NOVEMBER 2026

Strategic Shores

Strengthening Overseas Port Infrastructure to Safeguard U.S. Economic and Security Interests





AUTHOR
Romina Bandura

A Report of the CSIS Economic Development and Prosperity Program

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Contents

Acknowledgments	1
Executive Summary	3
Introduction	5
1 | Overview of the Global Port Ecosystem	9
2 | U.S. Interests and Vulnerabilities in Global Ports	14
3 | Advancing U.S. Engagement in Ports: Priority Regions and Strategies	33
Conclusion	44
Appendix I: Methodology	46
Appendix II: U.S. Companies and Government Agencies in the Port Ecosystem	48
Appendix III: International Organizations in the Port Ecosystem	63
Appendix IV: Country Dashboard	69
About the Author	78
About CSIS	79
Endnotes	80

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Executive Summary

Ports have long been central to U.S. economic strength and national security. Most U.S. overseas trade passes through port infrastructure, while commercial ports, merchant mariners, and civilian maritime infrastructure are essential to military sealift and force mobilization, particularly during contingencies or wartime. As the world's second-largest trading nation after China, the United States depends on a global network of overseas commercial ports to support both trade and military operations.

Yet the United States has a limited commercial presence in overseas ports, particularly container terminals. This report argues that this limited footprint represents a strategic vulnerability: U.S. trade and military operations depend heavily on foreign infrastructure over which Washington has little commercial influence or operational leverage. This creates economic, security, and geostrategic risks.

Drawing on desk research, case studies, expert interviews, data analysis, and a tabletop exercise, the report assesses U.S. strengths and vulnerabilities across the global maritime port value chain and recommends ways to strengthen U.S. engagement overseas.

The economic vulnerabilities are significant. Disruptions at strategic maritime choke points or ports serving critical U.S. and allied supply chains can have cascading effects on trade, production, and prices. This is particularly important for ports handling energy, critical minerals, pharmaceuticals, semiconductors, fertilizers, and other strategic inputs. Concentration among major terminal operators can also reduce competition and, in a crisis, create risks of restricted or denied access.

More broadly, limited U.S. commercial engagement can diminish Washington's influence over international standards, rulemaking, and maritime governance.

Security risks are also growing. Foreign ports and terminal operators may have weaker security protocols than those of the United States, increasing exposure to illicit trade and criminal activity. As ports become increasingly digitalized, cyberattacks can disrupt cargo flows, compromise commercially sensitive data, and generate cascading effects across global supply chains. Who owns and operates a port also matters for national security, especially when the port is located near U.S. or allied military installations. Port operators could gather sensitive intelligence or restrict military access during a crisis.

These concerns are heightened by the increasingly strategic approach that U.S. competitors are taking toward maritime infrastructure. China, in particular, has built an extensive commercial presence in overseas ports. Chinese involvement can provide Beijing with commercial and political leverage, strengthen relationships with host governments, and potentially create opportunities for intelligence collection or surveillance. Although Chinese-operated ports remain primarily commercial, some facilities could provide logistical support or other dual-use capabilities to the People's Liberation Army (PLA) during a contingency.

The United States nevertheless has important comparative advantages across the port ecosystem, including in engineering and design, marine construction, customs and security systems, cybersecurity, transparent concession governance, and financing. Direct operation of large container terminals, however, is not currently a U.S. comparative strength.

The United States therefore cannot and should not attempt to compete with China in every port or every segment of the industry. Instead, policymakers should identify strategically important geographies, determine where foreign involvement creates unacceptable risks, and concentrate U.S. resources where the country's capabilities can have the greatest impact. Complete disentanglement from China across the global maritime industry is neither realistic nor desirable. The objective should be to manage strategic risks, strengthen U.S. competitiveness, offer partner countries credible alternatives, and work more closely with allies and the private sector.

The report recommends that the United States:

- Develop a comprehensive U.S. maritime strategy and designate a lead agency to coordinate overseas port engagement.
- Prioritize strategically important geographies and ports rather than attempting to compete everywhere.
- Help partner countries structure transparent, competitive port transactions and strengthen concession governance.
- Empower U.S. embassies and strengthen commercial diplomacy to identify opportunities earlier and support U.S. firms.

- Bundle U.S. capabilities into competitive offerings that combine infrastructure, technology, security, financing, and technical expertise.
- Strengthen U.S. development finance tools to better support commercially viable strategic port investments.
- Expand U.S. port security assistance abroad, including physical security, customs, and cybersecurity capabilities.
- Support integrated port and hinterland infrastructure, including rail, roads, logistics systems, and digital connectivity.
- Strengthen U.S. leadership at the International Maritime Organization (IMO) and other relevant standard-setting bodies.

A more selective, coordinated, and sustained approach to overseas ports can strengthen U.S. economic security, protect critical supply chains, and preserve U.S. strategic influence in an increasingly contested global maritime environment.

Introduction

Since the time of the Phoenicians, seaports have evolved to become some of the world's most important feats of engineering, underpinning global trade and economic prosperity. At the most fundamental level, ports are dynamic systems where natural environments, human movement, and economic activity intersect. They stand at the core of modern supply chains and intermodal transport networks, connecting goods and people to both domestic hinterlands and overseas markets.

However, ports are far more than gateways for trade: They are also important conduits for enabling military operations. Ports have become strategic assets that shape economic power and geopolitical influence worldwide. Countries such as China and India are playing significant roles in global port investment and infrastructure development. From the Mediterranean to Panama to Southeast Asia and Africa, the port landscape is being contested.

On the other hand, the United States currently has a limited footprint in overseas commercial port operations, particularly in container terminals; this state of affairs has significant economic and national security implications. Yet there is no comprehensive strategy in place to address these growing vulnerabilities. This report aims to fill that gap.

Much has already been written about China's global presence in port infrastructure, focusing on individual projects, financing, governance challenges, and the debate over whether Chinese-operated ports primarily serve commercial purposes or dual-use intentions.[1] This report takes a different approach. Rather than examining China's role alone, it analyzes the



Port of Rotterdam, April 21, 2026.

Photo: Romina Bandura

vulnerabilities associated with limited U.S. engagement in commercial seaports abroad and presents a practical, actionable path for the United States to address these risks while countering China's growing influence. By acting on these constructive ideas, the United States can strengthen its engagement across the port value chain (which includes construction, terminal operations, financing, asset management, port equipment manufacturing, and digital infrastructure) and become a more reliable partner for countries seeking to develop their maritime infrastructure. Ultimately, this paper's recommendations are intended to help U.S. decisionmakers foster more effective international partnerships, secure critical infrastructure, and support greater private sector participation.

This document is not meant to be a port infrastructure handbook; there are already many comprehensive resources covering that topic.[2] Nor is it an analysis of U.S. domestic ports or U.S. naval bases, although references are made where relevant. While strengthening U.S. domestic port competitiveness is essential, this report focuses on the international dimensions of U.S. port strategy, complementing the work of other scholars who examine domestic port modernization.

The insights and findings contained in this report rely on both qualitative and quantitative research. The CSIS team examined existing cases of commercial seaports abroad as well as future port development opportunities. For this project, the team conducted desk research, carried out four country case studies (Panama, Peru, Greece, and Sri Lanka), and interviewed more than 100 experts, both in the United States and abroad. A tabletop exercise and data gathered in the port investment dashboard also informed the research findings.

The report is divided into three chapters. The first provides an overview of the global maritime port ecosystem and its current drivers; the second examines the importance of ports to U.S. economic and national security interests, as well as key vulnerabilities. The final chapter provides recommendations for strengthening U.S. engagement in ports abroad. A series of appendices provides additional information on the methodology, U.S. institutions, and the port supply chain. The country case studies have been published as a separate compendium.

1

Overview of the Global Port Ecosystem

With more than 2,000 commercial ports worldwide, seaports play a pivotal role in the global economy, processing 80 percent of all worldwide cargo by volume (see Box 1).[3] Port infrastructure reduces trade costs, enhances economic competitiveness, generates employment, and supports local economies. Studies have demonstrated that there is a positive correlation between port efficiency and regional economic growth.[4] Current research indicates that improving port infrastructure and logistics performance can lead to increased maritime trade, which in turn stimulates economic growth.[5]

BOX 1

How Many Ports Are There Worldwide?

There are several databases that compile information on ports:

The U.S. National Geospatial-Intelligence Agency's Maritime Safety Office has compiled a World Port Index, listing more than 4,000 ports, harbors, terminals, and offshore facilities.[6]

- The Lloyds Geospatial Ports Database is a highly granular dataset that includes 12,262 ports, 14,321 terminals, and 38,094 berths.[7]
- The Institute of Shipping Economics and Logistics (ISL) covers the most important ports in terms of cargo traffic, encompassing 489 ports in 108 countries.[8]

- The IMF PortWatch contains more than 2,000 ports that are relevant to trade in databases such as ISL, Lloyds, and the World Bank.[9] It classifies ports that are significant to global, regional, or domestic country trade.
- The UN Conference on Trade and Development (UNCTAD) and MDS Transmodal cover more than 800 container ports in their Liner Shipping Connectivity (Port LSCI) dataset, a complete list of all ports that receive regular containerized liner shipping services.[10]

Specialized datasets cover other characteristics, including port performance (e.g., the World Bank Logistics performance indicators and the World Bank Container Port Performance Index) and financing (e.g., AidData's Chinese-Financed Ports Overseas and Related Terminals Dataset and the Council on Foreign Relations' China's Control of Overseas Ports, among others).[11]

Ports vary in size, configuration, and function.[12] They can be maritime, riverine, or lacustrine, and they can berth large or small vessels. Some ports handle passengers and goods. Others handle a limited set of commodities, typically large, unpackaged cargo of raw materials in dry or liquid form. However, most ports are multipurpose: They contain specialized and general cargo facilities that can accommodate different types of vessels. As a result, these kinds of ports can trade a wide variety of goods that include containers, raw materials, and bulk cargoes.[13]

Ports can also be classified as either common user or dedicated facilities. Common user ports are open to multiple shippers, carriers, and logistics providers and form the backbone of international trade, especially for manufactured and consumer goods. Dedicated ports and terminals, by contrast, are often developed to serve a single company or industrial supply chain—such as iron ore, oil, or liquefied natural gas exports—and may not provide access to third parties. Most container ports are common user facilities, whereas many dry and liquid bulk terminals are dedicated or owned by a private company.

While ports may share certain characteristics, each port is unique in its geography, governance, ownership structure, cargo mix, and operational model. That is why the International Association of Ports and Harbors (IAPH) states, "If you have seen one port, you have only seen one port."[14]

"If you have seen one port, you have only seen one port."
– International Association of Ports and Harbors

The largest commercial seaports, in terms of container throughput, are located in Asia (see Table 1), including megaports in Shanghai (China), Singapore, Ningbo-Zhoushan (China), and Shenzhen (China). In Europe, ports such as Rotterdam (the Netherlands), Hamburg (Germany), and Antwerp (Belgium) serve critical value chains as well as provide provisions for NATO partners. In the

Middle East and South Asia, the ports of Jebel Ali (UAE) and Colombo (Sri Lanka) serve as key transshipment hubs linking Asia to Europe and Africa. In the United States, the West and East Coast ports are key container hubs for consumer goods, retail inventories, and industrial machinery, while the ports located in the Gulf of Mexico (which the Trump administration has renamed the Gulf of America), such as Houston and Corpus Christi, are important trading points for liquid bulk and petrochemicals.[15]

Table 1: Largest Container Ports, 2025

Rank	Port	Country	Volume 2025 (million TEU)
1	Shanghai	China	55.1
2	Singapore	Singapore	44.7
3	Ningbo-Zhoushan	China	43.9
4	Shenzhen	China	35.4
5	Qingdao	China	32.9
6	Guangzhou Harbor	China	27.7
7	Busan	South Korea	24.9
8	Tianjin	China	24.0
9	Jebel Ali, Dubai	United Arab Emirates	15.6
10	Port Klang	Malaysia	15.1
11	Rotterdam	The Netherlands	14.3
12	Tanjung Pelepas	Malaysia	14.0
13	Antwerp	Belgium	13.6
14	Hong Kong	China	13.0
15	Xiamen	China	12.5
16	Tanger Med	Morocco	11.1
17	Laem Chabang	Thailand	10.5
18	Los Angeles	United States	10.2
19	Suzhou	China	10.2
20	Guangxi Beibu	China	9.6

Source: "The Top 50 Container Ports," World Shipping Council, https://www.worldshipping.org/top-50-container-ports.

Like many other sectors, maritime infrastructure has evolved throughout history. Ports are currently undergoing significant transformation as they respond to a range of external and internal factors. Market research firms project that the global port infrastructure sector will continue to grow over the next five years, driven by automation, port modernization programs, and continued investments in Asia.[16] Within this context, several key trends will shape the future of the port industry.

Market Consolidation and Vertical Integration

A significant trend over the past two decades has been the accelerating consolidation of the global shipping and port industries. What was once a fragmented market of independent shipping lines and separate companies running port terminals has consolidated into a group of dominant players.[17] This includes horizontal integration, whereby many container carriers have merged or been acquired. As a result, UNCTAD reports that from 1996 to 2022, the top 20 shipping carriers increased their share of container-carrying capacity from 48 percent to 91 percent.[18]

In addition, shipping lines have assertively moved toward vertical integration, acquiring entire infrastructure networks from ports, railroads, trucking, and warehousing–all in the pursuit of controlling logistics end to end, as well as capturing additional value along transport and supply chains.[19] The four largest global container carriers are all vertically integrated into container-terminal operations: Mediterranean Shipping Company (MSC) through Terminal Investment Limited (TIL), Africa Global Logistics, and other MSC Group port assets; Maersk through A.P. Møller Terminals (APM Terminals); CMA CGM through CMA Terminals, Terminal Link, and United Ports; and COSCO through COSCO SHIPPING Ports Ltd.[20]

Some of these firms hold more equity than the entire GDP of the countries wherein they operate, granting them profound leverage and negotiation authority. This consolidation grants significant market power to a few dominant operators which, for small developing countries without proper regulatory oversight, may translate into less competition and higher shipping rates and prices for traded goods, ultimately affecting consumers.

Moreover, some markets are witnessing an oligopsony, or a situation in which many sellers (ports) have few clients (carriers and their alliances). In the past, ports tended to be in a stronger position, with a captive hinterland. Over the past 20 years, two shifts have taken place: On the land side, the hinterlands have increasingly begun to overlap, driven by market liberalization, trade and transit facilitation, better intermodal infrastructure, and more liberal trucking markets. On the sea side, thanks to the process of consolidation–including mergers and acquisitions, as well as alliances–there are fewer clients for the ports. This is compounded by vertical integration, in which carriers now have their own terminal operators.



Shipping containers are loaded onto unmanned vehicles at Asia's first fully automated container terminal at the Port of Qingdao, Shandong Province, China, January 13, 2022.

Photo: Zhang Jingang/VCG via Getty Images

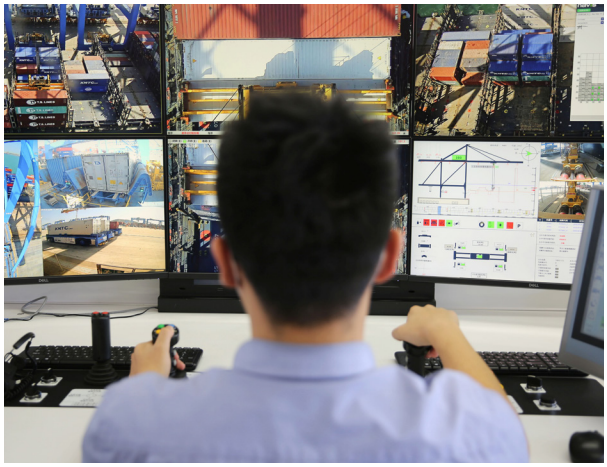
Digitalization, Automation, and Cybersecurity

At the same time, port operations—including cargo handling, information gathering, and logistics—are increasingly being digitalized.[21] Technologies such as the Internet of Things (IoT), AI, blockchain, 5G, automation and robotics, Port Community Systems (PCSs), and digital twins are used to handle cargo and information flows, track transactions, and improve business operations. This can lead to improved efficiency.[22]

According to the World Bank, the stages of digital transformation that a port can undertake range from Maritime Single Window to a PCS, then to a port management system, and finally to a "smart" port.[23] Within this space, countries are seeking to digitalize customs and port operations—for example, by developing a PCS, a digital platform that connects and exchanges information between port stakeholders such as customs agencies, shipping lines, terminal operators, trucking firms, freight forwarders, and government agencies.[24] Larger ports tend to have more resources to invest in digital transformation.[25]

Relatedly, competition among ports is driving the need to become more efficient by resorting to automation as an important tool.[26] From basic activities such as handling cargo to more sophisticated processes such as terminal operations, automation—including the use of unmanned equipment, robotics, and advanced digital systems—is poised to make port operations more efficient, transparent, and safe, with fewer human errors.[27] China's ports are global leaders in port automation, while the Ports of Los Angeles and Virginia (United States), Rotterdam (the Netherlands), Colombo (Sri Lanka), and Singapore are also advancing on this course.[28]

Digitalization also goes hand in hand with the need to implement strong cybersecurity measures. Port data and information systems provide visibility into cargo flows and shipping patterns and can be used overall to collect business intelligence. If these digital networks are compromised or tampered with, port operations could be disrupted, and sensitive data could be exposed. Indeed, this risk is growing globally, with maritime cyber incidents surging by 103 percent in 2025 compared to the previous year.[29] A notable example was the 2017 NotPetya ransomware attack that cost Maersk $200 million.[30] Moreover, this risk brings second-order effects: A disruptive cyberattack at a major port could trigger cascading impacts across global networks and impose massive economic losses.[31] In sum, with increased digital transformation, ports will have to invest in robust cyber capabilities and data protection.



A worker monitors operations at the production control center of the fully automated terminal at the Port of Qingdao, Shandong Province, China, September 30, 2020.

