that it will need the whole-of-Government approach, and certainly for us to deepen our exploration of areas about where they are going to go, not just where they have been in the past, where it is going to go in the future.

One case example is the Arctic. It was raised earlier today. The DoD wrote a report on our Arctic strategy on June 29, 2019, this June, and it covers three things: building awareness, enhancing operations, and upholding a rules-based order. These are the types of areas that we have not had to contend with in the past that we will have to orient on better.

Mr. GIBBS. I am out of time. I would just say in closing we have got to be really careful to address this issue, because we could be held hostage.

Mr. SBRAGIA. Yes.

Mr. GIBBS. And just economically and, of course, militarily. I yield back.

Mr. MALONEY. I thank the gentleman.

Mr. Larsen?

Mr. LARSEN. Thank you, Mr. Chairman.

Ms. Bartholomew, thanks for helping us out today. Has the Commission looked at whether or not any U.S. companies are involved in either operation, technical advice, or in construction on any BRI projects?

Ms. BARTHOLOMEW. I think we did a chart in our 2018 report. We can provide for you some information.

Most of the U.S. companies that are involved in BRI projects are involved as subcontractors. They are having a tough time breaking into full contracting. Not surprisingly, the Chinese Government is doing here what it does other places, which is it is making these projects advantageous for Chinese companies, bringing in Chinese workers, and making it difficult for U.S. and other companies to get involved.

Well, our staff will get to your staff a list of the companies.

Mr. LARSEN. Yes, yes. And is the Commission report recently or in the future? Do you have an opinion on whether U.S. companies should participate at all?

Ms. BARTHOLOMEW. We probably would not come to a consensus on that. We have not taken a position. I mean, our belief is that U.S. companies should have opportunities around the world. So I don't think that we would be saying that they shouldn't be participating in those projects.

But what we are is disappointed that, if China is indeed going to spend as much money as it says it is going to spend on infrastructure, that our companies, which have a lot of experience, should have opportunities to participate there.

Mr. LARSEN. Yes, that was the opinion of the administration when it sent a U.S. representative delegation in 2017 to China to the first BRI conference, as well.

You mentioned Seattle and L.A. as two ports. There are other ports, as well. The Chinese companies don't operate the ports. They operate individual terminals at ports. So it is not like they are operating an entire port.

Has the Commission developed or have you studied whether or not these ports that have Chinese operators of individual terminals have taken any steps at all to protect shipping data, to protect communications, to do anything that causes the concerns that we have heard from the panel today?

Ms. BARTHOLOMEW. We have not specifically looked at that as something—we could certainly try to look into—I don't know how much information the ports will actually share on some of those things. I will express I know 5G was mentioned.

Mr. LARSEN. Yes.

Ms. BARTHOLOMEW. Sort of the broader concern about where Chinese technology is getting into communication systems——

Mr. LARSEN. Yes.

Ms. BARTHOLOMEW [continuing]. And the data that they are able to gather, and what they are able to do with that. I would say that I certainly have a concern about that, although I don't have any specific information to answer your question.

Mr. LARSEN. Yes. Well, I guess one of my—it is nice to point out a problem, but it would be better to hear some solutions, as well, on that point.

Ms. BARTHOLOMEW. Absolutely. That is the case. I would also say it would be good to make sure that we can try to prevent these problems as much as we can.

Mr. LARSEN. Yes, all right. On that point, with regards to technology standards IMO and ISO—and this gets to the Huawei issue, as well, and ZTE—about 35 percent of the standard-essential patents for 5G are actually owned by Chinese-based companies like Huawei or ZTE or state-owned enterprises. And about 15 percent of those standard-essential patents are owned by U.S. companies. So we are focused a lot on the name on the box, as opposed to the guts inside the box.

And so if the standard-essential patents are owned by Huawei, that piece will end up in a non-Huawei box because it is a standard-essential patent. And so it gets into the standard-setting issue.

And so the question I have for you is—it is, again, one thing to point out that ISO and IMO—that there is a problem. But what are we doing to show up and make the argument, and be in the room when the votes are taken about what these standards are going to be?

Ms. BARTHOLOMEW. Well, Mr. Larsen, I mean, I think you are putting your finger on a very important point, which is to make sure that we are showing up and that we are participating in these.

One thing the Commission has done, not IMO- and ISO-specific, is that we have done a database of where the Chinese Government is involved in multinational organizations, multilateral organizations, because they—it is a strategy, right?

Mr. LARSEN. Right.

Ms. BARTHOLOMEW. I mean, they are consistently putting people into positions where they can help determine what standards are going to be.

I recognize that the Huawei situation, the technology, it is complicated stuff. You know, things are developed in different places and they are manufactured in different places. And it is complicated stuff. Our role is really to point out some of the concerns about potential problems and, as I said, to try to make sure that we prevent those. But——

Mr. LARSEN. But to say—I am out of time. I would just say, in conclusion, we are playing a lot of defense and not a lot of offense here. And I would like to see us open up the other side of that playbook. And that goes to everybody at the table.

Ms. BARTHOLOMEW. Yes.

Mr. LARSEN. Thanks.

Ms. BARTHOLOMEW. Thank you.

Mr. MALONEY. I thank the gentleman.

Mr. Gallagher?

Mr. GALLAGHER. Thank you. Whenever we talk about China, I am always struck by what I perceive to be the level of bipartisan consensus on this issue, which I think is remarkable at a time when Congress is divided, I think, on the most important strategic issue, not just of today, but perceivably for the next two decades. There is a ton of bipartisan support for a more realistic, if not aggressive, posture with respect to Chinese influence, expanding influence around the world. And so that is something we should continue to foster.

And thank you for holding this hearing, Mr. Chairman. That gives me a lot of hope. Not to say we agree on everything. Sometimes you guys are wrong about things and I am right. But I just think that is a very, very good thing.

And looking at the map, you can't help but notice that the BRI projects overlap with a lot of the key sea lines of communication and maritime choke points. And the chairman sort of referenced Mahanian theory earlier.

And I would just be curious, Lieutenant General Tuck, as a professional logistician, if you were seeking militarily to dominate and, if necessary, shut down the world's key trade and military supply nodes, how similar would be the areas you would want to control, compared to where the PRC is going with BRI?

General TUCK. Thanks for the question. We do share the same concern that you just raised, sir, with respect to global choke points. And just like was mentioned earlier, we just have to be present there. Not just watching, but actually present.

So if you take a look at ports like the Suez, the Red Sea, Panama Canal, Malacca Straits, where it is very vital to have freedom of navigation, just from a rules order perspective and international law, and so our partnerships with countries that either are a part of the equation and our partnership there, it is just going to be impactful and enormous for us to consider.

And this is now a whole-of-Government approach on how we actually make sure that we have the access that we need.

And so I really think that working with our allies and partners, which is part of the National Defense Strategy, is key. We have to keep the conversation going. And if you are thinking about just in our own hemisphere, working with the folks south of Mexico, it is very vitally important.

So, from an interoperability—exercising mil-to-mil dialogues, relationships, key leadership engagements, I think they are going to remain pivotal in ensuring that we have access to the areas that you have talked about. And so that is a priority that, as I pay attention to working with combatant commanders, to make sure that we do that, working with the J5 and how we interact with our embassies, our state representatives out there to keep the dialogue going, and fostering the development that we need to have with these countries.

Mr. GALLAGHER. I appreciate that. One area where I always feel like we give—we get a short shrift, maybe just because CENTCOM and INDOPACOM take up most of our time, is AFRICOM. And certainly we have seen the Chinese militarize their presence in Djibouti. You know, going east of that, Gwadar may be the next sort of port to follow.

But do you, Mr.—I apologize if I am mispronouncing this—Sbragia, did I get that close enough? You are allowed to correct a Member of Congress.

Do you expect to see the Chinese Government militarize other ports and locations along the Belt and Road?

Mr. SBRAGIA. Yes, they—absolutely. It is very evident and clear. I have talked to the Chinese military personally about this issue. They have an aspiration to do so.

I did reference earlier about China's 2019 defense white paper published by their State Council. I have had discussions with them and their principal authors at both their Academy of Military Science and National Defense University with oversight of their Office of International Military Cooperation who was the principal pen.

It was absolutely clear of what their intent is. It is to not only take Djibouti, which—I think my personal view is best viewed as a test case of how you start this practice, how you do best practices, how do you set up a port, how you do communications work, how do you do all the overseas command and control functions. That is a first step, it is not the last step. So you are going to see that come more often. And they told us that directly.

Mr. GALLAGHER. Great.

Mr. SBRAGIA. Both in terms of an aspiration to do it, and to further mature how they do those things.

Mr. GALLAGHER. Well, I thank you for the work you are doing. And again, thank you for holding this hearing.

Mr. MALONEY. I thank the gentleman.

Mr. Garamendi?

Mr. GARAMENDI. General Tuck, are you aware that the U.S. Navy cannot fuel the fleet with American vessels?

General TUCK. I am sorry, sir, can you——

Mr. GARAMENDI. Are you aware that the U.S. Navy cannot fuel its fleet with American vessels?

General TUCK. [No response.]

Mr. GARAMENDI. The answer is yes.

General TUCK. Yes.

Mr. GARAMENDI. You are aware, and the U.S. Navy cannot provide fuel for its fleet with American vessels. OK? OK.

Are you aware that the U.S. is exporting oil and gas?

General TUCK. Yes.

Mr. GARAMENDI. OK. Are you aware that none of this fuel is on American flagged and owned ships?

General TUCK. I am not.

Mr. GARAMENDI. The answer is none of the oil and gas is on American—excuse me, none of the gas is on American-flagged ships. Some of the oil is.

Are you aware that there is legislation that could take a small percentage of that oil and gas and lead to the construction of perhaps 50 American flagged, owned, and built vessels?

General TUCK. Yes.

Mr. GARAMENDI. Thereby solving part of the problem that the U.S. Navy has.

General TUCK. Yes, sir, I am.

Mr. GARAMENDI. Good. Then I would like to have the support of TRANSCOM for that legislation. It is called the Energizing American Shipbuilding Act.

General TUCK. I am aware of it, sir.

Mr. GARAMENDI. Good. So where is the support?

You have got a problem, you have got a very, very serious problem. You don't have American ships that are under American control to fuel the U.S. Navy. You have to rely on Chinese ships to do it. So we have got a problem. I would appreciate your insight into it.

And I suppose that the political appointees also ought to be aware. Are you?

Mr. SBRAGIA. Congressman, there are clear aspects of that that I am aware of. Not all of them.

Mr. GARAMENDI. Good.

Mr. SBRAGIA. Our job is to get busy figuring those out.

Mr. GARAMENDI. The bottom line here is we sit here and we talk about these things forever—and we have for at least the last half-dozen years, if not longer. I have yet to see this administration step forward with a solution to the problem.

There is one at hand. It would simply require that a small percentage of our exported oil and gas be on American-built ships.

Also, it could lead to a significant reduction in the cost of naval vessels. An example was given to me yesterday that there was competition for a small naval vessel that didn't exist before, but a new competitor entered the market. The cost savings was 40 percent from what was anticipated.

If we were to build vessels in the United States—for example, oilers and LNG vessels—we might have more competition in our shipyards, with a reduced price to the U.S. Navy for its kinetic vessels, which, by the way, can't get to where they need to go because they don't have the fuel to get there.

So beyond that, a question having to do with the islands in the Pacific, some of the little-known islands in the Pacific. Is it true that the Chinese are building significant ports in many of these obscure little-known islands out in the Pacific? Any one of you want to answer that?

Ms. Bartholomew?

Ms. BARTHOLOMEW. Well, we know that they are dramatically increasing their presence. I think there is one of the islands—which is——

Mr. GARAMENDI. Let's see, there is—in Luganville in Vanuatu.

Ms. BARTHOLOMEW. Yes.

Mr. GARAMENDI. Yes, we have that.

Ms. BARTHOLOMEW. Yes.

Mr. GARAMENDI. It is supposed to be for fishing, but it is big enough for the largest Chinese ships.

Ms. BARTHOLOMEW. Yes.

Mr. GARAMENDI. Gee, what is that all about?

Ms. BARTHOLOMEW. Yes.

Mr. GARAMENDI. Any of you have any idea what that is all about?

Ms. BARTHOLOMEW. I think we have to presume that we know what it could be about.

I would say I have been in the region twice in the past 6 months, and certainly the Australians are engaging with the United States in having a greater presence, generally, in the Pacific Islands.

Mr. GARAMENDI. Do we have——

Ms. BARTHOLOMEW. And there is growing concern——

Mr. GARAMENDI. Is there an American strategy to deal with this?

Ms. BARTHOLOMEW. I can't answer that. I am a congressional advisory.

[To panelists:] Somebody—is there an American strategy to deal with it?

General TUCK. So, sir——

Ms. BARTHOLOMEW. I think there is, actually.

General TUCK. The example that you quoted about China building a wharf in Vanuatu, for instance, it is coming with some problems.

But the one thing I can share with you is that the Pacific Area Symposium for Logistics—senior officers—29 or 30 countries get together. They meet in the Pacific, annually. These are the small countries that come, and we talk about either bilat or multilat sharing of information of what the Chinese might be doing and what we might be doing out there.

The reason why this is important to talk to you about, sir, is because there are a lot of islands out there that want us to come in and be a part of them versus them wanting to do something elsewhere. And I think that——

Mr. GARAMENDI. And what are we doing——

General TUCK [continuing]. That is important for us to——

Mr. GARAMENDI [continuing]. To address their desire to be partners?

General TUCK. [No response.]

Mr. GARAMENDI. I am out of time. The answer is little, if anything. I am out of time. Thank you, I yield——

Ms. BARTHOLOMEW. Mr. Chairman, could I just clarify one thing, which is there have been recent reports that the Chinese are leasing the island of Tulagi from the Solomon Islands, and it was an island that was important in our World War II Pacific war. And a lot of people are very upset, both in the Solomon Islands and elsewhere.

Mr. GARAMENDI. There is also a place called Subic Bay——

Ms. BARTHOLOMEW. Yes.

Mr. GARAMENDI [continuing]. That is about to be taken over by a Chinese company.

Mr. MALONEY. The gentleman's time has expired. I thank the gentleman, thank the witnesses.

Mrs. Miller?

Mrs. MILLER. Thank you, Chairman Maloney. The gentleman from California has certainly altered some of my speaking, so to speak.

I represent West Virginia. And trade is very important to West Virginia because we export timber, coal, oil, and gas, and we are always interested in fair trade. The presence of the infrastructure development to me is very concerning.

Lieutenant General Tuck, what are the U.S. military's concerns with the Chinese military showing so much force in Southeast Pacific and the South China Sea?

General TUCK. Ma'am, thanks for your question. I mean, from what we have been seeing for years—and you all have been seeing it, too—they are trying to bolster their own regional security, they are trying to bolster their own sphere of influence.

And from—at least from the lens that I have seen as a logistics officer for the joint staff, it is—again, I am going back to rules-based order, international law, freedom of navigation. I am responsible, at least in advising the chairman on access basing and overflight or freedom of navigation. So how do I—how do we best do this?

And I go back to—at least since you called out the South China Sea, ma'am—the INDOPACOM Pacific strategy, which talks about posture and presence, we have to be out there. And so that is something that I would like to have resonated with this committee.

It is about partnership capacity, to be able to have our relationships that we have with not only our FVEY partners, and it is not necessarily just the U.S., but it is Japan and India, it is Australia and Vietnam. It is Vietnam and New Zealand. It is those kinds of arrangements that are going to help areas like the South China Sea maintain rules-based order, freedom of navigation, so that commerce and economy can flow.

And then, last but not least is this idea of—that we all know about—it is interoperability. Not only is it good for us to partner when there is a humanitarian disaster that happens in that part of the world to show that we can be trusted as a partner by bringing our military assets to bear, and bringing lifesaving skills or recovery efforts for places like Nepal and the earthquake there, or Malaysia and the earthquake, or tsunamis and the like, but that hand that we lend as a military in times like that can lend incredible trust when it comes to having to then demonstrate why it is important for us to be present when it comes to freedom of navigation, and making sure that commerce flows the way it needs to.

Mrs. MILLER. And you called that partnerability?

General TUCK. I call it building partnership capacity.

Mrs. MILLER. Partnership capacity. OK, thank you. Mr. Sbragia, what steps has the Trump administration taken to drive China to join the international community on trade standards agreed to by members of the World Trade Organization? And have these efforts been successful?

Mr. SBRAGIA. Congresswoman, that is a great question. I got to tell you, that is a bit outside the scope of my expertise. My concentration is on DoD issues. We are fully supportive and participate across interagency efforts, and certainly advocate to align those issues. But for trade issues, I am not the best person to talk about——

Mrs. MILLER. Would either of the other——

Ms. BARTHOLOMEW. I can try addressing that a little bit, and preface it with the U.S. Ambassador to the WTO, Dennis Shea, was a long-serving member of this Commission, so he is very well steeped in the U.S.-China issues. And I think that the administration is certainly trying to make some changes at the WTO that would address the bigger challenges that China has created there.

Mrs. MILLER. Do you expect these ongoing negotiations to continue?

Ms. BARTHOLOMEW. I can say that I hope that they continue. It is very difficult to predict what is going to happen.

Mrs. MILLER. OK. What role can Congress play in making sure that the United States will continue to be prepared for world conflicts and disasters?

Ms. BARTHOLOMEW. I am sure we would all have answers to that. I would say that it is certainly important for us to strengthen our relationships with friends and allies—in this case, in the region, in Asia—but around the world, because we are going to need to be able to work with them to address any problems that might arise. To me that is one of the most important things.

And again, traveling in Asia, it is one of the concerns that we hear, that people aren't sure of our commitment. They are not sure that they can rely on us. And I think they need to be convinced that they can.

Mrs. MILLER. Absolutely. Thank you. I yield back my time.

Mr. MALONEY. I thank the gentlelady.

Mr. Lowenthal? The gentleman from California is recognized.

Mr. LOWENTHAL. It is hard to hear you all the way over here in California.

I represent the Port of Long Beach. I live in Long Beach. And I am the cochair of the PORTS Caucus. And so I hear—or my staff probably more than even me—hear from ports across the country. And one of the things I hear is the fear of increased tariffs on the ship-to-shore cranes, the cranes that come from China that all of our ports use.

So I am wondering maybe, Ms. Bartholomew, you can—what are the implications of having us so reliant on Chinese equipment for our ports? That is really, in my port, what is going on. Not so much the terminal. It is the terminal, we had to sell—China had to sell one of the terminals. But it is the reliance on the equipment. Maybe you could talk to us about that, and what that means.

And does China use leverage when they have that—you know, is this an important tool that—because we are so dependent on their equipment, their cranes?

Ms. BARTHOLOMEW. Well, I think we see the use of leverage on other products. I can't say that I have seen it on the use of cranes, but I think that having us dependent on sort of any one source is a problem, especially when that source is a country that doesn't necessarily see us as a friend.

But we have certainly seen them use economic leverage in the tariff war that is taking place, the products that they targeted in response to the President's tariffs. We are very focused, and we see in their presence, sort of their BRI presence and their presence in the ports, their willingness to use their economic presence and economic power to achieve other means, too, to achieve diplomatic means and political means.

Somebody mentioned Africa earlier. It is a little off of what you are saying, but one of the concerns about Africa is China's growing economic presence there. But their presence in the communications system, they are training journalists, they are running the 4G system, they look like they are going to have an edge in the 5G system, and so they are creating an environment where it is very difficult to oppose something that they are saying or doing.

So for me it is a twofold thing. One is the influence that they have, and two is the possibility that they could target that sector and shut down work at our ports if they do that.

Mr. LOWENTHAL. That is right. I wonder if anybody else on the panel has any thoughts about that. We are so reliant in our ports on Chinese equipment now, cranes and large—do you see this as a potential threat to the United States?

General TUCK. Sir, thanks for the question. Thanks for allowing me to comment.

There was a time when all we needed to do in our country was just really take a look at physical port security, something that the Coast Guard is very well equipped to do. And now you are talking about the resiliency of a port.

Mr. LOWENTHAL. Right.

General TUCK. The point that you perfectly raised. And the cyber activity, the AI that could go with that, any amount of technology that you throw at—including these mega-cranes that you are referring to, sir.

And so there is some concern, absolutely, because the last thing you want, as a person responsible for helping combatant commanders be successful by moving large military forces to a port to then put them on a conveyance and get them sailing in terms of their equipment, is to have something happen at that port where they don't actually leave. And so, without us even getting close to getting out of town, we need to make sure that we have mechanisms in place that can assure that power projection.

And so any of these technologies that you mention, to include automated systems that are right here in the State of Virginia, could cause some alarm if we don't have the right control mechanisms, the right SCADA ICS kinds of systems in place that we can actually protect so that when we need them to operate, they do operate the way that they are supposed to, versus preventing us from doing the things we need to to get out of town. So it is a concern, sir.

Mr. LOWENTHAL. Thank you. Any comments on that? Defense worried about that? They have all the equipment in—our large equipment in our ports.

Mr. SBRAGIA. I think it is an excellent question. I certainly echo the other panel members. At the strategic level it is important to make sure that you are measuring the costs and implications of those kind of issues. In the past we just haven't. I think that was raised. That is something that we have to do.

Earlier the congressman raised about what we are doing overseas, as well. Those are the same kind of practices that we have to help, and the efforts that we are making now to help our allies and partners out with as well. That is one of the main efforts; it is not just domestic, it is with this larger network. That is certainly part of our Indo-Pacific strategy that we have, is to help do that.

It is assessing best practices, it is talking about what the costs are. It is understanding to a greater depth and degree than we have in the past about what the implications are of this, and getting serious about it, and understanding that this issue traditionally may be something that the military wouldn't—or the Defense Department wouldn't pay that much attention to. It is that we have to, and we have to share with our colleagues across the departments and agencies to understand what those implications are, and argue with them about what the choices are that they can help make.

One of the reasons we are here today is to do that here.

Mr. LOWENTHAL. Thank you, and I yield back.

Mr. MALONEY. I thank the gentleman. I am going to move to the second panel.

But I do want to associate myself with the gentleman's remarks and underscore how important that issue is. If there is a future 9/11 coming, God forbid, it may be a cyber 9/11. If there is a future Pearl Harbor coming, it may well be a cyber Pearl Harbor. The dependency of U.S. logistics, operations, port infrastructure, the technology, the physical equipment on systems that may be produced or manipulated by our adversaries is real.

We should be focused on it, and that is before you even begin talking about the ships themselves that are under different flags. And when you look at the totality of our dependence and its vulnerability to the influence of our near-peer competitors, it is alarming, indeed.

I want to thank the panel for your testimony, for your service, the work you are doing. We appreciate it.

We are going to move to the second panel in the interest of time. I know we have been keeping you waiting a long time, but we do appreciate your presence here today. With that I would like to introduce the second panel, give them an opportunity to move to the witness table.

[Pause.]

Mr. MALONEY. Well, moving now to our second panel, I would like to welcome our panel of witnesses. We are joined today by Mr. Jonathan E. Hillman, director of the Reconnecting Asia Project for the Center for Strategic and International Studies; Dr. Jeffrey Becker, research program director of the Center for Naval Analyses; and Ms. Kathleen Walsh, associate professor of national security affairs at the Naval War College.

Thank you all for being here today. We look forward to your testimony.

Without objection, the witnesses' full statements will be included in the record.

And as with the previous panel, we would ask that you limit your oral remarks to 5 minutes so we can move to the Members' questions.

And with that, Mr. Hillman, you may proceed.

TESTIMONY OF JONATHAN E. HILLMAN, DIRECTOR, RECONNECTING ASIA PROJECT, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES; JEFFREY D. BECKER, PH.D., RESEARCH PROGRAM DIRECTOR, INDO-PACIFIC SECURITY AFFAIRS, CNA; AND KATHLEEN A. WALSH, ASSOCIATE PROFESSOR OF NATIONAL SECURITY AFFAIRS, U.S. NAVAL WAR COLLEGE

Mr. HILLMAN. Chairman Maloney, Ranking Member Gibbs, and distinguished members of the subcommittee, thank you for the opportunity to testify today.

Very briefly, I would like to just touch on four areas to help frame the discussion here, drawing on some of the work that we have been doing at CSIS, tracking China's activities.

So first, despite lots of hype about China's new overland routes through its Belt and Road Initiative, the maritime domain really is where the economic action remains and will remain. And I am happy to get into that more in the discussion, but I think that really does underscore the importance of the hearing today.

Second, while the Belt and Road Initiative is vague by design, I think it is very clear that China is increasingly dominant across the maritime supply chain. And it is dominant, not only as the last panel was pointing out, and as many of the Members have mentioned, China is dominant not only in the operational functions of that supply chain, but the production activities that sit behind those operational functions. So China has the world's largest shipping fleet in terms of number of vessels. It has the world's largest container port operator. It has the world's largest seafarer workforce. It also has the world's largest shipbuilder. And it has the world's largest port construction firms. It produces the most shipping containers.

And certainly China's maritime rise is not an accident or just a byproduct of the fact that it is a very large country. But this is the result of longstanding state policies and generous financial support. So in 2008 there were no Chinese banks among the top 10 shipping finance providers in the world. A decade later Chinese banks are first and second in the world. Made in China 2025, which is often talked about in terms of its investments in AI and semiconductors and those types of things, also designates shipping technology as 1 of 10 priority sectors. So, again, this is not at all an accident.

Third, you know, as many of the panelists mentioned before, China's maritime rise has broad implications for U.S. economic and strategic interests. And I think the U.S.-China trade war has illustrated some of these risks that the U.S. has. Mr. Lowenthal had mentioned, when the Trump administration proposed tariffs on shipping cranes, ship-to-shore cranes, ports in Baltimore, Virginia, and elsewhere asked for exemptions. And that is because U.S. companies haven't made these cranes for decades. And that all works in an environment in which the U.S. and China are partners and cooperating. But when we are shifting to a climate of increased competition, some of those risks emerge.

And it is notable that a single Chinese company has 70 percent of the global market for those ship-to-shore grants. And so something like ship-to-shore cranes can sound somewhat obscure in the context of a national security discussion. But I think it is not difficult to imagine how some of those maritime capabilities would benefit China in the event of a conflict. Surely China's massive shipbuilding industry also provides a latent capacity that could be harnessed to support military operations. Its network of ports, which includes lots of activities near major choke points, could provide flexibility to disrupt trade, as well as adapt to disruptions.

But I do think that the main challenges today exist in this space between war and peace, often referred to as the grey zone. And so China's maritime activities are enhancing its intelligence capabilities. It is further complicating the operating environment for U.S. military and diplomatic operations overseas. And as we have seen, China also uses infrastructure as a diplomatic tool to win political concessions.

And, of course, I should also mention there are plenty of Chinese maritime activities that are beneficial to the U.S. And this is part of the challenge. Surely the world needs more infrastructure, as long as that infrastructure is delivered properly and at the right standards, and the United States stands to benefit in terms of lower trade costs and growing foreign markets. There are certainly reasons to be concerned about whether China is meeting those standards through its Belt and Road Initiative.

Finally, Congress does have a very important role to play, and I think encouraging and shaping a more strategic response to these developments. At the very least, China's Belt and Road Initiative should be a wakeup call, both for U.S. policies at home and abroad. At home, certainly, it makes sense to think about building stronger and more resilient U.S. capabilities, which will require investing in U.S. infrastructure, investing in vessels to fill gaps in the U.S. fleet, supporting research for advanced maritime technology, and also training the next generation of U.S. mariners.

And abroad I think it is very important that the U.S. does more than criticize the Belt and Road. It needs to put forward its own positive economic vision. And I would be happy to talk about that more, as well. Thank you.

[Mr. Hillman's prepared statement follows:]

Prepared Statement of Jonathan E. Hillman, Director, Reconnecting Asia Project, Center for Strategic and International Studies

Thank you, Chairman Maloney, Ranking Member Gibbs, and distinguished members of the subcommittee, for the opportunity to testify today on China's Maritime Silk Road.

CSIS is tracking China's maritime activities with several initiatives. The Asia Maritime Transparency Initiative (AMTI) monitors developments in the East and South China Seas. The China Power Project has examined Beijing's naval modernization.[1] The Stephenson Ocean Security Initiative has investigated China's fishing fleet.[2] And the Reconnecting Asia Project, which I direct, is a leading source for facts and analysis on China's Belt and Road Initiative, including a database of over 14,000 infrastructure projects.[3]

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[1] China Power Team, "How is China Modernizing Its Navy?" China Power, December 17, 2018, Updated October 2, 2019, https://chinapower.csis.org/china-naval-modernization/.