Photo: Costfoto/Future Publishing via Getty Images

Decarbonization

The maritime industry is also dealing with increasingly stringent requirements to meet decarbonization and global climate goals. The process of greening maritime transport will require investing significant resources in areas such as upgrading ship fleets, introducing adaptation measures in ports, and constructing alternative fuel infrastructure.[32] For example, in April 2025, the International Maritime Organization (IMO), a UN specialized agency that works on global shipping safety and security, introduced the Net-Zero Framework, a set of measures that the shipping industry needs to implement to reach net-zero emissions by 2050 (including a global fuel standard and a carbon pricing mechanism for international shipping).[33] Similarly, in the European Union, ports and shipping companies face growing pressure to comply with an increasingly demanding stack of EU environmental regulations, with deadlines for adherence in 2030. These overlapping regulations have their own reporting requirements, verification obligations, and penalty structures.

However, these standards are also facing resistance from countries and industry players. Complying with these agreements adds costs for shipowners and port operators, and the agreements take time to implement. The IMO framework was set to be adopted in October 2025 (and implemented in 2027), but this was delayed for one year due to opposition by several IMO member states, including the United States.[34] Small island states that import many goods are also concerned that these regulations will raise shipping costs, which are then passed on to consumers.[35] As a result, the framework's future remains uncertain.[36]

In the case of the European Union, the industry is concerned that if compliance costs make its ports too expensive, shipping lines will reroute through other places, such as Turkey, that have fewer constraints. As such, decarbonization efforts must be paired with realistic infrastructure investment timelines that allow all EU member states to remain competitive.

Geopolitics

Ports—along with other critical infrastructure—are also at the center of broader geopolitical dynamics, with major powers playing significant roles in global port investments and using diplomatic, financing, and political tools to advance their commercial interests and national security priorities abroad.

> *"Geopolitical risk, once a lower-priority concern for port operators, used to be ranked 5th or 7th; now, it's in the top three priorities." – Anonymous interviewee*

To support trade and sustain economic growth, developing countries need to expand their maritime infrastructure and enhance their own port competitiveness. They often lack sufficient expertise and financing to develop infrastructure and therefore need to attract a significant amount

of foreign direct investments. In doing so, these countries must balance relationships with major powers competing in this space—including China, India, Japan, the United States, and others—while striving to preserve their economic and foreign policy autonomy.

The United States has begun to leverage its diplomatic, economic, and security capabilities to advance its interests in strategic port infrastructure across regions, including in Greece, Panama, and Peru. Working with allies and partners, the United States can support the development and operation of ports abroad in ways that advance shared economic and strategic interests. This includes strengthening countries' economic resilience, promoting transparency and a level playing field in port transactions, and championing quality infrastructure abroad.

With new port projects coming online and continued disruptions in major trade choke points, the global port sector will continue to be an important arena of economic and strategic competition in the years ahead.

Maritime Security

Finally, the physical security of ports and maritime shipping will remain a critical issue requiring sustained attention and investment by governments and industry alike. As global trade expands and supply chains become increasingly sophisticated, so do the incentives for malign actors—state-sponsored or criminal—to exploit maritime routes for illicit activities. Terrorism also remains an ongoing threat. Beyond disrupting trade and port operations, terrorist attacks can have profound economic consequences for countries—particularly those that rely heavily on tourism, such as Greece and Sri Lanka. For ports, these ongoing threats underscore the need to strengthen security measures, including investment in cargo scanning capabilities, adoption of a risk-based approach to screening, and integration of logistics and trade data into digital systems.

2

U.S. Interests and Vulnerabilities in Global Ports

Within this evolving global landscape, the United States has important interests for port infrastructure both at home and abroad. Ports have long been integral to the United States' commercial and military might. Since the precolonial era, ports have connected U.S. exporters to markets around the world and provided centralized areas for the inspection of goods and people entering the United States. Modern commercial seaports also serve as critical hubs for naval logistics and operations: They dock U.S. naval fleets; accommodate shipyards where naval vessels are built, maintained, and repaired; and operate as staging grounds for military supplies that are transported to overseas personnel.[37]

The Economic and Military Importance of Ports

Most overseas trade passes through U.S. port infrastructure, contributing nearly $2.6 trillion to the country's GDP and supporting one in every eight American jobs.[38] But ports also play a fundamental role for the U.S. military. Commercial ports, merchant mariners, and civilian maritime infrastructure are critical to national defense: They are essential for U.S. sealift and mobilizing forces, especially during contingencies or wartime (see Box 2).

BOX 2

Sealift

Sealift is the movement of military personnel, equipment, and supplies by sea to support operations, deployments, and sustainment. Airlift moves people and urgent items fast, but sealift moves the bulk: Approximately 90 percent of military cargo by weight moves by sea in major operations.[39] The United States uses a mix of military-owned and commercial ports and vessels for its sealift. At the U.S. Department of War (DOW), the Military Sealift Command is the unit that provides global maritime logistics and strategic sealift in support of joint military operations, enabling the rapid movement of personnel, equipment, fuel, and supplies worldwide.[40]

Military cargo is loaded domestically at U.S. commercial or military ports, many of which are part of the Strategic Seaport Program (see Appendix II for a list of U.S. strategic ports).[41] Commercial ports remain under civilian control even when supporting military operations.

Overseas, the cargo arrives at allied commercial ports, foreign ports with access agreements, or ports adjacent to U.S. naval bases. These foreign commercial ports are not owned or permanently operated by the United States, but access is enabled through alliances, status of forces agreements, acquisition and cross-servicing agreements, and defense cooperation agreements, all of which allow civilian-controlled infrastructure to support naval and joint force operations in both peacetime and wartime contingencies.[42] These agreements support a range of services for U.S. forces, including logistics, refueling, supply replenishment, and ship repair.[43] They are fundamental to ensuring U.S. access to port facilities during peacetime, and they enable joint exercises and humanitarian operations during contingencies. Examples of these ports include Djibouti, Darwin (Australia), and Jebel Ali (UAE).



U.S. Army Black Hawk helicopters and vehicles line a dock at the Port of Savannah, Georgia, January 14, 2003.

Photo: Stephen Morton/Getty Images

The U.S. Footprint

Given the importance of ports at home and abroad, the United States has contributed to the development of maritime infrastructure through its private companies and public institutions. The United States has undertaken significant innovations in the maritime industry, including containerization and crane technology (see Box 3), and constructed engineering marvels such as the Panama Canal (the work of the U.S. Army Corps of Engineers). Moreover, the United States possesses a broad and sophisticated private sector ecosystem supporting port development and operations, spanning

engineering and construction, infrastructure investment, terminal operations, equipment, software, logistics, and security technologies. U.S. firms are particularly strong in port engineering, design, dredging, infrastructure finance, and technology. U.S. companies also provide leading digital systems, logistics and customs software, cybersecurity, cargo screening, and inspection technologies used in ports around the world. (Appendix II provides a more detailed description of the U.S. port supply chain.)

> *"We have seen in the past few years how disruptions to maritime commerce, regardless of cause, can produce significant impacts for businesses and consumers, and we recognize that America's ports are equally critical in enabling our armed forces to effectively deploy and supply."*
>
> *– Eric Goldstein, former Executive Assistant Director for Cybersecurity, Cybersecurity and Infrastructure Security Agency, U.S. Department of Homeland Security*[44]

However, U.S. capabilities are uneven across the port supply chain. The United States has relatively few globally dominant container terminal operators, although companies such as Ports America and SSA Marine have substantial domestic operations, and SSA Marine operates terminals abroad. Many major U.S. container terminals are operated by foreign companies such as APM Terminals, CMA CGM, and MSC's TIL. The United States is also relatively weak in the manufacturing of large-scale container-handling equipment, particularly ship-to-shore and gantry cranes, where European, Chinese, and other Asian manufacturers dominate.

Several factors help explain this gap. The global container terminal operating industry is highly concentrated among a small number of large foreign firms, reflecting substantial barriers to entry and significant economies of scale. Developing and operating a modern container terminal requires billions of dollars in capital investment, long-term concession agreements, specialized equipment, and expertise in navigating complex labor and regulatory environments. As a result, a relatively small group of global terminal operators handles the majority of the world's container traffic. Foreign operators have gained prominence because major shipping lines increasingly seek control over terminal assets to ensure reliable berth access and optimize their global networks, driving vertical integration between shipping and terminal operations. This concentration has also shaped the U.S. market, where many major terminals are operated by the same international firms.

At the same time, U.S. firms historically focused on other port terminal segments, such as breakbulk, bulk cargo, and stevedoring, while many foreign operators were willing to make the substantial long-term investments required for container terminals. For noncontainer cargo, industry power is more dispersed, and U.S. firms thrive in bulk and breakbulk, where entry barriers are lower. Public port authorities have further reinforced this trend by favoring experienced global

operators with strong financial resources, established relationships with international carriers, and the ability to commit significant capital to terminal development and modernization.

More fundamentally, U.S. companies largely compete independently for overseas port projects, without a coordinated national strategy or significant government support for international expansion. Successive U.S. governments have not supported the international competitiveness of the U.S. shipping and port industries with incentives or a vision, particularly following the deregulation of the transportation sector in the 1980s, which left much of the industry to market forces. This contrasts with other countries that support more integrated models in which financing, construction, terminal operations, equipment, shipping, and logistics can be bundled together. In addition, the large domestic market has reduced incentives for U.S. firms to expand overseas, while the risks associated with foreign investments have further discouraged international engagement.

Globalization and the offshoring of manufacturing and supply chains, labor-related constraints, and limited political attention in Washington have also contributed to the erosion of U.S. leadership. Finally, stakeholders have noted that the United States has significantly reduced the level of federal investment in maritime research and development that once helped drive innovation through agencies such as the Defense Advanced Research Projects Agency (DARPA).

BOX 3

A Brief History of U.S. Port Management

When ports were first developed in the United States, mainly along its Atlantic coast, they were considered public access infrastructure. They were not owned by a single entity and were often governed by a local harbormaster or wharfinger who was appointed by the state or municipal government.[45] The Industrial Revolution fundamentally changed the nature of U.S. port administration in the nineteenth century. As the production of manufactured goods skyrocketed, railroad companies were pivotal in connecting international suppliers with U.S. consumers. To service the growing transportation volumes, railroad companies developed and expanded the port facilities out of which they operated.

Before the creation of government-run port authorities, ports were primarily owned and operated by railroad companies. Because railroad companies' private interests often were at odds with the common good and maritime shipping interests, several cities—including San Francisco, New Orleans, Philadelphia, and New York—established port authorities in the late 1800s, granting these public entities autonomy and jurisdiction over their waterfronts. Soon after, coastal cities across the United States followed their lead and established their own port authorities to develop their ports and regulate commerce.[46]

For much of the 1900s, the United States' ports were owned and operated by these port authorities, which had jurisdiction over "the harbor, the waterfront facilities, and the marginal rail trackage, highway facilities, and storage facilities that constitute an ocean port."[47]

Over the last 40 years, U.S. port governance has evolved to encompass a range of models; the two main ones are operating ports and landlord ports. In the operating port model, a public port authority (state or local government-run) owns and operates the port's infrastructure, terminals, and most port-related services, with only limited support functions outsourced to private firms. The ports of Houston, Savannah, and Charleston follow this model. By contrast, the landlord port model separates ownership from operations: The public authority retains ownership of the land and core infrastructure while leasing terminals to private operators responsible for cargo handling, terminal management, and equipment. Public and private entities often collaborate on major capital investments through public-private partnership arrangements. The ports of Los Angeles and Long Beach in California and the Port of Newark in New Jersey follow the landlord model.[48]

The overwhelming majority of U.S. ports have adopted the landlord model, and many of these port terminals are operated by foreign-owned companies.[49] This stands in stark contrast to the negligible number of U.S. companies that manage foreign container terminals: Among the world's largest port operators, none are from the United States.[50]

The United States revolutionized the global maritime industry through innovation and technology. In addition, U.S. companies are important players in other aspects of the port value chain, including construction and engineering, asset management, and technology (port software, customs clearance, scanners, and cybersecurity).

An example of these innovations is the development of containerization. In 1956, an American trucker from North Carolina, Malcolm McLean, introduced the modern concept of a shipping container: a standardized container that can be seamlessly moved across different types of transportation—such as truck, rail, or ship—without needing to unload and reload the cargo.[51] In addition, in 1959, container cranes were invented by the Pacific Coast Engineering Company (PACECO Corp.), a U.S. company, to stack containers on top of one another in organized fashion.[52] The time to load and discharge cargo was significantly reduced, from 3 weeks to 18 hours.[53]

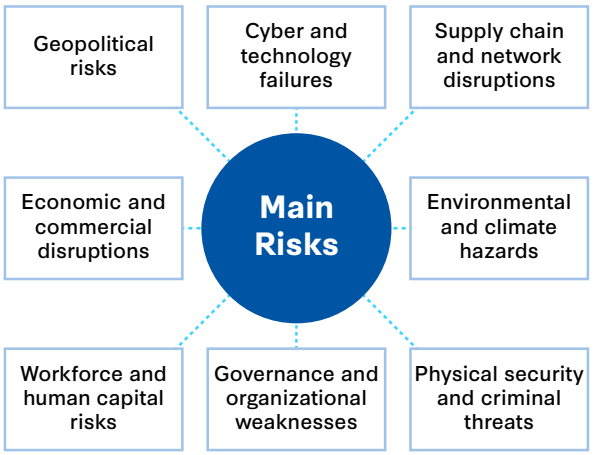
Before these innovations, diverse packages of goods aboard ships were poorly secured and loosely stacked on top of one another.[54] Containers, on the other hand, are stackable like Legos, which has allowed ships to carry much greater volume. The complementarity of these inventions made shipping faster, cheaper, and more efficient, fueling the rise of globalization by expanding the selection of internationally tradable goods. For example, goods made in Japanese factories could suddenly be stocked on American shelves. By 1983, approximately 90 percent of countries had container ports.[55]

Vulnerabilities

As critical infrastructure, ports in the United States and abroad face a broad range of physical, cyber, operational, and geopolitical challenges that require sustained attention (see Figure 1). Among the main risks are extreme weather events, labor strikes, cyber incidents, corruption, and governance failures. Inefficient port operations, congestion, capacity constraints, and inadequate infrastructure investment create further challenges. Weak regulatory oversight, sudden changes in tariffs or customs procedures, and the proliferation of nontariff barriers can further increase costs, delay cargo movements, and reduce the resilience of global supply chains.

However, these vulnerabilities are not one size fits all: They are highly contextual and depend on the political situation of the country, geography, governance models, and institutional capabilities, as well as other conditions impacting the port ecosystem of a particular country. The country case studies included in this report highlight the differences. In Panama, for example, pressing challenges to ports include water availability, which affects the canal, its ports, and the shipping lines that go through it. In Sri Lanka, the challenges relate to Colombo's existing cargo capacity and reliance on a transshipment model; increasing competition from regional ports; cumbersome bureaucracy and customs procedures that reduce the attractiveness of port operations and investment; and the relatively low level of digitalization across port operations. Greek ports face multiple challenges, including complying with an increasingly complex web of EU environmental regulations, strengthening governance and transparency, combating corruption, and enhancing cybersecurity. In Peru, bureaucracy, narcotics, and lack of hinterland connectivity are some of the key challenges. Underlying all of these case studies is the need to accelerate port digitalization, strengthen cybersecurity, and manage the growing presence and influence of competing powers.

Figure 1: Main Risks to Ports



Source: Adapted from International Association of Ports and Harbors, *Risk and Resilience: Guidelines for Ports* (Tokyo, Japan: IAPH), https://sustainableworldports.org/wp-content/uploads/IAPH-Risk-and-Resilience-Guidelines-for-Ports-BD.pdf.

The research team evaluated and stress-tested these U.S. risks through expert interviews and a tabletop exercise that examined how identified vulnerabilities could affect port operations, supply chains, and U.S. economic and national security interests under different scenarios. In these scenarios, ports were not treated as isolated infrastructure: They were understood as layered systems in which commercial financing, operator control, software, cargo data, public messaging, maintenance relationships, and host-nation politics can be converted into strategic leverage.

RISKS AT HOME

The U.S. port system, which comprises more than 200 commercial ports, faces specific

vulnerabilities that impact economic competitiveness and compromise national security.[56] Many U.S. ports face challenges related to aging infrastructure, underinvestment, and the slow adoption of automation and other advanced technologies.

First, U.S. ports lack operational efficiency.[57] Only one U.S. port (Philadelphia) ranks among the top 50 ports in the 2025 edition of the Container Port Performance Index conducted by the World Bank's Transport and Logistics Global Practice and S&P Global Market Intelligence.[58] Ports need to be modernized to process larger trade volumes and be more competitive.

Moreover, with increased digitalization across sectors, cybersecurity is a concern. The highly lucrative shipping industry makes port operations a prime target for hackers seeking to imperil digital systems for profit.[59] This can disrupt daily operations and compromise sensitive data. For example, between 2014 and 2023, the largest port in the United States, the Port of Los Angeles, saw an increase of cyberattacks from 7 million attacks per month in 2014 to 60 million in 2023.[60]

Meanwhile, the illicit smuggling of military weaponry and firearms, drugs (such as fentanyl), and people through shipping containers remains a persistent challenge for major ports, with the sheer volume of daily cargo creating significant obstacles for detection and enforcement.[61] In the United States, fentanyl precursors are not smuggled through seaports, but rather make their way from China and India to Mexico's Pacific ports, and are then trafficked via land routes into the United States.[62]

U.S. ports also face environmental shocks, such as weather-related events, which can disrupt operations and cause ecological harm. Hurricanes and tropical storms that impact the ports in the Gulf and on the Eastern Seaboard of the United States create operational shutdowns, infrastructure damage, and logistical bottlenecks.[63] For example, Hurricane Ian forced the temporary closure of seven major ports in 2022.[64]



Service members with Pacific Partnership 2015 wave to locals from aboard the Military Sealift Command joint high-speed vessel USNS Millinocket *(JHSV 3) in San Fernando City, Philippines, 2015.*

Photo: Smith Collection/Gado/Getty Images

Finally, U.S. ports are also focal points for social disruptions, including labor disputes. In 2024, 45,000 longshoremen went on strike for three days because of pay and automation; this action affected 36 ports across the East and Gulf Coasts.[65] The dispute impacted consumers and supply chains and cost the U.S. economy an estimated $5 billion a day.[66]

RISKS ABROAD

While maintaining the resilience, security, and competitiveness of its domestic ports remains a national priority, the United States also has growing economic and strategic interests in commercial ports overseas. As the world's second-largest trading nation behind China, the United States depends on

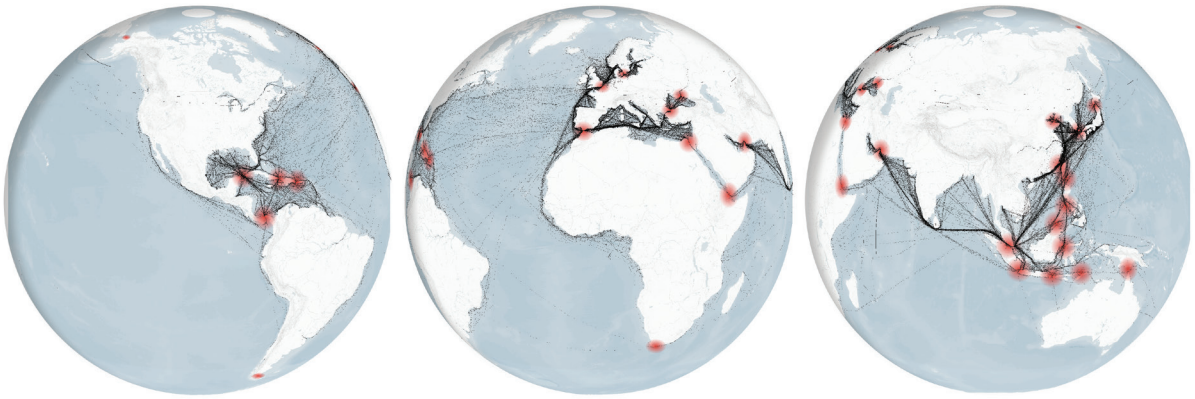
a global network of overseas ports to support international trade and military sealift.[67] Therefore, the United States must increasingly look beyond its own shores. Yet the limited U.S. commercial presence in key segments of overseas port infrastructure carries important economic, security, and geostrategic risks.

ECONOMIC RISKS

The main economic vulnerabilities for the United States associated with overseas ports include potential trade disruptions in ports near choke points and in ports serving critical supply chains; forgone commercial opportunities; market concentration; and diminished influence in global governance.

First, disruptions near strategic maritime choke points can affect shipping routes and port operations throughout the surrounding network. Along strategically important maritime choke points for the United States are major transshipment hubs and ports. A maritime choke point, or bottleneck, is a narrow geographical passage that major shipping lines use for which there is no practical alternative in the event of closure (or where alternative routes would be significantly more costly).[68] There are differing assessments on which choke points are most consequential for the United States, but Table 2 and Figure 2 provide a summary of the principal ones.

Figure 2: Global Shipping Routes and Maritime Choke Points



Source: CSIS; data from IMF PortWatch, https://portwatch.imf.org/datasets/fa9a5800b0ee4855af8b2944ab1e07af_0/about; and General Atomics Intelligence, Optix, https://www.optix.earth/.

In the Western Hemisphere, the Panama Canal and surrounding ports are crucial, because more than 40 percent of U.S. container traffic transits through that area.[69] In the Mediterranean, the Suez Canal is a major conduit of global trade and is significant for the energy security of NATO partners.[70] Likewise, maritime infrastructure in the Mediterranean Sea is integral to European logistics and energy, and to NATO defense. Although the United States does not rely as much on trade in the choke points of the South China Sea (i.e., the Strait of Malacca and the Taiwan Strait),

these are central for many U.S. allies and partners.[71] Moreover, the Taiwan Strait is central to global semiconductor supply chains (see Table 2).[72] Finally, the Strait of Hormuz and the Bab al-Mandab Strait—key choke points of the Persian Gulf and the Red Sea, respectively—are essential to the global flow of energy, manufactured goods, and critical technologies. The closure of the Strait of Hormuz due to the U.S.-Iran war stands out as a particularly relevant example in its impacts on global oil supplies, energy prices, inflation, and broader trade flows.

Table 2: Strategic Choke Points for the United States and Its Allies[73]

	Choke Point	**Economic Importance**	**Geostrategic and Security Importance**
1	Panama Canal	Shortcuts trade from Atlantic Ocean to Pacific Ocean Represents 5 percent of global trade volume Represents 40 percent of U.S. container traffic Important for crude oil and liquefied natural gas (LNG) exports from the United States to Asia	Security arrangement whereby U.S. Navy vessels have passage priority
2	Suez Canal	Connects Europe with Asia and shortcuts trade from the Cape of Good Hope (South Africa) Represents 10 percent of global trade volume and 22 percent of container volume	NATO members: strong naval presence from France, Turkey, Italy, and Greece
3	Bab al-Mandab Strait	Connects Red Sea with Indian Ocean Represents almost 9 percent of global sea trade volume; main products include cars, containers, and oil products	Instability of the region Nearby Djibouti hosts several military bases, including U.S. Camp Lemonnier Doraleh Multipurpose Port project hosts a Chinese naval base Chinese-funded undersea cable system called PEACE (Pakistan and East Africa Connecting Europe)[74]
4	Strait of Hormuz	Connects the Persian Gulf countries with the rest of the world Represents 11 percent of global sea trade volume Represents one-quarter of total global maritime traded oil Accounts for 7 percent of U.S. crude oil and condensate imports and 2 percent of U.S. petroleum liquids consumption	Instability of the region Disruption to global supply chains and the cost of goods globally U.S. military bases in the region: Bahrain, Kuwait, UAE, Qatar, and Saudi Arabia

5	Strait of Gibraltar	Connects Mediterranean countries to Atlantic Gas pipeline, electrical connections Crude oil and LNG to Europe	NATO assets
6	Turkish Straits (Bosphorus and Dardanelles)	Connect Black Sea with Mediterranean Sea Account for approximately 3 percent of seaborne trade volume	Montreux Convention enables Turkey to function as a gatekeeper between the Black Sea and the Mediterranean Sea
7	Strait of Malacca	Connects South China Sea with Indian Ocean Close to 25 percent of global sea trade volume Important for energy trade	NATO assets in the region[75] Piracy
8	Strait of Taiwan	A vital conduit for over one-fifth of global maritime trade[76] More than 90 percent of high-tech chips are built in Taiwan Key passage for ships from Port of Singapore (second-busiest port in the world) to Port of Busan (seventh-busiest port)	Taiwan: major non-NATO ally (MNNA) and security partnership South Korea: U.S.-South Korea Mutual Defense Treaty (1953)
9	Arctic Straits (Northwest Passage and the Northeast Passage)	Navigable during the late summer months; reduction of shipping time between Asia and Western Europe Untapped oil and gas reserves	NATO presence and potential regular exercise Russia and China use for research, military, and trade
10	Strait of Dover (English Channel)	Key passage for shipping between Atlantic Ocean and North Sea ports, including megaports such as Rotterdam, Antwerp, and Hamburg Key route for Russian oil tankers[77]	NATO assets
11	Danish Straits	LNG exports from the United States[78]	Key passage for NATO maritime forces

Without strategic partnerships or operational rights at key foreign ports, U.S. businesses may become more vulnerable to trade disruptions, delays, and geopolitical tensions affecting these critical maritime hubs.

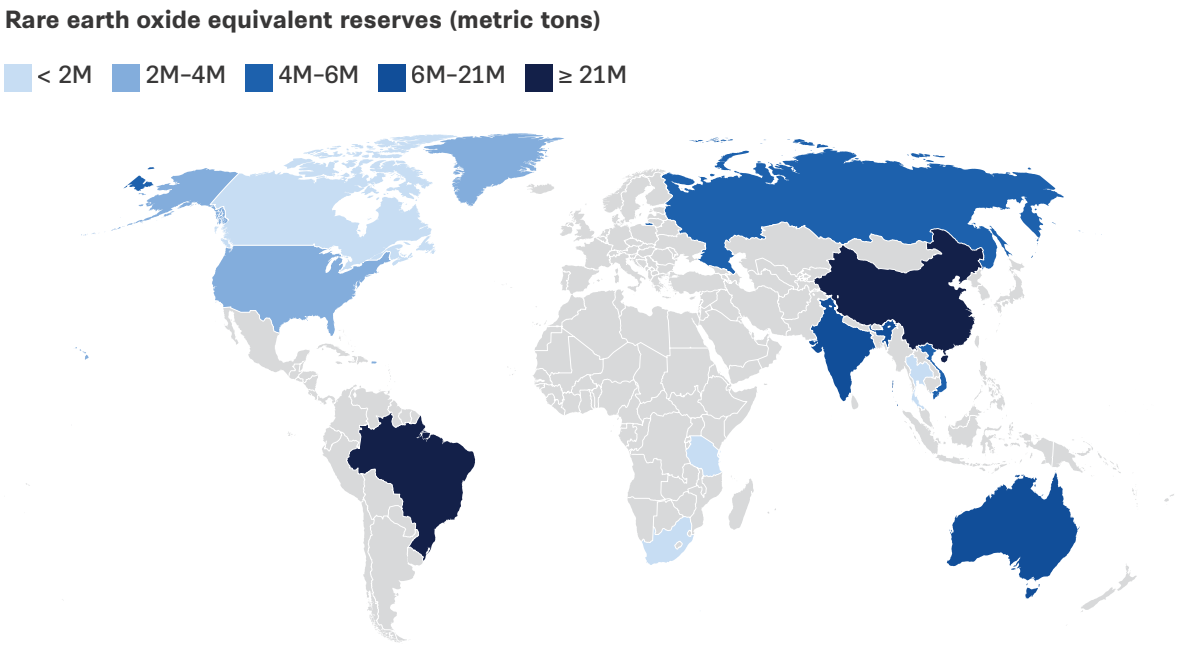
Disruptions to ports that serve critical supply chains for the United States and its allies can have significant economic repercussions at home. Ports that are important for transporting energy (oil and gas), minerals, pharmaceuticals, semiconductors, and other strategic inputs such as fertilizers are essential not only to U.S. business operations but also to the nation's economic security.

One of the sectors that has been at the center of intensifying global competition and has garnered significant policy attention in the United States and worldwide is the critical minerals supply chain,

given its importance for manufacturing, emerging technologies, and the defense industrial base.[79] The United States faces significant vulnerabilities in securing reliable access to critical minerals.[80] Many of these mineral commodities are located and processed beyond U.S. borders (see Figures 3 and 4). Diana Roy from the Council on Foreign Relations (CFR) notes that "the United States is 100 percent import-dependent on twelve minerals classified by the U.S. government as critical, and more than 50 percent import-dependent on twenty-eight additional minerals."[81] Transport infrastructure, including ports, is essential to enabling a more predictable supply.

To secure this supply chain, China has been dominating mineral extraction and processing worldwide.[82] As part of this strategy, China has been financing, building, and operating ports in mineral-rich countries. China's port projects cut across 90 countries, including Peru (Port of Chancay), Guinea (Port of Morebaya), and Angola and the Democratic Republic of the Congo (Lobito Corridor), to cite a few examples.[83] Thus, the location of critical minerals matters, but it also matters who controls the processing capabilities and the ports through which the minerals are transported. This is an area where the United States has fallen behind.

Figure 3: Rare Earth Reserves, 2024



Source: "Mineral commodity summaries 2025," U.S. Geological Survey, https://www.usgs.gov/publications/mineral-commodity-summaries-2025.

Table 3: Global Mineral Production, Selected Commodities, 2024 (percent of total)

ALUMINUM		
1	China	59.7%
2	India	5.8%
3	Russia	5.3%
4	Canada	4.6%
5	United Arab Emirates	3.8%

COBALT		
1	Congo (Kinshasa)	75.9%
2	Indonesia	9.7%
3	Russia	3.0%
4	Canada	1.6%
5	Philippines	1.3%

COPPER		
1	Chile	23.0%
2	Congo (Kinshasa)	14.3%
3	Peru	11.3%
4	China	7.8%
5	Indonesia	4.8%

GRAPHITE		
1	China	79.4%
2	Madagascar	5.6%
3	Mozambique	4.7%
4	Brazil	4.2%
5	India	1.7%

IRON ORE		
1	Australia	37.2%
2	Brazil	17.6%
3	China	10.8%
4	India	10.8%
5	Russia	3.6%

LITHIUM		
1	Australia	**36.7%**
2	Chile	**20.4%**
3	China	**17.1%**
4	Zimbabwe	**9.2%**
5	Argentina	**7.5%**

MANGANESE		
1	South Africa	**37.0%**
2	Gabon	**23.0%**
3	Australia	**14.0%**
4	Ghana	**4.1%**
5	India	**4.0%**

NICKEL		
1	Indonesia	**59.5%**
2	Philippines	**8.9%**
3	Russia	**5.7%**
4	Canada	**5.1%**
5	China	**3.2%**

RARE EARTHS		
1	China	**69.2%**
2	United States	**11.5%**
3	Burma	**8.0%**
4	Australia	**3.3%**
5	Nigeria	**3.3%**

TITANIUM MINERAL CONCENTRATES		
1	China	**35.1%**
2	Mozambique	**20.3%**
3	South Africa	**14.9%**
4	Australia	**6.4%**
5	Norway	**3.8%**

Note: Shares of world production; top five producers shown.
Source: CSIS analysis of data from U.S. Geological Survey, *Mineral Commodity Summaries 2025* (Reston, VA: USGS, 2025), https://doi.org/10.3133/mcs2025.

An additional economic vulnerability for the United States stems from industry concentration in the port ecosystem in partner countries. When important port terminals are run by one or two foreign operators through long-term concessions or exclusive operating rights, this reduces competition and limits the operational flexibility of the port. Because terminal operators control cargo handling and container flows, they have market power. The implication for the United States is that these operators could potentially delay the movement of U.S. commercial fleets in normal times or military vessels during a crisis, affecting U.S. trade, military logistics, and economic security. An example is the case of Panama, where the ports flanking the canal's entrances are by far the most economically significant. Until recently, Hutchison subsidiary Panama Ports Company served as the concessionaire for both container terminals, giving the company significant market power and economic leverage, both in the country and over this critical trade route.

Finally, limited U.S. commercial presence in the industry could diminish U.S. influence over the rules and standards governing global commerce. Beyond just making money, commercial engagement often reinforces diplomatic influence, technical expertise, and leadership in international standard-setting bodies such as the International Maritime Organization (IMO), where governments work with industry to develop regulations governing maritime safety, security, environmental protection, and emerging technologies. A diminished U.S. presence in the global port ecosystem could therefore weaken its ability to shape the future regulatory environment and promote high standards for cybersecurity, digital infrastructure, and resilient supply chains.

SECURITY RISKS

Beyond economic and commercial risks, CSIS research also identified heightened exposure to a series of security vulnerabilities for the United States associated with overseas ports, including weak customs enforcement, cybersecurity, and intelligence gathering.



Vietnamese environmental police and customs officers write reports after opening containers of animal feed at Dinh Vu port in Hai Phong, Vietnam, to test samples for bovine protein, July 16, 2008.

Photo: Chau Doan/LightRocket via Getty Images

First, foreign port authorities and terminal operators may not maintain the same high security standards and protocols as those in the United States. Weak customs enforcement, inadequate cargo screening capabilities, and poor governance at foreign ports that trade extensively with the United States can increase the risk of illicit goods and criminal activity entering global supply chains and ultimately reaching U.S. soil.[84]

Second, cybersecurity risks are also growing as ports become increasingly digitalized.[85] Modern ports rely on interconnected terminal operating systems, port community systems, cargo management platforms, communications networks, industrial control systems, and automated equipment, including

cranes. Systems that depend on untrusted technologies or lack adequate cybersecurity protections can become targets for cyberattacks, espionage, or intelligence collection. If digital infrastructure is compromised, this can disrupt cargo flows, expose commercially sensitive shipping data, and undermine the resilience of critical supply chains. Because ports are central nodes in the global economy, cyber incidents can have cascading international consequences, even for the United States. For example, the 2017 NotPetya cyberattack disrupted operations across the maritime sector, including at the Port of Rotterdam, and caused approximately $300 million in losses for shipping giant Maersk alone.[86]

The third risk to the United States centers on intelligence gathering. The geographic locations of ports have important defense implications. Ports situated near U.S. or NATO military installations may provide opportunities for intelligence collection, surveillance, or potential denial of access during periods of crisis. In this regard, ports along the Mediterranean Sea are important given that the United States hosts military bases in Italy (Naples and Sigonella), Greece (Souda), and Spain (Rota). The case of Panama is also significant. The U.S. Navy depends on reliable access to the canal and its surrounding port infrastructure to enable the rapid movement of naval forces between the Atlantic and Pacific Oceans and to maintain logistical flexibility during contingencies. Adversarial influence over key port facilities could enhance intelligence-gathering capabilities, complicate military logistics, and provide economic and strategic leverage during periods of heightened geopolitical tension.

GEOPOLITICAL RISKS

The global port ecosystem also presents a range of geopolitical risks. U.S. competitors and allies are approaching maritime infrastructure in a targeted and strategic manner. China, Japan, and India are well-positioned to expand their involvement in port infrastructure development. By comparison, the United States has taken a less coordinated approach to overseas port development. This not only represents missed commercial opportunities; it also creates geopolitical risks, including diminished political leverage in partner countries and the potential for military adversaries—particularly China—to employ commercial port infrastructure for dual-use purposes.

China leverages its economic power on a global scale by exerting significant control over entire supply chains, particularly through its dominance in shipping and port infrastructure. The country seeks to control key trade routes, rewrite maritime governance, and project global power. Worldwide, China has been investing in ports and other critical maritime infrastructure as part of its Belt and Road Initiative (BRI).[87] As of July 2026, China had invested an estimated $82.5 billion into a total of 145 port projects abroad.[88] Recent Chinese port development in important geographies such as the Panama Canal, the Port of Piraeus in Greece, and the Chancay Port in Peru further underscores the importance of this type of infrastructure.[89]

First, China is after economic leverage. Chinese-operated port terminals may provide preferential treatment of Chinese shipping companies while reducing market access and bargaining power for U.S. firms. At the same time, Chinese investments in ports and other infrastructure strengthen the country's influence with host governments, potentially limiting commercial opportunities for U.S. companies.



A gantry crane loads containers onto automated guided vehicles during the testing phase at the Long Beach Container Terminal in Middle Harbor, Port of Long Beach, California, May 13, 2015.