[2] Gregory B. Poling, "Illuminating the South China Sea's Dark Fishing Fleets," Stephenson Ocean Security Project, January 9, 2019, https://ocean.csis.org/spotlights/illuminating-the-south-china-seas-dark-fishing-fleets/.

[3] "Reconnecting Asia," Center for Strategic and International Studies, accessed October 11, 2019, https://reconasia.csis.org/.

Drawing from these and other resources, I'd like to focus on four areas today. First, I'll put the origins of China's MSR into context and explain what about it matters and what can be misleading. Second, I'll describe China's increasing control of the maritime supply chain, which is a better framework for thinking of its maritime rise. Third, I'll summarize how these developments impact U.S. interests. Finally, I'll outline three areas for Congressional action.

CHINA'S MARITIME SILK ROAD: ADVERTISING AND AMBITION

Six years ago, Chinese president Xi Jinping announced the "Maritime Silk Road" in a speech to the Indonesian parliament.[4] A month earlier, he announced the "overland Belt" in a speech at Kazakhstan's Nazarbayev University. Collectively, these efforts became "One Belt, One Road," which was eventually simplified in English to the "Belt and Road Initiative," or BRI. In the years since, the BRI has captivated the world's attention, leading to excitement among China's partners, concern among its competitors, and confusion across the board.

Despite plenty of hype about new overland routes, the economic action will remain in the maritime domain. Chinese state media advertise logos of camel caravans, and Chinese officials quote Marco Polo, but overland connectivity across the Eurasian landmass remains comparatively weak for longstanding reasons. China-Europe train services, one of the most popular examples of overland improvement, are growing, but they are fueled by Chinese subsidies and face structural challenges.[5] The vast majority of global trade, 90 percent by volume, travels by sea.[6] Put simply, overland trade is not making an epochal comeback.

Like all aspects of China's BRI, the MSR has expanded since its announcement. It received only a passing reference in Xi's speech, which gave roughly as much attention to Indonesian folk songs. Chinese officials scrambled to provide structure and fill in the details. In 2017, the Chinese government released a document that outlines three "blue passages" that run from China to Africa and the Mediterranean, another to Oceania and the South Pacific, and a third through the Arctic to Europe.[7] As I will explain, China is also pursuing activities beyond these routes, including much closer to the United States.

The "blue passage" concept reveals the strengths and weaknesses of China's BRI more generally. It gives the illusion of form and structure to China's maritime activities. By going almost everywhere, it ensures that no foreign partner or interest group within or outside China will feel left out. The concept is just as flawed for management purposes as it is savvy for advertising. Making everything a priority means there are no priorities. It is not worth dwelling too much on these "passages." What they do offer, however, is a vivid illustration of China's ambitions. As Washington talks about the Indo-Pacific, Beijing is acting globally.

CHINA'S CONTROL OF THE MARITIME SUPPLY CHAIN

The maritime supply chain is a better framework for examining China's activities. China is increasingly dominant not only in individual links of that supply chain, such as operating ports, but also in production activities behind this chain, such as building ports and manufacturing related equipment. This deeper maritime foundation brings commercial advantages during peacetime and could offer strategic advantages in the event of conflict.

China has the world's largest shipping lenders, ship builder, shipping fleet (number of vessels), seafarer workforce, port construction firms, and container port operator. It also dominates a wide array of related maritime products and services, including having the world's largest shipping container producer, dredging fleet, ship-to-shore crane producer, and crane truck producer, among other areas. Many of these superlatives only scratch the surface. Last year, for example, China led the world in all three categories of shipbuilding (largest orderbook, most newbuilding orders, largest number of deliveries).[8]

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[4] Xi Jinping, "Speech to the Indonesian Parliament," (speech, Jakarta, Indonesia, October 2, 2013), ASEAN-China Centre, https://reconasia-production.s3.amazonaws.com/media/filer__public/88/fe/88fe8107-15d7-4b4c-8a59-0feb13c213e1/speech__by__chinese__president__xi__jinping__to__indonesian__parliament.pdf.

[5] Jonathan E. Hillman, "The Rise of China-Europe Railways," Reconnecting Asia, March 6, 2018, https://www.csis.org/analysis/rise-china-europe-railways.

[6] "Shipping and World Trade," International Chamber of Shipping, accessed October 11, 2019, https://www.ics-shipping.org/shipping-facts/shipping-and-world-trade.

[7] "Full text: Vision for Maritime Cooperation under the Belt and Road Initiative," XinhuaNet, June 20, 2017, http://www.xinhuanet.com/english/2017-06/20/c__136380414.htm.

[8] "Shipbuilding Annual Review 2019," BRS Group, accessed October 10, 2019, https://www.brsbrokers.com/assets/review__splits/BRS-Review2019-01-Shipbuilding.pdf.

China's maritime rise began well before the BRI was announced and has been assisted by state subsidies. In 2008, there were no Chinese banks among the top ten shipping finance providers.[9] A decade later, Chinese banks were the first and second largest in the world.[10] Made in China 2025, which aims to move China up the manufacturing value chain, designates shipping technology as one of ten priority sectors. Through this initiative, China aims to capture 50 percent of the global market for high-tech ships and 80 percent of the critical systems and equipment for those ships.[11]

These commercial activities could prove useful in the event of conflict. China's massive shipbuilding industry provides a latent capacity that could be harnessed to support military operations.[12] Its investments in shipping technology, especially higher-end vessels and equipment, could make these capabilities more relevant to building naval vessels.[13] History is filled with examples of civilian vessels and equipment being repurposed for strategic purposes. China is already doing this in the South China Sea.[14]

China's network of ports has strategic utility as well. The global maritime network has four primary chokepoints, the closure of which would seriously impair global trade, and Chinese firms are investing or have ownership stakes in ports near all of them.[15] This includes activities closer to the United States. A Chinese firm owns and is expanding Panama's largest port, which sits near the Caribbean end of the Panama Canal.[16] Another Chinese firm operates a port at the Pacific end of the Panama Canal. If shipping is disrupted, China's broader network of ports could provide more flexibility to adapt and redirect trade.

IMPLICATIONS FOR U.S. INTERESTS

Over a century ago, the U.S. naval strategist Alfred Mahan observed, "Commercial value cannot be separated from military in sea strategy, for the greatest interest of the sea is commerce." [17] These days, Mahan is quite popular among Chinese strategists. Just like the great powers that have come before it, China's maritime rise has broad economic and strategic implications.

To be sure, not all aspects of China's maritime activities are harmful. The world's infrastructure needs are far greater than what the BRI can provide, even in its most exaggerated form. Maritime projects chosen wisely and delivered properly can lower transport costs, improve productivity, and boost growth, all of which benefit the broader global economy. Done poorly, these projects weigh developing economies down with debt, stoke corruption, harm the environment, and ultimately destroy more value than they create.

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[9] Henri d'Ambrières, "Ship Finance and Its Possible Impacts on Excess Capacity," (presentation to the OECD Council Working Party on Shipbuilding, November 9, 2015) OECD, https://www.oecd.org/sti/ind/Item%202.2%20HDA%20Conseil__-%20Impact%20of%20Ship%20Financing__Final.pdf.

[10] David Glass, "Chinese Banks Top Lenders to Shipping," Seatrade Maritime News, September 17, 2018,http://www.seatrade-maritime.com/news/asia/chinese-banks-top-lenders-to-shipping.html.

[11] "Unofficial USCBC Chart of Localization Targets by Sector Set in the MIIT Made in China 2025 Key Technology Roadmap," The U.S. China Business Council, accessed October 11, 2019, https://www.uschina.org/sites/default/files/2-2-16%20Sector%20and%20Localization%20Targets%20for%20Made%20in%20China%202025.pdf.

[12] Gabriel Collins and Michael C. Grubb, "A Comprehensive Survey of China's Dynamic Shipbuilding Industry, " (2008) *CMSI Red Books*. 9. https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?article=1000&context=cmsi-red-books.

[13] Andrew S. Erickson, "Chinese Shipbuilding and Seapower: Full Steam Ahead, Destination Uncharted," Center for International Maritime Security, January 14, 2019, http://cimsec.org/chinese-shipbuilding-and-seapower-full-steam-ahead-destination-uncharted/39383.

[14] Gregory B. Poling, "Illuminating the South China Sea's Dark Fishing Fleets," Stephenson Ocean Security Project, January 9, 2019, https://ocean.csis.org/spotlights/illuminating-the-south-china-seas-dark-fishing-fleets/. "Reconnecting Asia," Center for Strategic and International Studies, accessed October 11, 2019, https://reconasia.csis.org/.; Andrew S. Erickson, "Chinese Shipbuilding and Seapower: Full Steam Ahead, Destination Uncharted," Center for International Maritime Security, January 14, 2019, http://cimsec.org/chinese-shipbuilding-and-seapower-full-steam-ahead-destination-uncharted/39383.

[15] James Kynge et al., "How China rules the waves," *Financial Times*, January 12, 2017, https://ig.ft.com/sites/china-ports/.

[16] "China's Landbridge Group Purchases Largest Panamanian Port; Intends to Make it a Deep-Water Port," RWR Advisory Group, May 26, 2016, https://www.rwradvisory.com/chinas-landbridge-group-purchases-largest-panamanian-port-intends-to-make-it-a-deep-water%DB%9D-port/.

[17] Alfred Thayer Mahan, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land* (Boston: Little, Brown and Company, 1913), 302.

The United States has narrower commercial and economic interests at stake as well, as the U.S.-China trade war is now highlighting. Earlier this year, when the Trump administration proposed tariffs on ship-to-shore cranes, ports in Baltimore, Virginia, and elsewhere objected. That's because U.S. companies have not made these cranes for decades. A single Chinese company, ZPMC, has captured an estimated 70 percent of the global market.[18] If China achieves its industrial goals through Made in China 2025 and related efforts, the same could be said about a wider range of high-value manufacturing in the future.

China also uses infrastructure projects for non-economic objectives at odds with U.S. political interests.[19] It can dangle the prospect of financing to win political concessions, reward supporters, and gain control over port operations. These challenges are acute in developing economies, which often have few alternatives for investment, but are hardly confined to them. Chinese financing incentivized Hungary and Greece, for example, to weaken European Union statements on China's human rights record. At China's annual meeting with Central and Eastern European countries earlier this year, European participants proposed over 20 ports for Chinese investment.

China's maritime activities also enhance its intelligence capabilities. Chinese firms are building more underseas cables, the critical links through which the vast majority of international data travels. Foreign ports have long been used as listening posts. Building them provides opportunities to install surveillance equipment or design backdoors for access. Modern ports, of course, are highly networked, and Chinese firms often provide IT systems as part of the overall package. These activities further complicate the operating environment for U.S. military vessels and U.S. government supply chains.

Djibouti illustrates the challenge. Just miles from U.S. Africa Command headquarters, China has established its first military base on foreign soil. It also operates a multipurpose container terminal, is building a free trade zone, and has delivered other projects, including a big-ticket railway and telecommunications. Djibouti's debt is now dangerously high, and most of it is owed to China. Several U.S. officials and Members of Congress have warned against the prospect of China acquiring control of the Doraleh Container Terminal, which was nationalized in 2018 and is a critical hub in East Africa's trade.

Ultimately, understanding the impacts of Chinese maritime projects on U.S. interests requires looking closely at individual projects. Not every project is economically important or strategically important. Some projects are built mainly for the short-term benefit of local elites and Chinese state-owned enterprises. It is also worth noting that China's vulnerabilities can grow with its global activities, especially in terms of protecting trade routes, bases, and ships.[20] All of this underscores the value of a case-by-case approach.

Recommendations

Congress has a vital role to play in addressing these challenges. Three types of action it should consider include:

1. *Develop a global database of infrastructure projects*. After the 9/11 terrorist attacks, the U.S. Department of Homeland Security was charged with mapping critical infrastructure globally. While non-state actors still present threats to critical infrastructure, China poses a different set of challenges as a leading financer, builder, and operator. The United States needs a comparable effort to map and track foreign infrastructure projects, especially maritime assets. This database would help the U.S. government pool intelligence, separate benign projects from harmful projects, set priorities, and use its resources more effectively, in concert with partners and allies.
2. *Invest in U.S. maritime capabilities*. China's rising control of the maritime supply chain, combined with pressure on the U.S.-China economic relationship, should encourage a closer look at potential U.S. vulnerabilities in these areas. Building stronger and more resilient U.S. capabilities will require investing in

[18] David J. Lynch, "These Giant Cranes Show Why the Next Fight in the U.S.-China Trade War Could Be So Damaging," *Washington Post*, June 26, 2019, https://www.washingtonpost.com/business/economy/these-giant-cranes-show-why-the-next-fight-in-the-us-china-trade-war-could-be-so-damaging/2019/06/26/1e6f5d4c-975f-11e9-830a-21b9b36b64ad_story.html.

[19] Jonathan E. Hillman, "Influence and Infrastructure," Center for Strategic and International Studies, January 2019, https://csis-prod.s3.amazonaws.com/s3fs-public/publication/190123_Hillman_InfluenceandInfrastructure_WEB_v3.pdf.

[20] Zack Cooper, "Security Implications of China's Military Presence in the Indian Ocean," Center for Strategic and International Studies, April 2, 2018, https://www.csis.org/analysis/security-implications-chinas-military-presence-indian-ocean.

vessels to fill gaps in the current fleet, supporting research for advanced maritime technology, and training the next generation of U.S. mariners. Investing in U.S. capabilities also means supporting efforts to improve maritime and transportation infrastructure more broadly here at home.

3. *Champion a U.S. global economic vision*. Despite six years of missteps and broken promises, China's BRI remains attractive to much of the world because it speaks to the needs of most countries, particularly developing and emerging economies. This underscores the power of a positive economic vision. The United States needs to put forward its own positive economic vision, one that is defined not as a reaction to China, but on its own terms. Earlier this year, a CSIS Task Force, led by former U.S. Trade Representative Charlene Barshefsky and former U.S. National Security Advisor Stephen Hadley, proposed several recommendations to do this, including expanding on the principles that guide the "Free and Open Indo-Pacific" strategy.[21]

Mr. MALONEY. I thank the gentleman.

Mr. Becker?

Mr. BECKER. Chairman Maloney, Ranking Member Gibbs, members of the subcommittee, thank you for this opportunity to share my thoughts with you today on China's Maritime Silk Road and its implications for the U.S. Navy and the global maritime supply chain.

I just want to note briefly that the views I express today are my own, and they are not those of CNA or the Department of Defense.

As a result of China's Maritime Silk Road Initiative, Chinese state-owned firms have spent billions of dollars on maritime infrastructure. They now build and operate port facilities around the globe. And this raises a number of implications for the U.S. Navy and the U.S. Coast Guard.

As a result of these investments, China is likely improving its ability to collect intelligence on U.S. ships and assets operating in ports overseas. These investments are also allowing China to develop the capabilities that could be used later, such as the capability to interfere with U.S. Navy repair or resupply operations, or the ability to deny U.S. Navy access to certain ports altogether in times of crisis.

So first, just to provide some brief background, what are the most common types of Chinese presence in overseas port facilities? So fundamentally, Chinese state firms have expanded their presence in three ways: constructing new port facilities or upgrading existing infrastructure; purchasing stakes in port terminal operators; and operating port facilities directly.

Second, Beijing has a record of using economic tools to advance foreign policy objectives, and I see three tools in particular that Chinese SOEs could use to influence activities in overseas ports. One is China's foreign direct investment, which Chinese SOE executives often argue can turn a foreign country into the next economic miracle, just as FDI did for China, for example. Another tool is debt. China has become a major creditor to many emerging economies, and several may have trouble servicing their debts in the near term.

And a third is bribery, and we have already seen examples where Chinese executives have sought to channel money to foreign gov-

[21] Charlene Barshefsky et al., "The Higher Road: Forging a U.S. Strategy for the Global Infrastructure Challenge," Center for Strategic and International Studies, April 2019, https://csis-prod.s3.amazonaws.com/s3fs-public/publication/190423_Hadley%20et%20al_HigherRoads_report_WEB.pdf.

ernment officials and their family members in countries where they want to do business.

So using these tools, who might shine a target? Well, first, as I just mentioned, we have already seen Chinese firms attempt to influence national level leaders and their family members with gifts of cash.

A second target would be officials that run overseas ports, and this would include actors such as freight forwarding companies, husbanding agents, port captains, or port authorities. These are the individuals that know when ships arrive, where those ships dock, what they carry, where they store their cargo, and when that cargo gets picked up. So Chinese officials could potentially obtain useful information through these relationships.

A third would be local leaders that control access to the area surrounding the port, and Chinese firms often seek to develop these areas as part of a larger, all-encompassing development model.

And all this brings me to my most important issue: What might China do to affect U.S. Navy or U.S. Coast Guard port operations overseas? Again, I see four issues.

First, I think it is worth noting that Chinese overseas expansion may create challenges for the U.S. Navy, regardless of whether or not this is China's intent. More Chinese commerce and Chinese activity means that in some locations the U.S. Navy or the U.S. Coast Guard may face more competition, with more ships vying for limited facilities.

A second issue is that Chinese state firms may be able to collect intelligence on the movement and the location of U.S. Navy ships, ship maintenance requirements, combat readiness, and the procedures that the U.S. Navy uses for repair, resupply, and other activities while they are operating in foreign ports. Moreover, as Chinese firms work with Huawei and others on port IT infrastructure issues, this puts U.S. Navy communications and other information at risk, as well.

Third, China could potentially pressure non-Chinese firms to give U.S. Navy or U.S. Coast Guard ships lower priority than they currently enjoy, thus slowing down services and potentially throwing ships off their schedules. To be clear, I don't have any examples of this happening to date, but given China's importance to the maritime industry, firms that provide services to the U.S. Navy may have enough commercial interests in China to be sensitive to these types of overtures.

And then fourth, China could seek to restrict U.S. Navy access to ports where Chinese SOEs have a large presence in order to express their displeasure at U.S. activities.

However, I have to say I do find such an action to be unlikely to date, primarily for two key reasons. First, it would certainly make other countries sit up and take notice at a time when countries are already concerned about ceding sovereignty to China. Second, and perhaps most importantly, U.S. Navy ships visiting these ports may provide intelligence collection opportunities. So China has an interest in those visits continuing.

Regardless, responding to China's growing role in overseas maritime infrastructure will require careful consideration from the U.S.

Navy and the U.S. Coast Guard about where, when, and how it operates in overseas ports in the future.

Thank you.

[Mr. Becker's prepared statement follows:]

Prepared Statement of Jeffrey D. Becker, Ph.D.,† Research Program Director, Indo-Pacific Security Affairs, CNA

Chairman Maloney, Ranking Member Gibbs, and Members of the Subcommittee: Thank you for this opportunity to share my thoughts with you on China's Maritime Silk Road and its implications for the global maritime supply chain.

Announced during a speech to the Indonesian parliament in October 2013, China's 21st Century Maritime Silk Road (MSR) is one half of Xi Jinping's signature "Belt and Road Initiative," a program aimed at leveraging Chinese lending, investment, and technical expertise to construct infrastructure projects around the world.[1] Through these projects, China seeks to connect trade paths across Europe and Central Asia, and sea routes between Southeast Asia and Africa.

To be sure, Chinese state-owned enterprises (SOEs) had been involved in overseas port development projects before Xi's announcement of MSR in 2013. However, MSR has certainly accelerated this trend. Chinese SOEs have spent billions on maritime infrastructure and now build and operate port facilities around the globe.

For example:

- China's port builders, such as China Communications Construction Company, the parent company of two state-owned enterprises (SOEs)—China Harbour Engineering Company (CHEC) and China Road and Bridge Corporation—ranks third on *Engineering News-Record*'s list of the top 250 international contractors as of 2018.[2]
- According to People's Republic of China (PRC) Vice Minister of Transportation Liu Xiaoming, "China [has] invested and constructed 42 ports in 34 countries and regions along the Belt and Road Initiative."[3]
- Other analysts estimate that, in total, Chinese SOEs have equity stakes or concession agreements to operate port facilities in more than 70 ports worldwide.[4]

The emergence of Chinese companies as global port terminal owners and operators raises questions about the implications for the United States Navy (USN), United States Coast Guard, or United States Naval Ships (USNS) using those facilities. This issue received heightened attention after the government of Djibouti announced in early 2018 that it was terminating its agreement with the United Arab Emirates (UAE) terminal operator, DP World, to operate the Doraleh Container Terminal (DCT), effectively nationalizing the terminal.[5] This raised concerns that the Djiboutian government would eventually sign an agreement with a Chinese firm to run that container terminal. In a March 2018 US House Armed Services Committee hearing, General Waldhauser (Commander, US Africa Command), articulated his concerns regarding the potential implications of a Chinese firm taking over operations at the port, and what that would mean for the USN, should the Chinese firm seek to leverage that position to impose restrictions on USN vessels:

> If the Chinese took over that port, the consequences could be significant if there were some restrictions on our ability to use that, because obviously

† The views I express in this testimony are my own and do not reflect the views of CNA, any of its sponsors or affiliates, the United States Navy, or the Department of Defense.

[1] See *Speech by Chinese President Xi Jinping to Indonesian Parliament*, Jakarta, Indonesia, October 2, 2013, https://reconasia-production.s3.amazonaws.com/media/filer__public/88/fe/88fe8107-15d7-4b4c-8a59-0feb13c213e1/speech__by__chinese__president__xi__jinping__to__indonesian__parliament.pdf. The other half of the Belt and Road Initiative is the "Silk Road Economic Belt" which traverses Central and South Asia, connecting them to Europe.

[2] "ENR's 2018 Top 250 International Contractors," *Engineering News-Record*, August 2018, https://www.enr.com/toplists/2018-Top-250-International-Contractors-1.

[3] Liu Xiaoming, *Promoting Pragmatic Cooperation in Sea Ports Along the Belt and Road*, presentation given at the '16+1' Coordinating Secretariat Meeting on Maritime Issues, Szczecin, Poland, June 15, 2018.

[4] See for example, Isaac B. Kardon, Testimony before the U.S.-China Economic and Security Review Commission Hearing on "A 'World-Class' Military: Assessing China's Global Military Ambitions," June 20, 2019, p. 5.

[5] "London Court Rules DP World Djibouti Contract 'Valid and Binding'—Dubai Government," *Reuters*, August 2, 2018, https://uk.reuters.com/article/uk-emirates-dp-wrld-djibouti/london-court-rules-dp-world-djibouti-contract-valid-and-binding-dubai-government-idUKKBN1KN1Cl.

the supplies that come in not only take care of Camp Lemonnier and other places inside the continent, it is a huge activity there . . .[6]

My comments on China's MSR and its implications for the global maritime supply chain focus on one aspect of this question in particular, namely the growing role of China's SOEs in overseas ports, and the implications of this trend for the United States and the U.S. Navy. In doing so, I address three important questions to consider when seeking to understand how China's growing role in overseas ports might affect USN activities and operations:

- What are the most prevalent forms of Chinese presence in overseas maritime port infrastructure?
- What tools might China employ when seeking to influence activities in ports overseas, and what actors might China target to do so?
- What actions could Chinese state-owned enterprises potentially take to adversely affect USN activities and operations in overseas ports?

The remainder of my comments examines each of these three questions in detail.

1. What are the most prevalent forms of Chinese presence in overseas maritime port infrastructure?

In general, Chinese SOEs have expanded their presence in overseas port facilities in three ways: by constructing new port facilities or upgrading existing infrastructure, by purchasing ownership stakes in port terminal operators, and by operating port facilities. Each of these types of presence is examined below.

Chinese construction of port infrastructure

Chinese SOEs build a wide range of maritime facilities, constructing new terminals and upgrading existing infrastructure. In some cases, Chinese firms win contracts through competitive tenders. In Tanzania's Port of Dar-es-Salaam, for example, the World Bank provided roughly $345 million to improve the port, and awarded CHEC a $154 million contract through open bidding to design and build a roll-on/roll-off terminal and improve berths 1 through 7.[7]

In other cases, however, Chinese companies benefit through support from the Chinese State and secure contracts because Chinese banks provide loans that require buying and hiring from China. In China's development of the Doraleh Multi-Purpose Port in Djibouti for example, China's Export-Import (Exim) Bank, the only bank designated by the PRC to offer government concessional loans and preferential export buyers' credit (credit provided to foreign companies to buy Chinese goods and services), provided credits to the China Merchants-Djiboutian joint venture firm that developed the port.[8] Not only did more preferred credits make this deal more attractive to China Merchant's Djiboutian partners, it also likely provided financial incentives to the China State Construction Engineering Corporation, which built the port, and the firm Shanghai Zhenhua, which supplied the ports' cranes.[9]

Partial Chinese ownership of port infrastructure

In addition to building, Chinese state-owned firms own an increasing amount of maritime port infrastructure worldwide. Much of this infrastructure is owned by two SOEs. The first, COSCO Shipping Ports, was the world's fifth largest terminal operator by twenty-foot equivalent unit (TEU) in 2017, and the third largest container ship owner following the completion of its acquisition of Orient Overseas Container

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[6] Travis J. Tritten, "China May Try to Control Key US Military Port in Africa, General Says," *Washington Examiner*, March 6, 2018, https://washingtonexaminer.com/china-may-try-to-control-key-us-military-port-in-africa-general-says.

[7] World Bank, "Dar es Salaam Maritime Gateway Project: Fact Sheet," *World Bank*, July 2, 2017, www.worldbank.org/en/country/tanzania/brief/dar-es-salaam-maritime-gateway-project-fact-sheet; World Bank, "Procurement Notices-Dar es Salaam Maritime Gateway Project," *World Bank*, 2014, http://projects.worldbank.org/procurement/noticeoverview?id=OP00029170&lang=en&print=Y; "Tanzania Signs $154 Million Contract with Chinese Firm to Expand Main Port," *Reuters*, June 10, 2017, https://www.reuters.com/article/us-tanzania-ports/tanzania-signs-154-million-contract-with-chinese-firm-to-expand-main-port-idUSKBN1910RU; "Tanzania Inks Deal to Expand Dar es Salaam Port," *World Maritime News*, 2017, https://worldmaritimenews.com/archives/222503/tanzania-inks-deal-to-expand-dar-es-salaam-port/.

[8] China Merchants Group, "Djibouti Project (*Jibuti Xiangmu: Xing Gang Zhi lu, Shuzi Zai Tiaodong*;)," China Merchants Group, February 7, 2017, www.cmhk.com/main/a/2017/b07/a32755__32845.shtml.

[9] Gao Jianghong, "'Shekou Model 4.0' Arrives in Djibouti, China Merchants 'Flying Geese' Model Goes Abroad," ('Shekou Moshi 4.0' Luodi Jibuti; Zhaoshangju Yanxing Chuhai;), *21st Century Business Herald*, July 5, 2017, http://epaper.21jingji.com/html/2017-07/05/content__65726.htm.

Lines in 2018.[10] COSCO has equity investments in 18 ports located in 13 countries, including the US (Seattle and Long Beach).[11] The second, China Merchants Port Holdings, was the world's sixth largest terminal operator by TEU in 2017.[12] The company has a presence in 23 ports in 16 countries, including Taiwan.[13]

When Chinese firms purchase ownership in a foreign port facility, they often do so by establishing a joint venture company with the host government, often through the local port authority. The host government will continue to own the land and the core port facilities, but will lease parts of the port to the joint venture (or the Chinese firm directly) through a concession agreement—a contract in which a port authority transfers operating rights to build, finance, own, and operate a facility, returning it to the state after a specific time period.[14] Concession agreement lengths vary. While many are for 30 years, some are longer, particularly when large amounts of capital investment are needed to give the company time to recoup its investment. For example, in 2013, China Merchants acquired 23.5 percent of Port de Djibouti SA, the joint venture between China Merchants and the Djiboutian Ports Authority, which owns both the Doraleh Multi-Purpose Port and the Port of Djibouti.[15] The joint venture will reportedly be in effect for 99 years.[16]

Chinese firms operating port infrastructure

In other cases, Chinese firms not only own a stake in the port terminal operator, but also operate the port, either directly or through a joint venture partner in which they are the majority owner. They are responsible for purchasing and maintaining cranes and other container ship handling equipment, hiring labor, managing customer relations, and running day-to-day terminal operations. Labor is likely to be local, though foreign managers may be parties to the agreement that allows the Chinese firm in question to operate the facility.[17]

Chinese SOEs are now responsible for running port terminal operations in multiple locations, including Sri Lanka, Pakistan, and the UAE. For example, China Merchants owns 85 percent of the Colombo International Container Terminal, and also operates it through a 99-year lease.[18] A Chinese state firm (China Overseas

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[10] Drewry Maritime Research, *Global Container Terminal Operators Annual Review and Forecast*, 2018, p. 18; Michael Angell, "Port Report: Cosco Shipping Wraps Up First Year with Orient Overseas Intl. Results Under Belt," *Freight Waves*, April 1, 2019, https://www.freightwaves.com/news/maritime/port-report-cosco-ooil-2018-results.