Photo: Tim Rue/Bloomberg via Getty Images

A case in point is Panama, which represents, for China, a commercial logistics hub and a strategic foothold in the Western Hemisphere. In 2017, Panama joined the BRI as the first Latin American signatory. That same year, Panama switched diplomatic recognition from Taipei to Beijing, despite having maintained a free trade agreement with Taiwan since 2003.[90] Since then, China has become the second-largest investor in Panama over the past decade, although U.S. investment remains several times larger.[91] Beijing has gained influence over Panama's ports, as well as telecommunication and transportation projects. In 2018, a Chinese consortium of companies was awarded a contract to build a fourth bridge across the canal, worth $1.4 billion.[92] Moreover, the Cobre copper mine, one of the largest in the world, received substantial Chinese investment before closing in 2023, following environmental protests.[93]

China's second area of influence is intelligence and information leverage. The installation of unauthorized surveillance devices on port equipment has been cited as a significant security threat. Ship-to-shore cranes controlled by PRC-owned Shanghai Zhenhua Heavy Industries Company Limited (ZPMC) have become controversial in the United States. ZPMC is a market leader operating in more than 100 countries, with an estimated global market share of 70 percent. The majority of cranes operating in U.S. ports are supplied by ZPMC. However, there are findings of unauthorized IT equipment installed in these cranes that could track logistics data, be a tool for surveillance, or be used to disrupt supply chains.[94]

China also supplies software to facilitate shipping. China's platform for sharing logistics information, the National Transportation and Logistics Public Information Platform (LOGINK), administered by the Ministry of Transport, has agreements with 24 ports outside of China, mainly in Europe. U.S. lawmakers have raised concerns about the commercial and military risks associated with the vast amount of data this platform can collect and control.[95] In addition, China has provided scanners and customs inspection equipment free of charge to 91 countries. This risks giving "Chinese authorities insight into sensitive data, from biomedical information to military transshipments."[96]

A third risk is the potential dual-use nature of some Chinese-operated ports. Although these facilities are primarily commercial, certain ports could provide logistical support, intelligence collection opportunities, or surveillance capabilities for the PLA, particularly during a contingency. CFR identifies 14 Chinese-majority-owned port projects with physical characteristics that could support naval use, although actual military use would depend on host country politics, access

rights, and operational feasibility. If the tensions between both countries were to worsen and develop into a major trade war, China would be capable of creating choke points for U.S. merchant and naval vessels along major trade routes.[97] Moreover, if tensions were to grow further, the 14 commercial ports China already owns could potentially be repurposed for military use to protect its overseas interests, depending on the cooperation of host governments.

The nature of the China-related threat over control or operation of foreign ports is debated: For some experts, China's presence is an economic and geopolitical challenge, not an imminent military concern. To this point, Djibouti is the only unambiguous PLA foreign military base. The strongest consensus is that China would not "weaponize ports" by deliberately disrupting global trade or imposing a broad embargo through commercially significant ports, given the economic costs such actions would impose on China itself. Rather, experts argue that ports create opportunities for intelligence collection, cyber access, commercial leverage, and political influence over host country governments. Cybersecurity vulnerabilities, espionage, and intelligence collection through digital infrastructure represent the most credible and immediate risks.

However, not everyone shares this assessment. Countries need to expand their transport infrastructure to trade globally and sustain growth. Economists regard infrastructure spending in developing countries, including ports, as efficiency enhancing. As a result, Chinese investment is often welcomed, particularly when few alternative sources of financing are available. Many port terminals operated by Chinese companies, including Piraeus in Greece and Chancay in Peru, have witnessed significant capital investments and improved operational efficiencies. At the same time, these investments can introduce problematic practices and risks that host countries may lack the capacity or regulatory frameworks to adequately mitigate.

China's Competitive Advantage

What is clear is that China has a competitive advantage in global port development, characterized by three defining attributes, which this paper calls the "3S model": scale, speed, and systems integration. Rather than viewing ports as standalone assets, China combines engineering, design, financing, construction, and operational expertise into an integrated delivery model.

China's competitive advantages stem from an integrated model that combines state-backed financing, rapid project execution, and long-term strategic engagement. Chinese state-owned enterprises offer a comprehensive package that integrates project design, engineering, construction, financing, and long-term operations, enabling partner countries to work with a single provider throughout the project life cycle. Supported by streamlined decisionmaking and fewer bureaucratic constraints, Chinese firms are often able to deliver projects more quickly than their competitors. They also bundle infrastructure investment with financing packages, trade, and diplomatic engagement, creating a more attractive value proposition for many host governments. Finally, China frequently secures long-term concession agreements that provide sustained operational control and a durable commercial presence in strategically important ports.

China approaches ports as part of a broader strategy to secure access to critical supply chains, strategic commodities, and international markets.[98] Rather than investing in ports alone, China frequently develops integrated economic corridors that combine ports with railways, highways, logistics hubs, industrial parks, energy infrastructure, and mining assets, reinforcing its long-term commercial and geopolitical influence. In this regard, the country is often willing to prioritize long-term strategic objectives over short-term commercial returns. Chinese firms may pursue projects that private sector investors consider too risky or insufficiently profitable, particularly when those investments advance broader national objectives.

Weaknesses in the U.S. Approach and Implications

In contrast, there are several structural weaknesses that limit the competitiveness of the U.S. approach to international port development.

First, as discussed earlier, the highly concentrated and vertically integrated maritime industry makes it difficult for U.S. firms to compete with foreign competitors. Without sufficient government-backed risk mitigation or adequate financing tools—particularly equity investments, first-loss capital, and other risk-sharing mechanisms—U.S. private sector investors are unwilling to compete abroad.

Second, experts interviewed for this paper highlighted that the U.S. investments in ports are often "episodic" rather than strategic; they often lack the consistency and long-term commitment demonstrated by competitors. Interviewees place a high value on reliable, long-term political and commercial engagement. As a result, governments choose partners that demonstrate sustained commitment throughout the life cycle of infrastructure projects rather than one-time investments. As one expert observed, "Beijing aligns state financing, diplomatic engagement, industrial policy, and commercial actors behind common strategic objectives. By contrast, the United States often approaches overseas port opportunities on a transaction-by-transaction basis."

Within the U.S. government, authority for supporting port development abroad is dispersed across multiple agencies, contributing to fragmented engagement and the absence of a coherent long-term strategy. Current U.S. engagement on overseas ports is split across different agencies with no clear lead agency: the Development Finance Corporation (loans), the Export-Import Bank of the United States (export credit), the U.S. Trade and Development Agency (technical assistance), the State Department (diplomacy), and the Pentagon (NATO logistics). No single interagency mechanism coordinates these efforts with a dedicated focus on maritime infrastructure.

Moreover, projects financed by U.S. government agencies often have lengthy approval processes in comparison to competitor countries. All of these factors make U.S. presence in the ports market more challenging. In sum, there is a notable absence of a clear and integrated U.S. value proposition that partner countries can readily understand and navigate.

Part of the problem is that, despite the importance of port infrastructure—both domestically and abroad—the United States does not have a comprehensive maritime strategy that would address

vulnerabilities in shipping, shipbuilding, port infrastructure, and other elements of the maritime ecosystem.[99] The Biden administration and the second Trump administration started engaging in the issue, but their efforts have been piecemeal (see Appendix II for an overview of strategies). The Biden administration announced the Biden-Harris Action Plan for America's Ports and Waterways, which recognized that U.S. ports are underfunded, and outdated infrastructure costs the U.S. economy and harms international competitiveness.[100] The Biden administration also launched an initiative to improve maritime cybersecurity.[101] Relatedly, the Bipartisan Infrastructure Law invested $17 billion to upgrade ports and waterways, with over 580 announced projects.[102] President Trump's recent announcement to overhaul the shipbuilding industry is a step in the right direction.[103]

In addition, the United States has begun using government tools and the private sector to engage in overseas port deals. However, recent initiatives are small in scale and scattered. For example, the U.S. International Development Finance Corporation (DFC) has supported port development projects aimed at expanding the U.S. presence in overseas ports, such as the expansion of Angola's port of Lobito and the modernization of Yilport's port infrastructure in Ecuador.[104] The United States is also engaged in the modernization of the port of Ushuaia in Argentina and is helping Peru build a naval base in Callao.[105] However, these efforts do not holistically address the actions that the United States needs to take with overseas port infrastructure.

This does not mean that the United States cannot compete in this space. The country has significant strengths to offer partners, including strong digital infrastructure and cybersecurity capabilities, sustainable financing with debt transparency, and opportunities for capacity building, workforce training, and the adoption of high operational standards. Unfortunately, the United States has struggled to translate those assets into competitive, bankable infrastructure projects delivered at sufficient speed and scale. Yet there is a path forward.

3

Advancing U.S. Engagement in Ports

Priority Regions and Strategies

Given the complexity of global port ecosystems, the United States cannot invest in every segment of the industry or compete with China in every port. Instead, policymakers should understand U.S. competitive advantages, identify priority regions, and determine where Chinese involvement presents unacceptable strategic risks. China cannot be entirely disentangled from the global maritime industry; therefore, the United States should focus on managing strategic risk and presenting a better offer.

"What is the risk tolerance regarding China's role in ports? You cannot untangle China from the industry: the more important question is what the United States offers in this space."
– Anonymous interviewee

To engage more effectively in overseas ports, the United States will need to take a series of steps that include better-organized financing, faster decisionmaking, stronger interagency coordination, closer collaboration with allies, and the development of credible alternatives that integrate commercial returns with national security objectives.

Create a Comprehensive U.S. Maritime Strategy and Designate a Lead Agency

Many experts interviewed for this report emphasized that stronger White House leadership is essential to advancing U.S. international port engagement. The United States will need to craft a clear national strategy and designate a lead coordinator—such as the National Security Council (NSC). This strategy should be supported by an interagency effort, drawing on the expertise and funding from multiple U.S. government agencies and coordinating with U.S. embassies. Some experts even proposed appointing an "Infrastructure Czar" to coordinate policy across the federal government, arguing that political signaling is as important as formal institutional structures. More broadly, interviewees called for a whole-of-government approach that strengthens coordination among agencies such as the DFC, the U.S. Export-Import Bank (EXIM), and the Departments of Commerce, Defense, State, and Transportation; establishes a priority project pipeline with faster approvals and dedicated funding; and empowers U.S. embassies to identify opportunities, engage host governments, and support U.S. companies pursuing strategic infrastructure projects abroad.

As discussed above, U.S. leadership is particularly strong in areas such as engineering and design, marine construction, customs and security regimes, cybersecurity, concession governance and transparency, and financing structures; terminal throughput, on the other hand, is not currently a comparative U.S. strength. In developing its strategy, the United States should recognize these strengths and weaknesses and tailor its approach accordingly. Washington should distinguish among different types of terminals, work with allies and partners where appropriate, pursue opportunities through consortia, and focus on areas of the broader port supply chain where the United States has a comparative advantage.

- **Terminals and Port Ecosystem:** The strategy should distinguish between different types of port terminals. Container terminals, dry and liquid bulk terminals (e.g., oil, minerals, grain, and critical raw materials), and roll-on/roll-off (ro-ro) terminals each have distinct ownership structures, commercial dynamics, and strategic implications. Given these market dynamics, the United States may find greater opportunities by focusing on bulk terminals that support critical supply chains, energy security, and key economic corridors.
- **Type of Investments:** The strategy should take into account investments in both greenfield and brownfield projects. Greenfield investments involve devoting significant financial resources to developing new ports or terminals that provide a competitive alternative to nearby Chinese-operated facilities. Examples include the development of the Port of Elefsina in Greece—located near the Chinese-operated Port of Piraeus—and Peru's proposed Port of Corio, which could complement or compete with the Chinese-developed Port of Chancay. Brownfield investments focus on modernizing and expanding existing terminals to improve efficiency, capacity, resilience, and digital capabilities. The ongoing expansion and modernization of the Port of Colombo in Sri Lanka illustrates how investments in existing infrastructure can strengthen a strategic maritime hub without building a new port.
- **Working with Allies:** The United States could also build a coalition of maritime partners whose combined port networks, shipping capacity, terminal operators, and

other capabilities can provide resilience at scale. Such a coalition would include not only traditional allies but also countries and private operators that value transparency, operational reliability, cybersecurity, environmental sustainability, and rules-based access. For example, the United States has been successful in blocking Chinese investment in key ports when it acts early and in coordination with allies.[106] In the event of a disruption affecting a key choke point, regional port system, shipping route, or terminal technology provider, the United States would benefit more from reliable access arrangements, interoperable procedures, trusted operators, shared information, available shipping capacity, and coordinated contingency planning with partners than from isolated ownership stakes.

- **Looking Beyond Container Terminals**: Port terminals represent only one component of the strategy. Cybersecurity, digitalization, customs modernization, and port security are equally critical areas for U.S. engagement and competitiveness. The United States can support port infrastructure through technology cooperation by helping develop secure digital infrastructure and strengthening port cybersecurity capabilities. A modern digital platform should be viewed as an enabler of secure, efficient, and resilient port operations. By enabling trusted real-time information exchange among port authorities, customs administrations, shipping lines, terminal operators, logistics providers, and other competent authorities, such a system can strengthen governance, reduce administrative burdens, accelerate cargo flows, improve transparency, and enhance overall supply chain performance. In this regard, the United States can add significant value as a trusted ally by supporting the development of secure digital infrastructure, interoperable standards, and stronger cybersecurity capabilities for port operations.

However, rather than simply demanding that countries change their vendors, the United States and its allies should educate countries on the risks that different digital platforms pose and encourage them to seek a variety of vendors. Declaring that countries should "rip and replace" Chinese-linked cyber networks or terminal operating systems is not the best course of action. Rather, the United States can explain its concerns, illustrate what China can do with this leverage, and suggest an alternative U.S. or allied provider, all in the same conversation. The United States can encourage port operators to procure trusted digital solutions by offering financing, technical assistance, and incentives to adopt secure, interoperable alternatives.

Seek Selectivity in Geographic Focus

Rather than attempting to compete everywhere or seeking a widespread global commercial presence, the United States should pursue a strategy of "selectivity," concentrating U.S. resources on the most significant maritime nodes while working with allies and partners.

Given finite resources, the United States' focus should be guided by diverse criteria, considering locations of the following kinds:

- Near major maritime hubs and choke points supporting U.S. commerce, where investments can enhance the resilience and security of global trade flows.

- In key geographies that support critical supply chains such as critical raw materials, energy, food, and other essential commodities.
- Near ports of national security significance, including those located near U.S. military installations, allied naval bases, NATO infrastructure, or important defense assets.
- In high-growth markets and emerging trade corridors such as Southeast Asia.[107]

This report has found that although there is no single priority region, the European countries of the Mediterranean, followed by Southeast Asia and Latin America and the Caribbean, present the strongest cases for U.S. engagement. Data from the report's U.S. Overseas Port Priority Regions and Strategic Investment Dashboard (see Appendix IV) shows that from a regional perspective, Europe ranked as the region most highly conducive to U.S. engagement, followed closely by Asia and Latin America and the Caribbean. Although the data tool has several limitations, it provides useful insights into potential opportunities and areas for strategic alignment.

Not surprisingly, European countries dominated the rankings, given their strong economic performance, security partnerships, and alignment with the United States. While countries in sub-Saharan Africa generally ranked at the bottom of the list, there was a substantial amount of missing data, limiting regional comparisons. In total, 43 of the 145 countries were excluded because of lack of data; these were mostly small island states and countries in sub-Saharan Africa. However, these geographies are particularly salient given their proximity to strategic choke points and Chinese port investment.

Within Asia, beyond high-income economies such as Australia, South Korea, Singapore, Japan, and New Zealand, the dashboard identified the Philippines, Malaysia, Papua New Guinea, Thailand, and India as countries for strategic investment.

In Latin America and the Caribbean, the Bahamas, the Dominican Republic, Costa Rica, Panama, and Colombia ranked among the highest. In the Middle East and North Africa, the highest-ranked countries were Israel, Jordan, and the Gulf states, along with Morocco and Egypt.

Countries with data ranking at the bottom of the index included the Republic of the Congo, Mozambique, Nigeria, Equatorial Guinea, Angola, Cambodia, Yemen, Cameroon, Libya, and Myanmar.

BOX 4

Strategic Regions

The European countries of the Mediterranean, along with Southeast Asia and Latin America, are important maritime regions for the United States in terms of critical supply chains and geopolitical influence.

The Mediterranean region is vital due to the presence of U.S. NATO allies and key maritime routes for global energy security. It is also a focal point for addressing ongoing threats such as terrorism, illicit trafficking, and instability in the Middle East. Additionally, it has become a key arena for great power competition involving China and Russia.

Southeast Asia facilitates about 30 percent of all global trade, much of which passes through the Strait of Malacca. It also hosts some of the world's busiest cargo hubs, such as the Port of Singapore, all of which boosts the region's economic importance.[108] Despite U.S. military agreements and collaborations with countries such as Singapore, Malaysia, and Indonesia, aimed at combating piracy and providing maritime security, Chinese investments into various regional ports undermine the already declining regional influence of the United States.[109]

In the same vein, Latin American ports are important trade hubs for goods shipped to and from the United States. The Panama Canal accounts for approximately 5 percent of total global shipping traffic annually and facilitates approximately 40 percent of all U.S. container traffic.[110] Moreover, according to CSIS research, Chinese companies have direct equity, operational control, or infrastructure influence in 37 active port projects across Latin America and the Caribbean.[111] The mineral-rich Pacific nations of Ecuador, Peru, and Chile have also attracted significant Chinese investment.

There will inevitably be trade-offs in determining where the United States should prioritize overseas port engagement, as different regions carry distinct economic and security considerations. Europe is particularly important because of NATO, transatlantic security, and military mobility. The Western Hemisphere is critical because of its geographic proximity and deep trade ties to the United States, as well as concerns related to narcotics trafficking and other illicit flows. In sub-Saharan Africa, access to critical minerals and the infrastructure that supports their transport is increasingly important. Southeast Asia, meanwhile, is central to U.S. power projection, access to key maritime choke points, and relationships with allies and partners. These differences suggest that U.S. port engagement should be tailored to regional priorities rather than following a one-size-fits-all approach.