[11] COSCO Shipping Ports, *Overseas Terminals*, https://ports.coscoshipping.com/en/Businesses/Portfolio/#OverseasTerminals; COSCO Shipping Ports Limited, *Annual Report 2018*, March 2019, p. 33, https://ports.coscoshipping.com/en/Investors/IRHome/FinancialReports/; Lloyd's Maritime Intelligence, *One Hundred Ports 2018*, p. 12, https://lloydslist.maritimeintelligence.informa.com/one-hundred-container-ports-2018. As part of its purchase of Orient Overseas International Ltd., COSCO Shipping acquired a container terminal in Long Beach, California. However, COSCO sold the facilities to a consortium led by Macquarie Infrastructure Partners in order to address U.S. security concerns. See Jia Tianqiong and Han Wei, "Cosco Unit to Sell U.S. Long Beach Container Terminal," *Caixin Global*, May 1, 2019, https://www.caixinglobal.com/2019-05-01/cosco-unit-to-sell-us-long-beach-container-terminal-101410715.html.

[12] Tim Power, "The Rise of Chinese Global Terminal Operators," Drewry, July 12, 2017, https://www.drewry.co.uk/AcuCustom/Sitename/DAM/008/Rise__of__Chinese__Global__Terminal__Operators.pdf. A TEU is used to measure a ship's cargo carrying capacity. The dimensions of one TEU are equal to that of a 20-foot shipping container.

[13] China Merchants Port Holdings, *Annual Report 2018*, March 2019, p. 5, http://www.cmport.com.hk/enTouch/investor/Reports.aspx.

[14] Joseph Botham, "Concession Choices," *Port Strategy* (2014), http://hfw.com/downloads/HFW-Port-Strategy-Concession-choices-Article-July-2014.pdf; Jeffrey Becker, Erica Downs, Ben DeThomas and Patrick DeGategno, *China's Presence in the Middle East and Western Indian Ocean: Beyond Belt and Road*, (Arlington: VA, Center for Naval Analyses), February 2018, DRM–2018–U–018309-Final2, p. 86.

[15] China Merchants Holdings, "Acquisition of 23.5% Interests in Joint Venture in Djibouti, Voluntary Announcement," Hong Kong Stock Exchange, 2012, http://www.hkexnews.hk/listedco/listconews/SEHK/2012/1230/LTN20121230025.pdf.

[16] Gao Jianghong, "'Shekou Model 4.0' Arrives in Djibouti."

[17] Becker, et. al., *China's Presence in the Middle East and Western Indian Ocean: Beyond Belt and Road*, p. 92.

[18] Sri Lanka Ports Authority, "Agreements Signed to Construct Colombo Port Expansion Project's South Container Terminal," Sri Lanka Ports Authority, November 9, 2011, http://portcom.slpa.lk/news__events__324.asp. Additionally, China Merchants is likely in charge of the port's long-term development and strategic operations, given that the CEOof Colombo International Container Terminals is Jack Huang, who is also the deputy general manager (international)of China Merchants Holdings (International), and that seven of the 10 of Colombo International Container Terminal's board members are Chinese. See Colombo International Container Terminals, "Management/Executive Committee," http://www.cict.lk/management-executive-commitee.php; "Jack Huang-Director/CEO-Colombo International Container Terminals,"

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Port Holdings) also manages the port of Gwadar directly, having taken the 40-year concession from the Port of Singapore Authority (PSA) in 2013, following PSA's decision to give up the lease.[19] In 2016, a subsidiary of COSCO Shipping Ports signed a 35-year concession agreement with Abu Dhabi Ports to acquire the right to develop, manage, and operate Khalifa Port Container Terminal no. 2.[20] COSCO Shipping Ports began operating that terminal in December 2018.[21]

2. WHAT TOOLS MIGHT CHINA EMPLOY WHEN SEEKING TO INFLUENCE ACTIVITIES IN PORTS OVERSEAS, AND WHAT ACTORS MIGHT CHINA TARGET TO DO SO?

Potential tools of Chinese influence

Beijing has a track record of using the economic tools at its disposal to advance its foreign policy objectives.[22] Consequently, it is not unreasonable to think that China might deploy those tools in such a way as to influence national and local leaders with authority over and access to ports. Potential sources of influence at China's disposal to achieve this goal include investments, the provision of funds through loans, cash gifts, and bribery. Each is discussed below.

Investment

One tool China may use to expand its influence in overseas port facilities is the provision of foreign direct investment, which Chinese SOE officials often tout as having the potential to dramatically reform a country's future, just as China has done over the past four decades. This approach is likely to be most effective when directed at officials from countries where capital is scarce, such as Djibouti, the Maldives, or Sri Lanka. One can see the appeal of this approach in statements such as those made by the president of China Merchants Group, who stated that "we [China Merchants] are in the process of making the country [Djibouti] the 'Shekou of East Africa'—a hub for regional shipping, logistics and trade," referring to the Chinese village of Shekou in Shenzhen, which rose to become a global commercial logistics hub.[23] China's ambassador to Oman, Yu Fulong, argued that "over the past 30-plus years, China has developed a host of competitive industries and with the help of the Belt and Road Initiative, Oman can harness these strengths so as to promote a diversified economic development."[24]

Noticeably absent from these arguments, however, is any recognition of the fact that both countries lack other factors that were critical to China's success, including a large and educated workforce, easy access to large markets, and a stable international regional environment. Nonetheless, the promise to dramatically change the trajectory of a country's development is undoubtedly attractive to leaders of developing countries, and likely provides the Chinese government with significant leverage in negotiating the terms of investments.

Loans and debt traps

Another tool through which Beijing may seek to influence port activities is using debt owed to Chinese financial institutions as a bargaining chip. China has emerged as a major creditor to many emerging economies, lending roughly $40 billion annually through its Exim Bank and the China Development Bank.[25] Countries such as

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LinkedIn, https://hk.linkedin.com/in/jack-huang-906b3617; Colombo International Container Terminals, "Board of Directors," http://www.cict.lk/directors.php.

[19] Ministry of Ports & Shipping and Gwadar Port Authority, "Gwadar Port & CPEC: A Presentation to Parliamentary Committee on CPEC," National Assembly of Pakistan, November 28, 2015, http://www.na.gov.pk/cpec/sites/default/files/presentations/Parliamentary%20Commitee%20on%20CPECNew.pdf.

[20] COSCO Shipping Ports Limted, "Discloseable Transaction: Concession Agreement in Relation to Khalifa PortContainer Terminal 2," Hong Kong Stock Exchange, September 28, 2016, http://www.hkexnews.hk/listedco/listconews/SEHK/2016/0928/LTN20160928374.pdf.

[21] "COSCO, Abu Dhabi Ports Open New Terminal at Khalifa Port," *World Maritime News*, December 10, 2018, https://worldmaritimenews.com/archives/266410/cosco-abu-dhabi-ports-open-terminal-at-khalifa-port/

[22] See for example, Peter Harrell, Elizabeth Rosenberg, and Edoardo Saravalle, *China's Use of Coercive Economic Measures*, Center for a New American Security, June 11, 2018, https://www.cnas.org/publications/reports/chinas-use-of-coercive-economic-measures; Evan A. Feigenbaum, "Is Coercion the New Normal in China's Economic Statecraft?," *Marco Polo*, July 15, 2017, https://marcopolo.org/coercion-new-normal-chinas-economic-statecraft/.

[23] Deng Yangzi, "CMG Wants to Make African Port of Djibouti 'New Shekou'," *China Daily*, March 7, 2017, http://www.chinadaily.com.cn/bizchina/2017-03/07/content__28455386.

[24] "Oman Wants to Be China's Key Partner in Belt and Road Initiative, China Envoy," Xinhua, July 1, 2015, http://www.xinhuanet.com/english/2015-07/01/c__134373592.htm.

[25] David Dollar, "United States-China Two-way Direct Investment: Opportunities and Challenges," *Journal of Asian Economics* 50, June 2017, https://www.sciencedirect.com/science/article/pii/S1049007817300830.

Nigeria and Sri Lanka, where Chinese SOEs own or operate port facilities, have been among China's top borrowers over the past few years, accepting loans from China to finance activities, including infrastructure development, government operations, and debt payments.[26] Other developing countries where Chinese firms are currently undertaking massive infrastructure projects, such as Kenya, Tanzania, and South Africa, have been major borrowers from China as well. Over time, the accumulation of debts may also provide China with opportunities to expand its presence into port facilities in these countries as well.

Several countries may have trouble servicing their debts in the near term. According to a 2018 study published by the Center for Global Development, 23 countries are at risk of debt distress as a result of borrowing from China. These countries include Djibouti, whose port infrastructure is important to USN logistics operations for Naval Forces Africa and Naval Forces Central Command. These also include Sri Lanka and the Maldives, both of which are USN partner nations in the increasingly important Indian Ocean region, where the US has important equities.[27]

Moreover, when the Djiboutian government nationalized the Doraleh Container Terminal, the Chinese-Djiboutian joint venture Port de Djibouti SA, which owned a stake in the container terminal along with the Dubai firm DP World, could no longer meet the requirements of its loan from China Merchants, the Chinese partner in the joint venture. Therefore, in April 2019, it was reported that China Merchants will provide Port de Djibouti SA with another $144 million in debt refinancing, possibly further adding to its debt burden, and potentially setting China Merchants up to expand its stake in Port de Djibouti SA at a later date.[28]

China has employed various approaches when dealing with borrowers who cannot repay their loans.[29] In some cases, China has engaged in loan forgiveness or loan restructuring in order to provide new loans to allow borrowers to avoid default. Other times, China has conducted debt-for-equity swaps, allowing Chinese firms to acquire equity stakes in infrastructure projects that Chinese banks helped finance. For example:

- When the government of Djibouti could not provide its share of the funding for the Ethiopia-Djibouti Railway, it sold a 10 percent stake in the joint venture that manages the railway to the China Civil Engineering Construction Corporation.[30]
- In 2016, the Sri Lankan government proposed using debt-for-equity swaps to reduce its debt burden, which allowed China Merchants Group to purchase an 85 percent stake in the concession that operates the Hambantota port.[31]
- In 2019, the Kenyan newspaper *Daily Nation* reported it had obtained a leaked copy of the agreement between China and Kenya for the construction of the Mombasa-Nairobi Standard Gauge Railway Project. According to Kenyan media, the contract states that China could take possession of the port of Mombasa should the Kenyan National Railway Corporation default on its $2.2 billion repayments to China's Exim Ban.[32]

While Chinese SOEs employing debt-for-equity swaps such as these still appear infrequently, the example of Hambantota, and the potential for China to do something similar in Kenya, suggests that Beijing is not opposed to employing this tool to obtain greater influence in overseas ports.

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[26] Ibid.

[27] John Hurley, Scott Morris, and Gailyn Portelance, *Examining the Debt Implications of the Belt and Road Initiative from a Policy Perspective*, Center for Global Development Policy Paper 121, March 2018, https://www.cgdev.org/sites/default/files/examining-debt-implications-belt-and-road-initiative-policy-perspective.pdf. See also Becker, et. al., *China's Presence in the Middle East and Western Indian Ocean: Beyond Belt and Road*.

[28] Michael Angell, "Port Report: China Merchants Rejiggers Debt for Djibouti Free-trade Zone After Doraleh Container Terminal Seized," *Freight Waves*, April 30, 2019, https://www.freightwaves.com/news/maritime/port-report-china-merchants-ports-djibouti.

[29] Ibid.

[30] International Monetary Fund, *Djibouti Selected Issues*, IMF Country Report No. 16/249, 2016, http://www.imf.org/external/pubs/ft/scr/2016/cr16249.pdf; Zhang Yuxue, "Why is Africa's First Transnational Electrified Railway Using a Complete Set of 'Chinese Standards'?" (*Feizhou diyi tiao kuaguo dianqihua tielu weihe yong quantao 'Zhongguo biaojun*';), *Caijing*, October 21, 2016, http://www.caijingmobile.com/top/2016/10/21/288773__2__4.html.

[31] For Sri Lanka's proposal of debt-for-equity swaps, see Ben Blanchard, "Sri Lanka Requests Equity Swap for Some of Its $8 bln China Debt," *Reuters*, April 9, 2016, https://www.reuters.com/article/china-sri-lanka/sri-lanka-requests-equity-swap-for-some-of-its-8-bln-china-debt-idUSL3N17B1BR.

[32] William Niba, "Will Kenya's Mombasa port be taken over by the Chinese?," *Radio France International*, January 15, 2019, http://en.rfi.fr/africa/20190114-kenya-mombasa-port-china-debt-default.

Cash gifts and bribes

Chinese officials and executives have already sought to influence foreign officials abroad with gifts of cash. China Harbour Engineering Company (CHEC) is a case in point. The company has a history of channeling money to foreign government officials and their families in countries where it is doing or seeking to do business. For example:

- In 2009, the World Bank barred the China Communications Construction Company and all of its subsidiaries, including CHEC, from engaging in any road and bridge projects financed by the World Bank from January 2009 to January 2017 as a result of engaging in fraud while working on a World Bank-funded road project in the Philippines.[33]
- Before the January 2015 presidential elections in Sri Lanka, at least $7.6 million was transferred from CHEC's bank account at the South African Standard Bank to affiliates of then Sri Lankan President Mahinda Rajapaksa's presidential re-election campaign.[34] While campaign contributions are not illegal, funding for a political party from a foreign entity does constitute external interference in local affairs, raising the possibility of charges of money laundering.[35]
- In January 2018, Bangladesh's finance minister, Abul Muhith, said that CHEC had been blacklisted for offering bribes to government officials. According to Muhith, CHEC offered the bribes after it secured a contract to expand a highway: "They have already got the contract. I think [they offered a bribe] only to please [officials] so that they [the company] can misappropriate money." [36]

CHEC is not the only Chinese SOE involved in port activities accused of bribing foreign officials and their families. In 2012, the China Merchants Port Holdings' controlled joint venture with the Sri Lanka Ports Authority in Colombo (Colombo International Container Terminals) donated nearly 20 million rupees to a foundation run by Pushpa Rajapaksa, who is the wife of Basil Rajapaksa, the younger brother of former President Rajapaksa. A representative from the joint venture stated that the donation was for housing for the poor. However, the joint venture did not supervise how the cash was used after it was donated.[37]

Potential targets of Chinese influence

Given the tools described above, should Beijing seek to hinder USN access to a port with a Chinese terminal operator, or affect its activities while in port, Chinese officials would likely seek to influence different actors at both the national and local levels within the host country. The most obvious targets for such Chinese influence would include national-level leaders and their families, local port authority personnel, and local-level officials.

National leaders and their families

Chinese officials and business executives would likely try to influence senior leaders, particularly heads of state who appreciate China's role in building national infrastructure, especially after overtures to other countries were rebuffed. For example, Djibouti's president, Ismail Omar Guelleh, has stated that he views China as his country's only long-term development partner, noting, "the reality is that no one but the Chinese offers a long-term partnership in Djibouti." [38]

The Chinese might also target family members of national leaders, especially if they also occupy leadership positions. Again, the example of Djibouti is instructive. President Guelleh's daughter, Haibado Guelleh, is his top economic adviser and a Chinese speaker. She is responsible for implementing Djibouti's long-term development plan, "Vision 2035," and likely plays a role in negotiating Chinese debt-fi-

[33] World Bank, "World Bank Applies 2009 Debarment to China Communications Construction Company Limited for Fraud in Philippines Road Project," *World Bank*, July 29, 2011, http://www.worldbank.org/en/news/press-release/2011/07/29/world-bank-applies-2009-debarment-to-china-communications-construction-compamy-limited-for-fraud-in-philippines-roads-project.

[34] Maria Abi-Habib, "How China Got Sri Lanka to Cough Up a Port," *New York Times*, June 25, 2018, https://www.nytimes.com/2018/06/25/world/asia/china-sri-lanka-port.html.

[35] "Chinese Firm in Sri Lanka Admits to Funding Rajapaksa Foundation," *Economynext*, July 12, 2018, https://economynext.com/Chinese__firm__in__Sri__Lanka__admits__funding__Rajapaksa__family__foundation-3-11200.html.

[36] "No Job for China Harbour in Future," *The Daily Star,* January 17, 2018, https://www.thedailystar.net/frontpage/no-job-china-harbour-future-1520917.

[37] "Chinese Firm in Sri Lanka Admits to Funding Rajapaksa Foundation."

[38] "Ismail Omar Guelleh: Nobody Other Than the Chinese Offers a Long-term Partnership in Djibouti (Ismail OmarGuelleh: Personne d'autre que les Chinois n'offre un partenariat a long terme a Djibouti)," *Jeune Afrique*, April 4,2017, http://www.jeuneafrique.com/mag/421096/politique/ismail-omar-guelleh-personne-dautre-chinois-noffre-partenariat-a-long-terme-a-djibouti/.

nanced infrastructure projects.[39] President Guelleh's half-brother, Saad Omar Guelleh, is also the director general of Port de Djibouti SA, a major source of income for the country and the presidency.[40]

Port authorities

Officials responsible for running local port authorities are also likely to be targets of Chinese influence, should China seek to influence port operations abroad. In general, a port authority decides who enters and exits a port. It controls the pilots and tugs that assist large ships when entering and leaving a port, allocates ships to berths, and is responsible for port storage. In short, port authorities know when ships, including USN and U.S. Coast Guard vessels, arrive at port, where they dock, what they carry, where they store cargo, and when that cargo gets picked up.[41]

Chinese officials could potentially obtain sensitive information through relationships that state-owned Chinese port terminal operators have established with local port authorities. For example, COSCO Shipping Ports and AD Ports, a company established by the Abu Dhabi government, are both stakeholders in a joint venture company that has a concession to build, operate, and manage the Khalifa Port Container Terminal no. 2 in the UAE.[42] AD Ports is the port authority for 10 ports in total, including Fujairah Terminals.[43] The U.S. Navy stations roughly 5,000 military personnel at several facilities throughout the UAE, including at Fujairah.[44] Moreover, because Fujairah lies outside the Persian Gulf, it serves as an important logistics link should the Strait of Hormuz be closed. This strategic positioning could make Fujairah an important target should China seek to affect US activities in foreign ports.

Combined with the recent expansion in China-UAE relations, including increased Chinese investment in the country, it is not impossible to think that PRC state actors could potentially make use of the established connections between COSCO Shipping and UAE port authority personnel to obtain information on the movement of personnel, supplies, and material related to USN personnel stationed in the country.

Local leaders

In Sri Lanka and elsewhere, Chinese actors may also attempt to single out not just national level leaders but also local government officials. While local officials may not have the direct access to port operations that officials within the local ports authorities do, they do have the authority to provide Chinese actors with access to areas surrounding the ports. Chinese firms, as part of MSR projects, are also often seeking to develop port-adjacent regions into special economic development zones as part of an all-encompassing "port-zone-city" development model. These port-adjacent areas could provide additional opportunities for intelligence collection on activities within the port.

Chinese investment in the city of Duqm, Oman, is one example that may be worth monitoring in this regard. In an effort to diversify its economy away from oil and natural gas, which account for roughly 60 percent of its exports, the government of Oman is seeking to develop the city of Duqm into a commercial and logistics hub.[45] In pursuing this goal, Muscat has partnered with Oman Wanfang, a consortium of private Chinese companies, to develop the China-Oman Industrial Park within the Duqm Special Economic Zone (SEZ).[46] According to Yahya bin Said al Jabri, the

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[39] "Djibouti Legislative Elections," *IHS Markit*, March 8, 2018, https://ihsmarkit.com/research-analysis/Djibouti-legislative-elections.html.

[40] "Ismail Omar Guelleh Governs Family-style with Kadra, Naguib, Saad and Co," *Africa Intelligence,* June 18, 2015, https://www.africaintelligence.com/ion/insiders/djibouti/2015/06/19?ismail-omar-guelleh-governs-family-style-with-kadra-naguib-saad-and-co/108078596-be1; "General Manager Message."

[41] Becker, et. al., *China's Presence in the Middle East and Western Indian Ocean: Beyond Belt and Road*, p. 96.

[42] COSCO Shipping Ports Limted, *Concession Agreement In Relation to Khalifa Port Container Terminal 2*.

[43] Abu Dhabi Digital Government, "Abu Dhabi Ports," *Abu Dhabi Digital Government*, https://www.abudhabi.ae/portal/public/en/departments/adports; "ADPC to Manage and Operate Zayed Port from 2014."

[44] "The United Arab Emirates (UAE): Issues for U.S. Policy," *Congressional Research Service Report*, May 3, 2019, https://fas.org/sgp/crs/mideast/RS21852.pdf, pg. 19.

[45] Asian Infrastructure Investment Bank, *Duqm Port Commercial Terminal and Operational Zone Development Project*.

[46] Ibid.

chairman of the Special Economic Zone Authority in Duqm, the SEZ will attract $10 billion of investment by 2022.[47]

Currently, no Chinese firms are involved in the operation of the Port of Duqm, as the July 2015 joint venture between the government of Oman and a Belgian consortium to manage the port for 28 years remains in effect.[48] However, Chinese firms under the Oman Wanfang consortium are seeking to develop the surrounding areas, and, given the amount of funding that could potentially be invested in the SEZ, this project could provide China with leverage to gain a foothold in the port, or cultivate influence among local-level government officials surrounding the port facilities.

3. WHAT ACTIONS COULD CHINESE STATE FIRMS POTENTIALLY TAKE TO ADVERSELY AFFECT USN ACTIVITIES AND OPERATIONS IN OVERSEAS PORTS?

Given the influence that Chinese SOEs have accrued in port facilities worldwide, how might China potentially influence USN port operations and activities in overseas ports? The following section identifies four ways in which this might occur.

Growing competition over access to facilities

First, it is worth noting that China's growing presence in overseas ports may create additional challenges for the U.S. Navy regardless of whether this is China's intent. China's MSR initiative has led to a dramatic increase in both Chinese overseas investments and Chinese citizens living and working in Asia, the Middle East, Africa, and throughout the Indian Ocean region. As a result, these expanding Chinese interests have led not only to an increased Chinese civilian presence, but also to an increased military presence, as China's military goes abroad to protect its national interests. This increased Chinese civilian and military presence abroad means that in certain locations, the USN is likely to face greater competition for access to ports and port facilities, potentially making it more difficult for the USN to gain access at certain times.

Port Khalifa may be one example where this may occur. In Port Khalifa, COSCO began operating a new container terminal in December 2018 and has already stated that it is seeking to make it a regional transshipment hub, diverting Chinese ships from other ports in the region. Should COSCO be successful, the increased port traffic in and around Port Khalifa could potentially create delays for USN ships seeking to use those port facilities as well.

Collecting intelligence on USN assets operating in foreign ports

Another issue that cannot be avoided is the opportunity for the PRC to improve its intelligence collection capabilities against USN assets operating in foreign ports. Chinese SOEs, like COSCO and China Merchants, are intimately tied to the Chinese state, and their positions as port operators could allow them to collect intelligence on the movement and location of USN ships and other assets, USN ship maintenance requirements, ship combat readiness, and the tactics, techniques, and procedures (TTPs) that the USN uses for repair, resupply, and other activities while in foreign ports. Such concerns are not without merit; as noted above, actors like China Harbour Engineering Company have reportedly been accused of seeking to bribe officials abroad. Moreover, when describing the negotiations for the Hambantota port, Nihal Rodrigo, a former Sri Lankan foreign secretary and ambassador to China, noted that intelligence sharing between China and Sri Lanka was "an integral, if not public, part of the deal."[49] Mr. Rodrigo also characterized the Chinese position during the negotiations as "We [China] expect you [Sri Lanka] to let us know who is coming and stopping here [Hambantota]."[50]

Moreover, as SOEs such as COSCO work with Huawei to replace and redesign IT infrastructure in places such as the Greek port of Piraeus, it puts USN communication and other information at risk as well.[51] Finally, if Chinese SOEs are not positioned to obtain that information directly, local actors at those ports may feel

[47] "Oman-China Deal for $10-bn Industrial City," *Oman Daily Observer*, May 23, 2016; A.E. James, "Chinese Firms Commit $3.1 Billion Investment in Duqm Free Zone," *Times of Oman*, April 22, 2017, http://timesofoman.om/article/107373/Oman/Chinese-firms-commit-$31billion-investment-in-Duqm-free-zone.

[48] "Overview," Port of Duqm, https://www.portduqm.com/About/Port-of-Duqm.html.

[49] Maria Abi-Habib, "How China Got Sri Lanka to Cough Up a Port."

[50] Ibid.

[51] See for example Piraeus Port Authority SA, "Piraeus Port Authority SA Assigns to Huawei Technologies SA the Project of Modernizing Its Network Infrastructure," *Hellenic Shipping News*, January 26, 2018, https://www.hellenicshippingnews.com/piraeus-port-authority-sa-assigns-to-huawei-technologies-sa-the-project-of-modernizing-its-network-infrastructure/; Christopher R. O'Dea, "Asia Rising: Ships of State?" *Naval War College Review*: Vol. 72: No. 1, Article 5, p. 83.

compelled to provide China with privileged information in return for financial benefits or outright bribes, or to avoid punitive Chinese actions. This information would have multiple benefits, improving China's ability to counter future USN operations, while allowing the People's Liberation Army (PLA) to learn about USN TTPs, thus potentially improving the PLA Navy's own operations.

"Slow-rolling" work for USN ships at Chinese-operated ports

Chinese firms could also affect USN operations directly, potentially using their economic leverage to encourage firms providing services to the USN at the port to slow down repair or resupply operations, or to provide USN ships lower priority than they currently enjoy. To be clear, I have seen no evidence of this to date. However, given that seven of the top 10 busiest ports in the world by throughput are in China, it is not unreasonable to think that a growing number of firms that contract to conduct work for the USN at overseas ports may also have commercial interests in China, or may subcontract portions of that work to firms that do.[52]

Actively restricting USN access to port facilities

When might China seek to restrict USN or USNS access to ports facilities run by Chinese SOEs? Hypothetically, if relations between the two countries continue to deteriorate, China could seek to restrict USN access as a response to a US action that it perceives as hostile—such as a USN warship visit to Taiwan—or even as an escalatory step should a serious crisis occur between the two countries in the East China Sea, South China Sea, or elsewhere.[53] Such an action would not be taken lightly, as doing so would certainly mark the start of a much more confrontational period in US-China relations with the associated political and economic ramifications. Nor would it go unnoticed in countries where concerns about ceding sovereignty as a result of China's growing footprint continue to gain traction.

China would likely face political pushback from the host country as well. For example, while China may be best positioned to restrict U.S. Navy access where it has significant economic leverage, such as Djibouti, or controls port operations, such as Piraeus, both Djibouti and Greece would have strong incentives to avoid being pulled into such a confrontation. Djibouti, for example, would potentially stand to lose some of the $130 million it earns annually from allowing US partners and allies such as France, Japan, and Italy to operate in its territory, should some of those countries decide to reevaluate their presence there. Greece, meanwhile, could potentially be subject to political and economic pressure from other NATO or EU member states.

Restricting USN access to port facilities would be even more difficult in locations where Chinese firms are not the sole or majority equity shareholder, as Chinese SOEs would face a range of actors at the local level with incentives to avoid being pulled into a conflict. In Port Said, Egypt, for example, where COSCO Shipping Ports owns a 20 percent stake in the Suez Canal Container Terminal, other parties to the joint venture include the Dutch firm APM Terminals (the majority shareholder and operator), the Suez Canal Authority, the National Bank of Egypt, and private Egyptian investors. All would likely want to avoid being drawn into the middle of a conflict between the US and China.[54]

Finally, one may argue that China has an interest in continuing to allow USN ships to frequent Chinese-controlled port facilities, as such visits provide ample opportunities for intelligence collection. In the near term, therefore, it may be more likely that the USN decides to limit its visits to certain ports owned or operated by Chinese SOEs to mitigate these growing operational security concerns. For example, following the news that the Shanghai municipal government-owned firm, Shanghai International Port Group, had won the concession to operate the container terminal in the Israeli port city of Haifa for 25 years beginning in 2021, Israeli media reported that US officials had expressed concern about continuing U.S. Navy activities there, to include a "Sense of the Senate" statement within the Senate's National Defense Authorization Act for Fiscal Year 2020, stating that the US Senate "has an interest in the future forward presence of United States naval vessels at the Port of Haifa in Israel but has serious security concerns with respect to the leasing arrangements of the Port of Haifa as of the date of the enactment of this

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[52] Lloyd's Maritime Intelligence, *One Hundred Ports 2018*, p. 12.

[53] I am not aware, however, of Chinese analysts discussing this as a possible tactic for use in the context escalation and crisis control more. See for example Alison A. Kaufman and Daniel M. Hartnett, *Managing Conflict: Examining Recent PLA Writings on Escalation Control*, (Arlington: VA, Center for Naval Analyses), February 2016, DRM–2015–U–009963-Final3.

[54] APM Terminals, "About Us: Port Said," *APM Terminals*, http://www.apmterminals.com/en/europe/port-said/about-us.

Act." [55] Former Chief of Naval Operations Admiral Gary Roughhead described possible concerns by noting:

> The Chinese port operators will be able to monitor closely US ship movements, be aware of maintenance activity, and could have access to equipment moving to and from repair sites and interact freely with our crews over protracted periods. Significantly, the information systems and new infrastructure integral to the ports and the likelihood of information and electronic surveillance systems jeopardize US information and cybersecurity.[56]

As China's roles and presence in overseas port operations continue to expand, the U.S. Navy is having to adapt to a more challenging operational security environment; one in which it is more likely to interact with Chinese military and civilian assets and personnel even when calling on ports located in partner and ally countries. Moreover, port investments by Chinese state-owned firms occurring today could allow them to develop capabilities that the Chinese state could leverage in the future, including the capability to hinder USN repair and resupply operations, or potentially even restrict USN access to select locations. Responding to these challenges will require careful consideration about where, when, and how the U.S. Navy operates in overseas ports.

Mr. MALONEY. Thank you, Mr. Becker.

Ms. Walsh?

Ms. WALSH. Thank you, Chairman Maloney, Ranking Member Gibbs, distinguished members of the subcommittee. I would like to add my condolences to the earlier panel. I was hoping maybe to get to meet Congressman Cummings. So my loss, as well as yours.

This is an important topic, one that doesn't get as much attention as I think it warrants, in my own view. So I commend the committee for focusing on this topic.

I have to note, as well, these represent my personal views, and not those of the U.S. Government, Department of Defense.

I will give you the bottom line upfront. The United States and China are in a geostrategic and economic competition in which development of the ocean economy, also referred to as a maritime or blue economy, will play a critically important—and particularly from a maritime, commercial, and naval technology point of view—important role. This competition will determine the future of the global maritime supply chain.

China has a comprehensive long-term strategy, vision, policies, and plans to develop the ocean economy, both at home and abroad. The United States does not.

The OECD in 2016 put out an important report on the ocean economy in 2030, noting that the ocean economy makes a significant contribution to the overall economy, saying that in 2010 the ocean economy contributed $1.5 trillion, and by 2030 estimating that $3 trillion will be value-added growth. This important strategic sector is particularly important in an age of global trade, investment, and innovation, maritime industry expansion, demographic shifts towards coastal zones, climate change, and an emerging and growing naval contest between the United States and China.

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[55] "To Authorize Appropriations for Fiscal Year 2020 for Military Activities of the Department of Defense, for Military Construction, and For Defense Activities of the Department of Energy, to Prescribe Military Personnel Strengths for Such Fiscal Year, and for Other Purposes," S1790, 116 Cong., 1st Sess (2019), pp. 607.

[56] Quoted in Michael Wilner, "U.S. Navy May Stop Docking in Haifa After Chinese Take Over Port," *Jerusalem Post*, December 15, 2018, https://www.jpost.com/Israel-News/US-Navy-may-stop-docking-in-Haifa-after-Chinese-take-over-port-574414.

How and where the ocean economy develops will determine the future of the global maritime industry, affecting key aspects such as infrastructure and transportation, where the source and centers of maritime innovation will emerge, and which countries will dominate in determining maritime law, policy, processes, and, as mentioned earlier, technical standards, hardware, software, and environmental measures and others, both on land and at sea.

Two important global trends that I would like to focus on here that are fueling development of the ocean economy globally, and that are sure to impact the global maritime supply chain are, first, the expanding numbers and types of special economic zones, or SEZs, that include specialized maritime industrial-themed development zones; and then secondly, a related concept of developing maritime clusters, or innovation ecosystems, that are designed to spur maritime, industrial, and also blue economic growth, technological innovation, and doing so in a more sustainable way.

China is at the forefront of both of these global trends.

The U.N. Conference on Trade and Development, in its annual report on world investment, had a special section on special economic zones because is, as UNCTAD put it, explosive growth in the use of special economic zones around the world. China alone accounts for over 2,500 of all the world's SEZs, nearly half of the worldwide total, and then more than half of those that are in developing countries.

China has also pioneered a new form of special economic zone that is focused on enhancing maritime, both commercial and naval, capabilities by establishing a specialized and pilot blue economy development zone, the first being Qingdao, China, but also now establishing these along China's long coastline. Within the Qingdao blue economic development zone they also have what they call Blue Silicon Valley, the idea being clearly to advance innovation in the marine and maritime sector.

In addition, China's blue economy development zones are strategically located with military and defense industrial interests in mind. As you have noted, commonly understood, China's long-term economic and technological development model remains based on dual-use, combined, and what they call now military-civil fusion of technology development and innovation that is intended for both commercial and defense purposes. This strategic approach applies to the maritime sector as well, and will affect how and the degree to which U.S. and Chinese maritime stakeholders can engage, whether in China or overseas, and as part of the global maritime supply chain.

Under the Maritime Silk Road Initiative, China has expanded its efforts to promote overseas SEZs, including overseas blue economy zones and other blue cooperative programs. As noted in the previous panel, in the recent New York Times article, for instance, China has leased an entire province in the Solomon Islands for development of a special economic zone, though it is not clear what industrial or military purposes it plans to use it for. But the vehicle is a special economic zone, which is an important part of China's own development, and part of the allure or attraction of Chinese foreign investment overseas.

In mid-2017 Beijing announced a new "Vision for Maritime Cooperation" which built upon the 2015 "Belt and Road Action Plan." I commend both of these documents to you, to the committee; they are both in English, easy to understand. Note that the maritime vision, in particular, has a whole litany of development projects, including what it calls blue passages, blue economic corridors, blue partnerships, blue carbon programs—all, of course, with maritime themes—in addition to overseas blue economic zones.

In cooperation, as their plan is, with neighboring regional and international partners that stretch across almost all of the globe, all of the Indo-Pacific, and stretching into the Mediterranean, the Arctic, and, importantly, as well, into the deep ocean. Thank you.

[Ms. Walsh's prepared statement follows:]

Prepared Statement of Kathleen A. Walsh, Associate Professor of National Security Affairs, U.S. Naval War College [1]

Mr. Chairman, Ranking Member and distinguished Members of the Subcommittee, thank you for the opportunity to appear before you to discuss the topic of China's Maritime Silk Road (MSR) initiative and implications for the global maritime supply chain. This is an important topic, but one that has not received as much detailed attention as it warrants, in my view. So I commend the committee for its focus on this topic. Please note that these remarks represent my personal views and not official views of the U.S. government.

Taking a cue from military practice, here is the bottom line up front: The United States and China are in a geo-strategic and economic competition in which development of the ocean economy (also referred to as the "maritime" or "blue" economy) will play a critically important role, particularly in terms of maritime (both commercial and naval) technology innovation advances. This competition will determine the future of the global maritime supply chain.

The Ocean Economy

According to *The Ocean Economy in 2030*, a 2016 report by the Organization for Economic Cooperation and Development (OECD): "The ocean economy makes a significant contribution to the economy—over USD1.5 trillion in value-added in 2010. . .and by 2030, the ocean economy is likely to more than double" to an estimated $3 trillion.[2] This growing strategic sector is particularly important in an age of global trade, investment, and innovation, maritime industry expansion, demographic shifts toward coastal zones, climate change, and an emerging naval contest between the United States and China. How and where the ocean economy develops will determine the future of the global maritime industry, affecting key aspects such as infrastructure and transportation, where the source and centers of maritime innovation will emerge, and which countries will dominate in deciding maritime law, policy, processes, and technical standards (on hardware, software, environmental measures and more), both on land and at sea.

Two important global trends fueling development of the ocean economy and sure to impact the global maritime supply chain are: 1) the expanding numbers and types of Special Economic Zones (SEZs) around the globe, including specialized maritime industrial-themed development zones; and 2) the related concept of developing maritime clusters or innovation ecosystems designed to spur "blue" economic growth

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[1] These views are based in part on research conducted for a forthcoming volume on strategic implications of China and the blue economy, as well as ongoing research and presentations on this topic dating back to 2013.

[2] OECD. *The Ocean Economy in 2030* (Paris: OECD Publishing, 2016).The ocean economy is sometimes also called the "maritime" or "marine" or "blue" economy. All of these terms include some degree of maritime industrial development, technological innovation, sustainable development, and environmental conservation as economic elements and as parts of an ecosystem. According to the OECD, "the ocean economy represents the sum of the economic activities of emerging ocean-based industries (i.e. renewable energy) and established ones (i.e. capture fisheries), together with the goods and services of marine ecosystems. . ." OECD, "The Ocean Economy and Innovation: Promoting Sustainable Seas and Oceans with Innovation," *STI in Focus*, Directorate for Science, Technology and Innovation (April 2017), http://www.oecd.org/sti.

and technological innovation in more sustainable ways. China is at the forefront of both global trends.

GLOBAL EXPANSION OF SPECIAL ECONOMIC ZONES PROMOTING ECONOMIC DEVELOPMENT

The United Nations Conference on Trade and Development (UNCTAD) published its annual World Investment Report (WIR) 2019, which emphasized the economic importance of special economic zones. The report shows "explosive growth in the use of special economic zones (SEZs) as key policy instruments to the attraction of investment for industrial development."[3]

As calculated in *WIR 2019*, worldwide (in 147 countries) there are more than 5,000 SEZs, with 1,000 of these established in the past decade and 500 more currently in planning stages.[4] This growth has taken place largely since the late 1990s, when there were less than 1,000 SEZs across the globe. China, alone, accounts for 2,543 of all SEZs, or nearly half (47%) of the worldwide total and more than half (53%) of those in developing countries (counting 13 planned zones but not China's many smaller-sized industrial or science parks and some of its more specialized zones within zones).[5]

As the *WIR 201*9 notes, SEZs "are widely used in most developing and many developed economies. Within these geographically delimited areas governments facilitate industrial activity through fiscal and regulatory incentives and infrastructure support."[6] The report notes that the United States has 262 SEZs, which represents the highest number among developed economies.[7] In the United States, SEZs mainly take the form of foreign trade or customs-free zones and "are created at the instigation of local organizations rather than the federal Government".[8]

The development of SEZs represents generally a top-down or government-driven effort to foster industrial development and can be effective in drawing domestic and foreign investment to economically and strategically critical sectors. Establishing an SEZ provides no assurance of economic success, but such zones can help spur investment, industry and innovation that might otherwise be slow to develop or be inefficiently dispersed or disconnected geographically.

The *WIR 2019* notes that Beijing estimates its 156 high-tech development zones (HTDZs), for instance, have "contributed $1.42 trillion to China's GDP, or 11.5 per cent of the economy" in 2017 with high levels of research and development expenditures to total production value as well as being responsible for a large fraction of China's overall patent activity, though such Chinese economic data is often suspect.[9] What is clear is that China's economic rise over the past 40 years is due in part to China's extensive and continually experimental approach to SEZ development.

For example, China has pioneered a novel form of SEZ focused on enhancing maritime—including commercial and naval—capabilities by establishing a specialized pilot Blue Economy Development Zone in Qingdao, China in 2011. Qingdao is located on the Shandong Peninsula southeast of Beijing and is the location of the PLA Navy's Northern Theater headquarters. Within Qingdao's Blue Economy Development Zone, planners also designated what they call a "Blue Silicon Valley" or maritime industry-focused cluster aimed at advancing marine science and technology.

Beijing has since approved additional Blue Economy Development Zones along its long coastline, from Dalian (the northern port home of China's first aircraft carrier) to Tianjin, Shanghai, Xiamen, coastal sites in Hebei, Jiangsu, Zhejiang and Guangxi Provinces as well as Zhanjiang in Guangdong Province—the purported starting point for China's Maritime Silk Road and also headquarters of the PLA Navy's Southern Theater headquarters.

In addition to being coastal centers for development of commercial maritime industry, China's planned Blue Economy Development Zones noted above are strategically located with military and defense industrial interests in mind. As has become commonly understood, China's long-term economic and technological development model remains based on a dual-use, combined, "military-civil fusion" of technology innovation intended for both commercial and defense purposes. This strategic approach applies to the maritime sector as well and will affect how, and the degree

[3] United Nations Conference on Trade and Development (UNCTAD), W*orld Investment Report: Special Economic Zones* (New York, NY: United Nations Publications, June 2019), p. iv. (Hereafter *WIR 2019*).
[4] *WIR 2019*., p. xii.
[5] *Ibid*., pp. 135–143.
[6] *Ibid*., p. xii.
[7] *Ibid*., pp. 152–3.
[8] *Ibid*., p. 153.
[9] *Ibid*., p. 134.

to which, US and Chinese maritime stakeholders can engage, in China or overseas, as part of a global maritime supply chain.

As in other countries, China's blue economy concept includes promotion of sustainable maritime development and marine conservation as part of an innovation ecosystem. But foreign researchers note that marine environmental concerns as part of China's maritime and blue economy development plans typically rank as a distant last priority following innovation and industrial development goals, which Chinese researchers also acknowledge. Yet, the "blue" sustainable development component remains attractive to local officials as well as those in developing countries open to or seeking Chinese assistance in establishing blue economy development zones of their own.

In fact, bilateral government-government "partnerships zones" are becoming popular among developing countries, including partnership zones established with and by China. These zones complement China's own China Overseas Cooperation Zones (COCZs), established as of 2006 and of which 20 have been verifiably established, most (7) located in Southeast Asia, with four each in Russia across across Africa, among other locations.[10]

China is a prominent actor, in fact, in developing overseas SEZs of various sorts, including zones with maritime importance. The *WIR 2019* notes that, "The first instance of Chinese involvement in the establishment of SEZs in Africa was in 1999, when China signed an agreement with Egypt to develop an industrial zone in the Suez Canal area. In 2006, as part of the implementation of its 11th five-year plan, China announced the development of 50 SEZs overseas, seven of which were to be in Africa. Subsequently, as Chinese investment and interest in Africa deepened, plans were announced for several additional zones to be built with Chinese support. For instance, China signed an agreement with Djibouti in 2016 to build an FTZ [free trade zone] as part of the Belt and Road Initiative; the first phase of the zone was launched in 2018. This 10-year project, costing $3.5 billion, is to create Africa's largest FTZ, spanning 4,800 ha. The zone will be managed by a joint venture comprising the Government of Djibouti as the majority shareholder and three Chinese companies: the China Merchants Group, Dalian Port Authority and IZP. Involvement by Chinese development companies has also been reported in Algeria, Angola, Ethiopia, Kenya, Mauritius, Nigeria, Rwanda and Zambia, among others." [11] It was not lost on the United States and other naval and maritime powers that China also has built its first overseas military base (a naval support facility) in Djibouti, next to a major port and not far from the U.S. military's own base.

Under the Maritime Silk Road initiative, China has expanded its efforts to promote overseas SEZs, including overseas Blue Economy Zones and other "blue" cooperative programs, as discussed below.

US & International Ocean/Maritime Clusters of Innovation and Sustainable "Blue" Economy Development

The comprehensive OECD study, The Ocean Economy in 2030, concludes by recommending a focus for future SEZ development on sustainable development, noting that "the sustainable development agenda increasingly drives MNEs' [multinational enterprises'] strategic decisions and operations. . ." [12] The WIR 2019 report shares this advice, noting that new SEZs focused on meeting sustainable development goals (SDGs) represent a relatively new trend and promising development model.[13]

This dynamic has already begun to emerge in the maritime realm in the form of ocean- or maritime-oriented innovation clusters, many of which include emphasis on sustainable development efforts. According to a *World Ocean Council White Paper*, there are already dozens of (over 40) ocean or maritime industry clusters in development around the globe, including in the United States and China.

As defined by the World Ocean Council (WOC), "Ocean/Maritime Clusters are geographic concentrations of similar or related maritime firms—such as shipping, seafood, marine technology, and/or port operations—that share common markets, technologies, worker skill needs, and are often linked by buyer-supplier relationships and operate in close interactions with another directly and through multiple networks." [14] As noted, many of these clusters also include a focus on sustainable development. Ocean/maritime clusters are often found within or near SEZs.

[10] *Ibid*., p. 157.
[11] *Ibid*., pp. 149–150.
[12] OECD. *The Ocean Economy in 2030*, p. xiv.
[13] *WIR 2019*, p. 205.
[14] Hansen, Eric Rolf, et al., *Ocean/Maritime Clusters: Leadership and Collabortion for Ocean Sustainable Development and Implementing the Sustainable Development Goals*. World Ocean Council White Paper, Economic Transformations Group & World Oceans Council, 2018, p. 4.

These ocean or maritime industry clusters, whether planned (as in China) or forming organically (as is often the case in the United States), seek to enhance prospects for investment, industrial development, and innovation in a fashion similar to that found in Silicon Valley's networked cluster of ICT industry firms and related organizations. This innovation ecosystem model concept promotes continuous and sustainable (in this case, maritime) industry development through establishment of formal and informal networks among the area's varied stakeholders, setting up opportunities for both competition and cooperation to ensure a thriving business environment, both literally and figuratively.

The WOC maritime clusters report concludes, in fact, that, "the way forward is a focus on business growth and investment opportunities for responsible, sustainable ocean use (sometimes referred to as the 'Blue Economy' and 'Blue Growth'), which considers the intersection of ocean economic benefits, environmental health and societal value in policies and best practices. . .Ocean/Maritime Clusters can lead ocean sustainable development and realize economic benefits."[15] In other words, maritime clusters ought to focus not only on promoting industry and innovation but also on more environmentally friendly, sustainable development-oriented practices such that today's profits don't lead to tomorrow's marine ecological disaster.

The development of innovative maritime clusters that also promote environmental sustainability is an area in which the United States is likely to be more competitive with other countries, particularly China and developing economies, where environmental laws, regulations and practices are less established or advanced. In this regard, US maritime stakeholders could learn much from European countries, too, where environmental policies are prompting innovative approaches to maritime development and use of marine space. Yet, the United States presently lacks a clear strategy for sustainable development of the maritime sector, relying instead mainly on local and state leaders to foster enhanced maritime trade through investment, innovation and sustainability with only limited federal attention to the ocean economy overall.

China, alternatively, in addition to having experimented with development of SEZs for four decades, already has a vision and plans for all of the above and is implementing its plans both domestically and internationally, the latter as part of Xi Jinping's Maritime Silk Road initiative. A European Council on Foreign Relations April 2018 study determined, for instance, that "Europe should emulate China's blue economy as an engine of growth and wealth and encourage innovation to respond to well-funded Chinese industrial and R&D policies."[16] In short, Beijing is ahead of the rest of the world in conceiving a national and international strategy to leverage ocean/maritime/blue economy opportunities and could reap significant, first-mover commercial and defense industrial as well as technological advantages as a result. If so, China's efforts could quickly shape the global maritime supply chain in surprising and strategically complicated ways for the United States and our allies, partners and friends across the globe.

China's Maritime Silk Road, Maritime Vision & Action Plan

In 2013, Xi Jinping introduced China's Maritime Silk Road as part of a larger "One Belt, One Road" strategic initiative (see Figure 1, bottom dotted line below).

[15] Hansen, et al., p. 3.

[16] Mathieu Duchatel and Alexandre Sheldon Duplaix, Blue China: Navigating the Maritime Silk Road to Europe," European Council on Foreign Relations *Policy Brief*—Summary (ECFR/ECFR/255, April 2018).

Figure 1: "1 Belt, 1 Road": "New Silk Road Economic Belt, 21st Century Maritime Silk Road" (Xinhua, 2013)

As explained by PRC State Councilor Yang Jiechi in 2015, "The 21st Century Maritime Silk Road will present a rich and colorful program of cooperation. In addition to maritime transport and resource development, it will involve research, environmental protection, tourism, disaster reduction and prevention, law enforcement cooperation and people-to-people exchanges on the sea. Not only will it look at the development of the blue economy and building of oceanic economic demonstration zones offshore, it will also build onshore industrial parks, marine science and technology parks and training bases for ocean-related personnel. Not only will we go utilizing the oceanic resources, we will also protect well our oceanic environment. Not only should we deliver a good life to our people along the coast, we should also bring about an interconnected development of the hinterland and coastal regions to achieve common prosperity."[17] These are hefty promises and ambitious plans. While it's unclear if China can achieve these aims, it's fairly certain Beijing will try.

The inclusion of "development of the blue economy" in Xi's MSR initiative is significant. Though China's blue economy development efforts date back formally to the Hu Jintao era (2002–2012/13), Beijing's initial enthusiasm for this development concept as a means of spurring China's domestic maritime economy and dual commercial and naval technology innovation efforts appeared to wane for a time, becoming mired in bureaucratic rivalries or technology transfer challenges and other matters. Xi's inclusion of the blue economy in the MSR appears to have revitalized the idea as an attractive means of promoting foreign direct investment and foreign maritime technology transfer in China's blue economy development zones but also, perhaps primarily, through China's development of overseas blue economy development zones.

Where China has found it harder in some ways to continue to attract US and other foreign ocean researchers, scientists, venture capitalists, entrepreneurs, academics, businesses, and other innovative actors to China, the MSR envisions China building a network of overseas BE development zones along the MSR as a means of achieving the same foreign technology transfers while emphasizing the opportunities such zones also provide local overseas economies and communities, presenting such development zones as a "win-win" deal.

In mid-2017, Beijing announced a new *Vision for Maritime Cooperation*, which built on Xi Jinping's *Belt and Road Action Plan* announced in 2015.[18] These two documents, in particular, provide a blueprint of China's plans to develop an inte-

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[17] China Ministry of Foreign Affairs, Press Release (March 28, 2015), http://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1249761.shtml

[18] See, respectively, "Vision for Maritime Cooperation under the Belt and Road Initiative," *Xinhua News Agency* (June 20, 2017), http://news.xinhuanet.com/english/2017-06/20/c_136380414.htm; and *One Belt One Road Action Plan*. Beijing: Xinhua News Agency, March 2015. Both documents were available in English-language translations.

grated global maritime industrial production, supply and technological development chain across the MSR.

China's vision and action plans clearly outline how Beijing seeks to develop an overseas network of maritime industrial zones and innovative maritime clusters that are integrated with China's domestic maritime sector. This ocean economy network is being built, in part, through development of what Beijing has termed "Blue Passages", "Blue Economic [cross-border regional] Corridors," "Blue Partnerships", "Blue Carbon Programs", and the aforementioned "Blue Economic Zones" in cooperation with neighboring, regional and international partners.[19] These plans cover most of the globe, including all of the Indo-Pacific, stretching into the Mediterranean through to the Artic and into the deep ocean.

China has advanced also the related concept of building a digital or "Information Silk Road" aimed at connecting maritime infrastructure and networking blue development efforts along the MSR. The 2015 Belt and Road Action Plan proposes, for instance, a range of development programs: "cross-border optical cables and other communication trunk line networks" (transcontinental submarine & satellite); plans to "form an infrastructure network connecting all sub-regions in Asia" as well as prioritizing facilities and network "connectivity"; standardized transportation, maritime, customs, logistics, info-technology and technical standards; promotion of "green and low-carbon infrastructure construction and operation management"; and the establishment of maritime cooperation centers and other collaborative efforts in ocean engineering, exploration, environmental protection industries, hydropower, and more.

Xi's 2017 *Maritime Vision* further advises that "Countries along the Road are encouraged to enhance cooperation through pairing sister ports and forging port alliances. Chinese enterprises will be guided to participate in the construction and operation of ports. Projects for the planning and construction of submarine cables will be jointly advanced to improve connectivity in international communications."

Finally, the 2017 *Vision* also offers planning assistance in promoting a full range of blue economy activities, noting: "China is prepared to provide technical assistance to countries along the Road in drafting plans for sustainably utilizing marine resources. Enterprises are encouraged to participate in marine resource utilization in a responsible way. . .China will join in efforts by countries along the Road in establishing industrial parks for maritime sectors and economic and trade cooperation zones, and promote the participation of Chinese enterprises in such endeavors. Demonstration projects for developing the Blue Economy will be implemented and developing countries along the Road will be supported in mariculture to improve livelihoods and alleviate poverty. China will also work with countries along the Road in developing marine tourism routes and high-quality tourism products, and in setting up mechanisms for tourism information sharing."

Thus, in the case of maritime competition, China's strategic intentions under Xi's leadership are clear, and much of the PRC's basic long-term development plans publicly available to assess. The challenge for analysts and officials, therefore, lies more in determining whether, why, how far, and how fast China might succeed—or not—in implementing its ambitious plans. In conceiving its MSR initiative and network of ocean/maritime/blue economy zones and clusters, China's strategic head start provides a competitive advantage but one that will not necessarily be maintained, particularly if the United States and its allies and partners decide to implement a strategy and plan(s) of our own to contend in this strategically critical space.

Given China's clear rejection under Xi's leadership of Western, liberal-democratic values as well as the Trump administration's adoption of tariffs as a means to compel change in Chinese trade and investment activities, the growing geo-strategic and economic competition between China and much of the rest of the developed world is intensifying. It is unclear if the US and Chinese economies will be "decoupled", as suggested by some White House officials. But the intensifying strategic competition is, at the very least, likely to complicate and slow future development of the global maritime supply chain, which could evolve into separate industrial spheres of influence. In that case, China's head start in terms of strategic development of an ocean economy at home and abroad could prove more challenging.

[19] Regional Economic Zones include, or instance, the Beibu Gulf Economic Zone; there are thus far six Regional "Blue" (Economic) Corridors (on land & sea), including the China-Pakistan Economic Corridor (CPEC), Bangladesh-China-India-Myanmar, China-Indochina Peninsula, New Eurasian Land Bridge, China-Mongolia-Russia, and China-Central Asia-West Africa; "Blue Partnerships" exist with the European Union and some island states; and various "Blue Passages" are envisioned connecting China's domestic ocean economy to those elsewhere, namely: China-Oceania-South Pacific, China-Indian Ocean-Africa-Mediterranean Sea, and others (including one passage that seeks to connect China to the Arctic).

Advances in the Ocean/Blue Economy in the United States

In trying to understand China's innovation efforts and blue economy endeavors, I have conducted a modest amount of research in the United States and Europe to get a better idea of how these activities compare. In the United States, my outreach efforts indicate that ocean and blue economy activities remain largely local- or state-led initiatives driven by area entrepreneurs and officials seeking to leverage existing as well as emerging, start-up maritime enterprises and innovative opportunities. This primarily bottom-up (rather than top-down driven) approach to innovation is characteristic of how the United States historically has developed innovative opportunities, networks and clusters and represents an important comparative advantage. In this respect, maritime innovation in the United States appears to be robust and dynamic.

At the same time, however, as ocean/maritime/blue economies continue to grow and expand around the United States, the federal government can playing an important supporting role to local ocean/maritime/blue innovation efforts by providing data and other information on the totality of these local efforts, regular analyses of these activities, and by providing some amount of funding to assist local actors to better understand how they fit into the larger picture—domestically and globally—as well as how they might find opportunities to engage within and outside their region, whether through business ventures, research collaborations, or federal R&D opportunities.