Assist Partner Countries in Structuring Port Deals

Part of the engagement that the United States should undertake is providing technical assistance to countries in port infrastructure planning. Working through its bilateral agencies, multilateral

development banks (MDBs), and donors, the United States can support partner countries by promoting greater transparency in the bidding process and concession terms, encouraging a more diversified mix of infrastructure owners and operators, and helping reduce overdependence on any single external actor. Technical assistance activities that the United States could provide include:

- **Enhancing project preparation capabilities:** The United States can contribute to port development by supporting project development, prioritization, and preparation rather than focusing solely on financing. Many countries struggle with infrastructure projects because of inadequate feasibility studies, weak project selection processes, and insufficient preparation. Through agencies such as the U.S. Trade and Development Agency (USTDA) and allied donors like the Japan International Cooperation Agency, the United States could be ramping up technical assistance for feasibility studies, master port planning, and project prioritization to help countries identify economically viable investments, improve project bankability, and attract private sector participation.
- **Encouraging countries to maintain fair, competitive, and transparent bidding and investment practices:** By diversifying operators across terminals, rather than granting a single foreign entity control over all piers, countries would reduce the leverage any one actor can accumulate. Such an approach is not only good governance; it is also a form of risk management that reduces overdependence on any single actor, strengthens national resilience, and helps prevent corruption. In this regard, it is important to maintain open, transparent, and competitive bidding processes that allow qualified firms from all countries to participate. As a result, countries would benefit because the process would lead to better, more competitive project proposals.
- **Improving due diligence and screening of critical infrastructure investments before concessions are awarded:** The United States could also assist countries in establishing their own version of the Committee on Foreign Investment in the United States (CFIUS) to screen foreign investments and reject those that cede excessive leverage to few operators or opaque investors. This screening mechanism assesses project proposals and investments and examines how they might fit into and impact the wider ecosystem. The mechanism also blocks companies at the beginning of the process rather than attempting to remove them after they have entrenched themselves. This could prove to be a powerful tool across all sectors, including telecommunications, critical minerals, and maritime infrastructure. Many countries, including the United Kingdom and the nations of the European Union, have adopted investment review mechanisms similar to CFIUS.[112] The United States could provide consultations, technical expertise, and effective models and processes from its own CFIUS for countries to emulate. For example, in 2023, the U.S. Treasury signed a memorandum of understanding with Mexico to establish a similar program.[113]
- **Developing trusted vendor frameworks:** Investment screening alone is insufficient if procurement contracts end up in the hands of untrusted vendors. Countries often lack trusted vendor frameworks, leaving local authorities to make cost-driven decisions that often come with significant security implications.[114]

- **Strengthening concession oversight:** Countries need to balance priorities such as attracting foreign direct investment, respecting property rights, and making sure that concession terms are fulfilled. Governments should strengthen oversight of port concessions and retain the ability to review, renegotiate, or terminate agreements that fail to meet established legal, operational, or national security standards. This may include concessions that lack transparency, grant excessive control over critical infrastructure to a single operator, fail to meet contractual performance obligations, or pose significant national security risks.

Empower U.S. Embassies and Enhance Commercial Diplomacy

U.S. embassies should play a central role in advancing U.S. engagement in overseas port infrastructure. With their knowledge of local markets, governments, and stakeholders, embassies are well-positioned to identify strategic port projects early, cultivate relationships with host governments and private sector partners, and connect U.S. companies with emerging opportunities. Rather than waiting for projects to come to market, embassies, working with relevant U.S. agencies, can help position American companies earlier in the project cycle and support a more proactive and coordinated U.S. approach to overseas port development.

The United States should strengthen its commercial diplomacy and long-term engagement with partner countries. Despite recent budget and personnel cuts at the State Department and the U.S. Agency for International Development (USAID), the White House should empower ambassadors and embassy economic and commercial teams to identify strategic opportunities, promote U.S. companies, and facilitate partnerships. More commercial and economic officers at U.S. embassies are needed to gather market intelligence, identify upcoming port concessions and investment opportunities, engage local decisionmakers, and promote U.S. investment and commercial participation in strategically important port projects.

The U.S. diplomatic missions in Panama, Peru, Sri Lanka, and Greece have been very proactive in identifying projects and areas of engagement (see separate compendium with country case studies). In Greece, the work of former U.S. ambassadors in attracting U.S. investments is worth mentioning.[115] In Sri Lanka, the U.S. embassy has a dedicated Regional Indo-Pacific Strategy Coordinator who promotes U.S. commercial interests and infrastructure deals in the region.

Bundle U.S. Capabilities into a Competitive Offering

In addition, rather than offering financing alone, the United States should present an integrated package that combines diplomatic engagement, development finance, technical assistance, high governance and transparency standards, and workforce development. A coordinated and bundled "U.S. offer" would make it easier for partner countries to choose trusted alternatives while delivering long-term economic benefits.

Given that the United States is not a dominant global port operator, it can pursue this approach by partnering with established trusted foreign operators or participating in consortia that bring

together firms providing different components of port development and operations across countries. The United States should work more closely with allies and partners—including Japan, the European Union, and Australia—to pursue strategic port investments through consortium-based approaches. Joint bids, shared financing mechanisms, and coordinated project pipelines would increase competitiveness, reduce duplication, and help ensure that trusted partners do not undercut one another in strategically important markets. By coordinating financing, diplomacy, and partnerships with allies, the United States can help trusted operators compete more effectively for port concessions and acquisitions. This proactive approach would also help mitigate attempts by Chinese entities to acquire or exert influence over strategically important ports before transactions are completed.

"We've been asleep at the wheel for the past 25 years. If we want to compete again, we need to bundle the U.S. offer."
– Anonymous interviewee

Strengthen U.S. Development Finance Capabilities

Within this bundled offer, the role of U.S. finance institutions in supporting strategic port infrastructure abroad cannot be overstated. Agencies such as the DFC, the Millennium Challenge Corporation (MCC), and EXIM can work closely with U.S. companies and investors with significant experience in the port sector. This effort could also engage large U.S. public pension funds, which are important institutional investors in infrastructure. Closer coordination among these actors could help projects move faster and at greater scale, while supporting a more effective and strategically aligned U.S. investment approach.

To compete more effectively and be a better partner to countries, the United States could strengthen its development finance tool kit. Potential actions include allowing the DFC to speed up its underwriting processes and facilitate cofinancing mechanisms with other MDBs. The DFC should also deepen engagement with U.S. private capital through innovative financing mechanisms, including buyback programs for strategic port assets. In the same vein, Congress should expand the MCC's authority to operate in select high-income countries of strategic importance and broaden its tool kit beyond grants to include sovereign lending where appropriate.

In addition, U.S. agencies could support trusted vendors that provide equipment and technology solutions for port operations. EXIM and the DOW's Office of Strategic Capital can provide export incentives for manufacturers of ship-to-shore cranes and cargo-handling equipment along with companies that supply digital infrastructure: secure port operating systems, cybersecurity technologies, and logistics software. These solutions could help reduce global dependence on Chinese suppliers while strengthening the competitiveness of U.S. and allied industries.



A nuclear cargo scanner, paid for by the U.S. government, is used by PSA, the port operator formerly known as Port of Singapore Authority, at the Port of Antwerp, Belgium, October 26, 2006.

Photo: Mark Renders/Getty Images

Expand Port Security Assistance Abroad

One of the United States' greatest comparative advantages is its expertise in maritime security and customs enforcement. Interviewees consistently highlighted the value of U.S. technical assistance in helping partner countries address challenges such as cargo theft, smuggling, illicit trafficking, narcotics, terrorism, and other transnational threats. As discussed above, failure to address security vulnerabilities at overseas ports and along global shipping routes creates negative externalities for the United States, including the flow of illicit drugs, fentanyl precursors, counterfeit goods, and other contraband.

Through the U.S. Coast Guard, Customs and Border Protection, and other agencies, the United States has supported overseas ports in implementing international security standards, improving container security, and modernizing customs procedures. Programs such as the U.S. Coast Guard's International Port Security Program, as well as compliance with the IMO's International Ship and Port Facility Security (ISPS) Code, have strengthened global maritime security while allowing the United States to focus its limited inspection resources on higher-risk cargo before it reaches U.S. shores.[116]

Rather than reducing funding for these programs, the United States should recognize them as investments in homeland security. The United States should expand technical assistance, customs modernization, and donations of critical inspection equipment—including cargo scanners, X-ray systems, and related technologies—while ensuring that recipient countries receive the installation help, maintenance, and training needed to operate them effectively. For example, the United States has made recent donations of scanners in Greece and Panama.[117]

Finally, the U.S. Coast Guard should strengthen and expand its attaché program (COGATT) at U.S. embassies to deepen long-term partnerships, enhance maritime security cooperation, and support the broader U.S. commercial and strategic agenda overseas.

Help Countries Develop Integrated Port and Hinterland Infrastructure

Existing ports such as Colombo in Sri Lanka, Callao in Peru, and ports in the Panama Canal currently capture limited value beyond traditional cargo-handling activities. These countries could enhance the economic impact of their ports by developing integrated logistics, manufacturing, and distribution ecosystems similar to those established in other parts of the world (including in the

UAE), particularly around free zones and logistics parks. This would attract additional investments in warehousing, light manufacturing, packaging, assembly, and regional distribution, generating employment and increasing revenue from maritime trade.

Port operations also depend on seamless connections between maritime, rail, road, and digital systems, as well as compatibility between national and cross-border procedures. Developing dumb infrastructure around ports (e.g., roads and rail) is extremely important for efficient logistics and another area in which the United States could be providing significant investments and technical assistance to countries. The case of Greece illustrates this point: Although its ports have been upgraded, they remain underleveraged as gateways to inland Europe. Similarly, Panama aims to shift from a transshipment hub to a diversified trade and logistics powerhouse.[118] Panama has an opportunity to capitalize on the globally unique features of its canal and unleash the waterway's full economic benefits by developing value chains tied to nearby ports and logistics, including building pipelines, energy storage, and container repair facilities. Within this vision, there are good prospects for U.S. corporations to invest and partner with Panama to develop a more integrated logistics strategy.

The United States, working with allied development agencies, should jointly support logistics parks and transport corridors that could deepen partner countries' integration into regional supply chains and reduce dependence on any single operator or corridor. These adjacent investments are trusted alternatives to Chinese equipment and services and institutionalize a long-term presence through infrastructure partnerships. Two examples mentioned in the Greece case study are the Thriasio Logistics Centre development in West Attica (near Athens) and the transformation of the Gonou military camp near Thessaloniki.[119]

Strengthen U.S. Leadership in Multilaterals

The United States should continue supporting strong multilateral rules through the International Maritime Organization (IMO), World Trade Organization (WTO), World Customs Organization, and related institutions. Although the UN system is currently experiencing significant disruption, the IMO remains a critical UN specialized agency responsible for setting global standards for maritime safety, security, and environmental protection. Rather than stepping back, the United States should deepen its engagement and play a more active leadership role.

China has steadily expanded its influence in the UN system, raising concerns that parts of the system could become arenas in which authoritarian governments are able to shape global norms to their advantage.[120] Within the IMO, China has steadily expanded its influence. In 2025, for example, China inaugurated a permanent mission to the IMO in the United Kingdom, underscoring its commitment to the organization and recognizing the shipping industry as a key pillar of China's global connectivity.[121]

Moreover, many experts interviewed for this study noted that in recent years, the IMO has devoted considerable attention to advancing global greening maritime initiatives, including its Net-Zero Framework, instead of advancing standards for digital technologies.[122] This is an area where U.S.

leadership and expertise are much needed. The experts argued that the organization should place greater emphasis on updating international standards for cybersecurity, digital technologies, drones, autonomous systems, and biometrics in ports.

Today, there are no globally harmonized cybersecurity standards for ports; instead, they often rely on their own policies and practices. While the International Association of Ports and Harbors (IAPH) has developed valuable cybersecurity guidelines, it is an industry association rather than an intergovernmental body, and its guidance is voluntary. Smaller ports, in particular, often lack the financial resources and technical capacity to modernize their networks, digital infrastructure, and operational systems, leaving them more vulnerable to cyber threats.

The United States can advance global standards through the IMO while helping countries adopt these standards through technical assistance and other instruments. Financing should not be the only action item in the U.S. strategy. Increasingly, countries are looking toward developing effective technology partnerships that include training, technical assistance, and operational capacity building to ensure that new technologies are fully utilized and maintained. Strengthening U.S. engagement in this area could help provide alternative technological partnerships.

Conclusion

As global trade routes, supply chains, and geopolitical competition evolve, greater U.S. engagement in port infrastructure overseas will be increasingly important to advancing U.S. economic and national security interests.

For U.S. policymakers, this has several strategic implications. First, infrastructure finance should be viewed as a tool of economic statecraft and national security, not solely as a development or commercial instrument. Second, limited influence over critical maritime nodes may weaken U.S. economic resilience and constrain its ability to shape supply chains, support allies, and respond to geopolitical disruptions. Third, access to strategic ports will become increasingly important for crisis response and military mobility. Timely access to critical maritime infrastructure can directly impact the effectiveness of both economic and military responses during a crisis.

For the U.S. private sector, geopolitical considerations will increasingly shape investment decisions and the viability of overseas projects. In strategically important markets, U.S. companies may struggle to compete on commercial terms alone against state-backed companies, underscoring the need for closer coordination between government and industry.

For developing countries, partnerships with the United States and its allies may offer important advantages, particularly where transparency, cybersecurity, strong governance, and long-term reliability are priorities. Providing credible and competitive alternatives can strengthen these partnerships while advancing shared economic and security interests.

Ultimately, the United States does not need to compete in every port or every market. It needs a more strategic, selective, and coordinated approach that concentrates U.S. capabilities and resources where they can have the greatest economic and geopolitical impact. Competition with China may well remain a reality, but in the long term, the United States is without any doubt more likely to succeed if it competes through coalitions, standards, transparency, and credible commercial alternatives rather than through a purely asset-by-asset approach. The safest maritime system for the United States is one in which open access, reliable partners, enforceable rules, diversified capacity, and trusted infrastructure make coercion difficult and disruption manageable.

Appendix I

Methodology

The research team conducted a yearlong project to provide U.S. policymakers with a comprehensive strategy to address U.S. economic and security vulnerabilities in global port infrastructure, particularly in developing countries. The main question posed by the research team is as follows:

How can the United States expand its influence over port infrastructure in developing countries to safeguard its economic and security interests?

Within this broad question, the research team analyzed the following themes:

- Economic and security risks to the United States from limited engagement in port infrastructure abroad
- Forward-looking policy steps for the United States to compete more effectively with China in ports, including:
  - Port regions most critical to U.S. economic and national security interests
  - Concrete approaches and actions the United States can take to exercise more influence over port infrastructure in these geographies
  - A competitive U.S. counteroffer to the Chinese approach
  - Ways to use finance and investment tools more effectively to advance strategic interests in an age of great power competition

The project proceeded in three interrelated phases.

In the first phase, the research team conducted a literature review and an in-depth risk assessment for the United States, focusing on the implications of limited control over global port infrastructure. Using publicly available data and indicators, the research team developed a country dashboard centered on economic, security, and geopolitical factors. The team also conducted interviews with more than 50 experts in the United States and abroad, including representatives from academia, think tanks, U.S. and foreign port operators, U.S. government agencies, MDBs, asset managers, trade associations, and former ambassadors. To refine this assessment, a tabletop exercise (TTX) was held at CSIS featuring different scenarios. The TTX helped sharpen the risk analysis and identify potential strategies and actions the United States could adopt.

Building on the results of the first phase, the second phase involved field work, with visits to four countries in strategic regions. The research team chose Panama, Peru, Greece, and Sri Lanka as case studies. These visits allowed the research team to validate the findings of the first phase and analyze issues relevant to the developing world. Through in-person interviews with regional experts and leaders, CSIS gathered detailed information and integrated local expertise into the policy recommendations.

The third phase involved compiling the findings and recommendations of the first two phases and presenting them to a focus group of experts, to both validate the findings and gather additional ideas. The project culminated in the publication of this policy report accompanied by four country case studies.

Appendix II

U.S. Companies and Government Agencies in the Port Ecosystem

To support trade and military operations, the U.S. port ecosystem comprises a diverse network of stakeholders, including U.S. federal and state governments, U.S. and foreign firms, local communities, and international organizations. Across the port value chain are construction and engineering firms, financial institutions, private asset managers, terminal operators, stevedores, shipping companies, cargo owners, logistics providers, industrial firms, IT and cybersecurity providers, and equipment manufacturers. In addition, public institutions such as port authorities and government agencies work with the private sector to support security, customs, and regulatory compliance at ports.

U.S. Companies

PORT DESIGN, ENGINEERING, AND CONSTRUCTION COMPANIES

The United States possesses world-class capabilities in port engineering, design, and marine construction. Engineering and design leaders include Moffatt & Nichol (arguably the premier U.S. port engineering firm), AECOM, Jacobs, HDR, WSP USA, Bechtel, Fluor, and Burns & McDonnell. Marine construction and dredging leaders include Great Lakes Dredge & Dock, Weeks Marine, Kiewit, Orion Marine Group, Cashman Dredging, and Cianbro.[123]

However, U.S. companies are not incorporated into a coordinated national port development strategy. They have to compete independently for projects and are financed through commercial contracts.

INFRASTRUCTURE INVESTMENT FIRMS AND PRIVATE EQUITY

U.S. firms are also leaders as investors, providing capital for port terminal acquisitions, expansions, or joint ventures with operators. Among them are:[124]

- Stonepeak: an investment firm focused on transport and logistics infrastructure.
- BlackRock: an asset manager that led a consortium buying interests in overseas port operations. In 2024, it bought Global Infrastructure Partners (GIP), an infrastructure investor that joined forces with Terminal Investment Limited (TIL) to acquire port assets abroad.
- KKR and Blackstone Infrastructure: private equity with growing infrastructure divisions.

Moreover, some international shipping lines invest directly in U.S. terminals, either through ownership, operating subsidiaries, or coinvestment partnerships:

- CMA CGM Group: global container shipping company investing heavily in U.S. terminals (e.g., Port Liberty in New Jersey/New York and TK Terminal in Los Angeles). In July 2026, CMA CGM partnered with Stonepeak to form United Ports LLC to expand terminal ownership and investment capacity.[125]
- MSC/TIL: While primarily an operator, TIL's involvement in large infrastructure deals (with partners such as GIP and BlackRock) demonstrates a strategic investor role in port assets.
- Maersk/APM Terminals: although mainly a port operator, it also participates in port infrastructure ventures.