The federal government also can play an important role in collecting data to help officials better understand and leverage local, regional and national economic centers of maritime innovation. Such efforts are already taking place. Though often under the national radar. For instance, local-level efforts to understand what stakeholders already or potentially could be involved in regional ocean/maritime/blue economy clusters are occurring and local parties are working to connect stakeholders to one another through business, academic and government-sponsored conferences, workshops, contact lists, and more. In the absence of a national-level strategy, these laudable local-level efforts are occurring in an often ad-hoc manner and/or by parties with an interest in only a section(s) of the maritime economy, which means opportunities are being lost. Also, information on potential stakeholders as well as a systemic understanding and analyses of strategic implications are likely to be incomplete.

Such local, ad-hoc, or area-specific efforts are also very unlikely to provide national leaders with a clear understanding of how competitive the United States is—or is not—in maritime development and innovation vis-à-vis other countries, particularly China. If the United States wishes to ensure the global maritime supply chain remains one in which U.S. researchers, enterprises, policy, technologies and standards play a leading and essential role, then a more strategic and systemic approach is needed to understand changes to the global maritime supply chain, and particularly the role played by ocean/maritime/blue economy and innovation zones and clusters being formed across the United States and internationally.

Recommendations for a Strategic Way Ahead

There is much that Congress can do to support the United States' leadership in ocean science, maritime industry, blue technology, marine conservation and sustainable maritime development, all of which will impact the global maritime supply chain as well as Coast Guard and U.S. Navy development and acquisition efforts. Below are a few ideas for the Committee's consideration.

- *The United States needs a comprehensive strategy focused on how to both facilitate and leverage development of the ocean or blue economy at home and abroad.*
  The Trump administration in 2018 revoked the Obama-era National Ocean Policy, replacing it with a brief Executive Order focused on "ocean-related matters" that mentions in the body "environmental" interests and "sustainable use" substantively only once, each, and "innovation" not at all.[20] Under new, joint leadership of the Office of Science and Technology Policy (OSTP) and Council of Environmental Quality (CEQ), the latter initiative appears to be a low priority for the current administration. This observation is supported by the brief section on "oceans" in the White House budget R&D memo that directs "Departments and agencies should prioritize new and emerging technologies and collaborative approaches to efficiently map, explore, and characterize the resources

[20] Executive Order 13840, entitled "Ocean Policy to Advance the Economic, Security and Environmental Interests of the United States", was issued June 19, 2018 and overrides Obama-era policies establishing the National Ocean Policy. See Executive Office of the President, "Executive Order 13840," The Federal Register (June 19, 2018) 83 FR29431, pp. 29431–29434

of the U.S. exclusive economic zone. . .[and] should also focus on processing and making publically available data that characterize natural resources and human activities and on R&D that improves understanding of and supports effective responses to changes in the ocean system".[21] This narrow scope and limited efforts effectively represent a strategic step backward in meeting US national security, economic, technological and sustainable development interests.

While the United States' advantage in innovation stems mainly from local community and state-level, bottom-up, entrepreneurial activities, a national strategy for development of the ocean or blue economy can facilitate and help coordinate such efforts to ensure local-level advances also serve national economic and defense requirements.

- *Congress should continue to support ocean science research and, if necessary, mandate a comprehensive ocean economy strategy (per above) to guide national priorities*. Ocean science, technology engineering and math (O–STEM) educational support starting at K–12 programs and carrying through to graduate education and federal laboratory research, is essential, particularly where these programs engage with other actors as part of ocean/maritime zones and clusters.
- *Congress can authorize executive departments and agencies to develop and facilitate adoption of export control policies, processes and expertise specific to the expanding and increasingly global maritime industry sector*.

Ocean science and research is by nature a global enterprise, including work by and with Chinese scientists and researchers; maritime innovation and technology development, however, must be carefully protected in the face of decades of Chinese efforts to exploit foreign technology transfers. US ocean/maritime/blue economy actors are becoming increasingly engaged around the globe. At the same time that we must find ways to leverage the maritime S&T and R&D that is taking place around the country and across the globe, doing so involves inherent risks, particularly when interacting with Chinese and other foreign counterparts. That is not a reason not to engage, but cause to do so strategically while taking care to protect intellectual property and other U.S. assets—for instance, by applying hard lessons learned in assisting emerging ocean/maritime/blue economy and innovation clusters across the United States in establishing strong export control and technology transfer expertise and corporate or university research policies before problems arise.

Just as other countries seek to secure a presence in our Silicon Valley in order to be on the ground where computer software and other new technologies are being developed, the United States should encourage an American presence in overseas ocean/maritime clusters and blue economy zones so as to ensure US companies and researchers have knowledge of, and familiarity with, what maritime industry developments and ocean innovations are occurring elsewhere around the globe and in a timely fashion; US federal R&D labs should also focus on understanding what implications are arising from these emerging ocean/maritime centers.

- *More specifically, Congress could support research—particularly field research—aimed at gaining a deeper understanding of whether, how effectively, and how quickly China's MSR network and related maritime industrial and innovation plans are being implemented*.

Many research institutions around the world are trying to analyze and assess China's MSR. These laudable efforts exist far and wide but are typically intermittent and generally lack a consistent, long-term or comprehensive focus. Congress might usefully provide funding for a public repository of such information and analyses, which would aid US and allied research efforts into China's near- and long-term MSR activities. Earlier this year, I recommended the U.S. Navy establish (or support) a dedicated Blue Century Initiative Institute as a research center and repository of information and analysis on the developing concept of an ocean/maritime/blue economy in order to aid its own strategic and innovative endeavors. Such a one-stop public research institute and library also could serve—or be leveraged by—the U.S. Coast Guard. If any such center were to be established, it should include a focus on technological innovation but also on sustainable development dynamics to ensure that any work takes into account the full range of commercial and military maritime advances that are possible as well as ensure a sustainable ecosystem of maritime innovation de-

[21] Executive Office of the President, "Memorandum for the Heads of Executive Departments and Agencies on Fiscal Year 2021 Administration Research and Development Budget Priorities" (August 30, 2019), https://www.whitehouse.gov/wp-content/uploads/2019/08/FY-21-RD-Budget-Priorities.pdf.

velops to serve near- and long-term US economic and national security interests.

- *At a minimum, Congress can support research specific to development of blue technology*. As this subcommittee noted in its May 2018 hearing, "'Blue technology' is a term that describes a wide swath of technologies and systems that support, sustain, and integrate the U.S. and global ocean economy. Accordingly, systems and technologies such as autonomous vehicles, sensors (both remote and in situ), ocean observation platforms, and hydrographic services, among many others fall under the term. The integration of advanced blue technologies could improve operational efficiencies and the Coast Guard's mission performance. . .improved understanding of the maritime environment, and optimal deployment and use of conventional Coast Guard assets (e.g., cutters, aircraft, small boats, etc.)." [22] Blue technology holds promise far beyond traditional maritime industries and, thus, represents a worthwhile focus for U.S. scientific research funding.
- *Finally, as many before me have advised, Congress should ratify the United Nations Convention on the Law of the Sea (UNCLOS) so that the United States can be a constructive and driving force in shaping critical decisions made or influenced at this important international legal forum (and to which China is a member)*. If Congress determines ratifying UNCLOS is not in the U.S. interest, then it is advisable for the United States to initiate an alternative or follow-on treaty or forum to address the future sustainability and use of the world's oceans.

Thank you for your invitation. I stand ready to provide answers to any questions you might have.

Mr. MALONEY. I thank you, Ms. Walsh. I will now proceed to Members' questions. Under the 5-minute rule I recognize myself for 5 minutes.

Ms. Walsh, I am struck by your testimony. I agree wholeheartedly with the point you are making. But can you tease that out for me a little bit?

When you talk about the geostrategic and economic competition, and you point out rightly the range and scope of it, this is unlike the competition we have with other major countries. Right?

I mean this is not the same as the global competition we have with Japan, or the global competition we have with Germany, or even the pressure on our manufacturing sectors or other industries like shipbuilding that we might find with other emerging economies or nations.

Talk about how it is different, and particularly how it depends for its orientation, for its success to date, on the authoritarian model that the Chinese have embraced, despite 30 years of economic policy and trade policy and wishful thinking on behalf of American policymakers that the Chinese are moving closer to our model, but instead, if anything, seem to be accelerating away from it.

Can you just talk about how that competition is central to what we see with the Maritime Silk Road, with One Belt, One Road more broadly, with the Digital Silk Road, and with all of its components?

Ms. WALSH. Sure. Thank you, Congressman, for your question.

I remember when I first saw the map of the Belt and Road. I was shocked, honestly. I have studied China since 1990, so quite a long time, and that is something I never thought I would see from a Chinese paper or government product.

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[22] Subcommittee on Coast Guard and Maritime Transportation of the Committee on Transportation and Infrastructure, "Hearing on Blue Technologies: Use of New maritime Technologies to Improve Efficiency and Mission Performance" (Washington, DC: Government Printing Office, May 6, 2018), p. iv.

That said, I think that Xi Jinping's China is a very different China than what we have seen in the past. I think there was reason, I think, that we could engage with China in the past. It was following along, or wanting to be part of the international global order, which is based on, as you note, the fundamental rule of law, of Western liberal democratic ideals. I think Xi Jinping's China is fundamentally different.

And I think it has taken some time to understand that Xi Jinping has a very different view of the international global order. And I was one of the first, I think, to say China is a revisionist power. Under Xi, China does want to remake the international order in a more Chinese model approach. This is fundamentally different, and much more concerning than the China of the past.

This China of old has the same, you know, industrial policies, 5-year plans, long-term plans. That hasn't changed. But what has changed is that China wants to remake and revise the international order, which gets down to that fundamental difference between a Communist-led China, a Communist Party-led China, and what the international community, U.S. and others, have set up, which relies on the rule of law.

Mr. MALONEY. And when you say revise and remake, another word would be to displace the United States. What is your view of that?

Ms. WALSH. I would agree with that now. I would not have, you know, 7, 8 years ago, before Xi. I think that was a different China. I think that we—our strategy may have fit them, but I think our strategy has to adjust to a new and more aggressive China.

Mr. MALONEY. And so is it fair that we should—when we talk about displacing, we are not just talking about displacing us economically from a particular industry, or even from a particular region. We are talking about displacing our global economic model with a different one. Isn't that right? One led by China.

And is it fair that we should understand the components of One Belt, One Road, Maritime Silk Road, Digital Silk Road all as component elements of a larger strategy to displace the United States and its market-based, rules-based system with a Chinese authoritarian model?

Ms. WALSH. Yes, I would agree with that. But I would also caution, as I have before and with others, that this is Xi Jinping's China. I am not convinced that this is going to be China of the future, necessarily. It is the China we need to deal with, obviously. We need a new strategy, but——

Mr. MALONEY. Ms. Walsh, Xi Jinping has made clear that he has no intentions of going anywhere. Isn't that fair? Do you know something I don't about the next Chinese leader? Because I think the next Chinese leader is Xi Jinping.

Ms. WALSH. All right. I would just caution——

Mr. MALONEY. Isn't that right?

Ms. WALSH [continuing]. That, as a strategist, you want to be prepared for the potential of change to happen. And if that were to happen, we want to have that in mind if we were to develop a long-term strategy——

Mr. MALONEY. I couldn't agree more. In fact, that is why we are holding this hearing, one of the reasons.

But you would agree that hope isn't a strategy, right?

Ms. WALSH. No——

Mr. MALONEY. You would agree that we have something to say about whether we are confronted with this China or the China we had hoped for, the China we hope to see in the future.

Mr. Hillman, I only have a few seconds left, but I know you made the point about cooperation with China. None of us wants a purely confrontational relationship with the Chinese. Some of us feel as though we are being pushed in that direction aggressively, and we better be prepared for it. Is it possible to cooperate our way through this global competition?

Are we overstating the risks of what we are talking about here today?

Are we being too alarmist?

Mr. HILLMAN. So I think you do have to think through what the risks are, and then you plan toward those. And so I don't think that that has been alarmist at all. I think we are having a healthy reassessment of what interdependence has meant for us. And so I think looking at the maritime dimension of that certainly makes sense.

I do think that there is more we can do, in terms of our analysis, to separate things that are threatening from things that are benign, or harmless, or sort of white elephant projects. So to give you an example with ports, not every port is some Trojan horse Chinese naval facility.

But being able to go through that takes—you need to have information about who is involved and what the port looks like, and there is an art to it. And, you know, our Government needs to be doing more of that to separate these harmful activities from the ones that are OK and can be encouraged.

Mr. MALONEY. I thank the gentleman.

Mr. Gibbs?

Mr. GIBBS. Thank you. Ms. Walsh, you talked about how you were surprised when you saw the map. I believe it is this map [indicating a document], where there are 92 countries that have formally endorsed the Belt and Road project. And, of course, most of them are in Asia, some in Africa, a few in South America.

But it is interesting when we talk about choke points, you know, the Panama Canal, the Suez Canal, the Strait of Hormuz—oh, the Persian Gulf, Panama, and those countries around the Red Sea and, of course, in the Middle East are all colored red. So they are all part of the Belt and Road project.

Obviously, today, our U.S. Navy, you know, keeps those areas open. But I guess I am just thinking with the initiatives that China is doing, they probably could cause havoc without a military action, because they got their foot in the door. They control—they make investments there. So it could be political, it could be a mechanical thing, you know, the assets of the infrastructure.

So, I mean, what is the course moving forward?

Ms. WALSH. Well, as my colleague said, I would advocate, as you are talking about here, we need a comprehensive strategy to deal with this.

China's hard power ports and capabilities that they are building literally at sea and on land, that is hard power. We know about their navy and commercial shipbuilding.

It is also soft power, which is the part I think you may be getting at, too, which is, you know, you develop a special economic zone. That is attractive to a lot of countries around the world. You come in with money and infrastructure loans and so on. The blue economy is an important soft power asset that China has and we don't. That is something that countries will want, its maritime industry, jobs, innovation, or at least promised, and also sustainable industry and innovation. That is a soft power tool that will expand that map, I expect.

And then finally, as you note, coercion. We have seen China use economic coercion in the past. I expect they will continue to do this. And once you have both the land-based assets and control, and the willingness to use it, and then you expand that out to sea, I think that is a whole different way of looking at power and presence that we are not ready yet to deal with.

Mr. GIBBS. Now, most of these countries that are on this list are not really allies of ours. Some are: South Korea, Israel, Jordan, Panama.

So, you know, I guess I am just kind of wondering what is happening here. The carrot approach that China is using by bringing in dollars, capital investment, they are just buying into it, it doesn't matter? Or, you know——

Ms. WALSH. I think we need a holistic strategy. You know, much of what I heard in the previous panel—and I often hear—is whole-of-Government, but it really is a defense-oriented, military-oriented allies and partners strategy. I think that is insufficient.

I think it needs to be economic, diplomatic, innovative, and, of course, also military, defense, security. But it is—whole-of-Government is too simplistic. It has to be holistic. To me that means we need a comprehensive strategy, and we need somebody to run that, whether it is one person or one institute, one organization to focus on this, because it is too much for any of us.

Mr. GIBBS. I agree. And, you know, I am glad you held this hearing, Chairman, just to bring this to light, because I don't think most people really understand what is going on.

I think a lot of American citizens understand that China—we have a lot of challenges with China and, you know, what we are going through with the trade war. I think maybe President Trump has got it right, that we have been financing a lot of stuff in China, and now overseas. Maybe we get the trade done, we get some equilibrium there, because this is not sustainable, I think, for the future of our country, for our national security. So——

Ms. WALSH. The first thing, though, we need to understand, the scope and the details, I think, and having a way to do that, so that officials and others can really understand, and then come up with a strategy.

Mr. GIBBS. And I guess, just closing, right now we still are the superpower. We project our power to promote peace around the world—basically, the aircraft carrier groups. And I know China is trying to build their capacity that way, too. So I think that is a concern.

It is economic, like I said earlier, plus it is military. Put the two together, and that is what makes it a strong force. So we have to be prepared for that.

So I have nothing else. I yield back and I think we are probably done.

Mr. MALONEY. I thank the gentleman. Given the lateness of the hour, we will be concluding.

I want to thank the panel. I also just want to underscore a couple of closing points.

We saw recently, in fact, with respect to the Solomon Islands, that they severed diplomatic relations with Taiwan, further isolating Taiwan diplomatically. I think that serves a pretty good example of how these issues get linked, and how it becomes pretty impossible to resist other areas of Chinese influence internationally when you are so interwoven, and how dependent our participation in this competition is, on the point Mr. Hillman made, that we assume a certain model of what we are dealing with. I think you made this point as well, Ms. Walsh.

I thank my colleagues on the other side of the aisle for the bipartisan remarks today, because I want to close by pointing out that a lot of us feel that, for 40 years, both parties have participated in a bipartisan way with a strategy towards China that is starting to show real limitations. Maybe it is not forever. Maybe it is dependent on the current regime, but it is real.

And I think we are beginning to see in a robust, bipartisan way a reassessment on Capitol Hill. That is going to stretch across a lot of different areas of jurisdiction, and the whole of Government certainly sums it up.

But it is not just Government, is it? It is also the American private sector. It is also the American not-for-profit sector. It is also our academic institutions. Those are all elements of the Chinese strategy. And we need to enroll those sectors in our strategy, as well. We prefer to have them not under the control of the Government, but the important role they play is evident when you see the way China is executing on its global strategy through all those areas and more.

So with that I want to thank the panel. I thank my colleagues.

And I will ask unanimous consent that the record of today's hearing remain open until such time as the witnesses provide answers to any questions that may have been submitted to them in writing. Not sure there were any, but if there are.

Further, I ask unanimous consent that the record remain open for 15 days for any additional comments and information submitted by Members or witnesses to be included in the record of today's hearing.

Without objection, so ordered.

If no other Members have anything to add, then the subcommittee will stand adjourned.

[Whereupon, at 4:53 p.m., the subcommittee was adjourned.]

SUBMISSIONS FOR THE RECORD

Prepared Statement of Hon. Sam Graves, a Representative in Congress from the State of Missouri, and Ranking Member, Committee on Transportation and Infrastructure

Thank you, Chairman Maloney.

As a farmer and a Congressman whose district is bounded by the Missouri and Mississippi Rivers, I understand the necessity of access to international markets.

Since 90 percent of international trade moves by sea, access to those markets requires access to maritime transportation.

China clearly understands the importance of controlling the levers of maritime transportation and has set up a government-backed initiative to ensure it can control trade through the Pacific basin and between the Pacific and Europe.

As the Committee's Ranking Member and as a Member of the Armed Services Committee, I am concerned that the trade network they are establishing through ship construction and operation, and infrastructure investment can also be used by China's military.

I looked forward to hearing from the witnesses about the impact of China's Maritime Silk Road Initiative on U.S. maritime trade, as well as the ability of China to project forces through the Pacific basin.

Mr. Chairman, thank you for holding this hearing today.

Letter of October 17, 2019, from Scott N. Paul, President, Alliance for American Manufacturing, Submitted for the Record by Hon. Sean Patrick Maloney

OCTOBER 17, 2019.

Hon. SEAN PATRICK MALONEY,
Chairman,
Subcommittee on Coast Guard and Maritime Transportation, U.S. House Committee on Transportation and Infrastructure, 2331 Rayburn House Office Building, Washington, DC.

Hon. BOB GIBBS,
Ranking Member,
Subcommittee on Coast Guard and Maritime Transportation, U.S. House Committee on Transportation and Infrastructure, 2446 Rayburn House Office Building, Washington, DC.

RE: Comments regarding the October 17th Subcommittee on Coast Guard and Maritime Transportation's Hearing on *China's Maritime Silk Road Initiative: Implications for the Global Maritime Supply Chain*

DEAR CHAIRMAN MALONEY AND RANKING MEMBER GIBBS:

The Alliance for American Manufacturing appreciates the opportunity to submit these comments regarding the October 17th hearing on *China's Maritime Silk Road Initiative: Implications for the Global Maritime Supply Chain*. This hearing comes at a critical time, as the United States wrestles with the economic and national security implications of the deterioration of domestic manufacturing capacity in a wide range of industries, including shipbuilding. At the same time, China's increasingly aggressive posture abroad has focused increased attention on its mercantilist policies and unfair trade practices that distort markets and create global overcapacity, and the implications this has for the U.S. economy and global security.

The American Shipbuilding Industry: American shipbuilding led the world in the decades after World War II, and as recently as 1975 U.S. shipyards built over 75 commercial vessels in a year. But a combination of subsidized foreign competition and underinvestment by U.S. policymakers led to steep reductions in production, falling to less than five ships in 1990. The United States is now responsible for less than a half of a percent of global commercial shipbuilding.[1]

Japan, South Korea and China have heavily subsidized their shipbuilding industries for years, giving them a massive competitive advantage over U.S. commercial shipbuilders. In recent congressional testimony Mark Buzby, Administrator of the Maritime Administration, stated that this has "virtually eliminated the ability for U.S. shipyards to compete in the global market," locking the shipyards that produce large merchant-type ships "into a downward spiral of decreasing demand and an increased divergence between domestic and foreign shipbuilding productivity and pricing."[2]

Economic and National Security Concerns: This erosion of our shipbuilding base has far-reaching implications for our national security. In times of crisis, the Navy relies on a mix of government-owned and commercial ships to assist with sealift activity. According to a recent report by the Center for Strategic and Budgetary Assessments, the Department of Defense is currently short 200,000 square feet of sealift capacity and would need another 1,900 mariners to be able to undertake extended operations, while much of the existing capacity is approaching obsolescence.[3] Meanwhile, the commercial fleet, long an asset that could be relied upon to assist the military in times of need, struggles in the face of subsidized competition from abroad. The continued deterioration of our domestic shipbuilding and commercial shipping capacity threatens the ability of our commercial fleet to step up in an emergency.

The erosion of commercial shipbuilding also contributes to concerns about our defense supply chain. According to a 2018 Pentagon report, our defense industrial base has lost over 20,500 firms since 2000. The report highlights that manufacturers in the shipbuilding supply chain "were among the hardest hit by the global shift in the industrial base over the last 20 years."[4] In some cases this has led to an alarming lack of redundancy, forcing the Navy to rely on a single domestic supplier for critical inputs. According to Mike Petters, President and CEO of Huntington Ingalls Industries—the largest military shipbuilder in the United States—over half of their suppliers are the sole source of certain parts and services.[5]

In addition to its national security significance, the American maritime industry is an important driver of our economy. All told, the industry supports 650,000 jobs and contributes over $150 billion to the economy.[6] But these figures belie the precarious position of our commercial shipbuilding industry. According to the Eno Center for Transportation, shipbuilding, which directly employed 180,000 workers in 1980, was on track to employ as many as 250,000 Americans in 2013 had it maintained its share of the labor market. Instead, the rapid movement of shipbuilding activity overseas has reduced employment to 110,000.[7]

While this hurts the communities where shipyards are located, its impact is felt all along the supply chain. Suppliers of everything from steel to propulsion systems to a wide range of services sell to U.S. shipbuilders. With that supply chain in mind, shipbuilding supports nearly 290,000 jobs through indirect and induced activity, in-

[1] Klein, A. (2015, September 1). Decline in U.S. Shipbuilding Industry: A Cautionary Tale of Foreign Subsidies Destroying U.S. Jobs. Retrieved October 14, 2019, from http://www.enotrans.org/article/decline-u-s-shipbuilding-industry-cautionary-tale-foreign-subsidies-destroying-u-s-jobs/.

[2] U.S. Maritime and Shipbuilding Industries: Strategies to Improve Regulation, Economic Opportunities and Competitiveness: Hearing before the Committee on Transportation and Infrastructure, Subcommittee on Coast Guard and Maritime Transportation, House, 116th Cong. (2019) (Testimony of Mark Buzby, Administrator, Maritime Administration). Retrieved October 15, 2019, from https://www.transportation.gov/testimony/us-maritime-and-shipbuilding-industries-strategies-improve-regulation-economic.

[3] Walton, T., Boone, R., & Schramm, H. (2019). *Sustaining The Fight: Resilient Maritime Logistics For A New Era*. Center for Strategic and Budgetary Assessments. Retrieved October 11, 2019, from https://csbaonline.org/uploads/documents/Resilient__Maritime__Logistics.pdf.

[4] Interagency Task Force in Fulfillment of Executive Order 13806. (2018). *Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States*. Retrieved October 11, 2019, from https://media.defense.gov/2018/Oct/05/2002048904/-1/-1/1/ASSESSING-AND-STRENGTHENING-THE-MANUFACTURING-AND-DEFENSE-INDUSTRIAL-BASE-AND-SUPPLY-CHAIN-RESILIENCY.PDF.

[5] Cameron, D. (2012, May 9). Shipbuilder warns Pentagon cuts could hike costs. Retrieved October 15, 2019, from https://www.marketwatch.com/amp/story/guid/C5E73647-2699-4A71-AAA4-449036AC494D.

[6] U.S. Maritime Workforce Grows to 650,000. (2019, April 4). Retrieved October 15, 2019, from https://www.maritime-executive.com/article/u-smaritime-workforce-grows-to-650-000.

[7] Maritime Administration. (2015). *The Economic Importance of the U.S. Shipbuilding and Repairing Industry*. Retrieved, October 15, 2019, from https://www.maritime.dot.gov/sites/marad.dot.gov/files/docs/resources/3641/maradeconstudyfinalreport2015.pdf.

cluding nearly 30,000 in manufacturing.[8] For example, just last year the largest container ship built in the U.S., the Daniel K. Inouye, was completed. It used over 13,000 tons of steel plate in its structure, all produced at ArcelorMittal plate facilities in the United States.[9]

China's Aggressive Moves into the Maritime Industry: While commercial shipbuilding initially shifted from the U.S. to competitors in other countries, China has moved rapidly to grow its footprint in this sector. For years, we have seen the destructive impact of China's state-led capitalism on our domestic manufacturing sector, and its ripple effects on thousands of communities across our nation. Between 2001—when China entered the World Trade Organization—and 2017, 3.4 million U.S. jobs were lost or displaced because of our massive bilateral trade deficit with China.[10] This economic carnage has been fueled by predatory trade practices and disruptive economic policies, including heavy subsidization of state-owned enterprises and other firms that Beijing has deemed strategically important for its own security and economic interests.

China's state-led capitalism has led to leaps in global market share and massive global overcapacity in a wide range of industries, from steel to aluminum to solar panels. Shipbuilding is no exception. Since 2000, when China accounted for about five percent of global production, its shipbuilding sector has grown immensely, now accounting for 43 percent of the global market.[11] With the inclusion of ocean engineering equipment and high-end vessels in its Made in China 2025 plan, the Chinese government has made clear its intention to continue to use heavy intervention to support its shipbuilding and maritime industries.

Conclusion: This is a critical time for our domestic shipyards. The recent growth in U.S. energy exports offers a unique opportunity to cultivate a vigorous shipbuilding industry to meet our maritime commerce and security needs while also providing a boost to our economy. It makes no sense to exchange one foreign dependency for another, but that is precisely what is happening. Just as the shale gas boom has reduced our dependence on foreign energy, we have grown almost completely dependent on other nations for the ships necessary to export liquefied natural gas (LNG). There is currently bipartisan legislation, the *Energizing American Shipbuilding Act*, that would help reverse this by requiring a portion of LNG and crude oil exports to be transported on U.S.-built and U.S.-crewed vessels. Passage of this legislation would be an important step to restoring the health of our commercial shipbuilding sector.

Our competitors around the globe have invested heavily in their shipbuilding industries. Decades of promises broken by China to reform its state-led capitalism, to reduce industrial overcapacity and to curtail unfair trade practices lay bare the increased need to strengthen our own key industries. It is time we give serious consideration to how we foster a robust and resilient shipbuilding sector, ready to meet the demands of the modern maritime industry. Strengthening our shipyards will not only bolster a neglected part of our national defense, it will support thousands of shipbuilding jobs and even more throughout the supply chain.

Thank you for the opportunity to submit these comments regarding the Subcommittee on Coast Guard and Maritime Transportation's hearing on *China's Maritime Silk Road Initiative: Implications for the Global Maritime Supply Chain*.

Sincerely,

SCOTT N. PAUL,
President, Alliance for American Manufacturing.

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[8] ibid

[9] Largest U.S. containership Daniel K. Inouye built with ArcelorMittal USA plate. (2018, December 7). ArcelorMittal. Retrieved October 14, 2019, from https://usa.arcelormittal.com/news-and-media/our-stories/2018/dec/12-07-2018.