TERMINAL OPERATORS

Many ports in the United States are landlord ports, where port authorities lease the terminals to private operators that manage container terminals, break-bulk, and roll-on/roll-off cargo. The leading port operators in the country that are U.S. owned include:

- Ports America: the largest U.S. operator, managing terminals across 33 ports and 70 locations nationwide, including container facilities in New York/New Jersey, Baltimore, New Orleans, Houston, and Jacksonville, in addition to several ro-ro and break-bulk terminals.[126]
- SSA Marine: handles significant containers, bulk, and break-bulk operations at places such as Terminal 18 (Seattle); Oakland International Container Terminal; Pacific Container Terminal (Long Beach, CA); Port Houston (Bayport, TX); New Orleans Terminal; Ocean Terminal (Savannah, GA); and terminals in Virginia and Maryland (Baltimore) through joint ventures. It operates several container terminals abroad, in countries such as Panama (Manzanillo International Terminal); Mexico (Port of Manzanillo); Costa Rica (Alamo Terminals in Caldera, Limón, and the Coyol Free Zone); Vietnam (Cai Lan International Container Terminal); and Canada (Vancouver, Prince Rupert, Montréal).[127]
- Maher Terminals: a smaller operator that handles major container terminal facilities, notably in the Port of New York and New Jersey.[128]

At the same time, many U.S. port terminals are leased to foreign operators. Among the most important are:

- APM Terminals (part of Maersk of Denmark): a major international operator with a strong presence in U.S. container terminal operations. It operates Pier 400 (Port of Los Angeles); APM Terminals Elizabeth (Port Newark, Elizabeth, NJ); South Florida Container Terminal (Port Miami); and APM Terminals Mobile (Port of Mobile).[129]
- CMA CGM (France): owns and operates Port Liberty Bayonne and Port Liberty New York in the Port of New York and New Jersey. It also owns Fenix Marine Services at the Port of Los Angeles.[130]
- Terminal Investment Limited (TIL/MSC Switzerland): operates primarily through joint ventures, including interests in Port Newark Container Terminal, Long Beach, and Los Angeles, along with a new Sparrows Point Container terminal in Baltimore that is under development.[131]

Among other leading global port operators, DP World (owned by the government of Dubai, UAE) had purchased P&O, a British shipping and logistics company, in 2006, which operated terminals in the United States and elsewhere. As a result of intense scrutiny, DP World had to sell its six U.S. investments (consisting of facilities in the port of New York, New Jersey, Philadelphia, Baltimore, New Orleans, and Miami) to AIG.[132] However, the company is currently conducting negotiations with the Port of Corpus Christi in Texas to operate a terminal in the future.[133] Similarly, in 2018, COSCO Shipping (China) acquired a controlling stake in Hong Kong–based Overseas Orient International Ltd (OOIL). OOIL operated the Long Beach Container Terminal (LBCT) in California. As part of the CFIUS process, OOIL was forced to divest LBCT to a consortium led by Macquarie Infrastructure Partners, an Australian asset management company.[134]

LOGISTICS AND PORT EQUIPMENT COMPANIES

U.S. firms also operate in the port equipment market, including in the manufacturing of cranes, forklifts, cargo handling equipment, and related products.[135] Such companies include PACECO Corp., which supplies ship-to-shore container cranes; Taylor Machine Works, which supplies container handlers, forklifts, and terminal equipment; and Hyster-Yale, which manufactures forklifts, reach stackers, and empty container handlers.[136]

However, the United States has a limited global presence in the manufacture of large container-handling equipment, particularly ship-to-shore, rail-mounted gantry, and rubber-tired gantry cranes; Chinese and European firms dominate global markets. Major players include ZPMC and Sany Heavy Industry (China), Konecranes and Kalmar (Finland), Toyota Material Handling and Mitsubishi Heavy Industries (Japan), and Liebherr Group (Switzerland).[137]

TECHNOLOGY AND SOFTWARE COMPANIES

There is also a strong ecosystem of U.S. technology and software companies that are very competitive in providing services for the digitalization of maritime operations (including logistics software, customs management software, and terminal operating systems), cybersecurity, and advanced cargo screening technologies.[138]

U.S. companies provide elements of port community systems, including the development of software that manages vessel scheduling, yard operations, gate operations, cargo movements, customs billing, and terminal logistics. Key U.S. firms include:

- Kaleris: a market leader in container terminal software that connects terminals, shipping lines, rail, trucking, and port stakeholders. Present in more than 500 terminals worldwide.[139]
- Tideworks Technology: provides terminal operating systems and planning and marine terminal software, used in 100 marine and intermodal terminals globally.[140]
- Oracle: provides logistics, customs, trade management, and supply chain software that is often integrated into port ecosystems.[141]
- IBM: provides port digitization projects, blockchain-enabled logistics ecosystems, AI, and cybersecurity.[142]
- SAP Americas: provides enterprise resource planning, logistics, and cargo management platforms that are integrated into ports and terminals; also maintains a presence in global ports and logistics ecosystems.[143]
- Descartes Systems Group: provides global logistics networks linking customs, freight, and cargo stakeholders.[144]
- Cargomatic: offers digital freight ecosystems connecting port cargo with trucking networks.[145]

U.S. companies also provide security equipment and trusted technology to protect ports from harmful cargo and contraband. Some of the major U.S. firms include:

- Rapiscan Systems: provides container scanners, vehicle scanners, and cargo inspection systems deployed in more than 170 countries and key ports worldwide, including Jebel Ali (UAE), Santos (Brazil), Singapore, Rotterdam, and others.[146]



A truck carrying a container passes a new X-ray scanner during its inauguration at the Port of Abidjan, Ivory Coast, May 28, 2008.

Photo: ISSOUF SANOGO/AFP via Getty Images

- OSI Systems: the parent company of Rapiscan; provides inspection and security technologies globally.[147]
- Leidos: provides cargo screening, radiation detection, and customs and border security systems. Varec is a Leidos subsidiary, providing terminal automation and inspection technologies for energy and cargo facilities.[148]
- Astrophysics Inc: provides X-ray cargo inspection and screening technologies used in ports and border crossings.[149]

U.S. Government Agencies

Supporting the private sector is a broad ecosystem of U.S. government agencies that

provide oversight, financing, technical assistance, diplomacy, and security cooperation related to ports and maritime infrastructure. Together, these agencies help promote secure, efficient, and resilient port systems while advancing U.S. economic, commercial, and national security interests abroad. The following section highlights the principal U.S. government entities engaged in port development and operations. The section is divided between the agencies that focus on domestic ports and those that focus on overseas ports.

AGENCIES FOCUSED ON DOMESTIC PORTS

Domestically, the U.S. Department of Transportation (DOT) Maritime Administration (MARAD) is the main technical agency supporting the United States' maritime infrastructure, from ports to shipping to environment to security. MARAD chairs the National Port Readiness Network (NPRN), a collaborative effort established to guarantee the readiness of commercial ports for deploying forces during national defense emergencies and other contingencies.[150] The structure of the NPRN includes nine federal agencies and organizations, as well as two key internal groups.

Alongside MARAD, the Department of Homeland Security (DHS), whose main aim is to keep the United States safe, has authority in many port security aspects:

- U.S. Customs and Border Protection (CBP) enforces federal customs and immigration laws at or near the international border and at U.S. ports of entry.[151] After the terrorist attacks of September 11, 2001, CBP created the Container Security Initiative (CSI), a program aimed to address terrorist threats to trade.[152] This program was designed to identify and inspect high-risk cargo containers at foreign ports before they are loaded onto vessels bound for the United States. Under the program, CBP officers are deployed to partner ports overseas to work alongside host country customs authorities in identifying high-risk shipments and strengthening cargo security. CSI relies on three core elements: identifying high-risk containers through intelligence and automated targeting systems, screening cargo as early as possible in the supply chain, and employing nonintrusive inspection technologies—including large-scale X-ray, gamma-ray, and radiation detection equipment—to inspect containers without disrupting the flow of trade. Through these partnerships, CBP and foreign customs agencies establish common security criteria and enhance the protection of the international maritime supply chain.
- The Coast Guard works closely with CBP. It is the lead federal agency for maritime safety and security; it enforces the Maritime Transportation Security Act; and it conducts vessel inspections, port state control, facility security plans, and incident response.[153] While CBP handles enforcement and trade compliance at land borders, the Coast Guard is responsible for enforcement at sea and international maritime affairs.
- In the area of cybersecurity, the Cybersecurity and Infrastructure Security Agency (CISA), established in 2018, serves as the DHS's lead agency for protecting the nation's critical infrastructure and information systems, working closely with federal, state, local, tribal, territorial, and private sector partners.[154] Within the transportation sector, the more than 200 commercial ports in the United States benefit from CISA's engagement.[155] The agency provides critical threat information and, upon request, conducts vulnerability

assessments and scans of port networks to help mitigate cyber and physical risks to maritime infrastructure. CISA also works closely with the Transportation Security Administration (TSA), the U.S. Coast Guard, and other federal partners to share threat information, conduct tabletop exercises, and operate threat simulation laboratories that strengthen the cyber resilience and operational preparedness of U.S. ports.[156] It also works with entities when a cyber intrusion occurs to reduce the negative impacts of the event. Programs, simulations, and initiatives include the CyberSentry program, Vulnerability Scanning, Pre-Ransomware Notification, and Cyber Storm.

In addition, the DOW's Military Sealift Command operates approximately 125 ships daily around the globe.[157] It ensures the readiness of commercial ports to support force deployment during contingencies and other national defense emergencies. The DOW also houses the Office of Strategic Capital (OSC), which was created in 2022 to develop and support defense-related technology and innovation to safeguard national security.[158] The OSC provides debt, loan guarantees, and technical assistance to American firms involved in critical supply chain technologies. Although the OSC does not finance port deals, it could potentially support U.S. firms manufacturing critical equipment used in ports—such as cranes, autonomous systems, sensors, and cybersecurity technologies—if those investments strengthen the U.S. industrial base and fall within its covered technology categories.

Table A1: U.S. Federal Agencies: Domestic Ports

Agency	**Function**
White House National Security Council (NSC)	While the NSC does not directly support ports, it is tasked with advising the president on domestic, foreign, and military practices in order to facilitate cooperation between the U.S. armed forces and other departments and agencies, which could potentially include guidance on U.S. port policy.[159]
U.S. Department of Transportation Maritime Administration (MARAD)	MARAD is the main agency that supports U.S. maritime transportation infrastructure, including ships and shipping, port and vessel operations, and related national security, environment, and safety objectives. MARAD provides grant funding for port and intermodal infrastructure-related projects; supports projects that improve the safe, efficient, or reliable movement of goods into, out of, or within ports; and assists with port, terminal, waterway, and transportation network development issues.[160] MARAD is home to the Office of Ports & Waterways and the Port Infrastructure Development Program (PIDP) and thus facilitates port licensing and conveyance.[161] The National Port Readiness Network (NPRN) is a collaborative effort among U.S. government agencies to guarantee the readiness of commercial ports for deploying forces during national defense emergencies and other contingencies.[162] The structure of the NPRN includes nine federal agencies and organizations, as well as two key internal groups: the National Port Readiness Network Steering Group and the National Port Readiness Network Working Group.

U.S. Army Corps of Engineers (USACE)	The USACE regulates navigation and port infrastructure under the Rivers and Harbors Act and the Clean Water Act; maintains federal navigation channels; and issues permits for dredging, berth construction, and channel deepening.
Environmental Protection Agency (EPA)	Through its ports initiative, the EPA supports efforts to improve efficiency, enhance energy security, save costs, and reduce harmful health impacts by advancing next-generation, clean technologies and practices at ports.[163]
National Geospatial-Intelligence Agency	The National Geospatial-Intelligence Agency is home to the World Port Index, a database of worldwide maritime port information that serves as a general reference and navigational planning tool for mariners.[164]
U.S. Federal Maritime Commission (FMC)	The FMC is in charge of regulating the U.S. international ocean transportation system. It protects the interests of U.S. shippers in international trade from unfair practices.[165] The FMC oversees marine terminal operators and ocean carriers engaged in international trade and enforces fair competition and fair shipping practices affecting ports.
Department of the Interior (DOI)	Through agencies such as the U.S. Fish and Wildlife Service and the Bureau of Ocean Energy Management, the DOI oversees impacts on protected species, refuges, and coastal and offshore federal lands near ports.
Federal Communications Commission (FCC)	The FCC regulates radio spectrum, wireless networks, and communications systems used by ports and maritime operators, supporting port operations, safety, and connectivity.
Bureau of Ocean Energy Management (BOEM)	The BOEM contributes to permitting processes affecting offshore infrastructure connected to ports.
National Oceanic and Atmospheric Administration (NOAA)	NOAA provides mapping, coastal environmental data, protection requirements for species, and habitat assessments that factor into port placement, dredging permits, and compliance.
U.S. Committee on the Marine Transportation System (CMTS)	The CMTS is an interagency committee headed by the transportation secretary, coordinating policy across 14-plus federal agencies related to the Marine Transportation System, including ports, waterways, and intermodal connections.
Federal Emergency Management Agency (FEMA)	Through the Port Security Grant Program, in coordination with the U.S. Coast Guard, FEMA provides funding to state, local, and private sector partners to help protect critical port infrastructure from terrorism, enhance maritime domain awareness, improve port-wide maritime security risk management, and maintain or reestablish maritime security mitigation protocols that support port recovery and resiliency capabilities.[166]

Table A2: U.S. Federal Agencies: Domestic Port Security

Agency	Function
Department of Homeland Security Customs and Border Protection (CBP)	CBP enforces federal customs and immigration laws at or near the international border and at U.S. ports of entry.[167] After the September 11, 2001, terrorist attacks, CBP created the Container Security Initiative (CSI), addressing the threat to security and global trade posed by the potential for terrorist use of maritime containers.[168] The CSI is operational at ports in North America, Europe, Asia, Africa, the Middle East, and South and Central America. CBP's 61 operational CSI ports now prescreen over 80 percent of all maritime containerized cargo imported into the United States.
Department of Homeland Security Cybersecurity and Infrastructure Security Agency (CISA)	Established in 2018, CISA is the federal agency in charge of protecting infrastructure in the United States, including cybersecurity, in cooperation with partners.[169] CISA recently restarted a series of tabletop exercises designed to boost cybersecurity at U.S. seaports.[170]
Department of Homeland Security U.S. Coast Guard	The Coast Guard is the lead federal agency for port safety and security; it enforces the Maritime Transportation Security Act and conducts vessel inspections, port state control, facility security plans, and incident response. The Homeland Security Act of 2002 delineated ports, water, and coastal security as the Coast Guard's primary focus, alongside search and rescue. The Coast Guard is part of the National Port Readiness Network (NPRN), a cooperative designed to ensure the readiness of commercial ports to support force deployment during contingencies and other national defense emergencies.
Department of Homeland Security Transportation Security Administration (TSA)	Created in 2003, TSA supports the U.S. Coast Guard in its maritime security efforts and focuses primarily on passenger security and intermodal connectivity to ports.[171] (The U.S. Coast Guard is the lead federal agency in securing the maritime mode of transportation.)

Department of War (DOW)	The Military Sealift Command is the leading provider of ocean transportation for the Navy and the DOW, operating approximately 125 ships daily around the globe. It ensures the readiness of commercial ports to support force deployment during contingencies and other national defense emergencies. The Strategic Seaport Program—administered jointly by the DOW and DOT—facilitates the movement of deployed military forces through the 18 commercial and 5 military seaports designated as strategic seaports.[172] The 5 military seaports are Military Ocean Terminal Sunny Point (NC), the Port of Charleston (SC), Port Hueneme (CA), Military Ocean Terminal Concord (CA), and Naval Magazine Indian Island (WA). The 18 commercial ports are Anchorage (AK), Beaumont (TX), Charleston (SC), Corpus Christi (TX), Everett (WA), Guam, Gulfport (MS), Hampton Roads (VA), Jacksonville (FL), Long Beach (CA), Morehead City (NC), Oakland (CA), Philadelphia (PA), Port Arthur (TX), San Diego (CA), Savannah (GA), Tacoma (WA), and Wilmington (NC).[173]
Department of War U.S. Army Corps of Engineers (USACE)	The USACE is home to the Waterborne Commerce Statistics Center, which is responsible for capturing information on vessels, tonnage, commodity, origin, and destination from vessel operating companies. It is also part of the NPRN.

Table A3: Other Organizations

American Association of Port Authorities (AAPA)	The AAPA is an industry association comprising more than 130 public port authorities in the United States, Canada, the Caribbean, and Latin America. The AAPA advocates for federal funding, infrastructure modernization, and supply chain resilience, while also providing research, data, and best practices to support efficient and secure port management. It plays a key role in shaping U.S. port competitiveness through engagement with Congress, federal agencies, and international partners.
Intermodal Association of North America (IANA)	The IANA supports port operations by strengthening the intermodal freight system that connects ports to inland markets. It develops data standards, best practices, and digital tools that improve the efficiency of cargo movement between ships, rail, and trucking networks. The IANA also advocates for policies and infrastructure investments that enhance port connectivity, reduce bottlenecks, and improve overall supply chain performance.
State governments	State and local governments own and oversee most U.S. ports through their port authorities. Some ports are operated as "landlord" ports (i.e., private companies operate the terminals), while others are directly operated by the state's port authority.[174]

Table A4: Select U.S. Government Strategies Related to Ports

Name	Description
2025 National Security Strategy	The 2025 National Security Strategy broadly notes the importance of maritime access and securing supply chains.[175] It presses allies, particularly in the Indo-Pacific and first island chain, to give the U.S. military greater access to their ports, stating that any aid must be conditioned upon countries limiting the outside influence of adversarial states in their military installations and ports.
Executive Order on Restoring America's Maritime Dominance (April 2025)	The order does not specifically mention ports, but links economic prosperity and national security to maritime industries and infrastructure.[176]
U.S. Maritime Action Plan (2026)	The plan outlines a new U.S. strategy on expanding U.S. shipbuilding capacity, building a resilient workforce, reinvigorating federal financial investment in the maritime industrial base, and strengthening alliances that advance economic prosperity and national security.[177]
Department of Transportation Maritime Administration (MARAD) Strategic Plan 2022–2026	The overall mission is to promote and develop the maritime industry in the United States.[178] MARAD's plan details the NPRN, which makes readiness and efficiency of ports a key strategic priority. The plan also notes the importance of building resiliency into existing port infrastructure.
Department of Homeland Security National Strategy for Maritime Security (2022)	The strategy develops eight security plans to protect the U.S. economy by facilitating the restoration of passenger and cargo flow, specifically container cargo, in the event of an attack or similarly disruptive event.[179]
Maritime Transportation Security Act (MTSA) of 2002	In response to 9/11, the MTSA amends the Merchant Marine Act (1936) and establishes a program to ensure greater maritime security for U.S. seaports.[180] Its mandate includes identifying security risks to U.S. ports, requiring security plans to be made on ports deemed vulnerable, and improving coordination among federal, state, and private stakeholders.
Port Infrastructure Development Program (PIDP) (ended in 2026)	PIDP is a DOT/MARAD grant program that funds port infrastructure improvements to increase the capacity, reliability, and resilience of U.S. seaports, with recent requirements addressing cyber and foreign-related security risks.[181] The Bipartisan Infrastructure Law allocated $2.25 billion for PIDP over a five-year period, with $450 million available for FY 2026.

U.S. Coast Guard Cyber Strategy (2015)	The strategy frames cybersecurity as essential to the safety and resilience of the Marine Transportation System, emphasizing the protection of port infrastructure, vessels, and logistics networks from cyber threats.[182] It prioritizes defending Coast Guard and maritime networks, integrating cyber capabilities into port security operations, and strengthening public-private coordination with port operators and terminal owners. The strategy also underpins the expansion of regulatory requirements for port facilities, including cyber risk management plans, incident reporting, and workforce training, positioning cyber as a core component of U.S. port security policy.

U.S. AGENCIES FOCUSED ON OVERSEAS PORTS

In terms of overseas commercial ports, there is no single lead U.S. agency responsible for international engagement. Responsibility is fragmented across the State Department, DFC, USTDA, EXIM, Department of Commerce, MARAD, the Coast Guard, and other agencies. While each institution has important capabilities, no agency is charged with developing and implementing a comprehensive strategy for U.S. engagement in global port infrastructure.

The main agency involved in international maritime issues affecting the United States is the DOT's MARAD, through the Office of International Activities.[183] The activities that MARAD conducts include negotiating maritime access issues, helping to improve U.S. carrier access to foreign ports, and acting as an ombudsman to resolve diplomatic problems affecting the maritime industry. MARAD is also one of the U.S. government agencies that participates in the activities of the IMO, International Labour Organization (ILO), WTO, the Asia-Pacific Economic Cooperation (APEC) Transportation Working Group, and the Organization of American States Inter-American Committee on Ports.

In addition to MARAD, the State Department's authorities are largely diplomatic rather than operational. In practice, the State Department's network of overseas embassies often plays a more important role in this space because the staff is on the ground, identifying strategic port opportunities and engaging ministries of transport, finance, and port authorities. Diplomatic staff also advocate for U.S. companies competing for concessions and coordinate visits by staff from U.S. agencies, including the DFC, USTDA, EXIM, the Department of Commerce, and MARAD.

Working alongside the State Department, the U.S. Department of Commerce assists American companies pursuing contracts overseas related to infrastructure, including ports. Through the International Trade Administration (ITA), the Commerce Department plays a crucial role in facilitating trade and investments for U.S. companies. It maintains a strong presence abroad through its commercial service officers, who are based in U.S. embassies in more than 70 countries.[184]

To finance projects abroad and advance U.S. economic interests, the DFC houses an infrastructure and logistics practice that supports investments in critical supply chains, including commercial seaports.[185] Its tools include loans, equity investments, and guarantees. In 2023, it committed an investment of more than $500 million to develop Sri Lanka's Colombo West International Terminal, although the deal fell through.[186]

A smaller agency, the USTDA, has been working on transportation and port development for decades, providing technical assistance and feasibility studies to modernize ports and digitalize operations.[187] In 2022, the USTDA partnered with Honduras on a port digitalization project at Puerto Cortés and Puerto San Lorenzo to improve operational efficiency, throughput, and cybersecurity.[188]

In terms of maritime security, the U.S. Coast Guard currently has 21 diplomatic liaisons in 19 U.S. embassies around the world as part of the Coast Guard Attaché (COGATT) program.[189] These trained attachés support U.S. interests in countries where maritime operations play a significant role, representing the Coast Guard and the DOW overseas. The Coast Guard has three permanent international units.[190] Its largest overseas unit, Patrol Forces Southwest Asia (PATFORSWA), supports the U.S. Navy's Fifth Fleet. Two additional commands (Europe and Far East) conduct inspections, investigations, and port security operations. Coast Guard personnel are also assigned to nine Combatant Commands and operate worldwide.

The Coast Guard also runs the International Port Security Program, which aims to strengthen the security of U.S. ports by identifying and reducing risks across the global maritime transportation system.[191] The program evaluates the effectiveness of antiterrorism measures at foreign ports and delivers training to ports determined to have insufficient security. The program conducts evaluations abroad, exchanges information, and shares best practices with foreign ports to align their security programs with the IMO's International Ship and Port Facility Security (ISPS) Code and other international maritime security standards. The U.S. Coast Guard is the technical lead at IMO, assisting with policy development in the maritime domain.[192]

The Coast Guard also hosts the Cyber International Engagement Program, conducting international engagements "to reinforce global norms of behavior, share best practices, and amplify opportunities to collaborate to enhance capacity to secure the Maritime Transportation System through a rules-based international order."[193]

Table A5: U.S. Federal Agencies: Overseas Ports

Agency	Function
DOT MARAD	Through the Office of International Activities, MARAD negotiates maritime access issues for U.S. carriers, works to improve U.S. carrier access to foreign ports, and acts as an ombudsman to resolve diplomatic problems for the maritime industry. It also participates in multilateral agency activities such as the IMO and the WTO.

U.S. Department of State	The State Department performs several functions related to port infrastructure abroad. The State Department is the diplomatic lead for the IMO (while the U.S. Coast Guard is the technical lead at the IMO). The Office of Transportation Policy's Division for Transportation Affairs leads the U.S. government's efforts to enhance the capacity of the global commercial maritime sector and safeguard its operations. It manages the U.S. Sister Ports Program, in which ports exchange best practices in safety and security, smart port technology, sustainability, green shipping corridors, public-private collaboration, and port business and marketing. Through the Office of the U.S. Special Coordinator for the Partnership for Global Infrastructure and Investment (PGII), the State Department focuses on building infrastructure in developing countries to stimulate economic development and support U.S. strategic national security interests, including through supporting port projects abroad.[194] The agency does not operate or regulate ports directly but supports port-related infrastructure diplomacy and aligns foreign port investments with U.S. foreign policy and national security objectives. Moreover, the State Department represents the Blue Dot Network, alongside Australia, Japan, and the Organisation for Economic Co-operation and Development (OECD). Current members now include Canada, Czechia, Peru, Montenegro, and the Republic of Palau. The Blue Dot Network is a voluntary, private sector-focused, government-supported certification scheme for infrastructure projects.
Department of Commerce	Through the International Trade Administration (ITA), the Department of Commerce assists U.S. companies in pursuing international procurement contracts related to infrastructure, including maritime infrastructure and ports.[195] The U.S. Commercial Service is the trade promotion arm of the ITA, which has a presence in over 80 countries housed in U.S. embassies abroad, playing a crucial role in facilitating trade and investments.

DHS U.S. Coast Guard	The Coast Guard is the technical lead agency at the IMO, assisting with policy development in the maritime domain. It currently has 21 diplomatic liaisons in 19 U.S. embassies around the world as part of the Coast Guard Attaché (COGATT) program.[196] These trained attachés support U.S. interests in countries where maritime operations play a significant role, representing the Coast Guard and the DOW overseas. The Coast Guard has three permanent international units. Its largest overseas unit, PATFORSWA, supports the U.S. Navy's Fifth Fleet.[197] Two additional commands (Europe and Far East) conduct inspections, investigations, and port security operations. Coast Guard personnel are also assigned to nine Combatant Commands and operate worldwide. The Coast Guard also runs the International Port Security Program, which aims to strengthen the security of U.S. ports by identifying and reducing risks across the global maritime transportation system. The program evaluates the effectiveness of antiterrorism measures at foreign ports and delivers training to ports that are evaluated as having insufficient security. The program conducts evaluations abroad, exchanges information, and shares best practices with foreign ports to align their security programs with the IMO's ISPS Code and other international maritime security standards. The U.S. Coast Guard maintains a network of liaison officers responsible for engagement with major maritime nations.[198] These officers work closely with U.S. embassies and foreign maritime stakeholders to build partnerships and exchange security-related information. They also coordinate regular visits to foreign ports to evaluate security measures and identify potential vulnerabilities. These efforts help facilitate the safe and secure movement of people and cargo while strengthening the resilience of the global maritime transportation system.
DOW U.S. Army Corps of Engineers (USACE)	Most notably, the U.S. Army Corps of Engineers (USACE) built the Panama Canal in 1914. USACE oversees the Interagency and International Services program, providing technical assistance to international organizations and foreign governments on a reimbursable basis.[199] It provides engineering and construction services, environmental restoration and management services, research and development assistance, management of water- and land-related natural resources, relief and recovery work, and other management and technical services. It has regional offices in places such as Germany, Kuwait, and South Korea, supporting more than 100 countries. Through its Transatlantic Division, USACE supports projects abroad in the Middle East and Central Asia, including port facilities management. USACE also provides occasional dredging operations abroad to keep ports and harbors deep enough to be accessible.

U.S. International Development Finance Corporation (DFC)	The DFC has an Infrastructure and Logistics sector that finances infrastructure projects, including commercial seaports, through loans, equity investments, and other guarantees.[200]
U.S. Trade and Development Agency (USTDA)	Provides technical assistance and feasibility studies for port modernization and digitalization projects to improve efficiency, throughput, and cybersecurity.[201]
EXIM	Provides export credit financing to support U.S. companies supplying port equipment, dredging services, and maritime technologies to foreign ports and terminal operators.
Millennium Challenge Corporation (MCC)	Provides grant financing for port-related transport infrastructure, logistics corridors, and trade facilitation reforms in partner countries where port performance is a constraint on economic growth. For example, through the Côte d'Ivoire Compact, the MCC completed projects in the Port of Abidjan and the Vridi industrial zone, massively improving infrastructure and congestion in the area.[202] The MCC has invested in a number of other port projects across Africa, such as the $108.5 million Cabo Verde Compact (2005-2010), which funded the $54.8 million Port of Praia Activity.[203] The Activity modernized the port and increased its capacity in order to improve its operational efficiency and cargo delivery timeliness. Additionally, the $301.8 million Benin Compact (2006-2011) funded the $188.7 million Access to Markets Project, which aimed to reduce ship waiting time, streamline customs clearance, improve user satisfaction, and reduce the average duration of the stay of trucks within the Port of Cotonou.[204]
DOW Office of Strategic Capital (OSC)	The OSC provides loans and loan guarantees for private investment in critical supply chain technologies needed for national security. There are 31 technology categories that may receive OSC capital assistance. The OSC does not finance port investments, but instead directs money to critical technologies, industrial capacity, and resilient supply chains.

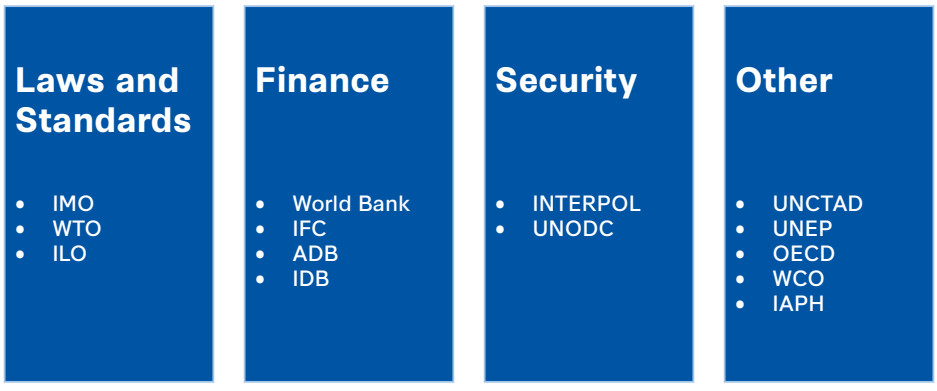
Appendix III

International Organizations in the Port Ecosystem

Although seaports are mainly governed by national frameworks and administered by state or federal port authorities, the U.S. and global maritime industry also follows the conventions and standards set by an international framework. This encompasses a multilayered group of organizations that aim to maintain safety, security, and environmental standards in ports, shipping, and trade.

Within this ecosystem of institutions, the main international organization that provides global oversight and guidance for shipping and ports is the IMO. The IMO sets standards for safety, security, and environmental performance, and member countries sign onto its conventions.[205]

Figure A1: Main International Organizations in the Port Sector



Source: CSIS.

Table A6: International Governance, Standards, and Data on Ports

Agency	Function
International Maritime Organization (IMO)	Established in 1948, the IMO is the primary global body regulating maritime affairs and shipping with 176 countries as members. It is a "specialized agency of the United Nations which is responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships. It is also involved in legal matters, including liability and compensation issues and the facilitation of international maritime traffic."[206] It has five technical committees: the Maritime Safety Committee (MSC), the Marine Environment Protection Committee, the Legal Committee, the Technical Cooperation Committee, and the Facilitation Committee. IMO treaties must be incorporated into national law so that they apply to ships flying a country's flag, enabling governments to enforce them through port state control and other obligations. The IMO regulates ship and port security through the ISPS Code, which requires ports to conduct security assessments, establish restricted areas, and implement specific security plans.[207] The Port State Control is an instrument through which local port authorities, backed by global and regional agreements, inspect foreign vessels to ensure they comply with international standards for safety, crew training, and pollution prevention. The IMO also oversees the Convention on Facilitation of International Maritime Traffic (FAL), which requires ports to reduce red tape, ensure seamless passenger/cargo flow, and provide adequate reception facilities for shipboard waste.[208] The U.S. State Department and U.S. Coast Guard interface with the IMO.
International Labour Organization (ILO)	The ILO sets labor and safety standards for dockworkers and seafarers, influencing port operations and workforce practices.
World Trade Organization (WTO)	The WTO sets global trade rules that shape port efficiency and transparency, most notably through the Trade Facilitation Agreement. While the WTO does not regulate ports directly, the Trade Facilitation Agreement directly governs how goods are cleared, inspected, and released at ports, shaping port efficiency, congestion, and trade costs.[209]

Organization of American States Inter-American Committee on Ports (CIP)	The CIP is "the only permanent forum that brings together the national port authorities of the OAS's 34 member countries and leaders of the maritime-port industry to promote the development of a secure, competitive, and sustainable sector."[210] While the CIP does not set specific standards, it issued a port security manual that consolidates relevant national regulations, policies, and procedures on how port security officials should perform their duties.[211]

Table A7: Multilateral Development Finance Institutions

Agency	**Function**
World Bank	The World Bank supports sustainable, efficient, and resilient maritime transport infrastructure, providing investment, technical assistance, and knowledge in three areas: greening ships and ports, digitalizing port operations, and improving port efficiency.[212] Its efforts focus on helping countries reduce emissions through low-carbon shipping fuels, modernize ports with digital technologies while strengthening cybersecurity, and enhance operational performance to lower shipping costs and improve supply chain resilience. The World Bank also publishes the Container Port Performance Index, the global benchmark for measuring container port efficiency. Through its Trade Facilitation Support Program, the World Bank helps governments with trade and connectivity by improving infrastructure, identifying significant bottlenecks, and enhancing border coordination.[213] The World Bank also coordinated with the IAPH to launch a report in 2024 on Port Community Systems.[214]
International Finance Corporation (IFC)	The IFC works closely with the private sector abroad to invest in infrastructure and transportation projects. With the IAPH, the IFC launched the Global Port Sustainability-Linked Loan Initiative to unlock investment in sustainable port infrastructure and accelerate the maritime sector's transition to net-zero, particularly in the Global South.[215]
International Monetary Fund (IMF)	The IMF, together with the University of Oxford, operates PortWatch, a platform that uses satellite-based data to monitor and simulate maritime trade and disruption.[216]
Global Infrastructure Facility (GIF)	A G20 initiative with the World Bank, the GIF works to mobilize private funding for infrastructure projects in the Global South, including ports.
African Development Bank	The African Development Bank finances port expansions, coastal infrastructure, and regional trade gateway projects across Africa.
European Bank for Reconstruction and Development	The bank supports port upgrades and private terminal concessions in Eastern Europe, Central Asia, and the Mediterranean region.
European Investment Bank	The European Investment Bank provides long-term financing for EU port infrastructure, green port projects, and TEN-T transport corridors.

Asian Development Bank (ADB)	The ADB provides loans, grants, technical assistance, and cofinancing for infrastructure that includes transport corridors and port-related projects in its member countries.[217] The ADB specifically launched the Sustainable and Resilient Maritime Fund in 2025, which is heavily related to ports.[218] Recognizing the important role of ports and trade to Asian economic security, the ADB has provided millions of dollars in funding for port projects across the Pacific.[219]
Inter-American Development Bank (IDB) and IDB Invest	A main source of multilateral development finance for Latin America and the Caribbean, the IDB supports infrastructure and transport projects, including port modernization and public-private partnership structuring.[220]

Table A8: International Organizations Related to Port Security and Supply Chain Safety

Agency	**Function**
International Criminal Police Organization (INTERPOL)	INTERPOL's EU-funded Port Security Project is designed to enhance the capabilities of law enforcement agencies and port authorities to prevent, detect, investigate, and respond to threats to port security.[221] The project also provides training courses and regional operational exercises. The project is in collaboration with the IMO, UNODC, the European Union, and the Indian Ocean Commission.
United Nations Office on Drugs and Crime (UNODC)	UNODC, together with the World Customs Organization and INTERPOL, works to strengthen member states' ability to effectively manage air, sea, and land borders.[222] Its support enables governments to disrupt illicit flows of containers, cargo, and mail, and to intercept high-risk passengers—all while facilitating legitimate trade and the movement of people.
World Shipping Council	The World Shipping Council works to address supply chain vulnerabilities and threats in shipping such as drug trafficking, piracy, and cyber risks. The council collaborates with governments, international organizations, and industry partners to develop practical measures that protect maritime trade routes. It also publishes data on ports, including the top 50 container ports.[223]

Table A9: Other Organizations

Agency	**Function**
UN Environment Programme (UNEP)	The UNEP implements the Global Clean Ports project, an initiative to reduce emissions from ports and other maritime sources in order to improve air quality and curb climate change.[224] The UNEP also consistently coordinates with the IMO.
Organisation for Economic Co-operation and Development (OECD)	The OECD conducts policy research, data, and guidance through the International Transport Forum, which publishes reports on ports and maritime transport.
International Organization for Standardization (ISO)	The ISO publishes international standards for ports and water transport terminals that are key to ensuring safe and reliable port operations.