[10] Scott, R., & Mokhiber, Z. (2018). *The China toll deepens*. Economic Policy Institute. Retrieved October 15, 2019, from https://www.epi.org/publication/the-china-toll-deepens-growth-in-the-bilateral-trade-deficit-between-2001-and-2017-cost-3-4-million-u-s-jobs-with-losses-in-every-state-and-congressional-district/

[11] Colton, T., & Huntzinger, L. V. (2002). *A Brief History of Shipbuilding in Recent Times*. Center for Naval Analyses. Retrieved October 15, 2019, from https://www.cna.org/CNA_files/PDF/D0006988.A1.pdf.

Moss, T. (2019, July 2). China to Weld Its Biggest Shipbuilders Into Single State-Run Giant. *Wall Street Journal*. Retrieved October 15, 2019, from https://www.wsj.com/articles/china-to-weld-its-biggest-shipbuilders-into-single-state-run-giant-11562067663

Joint Statement of Kathryn Waldron, Fellow, National Security and Cybersecurity, R Street Institute and Kristen Nyman, Government Affairs Specialist, National Security and Cybersecurity, R Street Institute, Submitted for the Record by Hon. Sean Patrick Maloney

Chairman Maloney, Ranking Member Gibbs and members of the subcommittee:

Thank you for holding this important hearing on *China's Maritime Silk Road Initiative: Implications for the Global Maritime Supply Chain*. This statement is offered by scholars from the R Street Institute's National Security and Cybersecurity team who have studied supply chain security extensively. The R Street Institute is a nonprofit, nonpartisan public policy research organization whose mission is to engage in research and outreach to promote free markets and limited, effective government.

China's Belt and Road Initiative (BRI) is an ambitious infrastructure development strategy to create a vast global transportation and shipping network aimed at increasing Chinese economic trade. First proposed by President Xi Jinping in 2013, the 21st Century Maritime Silk Road is the sea-based component of this strategy "...designed to extend from China's coast to Europe through the South China Sea and the Indian Ocean in one route, and from China's coast through the South China Sea to the South Pacific in the other."[1] In practical terms, this has led to increased Chinese investment in building and operating ports throughout the world.

While many countries were initially eager to embrace Chinese investment in their infrastructure, concerns over increased public debt have led former partners to shelve development projects.[2] But an inequitable reaping of the economic benefits isn't the only reason some countries are skeptical of the BRI. Indeed, China's development of a modern, maritime silk road also has problematic cybersecurity implications. The two main concerns are supply chain risks for ports that dock U.S. ships and cyber risks that would derive from a Chinese "digital silk road."

SUPPLY CHAIN RISKS FOR PORTS THAT DOCK U.S. SHIPS

The first concern is that Chinese-built or -operated ports present a national security risk for U.S. or NATO ships docked overseas. Just last year, Shanghai International Port Group, a Chinese company, announced plans to take over management of the Israeli port of Haifa. American stakeholders quickly raised national security concerns over the Chinese-Israeli deal. Former U.S. ambassador to Israel Dan Shapiro stated that "to have a Chinese company operate a port of a close ally potentially poses a significant challenge and maybe a risk for US Navy operations."[3] Retired U.S. admiral Gary Roughead also pointed out that Chinese port management could allow their intelligence agencies to better anticipate U.S. naval activities. But ship movement isn't the only information the Chinese could access: "Significantly, the information systems and new infrastructure integral to the ports and the likelihood of information and electronic surveillance systems jeopardize U.S. information and cybersecurity," Roughhead warned.[4] The potential for hostile foreign governments to access proprietary and sensitive military intelligence is of grave concern to U.S. domestic security, and Congress would do well to address this supply chain vulnerability.

Physical access to ports is not the only maritime supply chain risk involved. China's construction of a "digital silk road" might pose an even greater risk to the U.S. supply chain. Just as the 21st century version of the maritime silk road manifested itself as Chinese investment in physical infrastructure, the digital silk road would promote Chinese investment in digital infrastructure.

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[1] National Development and Reform Commission, "Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road," Ministry of Foreign Affairs and Ministry of Commerce of the People's Republic of China with State Council authorization, March 28, 2015. http://en.ndrc.gov.cn/newsrelease/201503/t20150330_669367.html.

[2] Amanda Erikson, "Malaysia cancels two big Chinese projects, fearing they will bankrupt the country," *The Washington Post*, Aug. 21, 2018. https://www.washingtonpost.com/world/asia_pacific/malaysia-cancels-two-massive-chinese-projects-fearing-they-will-bankrupt-the-country/2018/08/21/2bd150e0-a515-11e8-b76b-d513a40042f6_story.html; Nyshka Chandran, "Fears of excessive debt drive more countries to cut down their Belt and Road investments," CNBC, Jan. 17, 2019. https://www.cnbc.com/2019/01/18/countries-are-reducing-belt-and-road-investments-over-financing-fears.html.

[3] Raphael Ahren, "Has Israel made a huge mistake letting a Chinese firm run part of Haifa port?" *The Times of Israel*, Dec. 20, 2018. https://www.timesofisrael.com/has-israel-make-a-huge-mistake-letting-achinese-firm-run-part-of-haifa-port/.

[4] David Brennan, "Chinese Deal to Take Over Key Isreali Port May Threaten U.S. Naval Operations, Critics Say," *Newsweek*, Sept. 14, 2018. https://www.newsweek.com/chinese-deal-take-over-key-israeli-port-may-threaten-us-naval-operations-1121780.

"Digital Silk Road" Supply Chain Concerns

Recent speeches from Xi Jinping and other government officials have pushed Chinese cybersecurity firms to invest in countries where BRI development projects are underway.[5] Their goal, according to Vice-Minister of Information Technology Chen Zhaoxiong, is to build "a community of common destiny in cyberspace."[6] A cyber community of this magnitude fostered by China should raise alarms for anyone in favor of protecting free speech. China's "Great Firewall" reveals the Chinese Communist Party's (CCP) need to maintain operational control of any cyber community.[7] Authoritarian-leaning countries that embrace Chinese investment in their ports, like Malaysia and Vietnam, may also embrace China's exporting of its surveillance technology and policies of authoritarian censorship and Internet control.[8]

Countries more resistant to Chinese-style authoritarianism may also struggle to contain the cybersecurity of their digital ecosystem as Chinese software and hardware becomes more pervasive. The fear that Chinese companies will incorporate backdoors into telecom systems for CCP exploitation has already been a topic of fierce debate thanks to the Huawei situation.

While certain U.S. policymakers may want to bar China from the global digital system entirely, it is simply too late. The digital fabric is too intertwined for any separation to be viable. Unlike the United States, the rest of the world has not shown willingness to ban Chinese companies. Therefore, without allied consensus, we must assume there are no safe systems in cyberspace. Whether a given port is attached to an ocean or a computer, policymakers must keep in mind that China will be keeping a keen eye on everything flowing through it, be it ships or information.

An outright ban-and-sanction plan is infeasible, at least in the long term, in our digitally interconnected reality. The U.S. government does, however, have certain recourses to mitigate supply chain cyber risks.

Policy Recommendations

In order to address maritime supply chain risks, the United States and its allies will have to carefully vet the arrangements they make with regard to port operation and production. The United States should promote economic competition, clearing any trade barriers that impede American companies from bidding on international construction projects. In countries where American companies do not have the capacity to make competitive bids on construction projects, the United States should look for alternative diplomatic opportunities to counterbalance China's political influence and encourage allies to do the same. U.S. policymakers should also continue to point out the strings attached to Chinese investment. Finally, as ports become increasingly automated, the United States should work with international standard-setting organizations and local governments to ensure appropriate cybersecurity controls are built into port cybersystems.

As a prescription for the larger supply chain issue at hand, the government should consider implementing these strategies on a broader scale. Promoting market competition will allow friendlier producers to enter markets currently dominated by Chinese companies. One of the main issues with Huawei, for instance, is that they are one of the only companies on the path to providing 5G.

Another strategy is working with standard-setting organizations, like the International Organization for Standardization, to limit Chinese influence and ensure fair standard-setting, rather than regulations that would benefit any one country's products or production methods.

Collaborating with America's allies to collectively confront bad actors is crucial to ensuring companies with bad practices face enough pressure to change their behavior.

Regardless of the strategic path it chooses, one thing is certain: The United States will have to take decisive action in order to prevent China from gaining outsized

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[5] Kieran Green, "Securing the Digital Silk Road," Center for Advanced China Research, Feb. 11, 2019. https://www.ccpwatch.org/single-post/2019/02/11/Securing-the-Digital-Silk-Road.

[6] Staff, "China talks of building a 'digital Silk Road,'" *The Economist*, May 31, 2018. https://www.economist.com/china/2018/05/31/china-talks-of-building-a-digital-silk-road.

[7] Bloomberg News, "The Great Firewall of China," *The Washington Post*, Nov. 5, 2018. https://www.washingtonpost.com/business/the-great-firewall-of-china/2018/11/05/5dc0f85a-e16d-11e8-ba30-a7ded04d8fac_story.html.

[8] Ralph Jennings, "Chinese Get Chances to Invest in Vietnam Despite Political Rifts," *Voice of America*, Dec. 17, 2018. https://www.voanews.com/east-asia/chinese-get-chances-invest-vietnam-despite-political-rifts.

influence over the global supply chain and growing from its present nefarious state to an even more dangerous one.

We thank the committee for recognizing the importance of addressing supply chain vulnerabilities. If we can be of any assistance to members of the committee, please feel free to contact us or our colleagues at the R Street Institute.

Statement of the United Steelworkers, Submitted for the Record by Hon. Sean Patrick Maloney

Dear Chairman Maloney and Ranking Member Gibbs:

On behalf of the 850,000 members we represent, the United Steelworkers (USW) appreciates the opportunity to submit these comments in regard to the October 17th hearing on "China's Maritime Silk Road Initiative: Implications for the Global Maritime Supply Chain." This hearing is an important step in highlighting the reduction of the domestic maritime industry and the economic and national security threat that looms from lack of investment in the commercial and naval maritime industry.

WHO WE REPRESENT IN THE INDUSTRY

The USW represents workers across various sectors and crafts in the shipbuilding industry. Our members produce, build, and refurbish vessels and vessel components that are crucial to our national economy and security. From building and refurbishing Naval vessels at Newport News Shipyard in Newport News, VA, to manufacturing engines for the Coast Guard at Fairbanks Morse in Beloit, WI, to milling iron and steel across the country, our members provide essential domestic manufactured products throughout the supply chain.

American workers benefit when the country supports a domestic shipbuilding industry that can compete globally. For example, Fincantieri Bay Shipbuilding and The Interlake Steamship Company recently cut the first piece of steel for the construction of a new bulk material transport ship in Sturgeon Bay, WI. The steel was sourced from ArcelorMittal's Burns Harbor steelworks location and represents a complete life cycle for domestic material and manufacturing. It is the company's first ship built since 1981 and the first bulk ship designed and built for the Great Lakes since 1983.[1]

THE SHIFT OF SHIPBUILDING

America and its workers once led the world in shipbuilding. A little more than thirty years ago the US was building most of the world's fleets.[2] Today, America ranks nineteenth in the world for commercial shipbuilding, accounting for approximately 0.35 percent of global new construction.[3] This happened as other countries subsidized shipbuilding while the US stood idle.

The playing field is no longer level and US shipbuilders are unable to compete in a global market of subsidized builders. Foreign builders who capitalized on state subsidies have seized market share at the detriment of the U.S. industry. In 2007, South Korea had 37 percent of global ship construction, Japan had 27 percent, and China had 21 percent. Today, China has 43 percent, Korea has 27 percent, and Japan has 24 percent.[4]

With this shift in the global shipbuilding market, the American workforce has sustained substantial losses. In 1980, there were approximately 180,000 shipbuilding and repairing jobs.[5] According to the most recent US Economic Census that number has fallen 40 percent to approximately 105,000.[6] The economic impact of those job losses reaches further than just the shipbuilders. The Department of Transportation estimates that there have been roughly 400,000 indirect jobs lost that supported the industry and its workers.[7]

[1] https://fincantierimarinegroup.com/8-14-2019/

[2] Associated Press, Shipyard Closing Reflects Decline of a U.S. Industry, Los Angeles Times, August 8, 1985

[3] https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/maritime__trade__and__transportation/2007/html/table__07__02.html

[4] https://www.brsbrokers.com/assets/review__splits/BRS-Review2019-01-Shipbuilding.pdf

[5] https://www.princeton.edu/~ota/disk3/1983/8302/830206.PDF

[6] https://www.marad.dot.gov/wp-content/uploads/pdf/MARAD__Econ__Study__Final__Report__2013.pdf

[7] https://www.marad.dot.gov/wp-content/uploads/pdf/MARAD__Econ__Study__Final__Report__2013.pdf

China Growth and Implications for the domestic industry

As indicated above, the People's Republic of China has increased its market share in the global shipbuilding industry over the last couple decades. In a 2014 report, the Chamber of Commerce of the European Union highlighted that the shipbuilding industry in China had significant overcapacity issues. Much like other significant manufacturing industries like steel, glass, paper, aluminum and fiber optics this overcapacity impacts private industries ability to capitalize and remain competitive.[8]

In the last year China's shipbuilding industry has gone through significant mergers eliminating domestic competition, and now the 10 largest of China's remaining 117 shipyards built roughly three quarters of the country's ships last year. Shipping technology, one of 10 high-tech sectors covered by the government's Made in China 2025 industrial-upgrade blueprint has seen significant consolidation in China but that has not led to decreased production. Last year, two of the largest Chinese state operated firms CSIC and CSSC together produced $74.4 billion in revenue and $1.1 billion in profit and are now slated to merge.[9]

Similar to concerns by the Rail Security Alliance (RSA) regarding the impact of China State Owned Enterprise (SOE) CRRC in the Australian rail market, the domestic commercial shipbuilding industry could face complete collapse without more aggressive intervention. RSA highlights that in less than 10 years, CRRC effectively decimated the freight rail sector, forcing the four domestic suppliers out of business and out of the rail market which left only CRRC standing. Today, almost no meaningful Australian passenger or freight rolling stock manufacturing exists—CRRC's Australia footprint is almost exclusively that of an assembler of Chinese-made parts and a financier of purchases from CRRC.[10]

Implications on national security

Shipbuilding for the U.S. Navy and Coast Guard is the largest single use of American steel for military and homeland defense with steel making up about half of a warship's weight. A 100,000-ton aircraft carrier, for example, requires about 48,000 tons of steel.[11]

The shrinking capacity of commercial shipbuilding has a lasting effect on our national security and ability of the aging sealift fleet to assist Navy in times of need. The reduced capacity leads to concerns with the supply chain for military defense ship building and a lack of innovation efforts in the industry. The Pentagon has reported a loss of over 20,500 firms supplying manufacturing of shipbuilding components since 2000.[12] According to the Vice Chief of Naval Operations and other Naval leaders, the current Naval fleet of 275 ships is overworked and under maintained and an expansion of Naval shipbuilding is needed.[13] Without action, the Chinese will saturate and control the shipbuilding market much like they have attempted and successfully done in other industries.

Conclusion

A vibrant and re-emerging American shipbuilding industry is vital to the nation's security and workforce. It is time to seriously consider policy and legislative solutions to invigorate competitive domestic shipbuilding that meets the demands of merchant and military needs given the uncompetitive advantages state owned enterprises in China and elsewhere have in global maritime ship construction. Investment in domestic shipbuilding will boost our economy, American workforce, and national security. The USW urges the Committee to undertake bipartisan efforts to address these industry issues prioritizing the American worker, American manufacturing, and American security and defense.

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[8] https://www.europeanchamber.com.cn/en/publications-overcapacity-in-china

[9] https://www.wsj.com/articles/china-to-weld-its-biggest-shipbuilders-into-single-state-run-giant-11562067663?mod=article__inline

[10] https://homeland.house.gov/imo/media/doc/Testimony-Olson.pdf

[11] http://archive.fortune.com/magazines/fortune/fortune__archive/2002/07/22/326287/index.htm

[12] https://media.defense.gov/2018/Oct/05/2002048904/-1/-1/1/ASSESSING-AND-STRENGTHENING-THE-MANUFACTURING-AND-DEFENSE-INDUSTRIAL-BASE-AND-SUPPLY-CHAIN-RESILIENCY.PDF

[13] https://news.usni.org/2017/02/08/vcno-moran-navy-is-less-ready-because-were-too-small

APPENDIX

QUESTIONS FROM HON. SEAN PATRICK MALONEY TO CHAD SBRAGIA, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR CHINA, OFFICE OF THE SECRETARY OF DEFENSE

Question 1. Do you believe that the number of mariners we currently have (under 12,000) is enough to effectively surge and mobilize our existing sealift fleet in a timely and efficient manner for the duration of a conflict?

ANSWER. I believe we have enough mariners to maintain an initial rapid sealift push; however, over the long term, I do not believe we have sufficient numbers of mariners. The Maritime Administration (MARAD) estimates the United States would require an additional 2,000 mariners in the case of an extended conflict. We continually work to stress and test our capabilities. On September 16, 2019, the U.S. Transportation Command ordered the largest Turbo activation of Sealift Ships since 2003 to stress-test the ability to deploy quickly the cargo ships required for a large-scale armed force deployment and materiel movement. This no-notice exercise involved 33 vessels located on the Atlantic, Pacific, and Gulf Coasts, 6 from the Navy's Military Sealift Command (MSC) and 27 from the U.S. Department of Transportation's MARAD Ready Reserve Force (RRF). (Reference the MARAD Administrator's National Defense Transportation Association (NDTA) 2019 remarks). There were no issues with crewing the ships for this short-duration exercise; however, longer-term employment would be an issue.

Question 2. How significantly do mariners impact our national security and execution of the National Defense Strategy?

ANSWER. Mariners are extremely important to our ability to execute the National Defense Strategy. They are the ones who would crew the ships that would deliver our lethal force around the globe at the time and place of our choosing. Without them, we cannot project power, respond to crisis, or sustain operations.

Question 3. What domestic agreements can we improve to ensure access to required maritime capabilities and capacities, and what foreign partners can we work closer with to further our maritime access?

ANSWER. Continuing to support and strengthen the Jones Act is essential to keeping our maritime fleet alive. We must look to expand business opportunities for U.S. vessels to make them more commercially viable. Additionally, ensuring compliance with cargo preference laws, the Maritime Administration (MARAD) is currently working with the Defense Logistics Agency and forward-based Military Service commands to ensure they are in compliance with cargo preference laws. Another area is continuing support for the development and retention of mariners, such as the President's March 2019 Executive Order that allows military mariners to transfer their time, training, and skills to commercial positions.

QUESTIONS FROM HON. RICK LARSEN TO CHAD SBRAGIA, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR CHINA, OFFICE OF THE SECRETARY OF DEFENSE

Question 1. Can you expand on the relationship between the People's Liberation Army (PLA) and "One Belt, One Road" (OBOR) and how it will affect U.S. national security?

ANSWER. China is competing for access and influence at the global level. This past August I met with counterparts from China's military for a brief on China's 2019 National Defense White Paper, which they explained defines China's national defense aims, including "safeguard[ing] China's overseas interests." The White Paper identifies a need to build China's far seas forces and a need for "overseas logistical facilities." China's Science of Military Strategy, an authoritative military document published in 2013, indicates its military strategists have also long been concerned with safeguarding China's maritime industry and the ability of Chinese ships to transit strategic sea lines of communication. China's policymakers may believe that by leading with economic and technology exchanges in their interactions with partnering countries, China can subsequently generate opportunities for defense cooperation or military access. For example, in 2017, the People's Liberation Army (PLA) Navy deployed its Navy Task Group 150 on a cruise from Shanghai to Europe, not coincidentally along the pathway of the Maritime Silk Road. Along the way, Task Group 150 made numerous goodwill port calls and conducted at-sea exercises with One-Belt One-Road partnering nations.

Question 2. What is the Department of Defense doing to counter partner nation's reliance and dependence on Chinese maritime investments?

ANSWER. Allies and partners provide an asymmetric advantage China cannot match, and are a key element of our National Defense Strategy. We are working closely with our partners to share best practices, understand implications and comprehensive costs, and provide high-standard alternatives to Chinese maritime investments through initiatives, including: (1) the Maritime Security Initiative, which builds partners' ability to conduct maritime security and maritime domain awareness operations and advances interoperability; (2) enhanced engagement in the Pacific Islands, including Key Leader Engagements, ship visits and shiprider agreements, financial support to Compact States, and $7 million in Foreign Military Financing in 2018.

Question 3. What are the national security implications of the Chinese port in Djibouti?

ANSWER. China is aggressively seeking opportunities for military access and basing. The People's Liberation Army (PLA) Navy has argued in its publications for a long-term strategy to obtain bases overseas, using methods such as constructing, purchasing, and long-term leases to obtain rights in foreign ports. The national security implications of China's first overseas military facility in Djibouti, in operation since late 2017, located on the Bab-el-Mandeb Strait in the Red Sea, are threefold: the operational advantage for China's future use of force in the region, use as a testbed to perfect its global deployments and future basing, and the increased resource requirements on the United States and partner nations to compete. International press reporting has indicated China is seeking to expand its military basing and access in the Middle East, Southeast Asia, and the western Pacific, and may be considering additional locations in Africa. In the Arctic, civilian research could also support a strengthened Chinese military presence. China's maritime infrastructure activities can also be leveraged to exert political influence over countries. China holds 80 percent of Djibouti's debt, increasing risk of China's outsized influence over Djiboutian affairs.

Question 4. Do you believe the current number of U.S. mariners (under 12,000) is enough to effectively surge and mobilize our existing sealift fleet in a timely and efficient manner for the duration of a conflict?

ANSWER. [See response to question 1 from Hon. Maloney above.]

Question 4a. follow-up: How significantly do mariners impact our national security and execution of the National Defense Strategy?

ANSWER. [See response to question 2 from Hon. Maloney above.]

Question 5. What domestic agreements can we improve to ensure access to required maritime capabilities and capacities, and what foreign partners can we work closer with to further our maritime access?

ANSWER. [See response to question 3 from Hon. Maloney above.]

QUESTIONS FROM HON. SEAN PATRICK MALONEY TO LIEUTENANT GENERAL GIOVANNI K. TUCK, DIRECTOR FOR LOGISTICS, J4, JOINT CHIEFS OF STAFF

Question 1. What are the implications of China expanding its control and influence in and around ports frequented by U.S. flagged ships? Specifically, emerging 5G infrastructure capabilities?

ANSWER. There are many implications, along with 2nd, 3rd and 4th order effects. Access to ports can be limited or removed. Access to ships can also become more costly, be reduced, or even eliminated. Security of our data and systems are also at risk. Our data that transits Chinese IT infrastructure and systems can be used to bolster Chinese AI and decrease our competitive edge. Additionally, the Chinese may be able to drive up market prices when they effectively own the majority of the ports and ships, and container operations.

Question 2. What types of trade and security investments should the U.S. make in the areas covered by China's Maritime Silk Road initiative? How might these investments promote American commerce?

ANSWER. This question is not in J4's expertise to answer. Defer to Commerce Department.

Question 3. Does the military have a role in a Whole of Government approach to compete with China's Maritime ambitions?

ANSWER. Yes. While the Maritime Silk Road Initiative is primarily a geopolitical and economic initiative, the military does play a role in the area of competition. For the Chinese, it provides options for increased PLA presence through extended sustainment nodes. For the U.S., the challenge becomes political-military in nature—how do we maintain access for force projection and sustainment. I meet quarterly with the Whole of Government Logistics Committee to discuss ways we can work together better. For the military's part, the DOD must maintain sufficient capacity and capability to ensure we are able to execute the NDS. The military can also continue freedom of navigation of the seas and continue to use ports, and invest in our relationships with our partner and ally nations.

Question 4. Do we have the critical capacity in the Pacific to be able to address activity in the South China Sea?

ANSWER. The joint logistics enterprise must be postured with the right capability and capacity at the right locations in order to effectively support multi-domain and distributed operations. USINDOPACOM is critically dependent on tactical airlift and sealift capacity, which expands options for force design and maneuver. Increased tactical airlift and sealift capacity further increase survivability as it becomes more difficult for an adversary to counter a highly maneuverable joint force. These tactical lift assets play just as important a role as strategic lift assets in ensuring our ability to create a resilient and agile logistics network. Significant and sustained investment in munitions is needed to reduce risk to current and future strategic readiness. Statement by Admiral Davidson, Commander of USINDOPACOM before SASC, 12 February 2019.

QUESTIONS FROM HON. RICK LARSEN TO LIEUTENANT GENERAL GIOVANNI K. TUCK, DIRECTOR FOR LOGISTICS, J4, JOINT CHIEFS OF STAFF

Question 1. Can you expand on the relationship between the People's Liberation Army (PLA) and "One Belt, One Road" (OBOR) and how it will affect U.S. national security?

ANSWER. This question is not in J4's expertise to answer. Defer to the Intel community.

Question 2. What is the Department of Defense doing to counter partner nation's reliance and dependence on Chinese maritime investments?

ANSWER. This question is not in J4's expertise to answer. Defer to OSD.

Question 3. What are the national security implications of the Chinese port in Djibouti?

ANSWER. A response was not received at the time of publication.

Question 4. Do you believe the current number of U.S. mariners (under 12,000) is enough to effectively surge and mobilize our existing sealift fleet in a timely and efficient manner for the duration of a conflict?

ANSWER. I believe we have enough mariners to maintain an initial rapid sealift push, however, over the long term, I do not believe we have sufficient numbers of mariners. Maritime Administration (MARAD) estimates we are short nearly 2000 mariners. We continually work to stress and test our capabilities. On September 16, 2019, the U.S. Transportation Command ordered the largest Turbo activation of Sealift Ships since 2003 to stress-test the ability to quickly deploy the cargo ships required for a large scale armed force deployment and materiel movement. This no-notice exercise involved 33 vessels located on the Atlantic, Pacific and Gulf Coasts, six from the Navy's Military Sealift Command (MSC) and 27 from the U.S. Department of Transportation's MARAD Ready Reserve Force (RRF). (Reference MARAD Administrator's NDTA 2019 remarks). There were no issues with crewing the ships for this short duration exercise, however longer term employment will be an issue.

Question 4a. follow-up: How significantly do mariners impact our national security and execution of the National Defense Strategy?

ANSWER. Mariners are the lifeblood that allow us to execute the National Defense Strategy. They are the ones who crew the ships that deliver our lethal force around the globe at the time and place of our choosing. Without them, we cannot project power, respond to crisis, nor sustain operations.

Question 5. What domestic agreements can we improve to ensure access to required maritime capabilities and capacities, and what foreign partners can we work closer with to further our maritime access?

ANSWER. Continuing to support and strengthen the Jones Act is essential to keeping our maritime fleet alive. We must look to expand business opportunities for U.S. vessels to make them more commercially viable. Additionally, ensuring compliance with cargo preference laws, MARAD is currently working with DLA and forward based service commands to ensure they are in compliance. Another area is continuing support for the development and retention of mariners, such as President's March 2019 Executive Order that allows military mariners to transfer their time, training and skills to commercial jobs.

QUESTIONS FROM HON. ANTHONY G. BROWN TO LIEUTENANT GENERAL GIOVANNI K. TUCK, DIRECTOR FOR LOGISTICS, J4, JOINT CHIEFS OF STAFF

Question 1. The USGC recently announced that they are "doubling down on Oceania" with plans to homeport three of its newest fast-response cutters in Guam within the next two years. How is the USGC maintaining readiness is its domestic focused missions as it devotes more resources to overseas operations?

ANSWER. This question is not in J4's expertise to answer. Defer to USCG.

Question 2. As the Coast Guard continues to expand operations overseas, is it being properly reimbursed by the Department of Defense for missions that fall primarily in the Department of Navy's jurisdiction?

ANSWER. This question is not in J4's expertise to answer. Defer to USCG.

QUESTIONS FROM HON. SEAN PATRICK MALONEY TO CAROLYN BARTHOLOMEW, CHAIRWOMAN, UNITED STATES-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

Question 1. How, if at all, could federal agencies improve trade and security programs and policies to promote American commerce in the regions covered by China's Maritime Silk Road initiative?

ANSWER. It is vital that the United States take significant steps to expand our presence in regions covered by China's Maritime Silk Road. Those steps must be economic, diplomatic, security-focused, and political. As China expands its global footprint, we must focus on strengthening our relationships with allies, partners, and friends, and further develop relationships with other countries.

I commend the Congress for its work in developing and passing the BUILD Act, which is an important step toward strengthening and modernizing U.S. international development finance. Fully funded, the BUILD Act will notably more than double our development finance lending capacity through the establishment of the new U.S. International Development Finance Corporation. Congress should also reauthorize and fund the Ex-Im Bank.

Additionally, the Commission recommended in our 2018 Annual Report that:

> Congress create a fund to provide additional bilateral assistance for countries that are a target of or vulnerable to Chinese economic or diplomatic pressure, especially in the Indo-Pacific region. The fund should be used to promote digital connectivity, infrastructure, and energy access. The fund could also be used to promote sustainable development, combat corruption, promote transparency, improve rule of law, respond to humanitarian crises, and build the capacity of civil society and the media.

Enhancing U.S. security commitments in the Indo-Pacific is another important pillar of promoting U.S. commerce along the Maritime Silk Road. To that end, the Commission recommends in our 2019 Annual Report that:

> Congress support the implementation of the Indo-Pacific Security Initiative to align U.S. budgetary commitments with national security objectives and build the confidence of allies concerning U.S. commitment to security in the Indo-Pacific region.

Question 2. To what extent do U.S. maritime security programs also promote American commerce in the regions covered by China's Maritime Silk Road initiative?

ANSWER. Security of sea lanes, including those in the Indo-Pacific, is vital to U.S. commercial interests. In 2016, for example, more than 14 percent of U.S. maritime trade and an estimated one-third of all global shipping passed through the South

China Sea.[1] U.S. maritime security programs support an environment that enables American commerce to be safely conducted abroad.

- *United States Maritime Administration Office of International Activities*: Maritime Administration's Office International Activities works with U.S. carriers and shippers to improve maritime transport relations abroad and to ensure U.S. carriers' transport of U.S. international trade cargoes in a secure, safe, and competitive transportation environment.[2] The office facilitates U.S. carriers' access to foreign trade cargoes and "negotiates reciprocal foreign market access treatment for U.S. carriers in international trade."[3] The United States maintains maritime agreements with two countries along the "Maritime Silk Road," China and Vietnam.[*][4]
- *Maritime Security Program (MSP)*: MSP provides the U.S. military access to privately owned U.S.-flag ships ready to support the logistic needs of the U.S. government should a crisis occur abroad. The 14 U.S. commercial shipping companies currently participating in MSP are provided $4.99 million per ship to make their designated ships available to the U.S. government in times of war or national emergency.[5] MSP currently has access to 60 cargo ships among the 14 U.S. commercial shipping companies. U.S.-flagged ships participating in MSP carry about two percent of U.S. foreign trade.[6]
- *Maritime Security Initiative (MSI)*: MSI—established by the 2016 National Defense Authorization Act (NDAA)—builds the maritime capacity of U.S. partners to enhance information-sharing, interoperability, and multinational maritime cooperation.[7] Under the 2019 NDAA, MSI was renamed the Indo-Pacific MSI and extended through December 2025, and its scope was expanded to include South Asia.[8] As part of MSI, the United States engages in military domain awareness activities with partners around the world—including the Philippines, Vietnam, Indonesia, Malaysia, Thailand, India, Sri Lanka, and Bangladesh—to monitor risks to their maritime interests while promoting freedom of navigation and maritime commerce.[9]

QUESTIONS FROM HON. RICK LARSEN TO CAROLYN BARTHOLOMEW, CHAIRWOMAN, UNITED STATES-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

Question 1. What U.S. companies have been or are currently involved in either operation, technical advice, or in construction on any BRI projects, as contractors or subcontractors?

ANSWER. The Commission covered BRI's implications for U.S. economic interests in its *2018 Annual Report* (Chapter 3, Section 1, "Belt and Road Initiative," see attached under "U.S. Economic Interests"). The report found that several major U.S.

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[1] CSIS, "How Much Trade Transits the South China Sea?" October 20, 2019.

[2] U.S. Department of Transportation, "Office of International Activities." https://www.maritime.dot.gov/economic-security/office-international-activities.

[3] U.S. Department of Transportation, "Office of International Activities." https://www.maritime.dot.gov/economic-security/office-international-activities.

[*] The U.S.-China Maritime Agreement addresses U.S. carriers' rights to open branch offices throughout China and assures China of continued open access to U.S. markets. Likewise, the agreement between the United States and Vietnam allows U.S. carriers to open wholly owned subsidiaries in Vietnam, thus eliminating the Vietnamese monopoly of maritime trade in the region and strengthening economic relations. U.S. Department of Transportation, "Office of International Activities." https://www.maritime.dot.gov/economic-security/office-international-activities.

[4] U.S. Department of Transportation, "International Agreements." https://www.maritime.dot.gov/economic-security/international-agreements.

[5] U.S. Government Accountability Office, *DOT Needs to Expeditiously Finalize the Required National Maritime Strategy for Sustaining U.S.-Flag Fleet*, August 2018, 1. https://www.gao.gov/assets/700/694006.pdf; U.S. Department of Transportation, "Maritime Security Program." https://www.maritime.dot.gov/national-security/strategic-sealift/maritime-security-program-msp.

[6] U.S. House of Representatives Sub-Committee on Coast Guard and Maritime Transportation, Hearing on State of the United States' Merchant Fleet in Foreign Commerce, written testimony of David T. Matsuda, September 29, 2010. https://www.transportation.gov/testimony/state-united-states%E2%80%99-merchant-fleet-foreign-commerce-0.

[7] U.S. Department of Defense, Indo-Pacific Strategy Report: Preparedness, Partnerships, and Promoting a Networked Region, June 1 2019, 49. http://www.airforcemag.com/DocumentFile/Documents/2019/DOD%20Indo-Pacific%20Strategy%20Report.PDF.

[8] U.S. Department of Defense, Indo-Pacific Strategy Report: Preparedness, Partnerships, and Promoting a Networked Region, June 1 2019, 49. http://www.airforcemag.com/DocumentFile/Documents/2019/DOD%20Indo-Pacific%20Strategy%20Report.PDF.

[9] U.S. Department of Defense, Indo-Pacific Strategy Report: Preparedness, Partnerships, and Promoting a Networked Region, June 1 2019, 49. http://www.airforcemag.com/DocumentFile/Documents/2019/DOD%20Indo-Pacific%20Strategy%20Report.PDF.

companies are participating in BRI projects (see table below) but that opportunities for U.S. and other foreign companies may dwindle in the long term as Chinese companies become more competitive in sectors currently dominated by Western multinationals. Although Beijing has been careful to emphasize BRI's openness to foreign companies, the initiative does not provide a level playing field for U.S. and other foreign companies to compete with Chinese firms. Most Chinese-financed BRI projects are not open tender and are awarded to Chinese contractors, relegating foreign companies to partnering with Chinese companies as subcontractors.

Select U.S. Firms Participating in BRI †

FIRM	PARTICIPATION
AECOM (Engineering, procurement, and construction).	*Partnerships in engineering, procurement, and construction (EPC)*: In May 2017, AECOM signed a memorandum of understanding with Chinese construction 3–D printing company WinSun. Under the agreement, the companies will explore opportunities to collaborate on 3D printing for building design and construction projects, particularly in the Middle East, for a three-year period.[1] In January 2018, AECOM was selected by China Communications Construction Company to provide site supervision services for the stations, viaducts, tunnels, and depots of the East Coast Rail Link project in Malaysia.
Black & Veatch (Engineering, procurement, and construction).	*Partnerships in EPC*: In October 2017, Black & Veatch and China Tianchen Engineering Corporation (TCC) signed a memorandum of understanding to cooperate on developing gas, chemical, and fertilizer infrastructure projects throughout Asia, including in Indonesia, Thailand, Vietnam, Singapore, Burma, Bangladesh, Pakistan, Kazakhstan, and Tajikistan.[2]
Caterpillar (Engineering, procurement, and construction).	*Supplying construction machinery*: In 2016, Caterpillar released a white paper on its ''vision and commitment for the shared success of [BRI]'' in which the company outlined potential areas of cooperation with Chinese companies in BRI countries, including partnering on infrastructure projects and providing project finance. In September 2017 Caterpillar CEO Jim Umpleby said the company ''[is] working with Chinese SOEs in 20 [BRI] countries on projects ranging from roads, ports, mines and oil fields.'' This includes supplying machinery, training, and maintenance services to China Communications Construction Company for the renovation of the Zhrobin-Bobruisk expressway in Belarus, which was completed in July 2016. In November 2017, Caterpillar and Chinese SOE China Energy Investment Corporation signed a five-year strategic cooperation framework agreement outlining future agreements for mining equipment sales and rentals, technology applications and product support provided by Caterpillar. *Financing*: Caterpillar is providing project finance for Chinese companies to boost BRI sales, according to company executives. The company does not disclose data for such lending.
Fluor (Engineering, procurement, and construction).	*Partnerships in EPC*: Lu Yaming, general manager of Fluor China, noted in a May 2017 interview with an energy industry publication that Fluor and a Chinese EPC company were recently awarded a project for a gas-fired power plant in the Middle East. ''We're also working on a project in Indonesia that has been fueled by [BRI] and we have a number of very exciting prospects in the pipeline in other countries. All of these projects have Chinese investment or use Chinese financing,'' he said. Information on these projects is not available on the company's website or in other news reports.
Honeywell (Engineering, procurement, and construction).	*Partnerships in EPC*: In May 2017, Honeywell signed a partnership agreement with China's Wison Engineering Ltd. to jointly provide methanol-to-olefin technologies and EPC services to customers outside of China, particularly in countries included in BRI.[3]
General Electric (GE) (Engineering, procurement, and construction).	*Supplying power equipment*: In 2016, GE received $2.3 billion in orders for natural gas turbines and other power equipment from Chinese EPC firms to install overseas, including in Pakistan, Bangladesh, Kenya, and Laos. In 2014, GE received $400 million in orders from Chinese firms for equipment to install overseas. According to GE China CEO Rachel Duan, ''Africa is the market offering the greatest market potential for GE and Chinese EPC firms, followed by the Middle East, South Asia, Southeast Asia, and Latin America.'' *Financing*: In November 2017, GE Energy Financial Services and China's Silk Road Fund signed a cooperation agreement to launch an energy infrastructure investment platform to invest in power grid, renewable energy, and oil and gas infrastructure in BRI countries. Separately, Jay Ireland, CEO of GE Africa, said in 2016 that the company had set up a $1 billion infrastructure fund to help finance projects in Africa. According to Mr. Ireland, one-third of Chinese EPC companies' equipment orders with GE in 2016 were destined for projects in Africa.

Select U.S. Firms Participating in BRI †—Continued

FIRM	PARTICIPATION
Citigroup (Financial services)	*Financial services*: Citigroup provides a range of financial services (i.e., mergers and acquisitions, cash management, trade finance, and hedging) to Chinese firms and multinational corporations operating in 58 BRI countries. In June 2015, Bank of China launched the first public bond issue to fund BRI projects, raising $3.55 billion. Citigroup was one of four global financial services companies that led the deal alongside Bank of China. In April 2018, Citigroup signed memorandums of understanding with Bank of China and China Merchants Bank to strengthen cooperation on supporting clients' investments and projects related to BRI.
Goldman Sachs (Financial services)	*Financing*: In September 2016, Goldman Sachs—along with Bank of China, DBS Bank, and Standard Chartered—formed a working group to support the development of a standardized ''Silk Road bond'' that can be traded internationally to help BRI countries tap a wider source of funds.

† Updated as of October 2018.

[1] AECOM's move is part of a trend for large infrastructure firms to acquire specialist additive manufacturing technology. AECOM, ''AECOM Signs Memorandum of Understanding with Winsun to Collaborate on 3D Printing for Building Design and Construction,'' May 18, 2017; Global Construction Review, ''Aecom Forms Alliance with Chinese 3D Printer WinSun,'' May 19, 2017.

[2] TCC Vice President Deng Zhaojing said in the company's press release, ''Black & Veach's reputation and experience in the global contracting and oil and gas sectors will help TCC create compelling international EPC solutions for our clients. This partnership is one that will allow us to continue to expand our operations in other parts of the world in line with China's One Belt, One Road Initiative.'' Black & Veatch, ''Black & Veatch and China's TCC to Target Gas, Chemical and Fertilizer Projects,'' October 12, 2017.

[3] According to Honeywell's press release, ''The agreement combines Honeywell UOP's advanced technologies with Wison's strong EPC service capability, allowing them to help customers further improve olefin production capacity while reducing energy consumption and production costs.'' Honeywell, ''Wison Engineering to Collaborate with Honeywell UOP on International Methanol to Olefin Projects,'' May 25, 2017.

Source: Various; compiled by Commission staff:

Citigroup, ''Citigroup Continues Momentum for Supporting Clients on Belt and Road Initiative,'' April 20, 2018; William Hennelly, ''Caterpillar's Tractors Helping Power Belt and Road,'' *China Daily*, March 10, 2018; Rajesh Kumar Singh and Brenda Goh, ''Caterpillar Drives Sales on China's New Silk Road,'' *Reuters*, March 4, 2018; AECOM, ''AECOM to Provide Site Supervision Services for Malaysia's East Coast Rail Link Project,'' January 8, 2018; *Reuters*, ''General Electric, China's Silk Road Fund to Launch Energy Investment Platform,'' November 9, 2017; Caterpillar, ''Caterpillar and China Energy Investment Corporation Establish Strategic Cooperative Relationship,'' November 8, 2017; Alun John, ''Want a Job in Kazakhstan or Elsewhere on New Silk Road? Citi Might Have a Role for You,'' *South China Morning Post*, September 25, 2017; Matthew Miller, ''Citigroup Targets Belt and Road to Boost China Revenue,'' *Reuters*, September 22, 2017; *The Oil & Gas Year*, ''Fluor Flourishes in China,'' May 17, 2017; Keith Bradsher, ''U.S. Firms Want in on China's Global 'One Belt, One Road' Spending,'' *New York Times*, May 14, 2017; Jing Shuiyu, ''Recovering Caterpillar Set to Fly with Its Chinese Partners,'' *China Daily*, April 25, 2017; Yang Ziman, ''Caterpillar Seeks to Deepen Ties with Chinese Companies,'' *China Daily Asia*, December 9, 2016; Cai Xiao, ''GE Reaps Belt and Road Dividend,'' *China Daily*, October 25, 2016; Brian Spegele, ''GE Rides the Coattails of China's Global Dream,'' *Wall Street Journal*, October 16, 2016; Liz Mak, ''Global Bankers Pledge Expertise to Foster Standardized Silk Road Bond,'' *South China Morning Post*, September 9, 2016; Caterpillar, ''The Belt and Road Ahead: Caterpillar's Vision and Commitment for Shared Success,'' 2016; Frances Yoon, ''Update 1—Bank of China Raises USD 3.55 Bn for Silk Road Push,'' *Reuters*, June 25, 2015; Jennifer Hughes, ''Bank of China Set for Four-Currency Bond Sale,'' *Financial Times*, June 23, 2015.

Question 2. How could the U.S. participate in standard-setting bodies like the International Maritime Organization (IMO) and International Organization for Standardization (ISO) to mitigate the global adoption of Chinese technology standards? How can the U.S. be a significant voice in this conversation?

ANSWER. The best way for the United States to have a voice is to be present. The U.S. approach to standard setting is industry-led, while China has a more top-down approach. The U.S. government often supports and coordinates with private sector-led initiatives, but because U.S. companies do not receive subsidies from the U.S. government to participate in standard setting, U.S. perspectives can be underrepresented. The American National Standards Institute (ANSI), a non-profit organization, is the sole U.S. representative to the ISO.[10] The National Institute of Standards and Technology (NIST), which is part of the U.S. Department of Commerce, provides input to ANSI activities and in April 2019 signed a MOU with ANSI reaffirming the importance of a coordinated national strategy to support the development of standards.[11]

In the 2019 Annual Report, the Commission recommended that

[10] American National Standards Institute, "ISO Programs Overview."

[11] American National Standards Institute, "ANSI and NIST Sign New Memorandum of Understanding." May 3, 2019.

Congress direct the National Science Foundation, in coordination with other agencies, to conduct a study on the impact of the activities of Chinese government, state-sponsored organizations, or entities affiliated or supported by the state in international bodies engaged in developing and setting standards for emerging technologies. The study should examine whether standards are being designed to promote Chinese government interests to the exclusion of other participants.

Question 3. Can you elaborate on the benefits of U.S. federal investment in the infrastructure of overseas ports or encouraging U.S. companies to invest in international ports?

Question 3a follow-up: What role can the federal government play in these efforts?

ANSWER. The Overseas Private Investment Corporation (OPIC) and the new Development Finance Corporation encourage U.S. companies' investments in overseas infrastructure projects, including ports, by providing financing through loans and guaranties. In May 2019, for example, OPIC announced plans to invest $50 million in a new marine terminal in the Port of Poti in Georgia. Most recently, the premier of Malaita province in the Solomon Islands said the United States has pledged to support the development of a port in the Solomon Islands, exemplifying how U.S. investment in overseas ports can both support the infrastructure development needs of partner countries as well as advance U.S. interests in the Indo-Pacific.

In addition to providing development finance, Washington can work with allied and partner countries to ensure the procurement processes for overseas port projects are open, transparent, fair, and align with international best practices, such as the provisions of the WTO Government Procurement Agreement.

Question 4. To what extent do U.S. maritime security programs also promote American commerce abroad?

ANSWER. Security of sea lanes, including those in the Indo-Pacific, is vital to U.S. commercial interests. In 2016, for example, more than 14 percent of U.S. maritime trade and an estimated one-third of all global shipping passed through the South China Sea.[12] U.S. maritime security programs support an environment that enables American commerce to be safely conducted abroad.

- *United States Maritime Administration Office of International Activities*: Maritime Administration's Office International Activities works with U.S. carriers and shippers to improve maritime transport relations abroad and to ensure U.S. carriers' transport of U.S. international trade cargoes in a secure, safe, and competitive transportation environment.[13] The office facilitates U.S. carriers' access to foreign trade cargoes and "negotiates reciprocal foreign market access treatment for U.S. carriers in international trade."[14] The United States maintains maritime agreements with two countries along the "Maritime Silk Road," China and Vietnam.[*] [15]
- *Maritime Security Program (MSP)*: MSP provides the U.S. military access to privately owned U.S.-flag ships ready to support the logistic needs of the U.S. government should a crisis occur abroad. The 14 U.S. commercial shipping companies currently participating in MSP are provided $4.99 million per ship to make their designated ships available to the U.S. government in times of war or national emergency.[16] MSP currently has access to 60 cargo ships among the 14 U.S. commercial shipping companies. U.S.-flagged ships participating in MSP carry about two percent of U.S. foreign trade.[17]

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[12] CSIS, "How Much Trade Transits the South China Sea?" October 20, 2019.

[13] U.S. Department of Transportation, "Office of International Activities." https://www.maritime.dot.gov/economic-security/office-international-activities.

[14] U.S. Department of Transportation, "Office of International Activities." https://www.maritime.dot.gov/economic-security/office-international-activities.

[*] The U.S.-China Maritime Agreement addresses U.S. carriers' rights to open branch offices throughout China and assures China of continued open access to U.S. markets. Likewise, the agreement between the United States and Vietnam allows U.S. carriers to open wholly owned subsidiaries in Vietnam, thus eliminating the Vietnamese monopoly of maritime trade in the region and strengthening economic relations. U.S. Department of Transportation, "Office of International Activities." https://www.maritime.dot.gov/economic-security/office-international-activities.

[15] U.S. Department of Transportation, "International Agreements." https://www.maritime.dot.gov/economic-security/international-agreements.

[16] U.S. Government Accountability Office, *DOT Needs to Expeditiously Finalize the Required National Maritime Strategy for Sustaining U.S.-Flag Fleet*, August 2018, 1. https://www.gao.gov/assets/700/694006.pdf; U.S. Department of Transportation, "Maritime Security Program." https://www.maritime.dot.gov/national-security/strategic-sealift/maritime-security-program-msp.

[17] U.S. House of Representatives Sub-Committee on Coast Guard and Maritime Transportation, Hearing on State of the United States' Merchant Fleet in Foreign Commerce, written

- *Maritime Security Initiative (MSI)*: MSI—established by the 2016 National Defense Authorization Act (NDAA)—builds the maritime capacity of U.S. partners to enhance information-sharing, interoperability, and multinational maritime cooperation.[18] Under the 2019 NDAA, MSI was renamed the Indo-Pacific MSI and extended through December 2025, and its scope was expanded to include South Asia.[19] As part of MSI, the United States engages in military domain awareness activities with partners around the world—including the Philippines, Vietnam, Indonesia, Malaysia, Thailand, India, Sri Lanka, and Bangladesh—to monitor risks to their maritime interests while promoting freedom of navigation and maritime commerce.[20]

QUESTIONS FROM HON. SEAN PATRICK MALONEY TO JONATHAN E. HILLMAN, DIRECTOR, RECONNECTING ASIA PROJECT, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

Question 1. How, if at all, could federal agencies improve trade and security programs and policies to promote American commerce in the regions covered by China's Maritime Silk Road initiative?

ANSWER. China's Belt and Road is a web of bilateral arrangements, including trade deals. Rather than replicate this approach, the United States needs to start thinking multilaterally and regionally about trade. The United States should also make environmental sustainability a higher priority in its "Free and Open Indo-Pacific" strategy. This is a priority issue for countries in the region and one in which U.S. companies have a comparative advantage over Chinese companies.

Question 2. How can the United States leverage its existing maritime infrastructure to compete with Chinese State-Owned Enterprises, and where do we need to make significant investments?

ANSWER. The United States should continue to maintain and invest in its own port facilities, including roads, railways, and other supporting infrastructure. The American Society of Engineers gave U.S. ports a C+ rating in its most recent review. Exact estimates vary, but most underscore the need for additional investment to maintain and modernize navigation channels and build road and rail connections.

QUESTIONS FROM HON. RICK LARSEN TO JONATHAN E. HILLMAN, DIRECTOR, RECONNECTING ASIA PROJECT, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

Question 1. Mr. Hillman, you've discussed how a closer look at China's control of the maritime supply chain might provide a better sense of China's maritime strategy. Where else in China's foreign policy should we look to better understand their intentions?

ANSWER. Another key area that deserves further examination is the nature of the relationships between Chinese companies and the Chinese communist party. A more granular understanding of specific companies, and their relative influence and obligations, would be helpful in shedding light on China's intentions. CSIS will be pursuing research in this area in the coming months, including in the maritime domain.

Question 2. In your testimony, you highlight China's leadership in all three categories of shipbuilding (largest orderbook, most newbuilding orders, largest number of deliveries) last year. What can the federal government do to improve U.S. shipbuilding capacity to compete with China in the global market?

ANSWER. I have not yet studied this area in great enough detail to offer policy advice.

Question 3. What are some ways the U.S. can ensure our military and commerce remain undeterred by ongoing development of Chinese state-owned enterprises?

ANSWER. Two examples of positive proactive U.S. action are the airport in Greenland that could have become a Chinese facility and instead was financed by Green-

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testimony of David T. Matsuda, September 29, 2010. https://www.transportation.gov/testimony/state-united-states%E2%80%99-merchant-fleet-foreign-commerce-0.

[18] U.S. Department of Defense, Indo-Pacific Strategy Report: Preparedness, Partnerships, and Promoting a Networked Region, June 1 2019, 49. http://www.airforcemag.com/DocumentFile/Documents/2019/DOD%20Indo-Pacific%20Strategy%20Report.PDF.

[19] U.S. Department of Defense, Indo-Pacific Strategy Report: Preparedness, Partnerships, and Promoting a Networked Region, June 1 2019, 49. http://www.airforcemag.com/DocumentFile/Documents/2019/DOD%20Indo-Pacific%20Strategy%20Report.PDF.

[20] U.S. Department of Defense, Indo-Pacific Strategy Report: Preparedness, Partnerships, and Promoting a Networked Region, June 1 2019, 49. http://www.airforcemag.com/DocumentFile/Documents/2019/DOD%20Indo-Pacific%20Strategy%20Report.PDF.

land, and the renegotiation of a port project in Myanmar that resulted in the scope of work being reduced and the overall cost dropping from $7.3 billion to $1.3 billion. In the first case, the U.S. worked closely with a NATO ally, and in the second case it provided technical assistance to a developing country. The United States could build on these examples in other geographies, in coordination with partners and allies.

Question 4. Can you elaborate on your proposal to establish a federal database of global infrastructure projects, particularly maritime assets? How would this database inform the United States' infrastructure development, national security and economic strategy on China?

Question 4a follow-up: How else can the U.S. expand current efforts to increase transparency around Belt and Road Initiative projects?

ANSWER. This database would give the United States more accurate picture of ground reality and help it set strategic priorities. Many projects are announced but not completed. Not all projects are threatening to U.S. interests. There are certain types of infrastructure and certain geographic areas that we cannot allow China to dominate, given our own national security and economic interests. Using this database, the United States could conduct an internal assessment to identify those projects that are vital to U.S. economic and security interests. Resources could be mobilized to counter malign projects, while projects that pose little or no risk to U.S. interests could be encouraged and allowed to proceed.

QUESTIONS FROM HON. SEAN PATRICK MALONEY TO JEFFREY D. BECKER, PH.D., RESEARCH PROGRAM DIRECTOR, INDO-PACIFIC SECURITY AFFAIRS, CNA

Question 1. Noting the Chinese strategy of building port facilities on either end of the Panama Canal, are there other strategic straits where the Chinese have adopted a similar strategy?

ANSWER. Chinese maritime investments in Panama have been increasing for decades. For example, the Hong Kong-based firm Hutchinson Ports now owns a majority stake in the company that manages and operates both the port of Cristobal on the Panama Canal's Atlantic side and the port of Balboa on the Canal's Pacific side.[1] Moreover, in 2017, the state-owned China Communications Construction Company began work to expand the Panama Colon Container Port at Margarita Island on the Canal's Atlantic side.[2] The Chinese firms Shanghai Gorgeous and Landbridge Group wholly own and finance the company that will operate it upon completion.[3]

In addition to Panama, however, Chinese state firms have built a similar type of presence in maritime infrastructure along many of the world's more important maritime chokepoints. For example, at the Malacca Strait, through which transits most of China's import oil, the Chinese state-owned firm COSCO Shipping Ports operates port facilities at Singapore's Pasir Panjang terminal, while Hutchison Ports operates facilities at Malaysia's Port Klang.[4] COSCO also owns a stake in the port terminal operator which operates Port Said at the northern entrance to the Suez Canal, while the Chinese firm China Overseas Port Holdings Company both owns and operates the Port of Gwadar in Pakistan, which is roughly 600km east of the Strait of Hormuz.[5] Meanwhile China's first overseas military base, located in Djibouti, sits on the strategically important Bab El Mandeb Strait, while the Chinese state-owned China Merchant Port Holdings operates the Doraleh Multipurpose Port, which is located adjacent to China's base.[6]

[1] "Hutchinson Ports PPC—Cristobal," Hutchinson Ports—Our Ports, https://hutchisonports.com/en/ports/world/panama-ports-company-port-of-cristobal-ppc-cristobal/.

[2] GCR Staff, "Chinese Firm Starts Work on $1bn Panamanian Megaport," *Global Construction Review*, June 12, 2017, http://www.globalconstructionreview.com/news/chinese-firm-starts-w7rk-1bn-panama7nian-meg7aport/.

[3] Panama Colon Container Port, "About Us," https://www.pccp.com.pa/pccp/index.php/quienes-somos/pccp. My thanks to Chris Cairns in helping to prepare this information.

[4] "Our Ports—Westports Malaysia," Hutchinson Ports, https://hutchisonports.com/en/ports/world/westports-malaysia-westports/; Jeffrey Becker, Erica Downs and Ben DeThomas, *China's Presence in the Middle East and Western Indian Ocean: Beyond Belt and Road*, (Arlington, VA: Center for Naval Analyses, February 2019), https://www.cna.org/CNA__files/PDF/DRM-2018-U-018309-Final2.pdf, pp. 88.

[5] Becker, Downs and DeThomas, *China's Presence in the Middle East and Western Indian Ocean*, pp. 88.

[6] Erica Downs, Jeffrey Becker and Patrick deGategno, *China's Military Support Facility in Djibouti: The Economic and Security Dimensions of China's First Overseas Base*, (Arlington, VA: Center for Naval Analyses, 2017), https://www.cna.org/cna__files/pdf/DIM-2017-U-015308-Final3.pdf.

Question 2. What is the likelihood that one of these ports run by a Chinese SOE is going to become the next overseas Chinese naval base (i.e. the next Djibouti)?

ANSWER. The Chinese military has been given responsibility to protect China's growing overseas interests, including its growing reliance on imported oil from the Middle East, its overseas foreign investments, and the growing number of Chinese citizens living abroad. However, the Chinese military will need to improve its ability to operate far from Chinese home ports to protect those interests, and this is difficult to do without having dedicated overseas military facilities.

It is difficult to know with exact certainty the location of China's next overseas base. However, as these overseas interests continue to expand, it is very likely that China will seek to establish additional overseas facilities that will improve its ability to protect those interests.

For example, China may seek to replicate the benefits from its base in Djibouti by establishing a second base on the eastern side of the Indian Ocean in locations such as Cambodia or Myanmar.[7] China has long had strong military and economic ties to the Cambodian government, and while Cambodia's constitution prohibits the presence of foreign military bases in Cambodian territory, ties between the two militaries have grown more exclusive in the past few years.[8] In 2016, China and Cambodia conducted their first-ever bilateral military exercise (*Golden Dragon*). The following year, the Cambodian government cancelled their annual *Ankor Sentinel* bilateral exercise with the United States, which was to be the 8th iteration of the exercise. In November 2018 U.S. Vice President Pence reportedly sent a letter to Cambodian Prime Minister Hun Sen, expressing U.S. concerns over the possibility that China may establish a base in the country.[9]

Other potential locations for China's next overseas military facility include Sri Lanka, where the Chinese state firm China Merchants Port Holdings owns a majority stake in the concession agreement to operate the port of Hambantota, or the Pakistani port of Gwadar, where the Chinese firm China Overseas Ports Holding Company owns the rights to directly operate the port for a period of 40 years.[10]

Question 3. How, if at all, could federal agencies improve trade and security programs and policies to promote American commerce in the regions covered by China's Maritime Silk Road initiative?

ANSWER. While important, policy recommendations to promote American commerce are beyond my area of expertise.

With regard to security programs, I believe that the threat of PRC intelligence collection on U.S. Navy and Coast Guard activities and operations in Chinese-operated overseas ports is an important and growing concern, and both the U.S. government and military may wish to take additional steps to mitigate these concerns. For example, while the current process for vetting firms providing logistics services to the U.S. Navy and Coast Guard in foreign ports focuses predominately on cost, it would also be prudent to have providers vetted with an eye towards assessing the extent to which such firms have ties to the Chinese Party-State or military, and the potential implications of those relationships.

Despite this new operating environment, however, it is important that the U.S. Navy and Coast Guard continue to operate globally and conduct port visits, engagement activities, and other aspects of maritime diplomacy, which remain important to their missions.

QUESTIONS FROM HON. RICK LARSEN TO JEFFREY D. BECKER, PH.D., RESEARCH PROGRAM DIRECTOR, INDO-PACIFIC SECURITY AFFAIRS, CNA

Question 1. How can the United States leverage its existing maritime infrastructure to compete with Chinese State-Owned Enterprises, and where do we need to make significant investments?

ANSWER. While I agree that this is an important question, I believe this question is beyond my area of expertise to answer.

[7] See for example, Li Jian, Chen Wenwen and Jin Jing, "Overall Situation of Sea Power in the Indian Ocean and the Expansion in the Indian Ocean of Chinese Sea Powers (*Yinduyang Haiquan Geju yu Zhongguo Haiquan de Yinduyang Kuozhan*; [Chinese characters omitted])," *Pacific Journal* 22, no. 5 (2014), 74–75, http://www.cssn.cn/zzx/wztj__zzx/201406/t20140630__1235402.shtml.

[8] Article 53, Constitution of the Kingdom of Cambodia 1993 (rev. 2008), Constitute, https://www.constituteproject.org/constitution/Cambodia__2008?lang=en.

[9] Joshua Lipes and Sovannarith Keo (translated), "Cambodia's PM Hun Sen Denies Reports of Plans For Chinese Naval Base," *Radio Free Asia*, November 19, 2018, https://www.rfa.org/english/news/cambodia/base-11192018155126.html.

[10] Becker, Downs and DeThomas, *China's Presence in the Middle East and Western Indian Ocean*, pp. 88.

Question 2. Your written testimony details the impact of the significant investment by Chinese SOEs in global maritime infrastructure, particularly in port construction and operations. How can the U.S. work multilaterally to pressure China to open up maritime industries and put constraints on state owned enterprises?

ANSWER. It is important to recognize that not all Chinese investments in overseas maritime infrastructure constitute a risk to U.S. national security. Treating all investments as risks merely drains vital resources. When Chinese firms operate in a transparent manner consistent with international legal rules and norms, many investment projects have the potential to satisfy demand in underserved locations.

The first step, therefore, is to identify which Chinese investment projects may constitute a risk to U.S. national security, or a risk to the security of U.S. partners or allies. Such risks may arise as a result of the project's location, the role of certain Chinese firms with a history of engaging in corruption, or a lack of transparency regarding the details of the project.

Identifying which projects are of critical concern will allow the U.S. government to concentrate its efforts on what is most important, and avoid wasting resources.

Second, any successful effort will require careful coordination and cooperation with U.S. partners and allies. The United States will need to work with like-minded partner nations by sharing information regarding projects of concern, and providing high quality investment alternatives, as well as professional legal and technical advice to countries involved in Belt and Road projects to help improve transparency and legal accountability within the process.

Question 3. Could China restrict U.S. Navy access to ports operated by Chinese state firms?

ANSWER. If relations between the two countries continue to deteriorate, China could potentially seek to restrict USN access as a response to a U.S. action that it perceives as hostile, or even as an escalatory step should a serious crisis occur between the two countries in the East China Sea, South China Sea, or elsewhere.[11] Doing so, however, would carry a number of costs for China. Such an action would certainly be noted in other counties where concerns about ceding sovereignty to China as a result of its growing footprint continue to gain traction. China would likely face political pushback from the host country as well. For example, while China may be best positioned to restrict U.S. Navy access in locations where it has significant economic leverage, such as Djibouti, or controls port operations, such as Piraeus, both Djibouti and Greece would have strong incentives to avoid being pulled into a U.S.-China confrontation.

Finally, one may argue that China has an interest in having USN ships continue to frequent Chinese-controlled port facilities, as such visits provide ample opportunities for intelligence collection.

QUESTIONS FROM HON. SEAN PATRICK MALONEY TO KATHLEEN A. WALSH,[1]
ASSOCIATE PROFESSOR OF NATIONAL SECURITY AFFAIRS, U.S. NAVAL WAR COLLEGE

Question 1. How, if at all, could federal agencies improve trade and security programs and policies to promote American commerce in the regions covered by China's Maritime Silk Road initiative?

ANSWER. The most immediately useful way to promote US trade and commerce but in a way that also addresses US national security concerns would be to establish, or support establishment of, a resource for up-to-date information and objective analysis on China's Maritime Silk Road (MSR) initiative. Such information is currently available broadly from various private-sector resources such as think tanks, research organizations, foundations, and academia in the United States and abroad.[2] What is missing, however, is an easily accessible, comprehensive, and single up-to-date database of information on MSR initiatives that is provided in a way

[11] I am not aware, however, of Chinese analysts discussing this as a possible tactic for use in the context escalation and crisis control more. See for example Alison A. Kaufman and Daniel M. Hartnett, *Managing Conflict: Examining Recent PLA Writings on Escalation Control*, (Arlington: VA, Center for Naval Analyses, February 2016), DRM-2015-U-009963-Final3.

[1] The views expressed here are those of the author alone and do not represent official views of the US Government, Department of Defense, US Navy or Naval War College.

[2] In addition to CSIS' Reconnecting Asia Program, other public databases that are or have been offered in the past include those by the Council on Foreign Relations, American Enterprise Institute (China Global Investment Tracker), the East West Institute, and the Mercator Institute for China Studies (MERICS), among others. However, to my knowledge, none of these focus exclusively on the Maritime Silk Road and maritime concerns, opportunities and costs specifically nor at the level of detail likely of interest to the US maritime industry.

that would best serve US industries' needs, particularly in the maritime and broader "blue" sectors.

For instance, if a US enterprise is interested in possibly investing in or establishing a presence near an MSR project(s) or maritime cluster overseas, where might they get such information? Oftentimes companies will seek such assistance from Commerce or State Department programs, guidance and expertise. But such information is commonly available mainly at the country or regional level; such a large, long-term, cross-country initiative as the MSR likely makes gaining such information a difficult and extensive endeavor, one made more difficult due to the necessary reliance on the PRC government for MSR data, program information and policies. Having access to a trusted, US Government-vetted, open source resource on the MSR and its implications (both risks and opportunities) for US businesses could provide a value-added, one-stop electronic resource for enterprises of any size, anywhere seeking global, regional or country-level investment or trade opportunities while at the same time providing readily accessible information on the potential risks involved as well as ways to counter those risks (e.g., technology transfer and intellectual property protections and export control best practices). Making such information readily available to firms of any size and anywhere around the country who are potentially interested in the MSR (or MSR-related enterprises seeking to invest in the United States' maritime or blue sectors) could promote US trade and commerce but in a more security-conscious manner. (This sort of information public service is the basis for the initiative mentioned in my testimony with a specific focus on supporting the emerging ocean or blue economy.) Such an MSR-specific data and information resource would be useful in the event that the MSR begins to fulfill Beijing's ambitions or, alternatively, if the MSR fails (saving US firms from investing in or with failed, failing or too-risky programs).

A related, if less ambitious, idea is to mandate a US federal agency or agencies provide an annual report on the MSR that details issues such as maritime developments across the MSR, outlining any barriers to US trade and investment along the MSR or challenges faced broadly by US firms seeking to participate, providing indications of progress toward development of new maritime technology, standards, infrastructure and innovation (e.g., 5G as applied to maritime industry sectors), an assessment of financial tools, risks and costs (i.e., MSR-related leases, loans, and specifics on debt), indications (or lack thereof) of China's development and export of its blue economy concept through its various announced "blue" passages, corridors, carbon programs, etc., as well as an overview of environmental impacts from MSR development, among other potentially useful input to an annual assessment related to development of the MSR and conducted over time.

Question 2. How can the United States leverage its existing maritime infrastructure to compete with Chinese State-Owned Enterprises, and where do we need to make significant investments?

ANSWER. If issues arising from the development of the blue economy, from ocean science, and development of offshore wind energy (the main areas that have come up in my research on the blue economy) reflect the broader maritime sector, then US maritime infrastructure is in important ways out of date and currently lacking modern capabilities while at the same time is being challenged by the growing and costly impact of climate change. Leveraging existing, aging maritime infrastructure is likely to be an insufficient approach to deal with growing competition from China and elsewhere in maritime and blue endeavors, meaning that significant investment in maritime infrastructure (e.g., ports, shipbuilding facilities, ocean science facilities, etc.) and the expertise to build and sustain it are essential for continued development of the ocean/blue/maritime economy in the United States.

At the same time, the United States' existing maritime infrastructure, while in need of significant investment to modernize ports, rails, bridges, highways, telecommunications, etc., nevertheless serves as a competitive advantage vis-a-vis China and other developing countries in terms of already existing, being geographically clustered, market driven and increasingly connected intellectually and innovatively through emerging ocean or blue economy development efforts. Federal, state and local investments in the hardware (modern infrastructure programs) are likely to enhance and accelerate the equally important "software" that drives maritime innovation clusters—the collaborative and synergistic sharing and pursuit of new ideas, innovations, and scientific invention that can come from a cluster of ocean science, technology, engineering, research, commercial enterprises, and environmental interests. Similar to how Silicon Valley formed around a leading university (Stanford), drew on the nearby community of scientists, researchers, engineers and businesses to drive innovation, and was supported in part by federal government programs, funding, and requirements, the maritime/ocean/blue sector has begun to expand cross-maritime community collaboration and form new networks or clusters of cooperation, development and innovation on maritime concerns. These bottom-up behaviors reflect the strength of the United States' market economy but can be assisted by government (such as through continued STEM funding), particularly if expanded and geared more specifically to ocean-, maritime-, and new blue-themed science, technology, engineering and environmental science careers.

Lastly, it is important that the United States modernize its maritime infrastructure (in both hard and soft terms) in order to ensure that we do not become overly dependent on "Chinese technology, standards, equipment or engineering knowhow", the establishment of which is the aim of China's own Made in China 2025 strategy and has long been an objective of PRC science and technology development strategy and policies.

As explained by the OECD, "The strategy Made in China 2025 aims to encourage Chinese technology, standards, equipment and engineering knowhow, which can also be adopted within the BRI in competition with advanced economies trying to do the same thing: i.e. to win business and lock-in future projects through sound benefit/cost outcomes."[3]

If the United States is to remain a leader in technology and standard development in the broader maritime sector (both commercial and military/naval), significant investment is necessary in maritime infrastructure to ensure US science, technology, engineering, defense and business interests are involved in developing and innovating high-tech standards and intellectual property that exceeds, or at the very least is competitive with, PRC-developed technology standards, engineering and equipment. Because both the United States and the People's Republic of China rely on commercial-sector technology advances to serve defense technology requirements (and vice versa), development of a modern maritime industry is a critically strategic area of competition worthy of federal R&D investment.

While playing a distinct role from that of the PRC Government, the US government nevertheless has an important role to play in ensuring that maritime infrastructure is modernized and continues to provide opportunities for more competitive and capable maritime science, technology, engineering and commerce, all of which serves the national innovation and defense enterprise.

QUESTIONS FROM HON. RICK LARSEN TO KATHLEEN A. WALSH, ASSOCIATE PROFESSOR OF NATIONAL SECURITY AFFAIRS, U.S. NAVAL WAR COLLEGE

Question 1. I'm eager to hear more about the application of maritime clusters and blue technology development. As you may know, Washington state have a robust cluster, called Washington Maritime Blue, that fosters productive collaboration and competition for ocean economy companies and agencies.

a.What are some ways the public sector benefits from investment in maritime clusters?

ANSWER. I have had the opportunity to discuss development of Washington state's Maritime Blue cluster with experts and plan to conduct field research following an event tentatively scheduled there next July. As such, I am somewhat familiar with Washington state's efforts to develop a Maritime Blue cluster and am impressed by the program's aims and progress made to date. This is an initiative that is worth monitoring and is likely to serve as a model for other states or regions.

As indicated in my answers above, one of the most important benefits to the public sector from investment in maritime clusters is likely to be to the defense enterprise (in the maritime case, mainly naval development). Where maritime clusters emerge and promote opportunities for innovation and invention, this will serve US defense interests by enhancing scientific, technological and engineering knowhow, maritime or naval capabilities, and through development of leading edge products, standards, and practices applicable on the water, underwater and above the water. This emphasis on investment in maritime development will aid the United States in its strategic competition with a rapidly capable Chinese/PLA Navy, China's economic challenge, as well as with high-tech developments across the MSR.

The development of maritime clusters also is likely to promote jobs, support more advanced technical skills (leading to higher paying jobs), expand university programs, and open new trade and investment opportunities. Where maritime clusters are able to develop an innovation ecosystem, the whole is likely to be larger than

[3] OECD, "China's Belt and Road Initiative in the Global Trade, Investment and Finance Landscape," *OECD Business and Finance Outlook 2018* (Paris: OECD, 2018), p. 22. https://www.oecd.org/finance/Chinas-Belt-and-Road-Initiative-in-the-global-trade-investment-and-finance-landscape.pdf.

the sum of the parts, providing a sustainable cycle of development, which serves the public's interest overall.

An important element of an ocean or blue economy is the concept of an ecosystem. In the United States, we have learned the lesson that it pays (literally and figuratively) to consider the environment when also pursuing for-profit endeavors; sustainable development serves long-term industry interests, market development, as well as innovation by ensuring the environment not only does not repel families and visitors where environmental hazards and damage exist but, in fact, serves to promote business by attracting more people (i.e., investors, tourists, academic researchers, students and others) to a particular geographic region known as an environmentally pleasant place to live, work or visit. Thus, to the extent that maritime clusters are successful in developing and promoting more innovative but also sustainable and conservation-oriented policies, practices and technologies, the general public will be served by having a cleaner environment and drinking water while US industry will gain a competitive advantage in domestic and global markets. Having learned this hard lesson ahead of other countries still in the throes of fast-paced economic development provides the United States with a head start and competitive advantage in pursuing more sustainable, environmentally friendly and profitable approaches to economic, particularly maritime, development.

Question 2. In your testimony, you detail the Trump Administration's lack of a focused blue technology and blue economy plan following last year's rollback of the National Ocean Policy, established under President Obama. What are the consequences of the administration's inaction, particularly as China continues to increase investments in this field?

a. What would it take to make the U.S. blue economy more robust and able to compete with the Chinese?

b. Could you propose some strategies or areas of investment in the ocean economy sector that could leverage areas of expertise in our federal agencies?

ANSWER (2a.–2b.). Despite the federal government reversal on pursuing a national strategy to develop the ocean/blue economy under the Trump administration, regional, state and local efforts continue. The lack of a national strategy, however, means that these local efforts are not well coordinated, could prove wasteful or redundant, and likely are missing out on opportunities that having a national strategy and focused federal effort can illuminate and support.

The Trump administration recently has taken initial steps toward supporting ocean/blue economy development by hosting a November 2019 White House meeting on ocean science research and development (R&D). But this initiative has come three years into a first term and, in my view, represents the minimum that is required to address US ocean and maritime interests. In the absence of an influential US interagency policy process and development of a national strategy coordinated with US allies and partners around the globe, the United States is missing opportunities for development and ceding influence over international ocean/blue/maritime development matters to other powers, particularly China. As China prioritizes maritime/ocean/blue economy development as a strategic industry sector with civil and military applications, the United States' efforts to do the same are lacking and rely largely on local officials, funds, resources and political will. Without clear and consistent strategic guidance, established programs or sustained financial support as well as collective expertise from the federal government (beyond programs administered by the National Oceanographic and Atmospheric Administration [NOAA] and the Naval Undersea Warfare Center), the effect is akin to engaging in a major competition with one arm tied behind our back.

In addition to supporting a public service information database on the ocean/blue economy and/or MSR (addressed above) that would be designed to provide critical and timely information on what the United States, China and other states are doing to develop their ocean/maritime/blue economies, the federal government can sustain and expand funding programs for ocean science research, exploration, technology development and engineering, and related educational and training programs to promote ocean/maritime/blue development, innovation and careers. Given the relative newness of the blue economy concept and importance of maritime innovation clusters to the local, state and national economies, government support for research into these new aspects of maritime development (that promote blue and innovative, industrially and environmentally sustainable solutions) should be a priority so that we better understand these dynamics and how to leverage them to achieve improved outcomes. Non-partisan, government-sponsored public reports on what efforts across the United States and beyond have worked or have failed and why would be a valuable public service; trusted information and analysis on China's ocean/blue/maritime and MSR-related development efforts and their importance for US and allied trade, commerce and security interests is essential and could serve to counter China's influence by providing accurate, timely and comprehensive information on its activities. For instance, if China's various "blue" initiatives connected to the MSR do not enhance marine conservation but, instead, exacerbate environmental concerns, this information will be essential to US businesses and others with a potential interest in participating (or not) in the MSR.

Given the United States' long history and experience in fostering technology innovation, as maritime innovation clusters and the ocean/blue economies develop, federal agencies could usefully provide data indicators and a collection of case studies and best practices that other states, regions or countries might use in developing their own ocean/blue economies and maritime innovation clusters by building on market-based dynamics (in contrast to China's more statist, top-down, SEZ-model approach to development). To the extent that we can document the reasons for the success (or failure) of any US innovative and sustainable maritime/ocean/blue economy development efforts or those of other states, we can share those insights with allies, partners, friends and others around the world while also influencing development of this strategically vital sector at home and abroad.

Question 3. Is ratification of UNCLOS still a strategic imperative, and what would you say to our colleagues in the Senate to convince them?

ANSWER. Yes, ratification of UNCLOS is a strategic imperative given the opportunity costs incurred by not being at the table as the People's Republic of China attempts to re-interpret the customary maritime law upon which the UNCLOS was drafted as well as re-interpreting UNCLOS provisions in ways that enhance PRC maritime claims (i.e., Exclusive Economic Zone or EEZ boundaries) at the expense of freedom of navigation in the Indo-Pacific region and around the globe.

Despite denials, it is clear that the People's Liberation Army Navy (PLAN) operates as if China's claim of a made-up Nine-Dash Line encompassing almost all of the South China Sea is a sovereign maritime boundary, in contravention of UNCLOS.[4] But without having a seat at the table at which these matters are addressed and potentially re-interpreted by the convention's now largest United Nations Security Council power (PRC) puts the United States and also our allies, partners and friends at a disadvantage—in trying to enforce the rules and their interpretation in an international convention to which we are not a formal party. An added impact and opportunity cost is the United States' and others' (parties other than China), capability to conduct ocean scientific research in the South China Sea region, given the risks, uncertainties and exorbitant costs that would be involved in doing so.

China is also leading an effort attempting to change the long-accepted understanding under UNCLOS and maritime customary law of what constitutes territorial and international waters and states' rights therein, in order to claim sovereign rights out to 200 nautical miles of an EEZ and, for instance, to exclude foreign military access near China's shores. Such an interpretation if applied globally would cover and close off much of the world's maritime area and make international trade and security based on freedom of navigation principles difficult to maintain. Yet China does not apply this revisionary interpretation to maritime areas beyond the South China Sea, presumably because that would constrain China's own access in other parts of the world, such as along the US coastline, in the Arctic, and elsewhere. It would be more effective for the United States to counter this sort of inconsistent stance on the part of a powerful UNCLOS member if we were also a member of the Convention and upheld its principles as a member of good standing.

Beyond maritime boundary re-definitions, China and other states are pursuing claims to the seabed, as allowed under UNCLOS. As a non-party, the United States is not engaging in this internationally sanctioned arena of exploration and resource extraction and therefore has limited impact on the rules, practices and restrictions that govern this activity. As modern science, technology and engineering allow greater exploitation of the seabed, this issue is likely to become of greater interest and possible concern than in the past.

US ratification of UNCLOS has long been recommended by US military leaders due to US interests in the maritime domain and in the principle of freedom of navigation that is essential to global trade and security. To the extent that the United States Senate has concerns with regards to any particular provision(s) in the Convention, it is likely that these can be addressed as part of the ratification process. In short, it is better for the United States to be inside the Convention working to

[4] It is through discussions over several years with Chinese academics, researchers and military experts that it has become clear to me that the PLAN effectively treats the Nine-Dash Line as a sovereign maritime boundary.

ensure UNCLOS works for US interests and those of our allies, partners and friends than to remain nearly isolated on the outside complaining about what China and other UNCLOS members decide. As more time passes, the risk increases of China being successful in reinterpreting key provisions in which the United States has an interest, as do our allies, partners and friends.

Question 4. Are Chinese telecommunications firms such as Huawei or ZTE involved in port construction projects? If so, does this create any additional concerns for national security?

ANSWER. I do not know, offhand, if either Huawei or ZTE is involved in port construction projects and would have to research this question, but I certainly would like to know. This is one of the reasons why I have recommended (see first answer to Representative Maloney and testimony) a one-stop MSR-focused (or broader ocean/blue economy) database that would provide such answers to anyone, anywhere, at any time interested in knowing this sort of basic, generally publicly available information along with information on what concerns the US government has, any export policies or sanctions that might apply, and best practices on how to deal with IPR and technology transfer concerns, etc. Informed investing, decisionmaking and policymaking is in the US interest for commercial, technology and security reasons and, in the Information Age, certainly can be facilitated to better serve these interests.

Were Huawei, ZTE or other Chinese telecom enterprises to be involved in port construction projects along the MSR, in the United States or elsewhere outside the PRC, this could pose potential trade and security risks. US Government concerns based on investigations about these firms' technologies, products, policies, practices and their connections to and cooperation with the Chinese Communist Party mandates make these companies' involvement in strategically vital port facilities potentially worrisome in terms of raising concerns about technology transfers, espionage, unfair competition and possible state subsidies.

In addition, the strategies and plans related to China's MSR vision (see Appendix) indicate that overseas SEZs, industrial parks, other types of development zones, etc. (places and bases) are expected to be connected to and networked with the Chinese Mainland via telecommunications hardware and software, likely provided by these (and perhaps other) Chinese enterprises. According to China's 2017 Vision for Maritime Cooperation:

> "China will join in efforts by countries along the Road in establishing industrial parks for maritime sectors and economic and trade cooperation zones, and promote the participation of Chinese enterprises in such endeavors . . .
>
> Efforts are needed to strengthen international maritime cooperation, improve shipping service networks among countries along the Road, and to jointly establish international and regional shipping centers. Countries along the Road are encouraged to enhance cooperation through pairing sister ports and forging port alliances. Chinese enterprises will be guided to participate in the construction and operation of ports. Projects for the planning and construction of submarine cables will be jointly advanced to improve connectivity in international communications . . .
>
> Information networks will be improved in countries along the Road by jointly building a system with broad coverage for information transmission, processing, management and application, a system for information standards and specifications, and a network security system, thus providing public platforms for information sharing."—*2017 Vision for Maritime Cooperation* (full text in Appendix)

The 2015 Action Plan also outlines specific initiatives aimed at connecting Chinese and MSR maritime facilities, ports, energy infrastructure, and regional, transcontinental submarine optical cables:

> "Facilities connectivity is a priority area for implementing the Initiative. On the basis of respecting each other's sovereignty and security concerns, countries along the Belt and Road should improve the connectivity of their infrastructure construction plans and technical standard systems, jointly push forward the construction of international trunk passageways, and form an infrastructure network connecting all sub-regions in Asia, and between Asia, Europe and Africa step by step. At the same time, efforts should be made to promote green and low-carbon infrastructure construction and operation management, taking into full account the impact of climate change on the construction.

With regard to transport infrastructure construction, we should focus on the key passageways, junctions and projects, and give priority to linking up unconnected road sections, removing transport bottlenecks, advancing road safety facilities and traffic management facilities and equipment, and improving road network connectivity. We should build a unified coordination mechanism for whole-course transportation, increase connectivity of customs clearance, reloading and multimodal transport between countries, and gradually formulate compatible and standard transport rules, so as to realize international transport facilitation. We should push forward port infrastructure construction, build smooth land-water transportation channels, and advance port cooperation; increase sea routes and the number of voyages, and enhance information technology cooperation in maritime logistics. We should expand and build platforms and mechanisms for comprehensive civil aviation cooperation, and quicken our pace in improving aviation infrastructure.

We should promote cooperation in the connectivity of energy infrastructure, work in concert to ensure the security of oil and gas pipelines and other transport routes, build cross-border power supply networks and power-transmission routes, and cooperate in regional power grid upgrading and transformation.

We should jointly advance the construction of cross-border optical cables and other communications trunk line networks, improve international communications connectivity, and create an Information Silk Road. We should build bilateral cross-border optical cable networks at a quicker pace, plan transcontinental submarine optical cable projects, and improve spatial (satellite) information passageways to expand information exchanges and cooperation."*—2015 Vision & Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road* (*a.k.a. Belt and Road Action Plan* (full text in Appendix, document 2)

As such, US technology and security concerns raised by such Chinese companies could expand to third-party states (including potentially allies and partners) and across the region, thereby becoming much more difficult to counter or protect against. Moreover, to the extent that the MSR is successful in developing, connecting and networking overseas development zones, the technology hardware and software as well as communications channels that are used could become the regional and global standard; this outcome is more likely if Chinese telecommunications firms and products dominate MSR-related contracts, investments, and trade and if US firms are excluded from competing or ill-prepared to do so.

APPENDIX: 2 PRC GOVERNMENT DOCUMENTS

1. Vision for Maritime Cooperation under the Belt and Road Initiative (June 2017) [http://english.www.gov.cn/archive/publications/2017/06/20/content__281475691873460.htm]

2. Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road (March 2015) (a.k.a. Belt and Road Action Plan) [http://en.ndrc.gov.cn/newsrelease/201503/t20150330__669367.html]

Note: each highlighted by Walsh for relevant maritime/blue economy matters of interest.

[The two PRC Government documents in the appendix to Ms. Walsh's responses to questions for the record are retained in committee files. Ms. Walsh has also provided web links to these documents; see above.]

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