International Chamber of Shipping (ICS)	The ICS represents the world's national shipowner associations and over 80 percent of the global merchant fleet.[225] It advocates shipowner positions to international regulators, the IMO, the ILO, and other relevant stakeholders.
World Association for Waterborne Transport Infrastructure (PIANC)	PIANC produces technical engineering guidance on port design, dredging, breakwaters, and navigation infrastructure standards.
UN Conference on Trade and Development (UNCTAD)	UNCTAD produces global analysis on maritime transport, port performance, and shipping connectivity, including the Liner Shipping Connectivity Index and the Review of Maritime Transport, which are widely used in port assessments.
International Association of Ports and Harbors (IAPH)	The IAPH is a global alliance of ports, currently representing some 190 ports and 167 port-related businesses in 89 countries. It represents the interests of port authorities and operators at the regulatory level at the IMO, the World Customs Organization, and others. The IAPH has consultative status and works on behalf of ports with UN bodies including UNCTAD, UNEP, and the UN Global Compact.
World Customs Organization (WCO)	Representing 187 customs administrations, the WCO is an independent intergovernmental body whose mission is to enhance the effectiveness and efficiency of these entities. Its work involves coordinating with the IAPH on the Guidelines on Cooperation between Customs and Port Authorities.[226] The WCO also hosts workshops on best port practices.[227]

Table A10: Select International Frameworks Related to Ports

Name	**Description**
IMO The International Ship and Port Facility Security (ISPS) Code	The ISPS Code is the IMO's comprehensive mandatory security regime for international shipping.[228] Part A outlines detailed maritime and port security–related requirements that the 1974 International Convention for the Safety of Life at Sea (SOLAS) contracting governments, port authorities, and shipping companies must adhere to. Part B of the code provides a series of guidelines on how to meet the requirements and obligations set out within the provisions of Part A.
EU Global Gateway	A strategy to mobilize over €300 billion ($335 billion) in sustainable infrastructure and secure supply chains, the Global Gateway is positioned by the European Union as an alternative to China's BRI, in terms of its potential to support the maritime industry.[229]
G7 Partnership for Global Infrastructure and Investment (PGII) (2021)	Through this partnership, the G7 aims to invest up to $600 billion by 2027 to narrow the infrastructure investment gap in partner countries.[230] Multiple flagship projects include port modernization.
EU Maritime Security Strategy and Action Plan	The EU Maritime Security Strategy and Action Plan is a comprehensive EU policy framework that addresses maritime threats and resilience. It specifically notes that a lack of port security and modernization can increase illicit activities, and it lists strengthening port resilience and protection as a main EU maritime security interest.[231]

EU Common Information Sharing Environment (CISE)	CISE is a network that enables structured and secure information sharing among EU maritime authorities, both civil and military, across borders and sectors.[232] It plays a crucial role in increasing awareness of maritime activities and improving responses to growing threats at sea, such as attacks (both physical and cyber) on critical infrastructure, irregular migration, drug trafficking, and other illegal activities.

Appendix IV

Country Dashboard

Using publicly available datasets, the research team constructed the Overseas Port Priority Regions and Strategic Investment Dashboard, a database of indicators assessing the attractiveness of port development across 145 countries that are not landlocked (excluding China and the United States).

The dashboard includes 19 indicators grouped into three broad categories: economic efficiency, security, and geopolitics.

The dashboard is intended as a high-level analytical tool rather than an exhaustive or definitive assessment. It is designed to provide an initial, "back-of-the-envelope" guide for identifying priority countries and regions for further analysis. Indicators were normalized using min-max scaling, and countries were ranked on the average score of these 19 indicators using a 0-100 scale in which 100 was best.

Unfortunately, 43 of the 145 countries lacked sufficient data to calculate an overall index score. Most of these were small island states, although several countries in sub-Saharan Africa, as well as Taiwan, Iraq, and Kuwait, also had incomplete data.

Table A11: Indicators

	Economic Efficiency	**Rationale**	**Source**
1	Freedom	Countries that are freer are more accountable to citizens. The U.S. government and companies are more inclined to partner with freer societies.	Freedom House, Freedom in the World, 2025
2	Coastline	Countries with longer coastlines have a higher likelihood of possessing the geographic characteristics necessary for suitable port locations.	CIA World Factbook, Coastline length, 2026
3	Cargo/tonnage	Higher port tonnage indicates greater capacity to handle trade volumes.	Cargo tonnage, UNCTAD, 2023 (or latest year available)
4	Logistics performance	Countries with better performance on trade logistics are more attractive for potential port operators and investors.	LPI, World Bank, latest year available
5	Maritime connectivity	A country that is better connected to global shipping networks will be a more attractive geography for investment.	Liner Shipping Connectivity Index, UNCTAD, 2025
6	Labor productivity	A country that has a more productive workforce will be a more attractive geography for investment.	Output per hour worked, ILO, 2025
7	Corruption	A country with greater transparency is associated with stronger institutional performance and clean processes, increasing attractiveness to investors.	Corruption Perceptions Index, Transparency International, 2024
	Security	Rationale	Source
1	Natural disasters	A country with higher exposure to natural hazards faces a greater risk of damage to infrastructure and other assets, making it less attractive to investors.	World Risk Index, "Exposure to natural hazards (earthquakes, cyclones, droughts, floods, sea-level rise)," 2025
2	Crime	Criminality negatively affects the security of citizens, assets, and the workforce associated with investors, as well as the functioning of institutions.	Global Organized Crime Index, Criminality, 2025
3	Conflicts	A country with a high incidence of conflict is unattractive to investors due to the risks posed to assets and the workforce.	ACLED (Armed Conflict Location & Event Data) Conflict Index, December 2025
4	Cybersecurity	Ports require a strong digital backbone and robust cybersecurity standards for effective functioning. Countries with stronger cybersecurity measures are more attractive to potential investors.	Global Cybersecurity Index, ITU/World Bank, 2024

5	Proximity to trade choke point (distance radius <500 km)	Countries situated near major choke points for the United States (containers, energy, semiconductors, pharmaceuticals) or U.S. allies (NATO and other security agreements) are of greater strategic importance.	CSIS, nearby chokepoint <500 km
6	U.S. allies (security treaties)	Countries that have signed security treaties with the United States have greater strategic value for the United States and are likely to receive more protection than countries without such agreements.	CSIS, defense treaties, MNNA, and security partnerships
7	U.S. military bases/assets	Countries hosting U.S. military bases warrant increased U.S. attention for security and logistical reasons, as commercial ports in these countries often support and supply these installations. If ports are operated by companies from authoritarian regimes, these bases may also face heightened risks of espionage and data collection.	CSIS, several online sources
8	NATO bases	Countries hosting NATO military bases warrant increased U.S. attention for security and logistical reasons.	CSIS, several online sources
	Geopolitics	Rationale	Source
1	Alignment in UN voting	A country whose government aligns with the United States at the United Nations is likely to be more open to U.S. engagement and investment.	UN voting alignment with the United States, State Department
2	BRI signatory	Countries that are Belt and Road Initiative (BRI) signatories are more likely to be friendly toward China and attract investments from the Chinese government and its companies. Countries that later withdrew from BRI are also accounted for.	Council on Foreign Relations (CFR) list
3	Main trading partner: United States or China?	Trade dependency patterns shape geopolitical and economic alignment. Countries whose primary trading partner is the United States, as opposed to China, are more likely to demonstrate openness toward U.S. investment.	Trade volume, IMF, 2024
4	Free trade agreement signed with United States	Countries that have signed an FTA with the United States are more likely to demonstrate openness toward U.S. investment.	USTR

Table A12: Overall Results

Country	**Region**	**Income Status**	**Average Score, 0-100 (high)**
The Netherlands	Europe and Central Asia	High income	72.27
Germany	Europe and Central Asia	High income	71.32

Belgium	Europe and Central Asia	High income	71.30
United Kingdom	Europe and Central Asia	High income	70.27
Canada	North America	High income	68.86
Denmark	Europe and Central Asia	High income	67.62
Norway	Europe and Central Asia	High income	67.35
Iceland	Europe and Central Asia	High income	65.21
France	Europe and Central Asia	High income	64.33
Australia	East Asia and Pacific	High income	63.52
Spain	Europe and Central Asia	High income	63.35
Italy	Europe and Central Asia	High income	62.30
Portugal	Europe and Central Asia	High income	61.82
Israel	Middle East, North Africa, Afghanistan, and Pakistan	High income	60.73
Sweden	Europe and Central Asia	High income	60.61
South Korea	East Asia and Pacific	High income	60.11
Singapore	East Asia and Pacific	High income	59.61
Estonia	Europe and Central Asia	High income	58.68
Japan	East Asia and Pacific	High income	57.63
Lithuania	Europe and Central Asia	High income	57.44
Jordan	Middle East, North Africa, Afghanistan, and Pakistan	Lower-middle income	57.39
Finland	Europe and Central Asia	High income	57.18
Poland	Europe and Central Asia	High income	56.65
Latvia	Europe and Central Asia	High income	56.30
Greece	Europe and Central Asia	High income	55.82
Romania	Europe and Central Asia	High income	54.89
Bahamas	Latin America and the Caribbean	High income	53.14
Ireland	Europe and Central Asia	High income	52.69
Bulgaria	Europe and Central Asia	High income	52.66
Dominican Republic	Latin America and the Caribbean	Upper-middle income	49.05
Costa Rica	Latin America and the Caribbean	High income	47.56
Bahrain	Middle East, North Africa, Afghanistan, and Pakistan	High income	47.46
Turkey	Europe and Central Asia	Upper-middle income	47.37
Oman	Middle East, North Africa, Afghanistan, and Pakistan	High income	46.54
Slovenia	Europe and Central Asia	High income	46.36
Panama	Latin America and the Caribbean	High income	46.17
Colombia	Latin America and the Caribbean	Upper-middle income	45.41
United Arab Emirates	Middle East, North Africa, Afghanistan, and Pakistan	High income	43.84

Saudi Arabia	Middle East, North Africa, Afghanistan, and Pakistan	High income	42.29
Cyprus	Europe and Central Asia	High income	41.71
New Zealand	East Asia and Pacific	High income	41.01
Morocco	Middle East, North Africa, Afghanistan, and Pakistan	Lower-middle income	40.61
El Salvador	Latin America and the Caribbean	Upper-middle income	40.08
Honduras	Latin America and the Caribbean	Lower-middle income	39.84
Croatia	Europe and Central Asia	High income	39.40
Mexico	Latin America and the Caribbean	Upper-middle income	39.10
Egypt	Middle East, North Africa, Afghanistan, and Pakistan	Lower-middle income	38.90
Mauritius	Sub-Saharan Africa	Upper-middle income	38.74
Chile	Latin America and the Caribbean	High income	38.70
Philippines	East Asia and Pacific	Lower-middle income	38.29
Montenegro	Europe and Central Asia	Upper-middle income	38.22
Albania	Europe and Central Asia	Upper-middle income	38.21
Nicaragua	Latin America and the Caribbean	Lower-middle income	38.04
Malaysia	East Asia and Pacific	Upper-middle income	37.96
Qatar	Middle East, North Africa, Afghanistan, and Pakistan	High income	37.52
Uruguay	Latin America and the Caribbean	High income	37.22
Malta	Middle East, North Africa, Afghanistan, and Pakistan	High income	36.92
Papua New Guinea	East Asia and Pacific	Lower-middle income	36.52
Argentina	Latin America and the Caribbean	Upper-middle income	36.23
Guatemala	Latin America and the Caribbean	Upper-middle income	36.13
Jamaica	Latin America and the Caribbean	Upper-middle income	36.04
Guyana	Latin America and the Caribbean	High income	35.91
Georgia	Europe and Central Asia	Upper-middle income	35.69
Thailand	East Asia and Pacific	Upper-middle income	33.51
Trinidad and Tobago	Latin America and the Caribbean	High income	33.36
Djibouti	Middle East, North Africa, Afghanistan, and Pakistan	Lower-middle income	33.22
Cuba	Latin America and the Caribbean	Upper-middle income	32.82
South Africa	Sub-Saharan Africa	Upper-middle income	32.57
Brazil	Latin America and the Caribbean	Upper-middle income	32.47
India	South Asia	Lower-middle income	32.02
Indonesia	East Asia and Pacific	Upper-middle income	31.97
Namibia	Sub-Saharan Africa	Lower-middle income	30.03
Peru	Latin America and the Caribbean	Upper-middle income	29.91

Kenya	Sub-Saharan Africa	Lower-middle income	29.79
Ghana	Sub-Saharan Africa	Lower-middle income	29.44
Tunisia	Middle East, North Africa, Afghanistan, and Pakistan	Lower-middle income	29.37
Algeria	Middle East, North Africa, Afghanistan, and Pakistan	Upper-middle income	29.35
Sri Lanka	South Asia	Lower-middle income	29.19
Côte d'Ivoire	Sub-Saharan Africa	Lower-middle income	29.08
Senegal	Sub-Saharan Africa	Lower-middle income	29.08
Haiti	Latin America and the Caribbean	Lower-middle income	28.88
Togo	Sub-Saharan Africa	Low income	28.01
Vietnam	East Asia and Pacific	Lower-middle income	26.41
Ecuador	Latin America and the Caribbean	Upper-middle income	26.08
Tanzania	Sub-Saharan Africa	Lower-middle income	25.92
Lebanon	Middle East, North Africa, Afghanistan, and Pakistan	Lower-middle income	24.34
Bangladesh	South Asia	Lower-middle income	24.06
Syria	Middle East, North Africa, Afghanistan, and Pakistan	Low income	24.05
Russia	Europe and Central Asia	High income	23.32
Gabon	Sub-Saharan Africa	Upper-middle income	22.75
Guinea	Sub-Saharan Africa	Lower-middle income	22.62
Pakistan	Middle East, North Africa, Afghanistan, and Pakistan	Lower-middle income	22.10
Congo – Brazzaville	Sub-Saharan Africa	Lower-middle income	21.53
Mozambique	Sub-Saharan Africa	Low income	21.50
Nigeria	Sub-Saharan Africa	Lower-middle income	21.09
Equatorial Guinea	Sub-Saharan Africa	Upper-middle income	20.83
Angola	Sub-Saharan Africa	Lower-middle income	20.82
Cambodia	East Asia and Pacific	Lower-middle income	19.33
Yemen	Middle East, North Africa, Afghanistan, and Pakistan	Low income	18.59
Cameroon	Sub-Saharan Africa	Lower-middle income	18.47
Libya	Middle East, North Africa, Afghanistan, and Pakistan	Upper-middle income	17.88
Myanmar (Burma)	East Asia and Pacific	Lower-middle income	13.32
Antigua and Barbuda	Latin America and the Caribbean	High income	Missing data
Barbados	Latin America and the Caribbean	High income	Missing data
Belize	Latin America and the Caribbean	Upper-middle income	Missing data

Benin	Sub-Saharan Africa	Lower-middle income	Missing data
Bosnia and Herzegovina	Europe and Central Asia	Upper-middle income	Missing data
Brunei	East Asia and Pacific	High income	Missing data
Cape Verde	Sub-Saharan Africa	Upper-middle income	Missing data
Comoros	Sub-Saharan Africa	Lower-middle income	Missing data
Congo – Kinshasa	Sub-Saharan Africa	Low income	Missing data
Dominica	Latin America and the Caribbean	Upper-middle income	Missing data
Eritrea	Sub-Saharan Africa	Low income	Missing data
Fiji	East Asia and Pacific	Upper-middle income	Missing data
Gambia	Sub-Saharan Africa	Low income	Missing data
Grenada	Latin America and the Caribbean	Upper-middle income	Missing data
Guinea-Bissau	Sub-Saharan Africa	Low income	Missing data
Iran	Middle East, North Africa, Afghanistan, and Pakistan	Upper-middle income	Missing data
Iraq	Middle East, North Africa, Afghanistan, and Pakistan	Upper-middle income	Missing data
Kiribati	East Asia and Pacific	Lower-middle income	Missing data
Kuwait	Middle East, North Africa, Afghanistan, and Pakistan	High income	Missing data
Liberia	Sub-Saharan Africa	Low income	Missing data
Madagascar	Sub-Saharan Africa	Low income	Missing data
Maldives	South Asia	Upper-middle income	Missing data
Marshall Islands	East Asia and Pacific	Upper-middle income	Missing data
Mauritania	Sub-Saharan Africa	Lower-middle income	Missing data
Micronesia (Federated States of)	East Asia and Pacific	Lower-middle income	Missing data

Palau	East Asia and Pacific	High income	Missing data
Samoa	East Asia and Pacific	Upper-middle income	Missing data
Seychelles	Sub-Saharan Africa	High income	Missing data
Sierra Leone	Sub-Saharan Africa	Low income	Missing data
Solomon Islands	East Asia and Pacific	Lower-middle income	Missing data
Somalia	Sub-Saharan Africa	Low income	Missing data
St. Kitts and Nevis	Latin America and the Caribbean	High income	Missing data
St. Lucia	Latin America and the Caribbean	Upper-middle income	Missing data
St. Vincent and the Grenadines	Latin America and the Caribbean	Upper-middle income	Missing data
Sudan	Sub-Saharan Africa	Low income	Missing data
Suriname	Latin America and the Caribbean	Upper-middle income	Missing data
São Tomé and Príncipe	Sub-Saharan Africa	Lower-middle income	Missing data
Taiwan	East Asia and Pacific	High income	Missing data
Timor-Leste	East Asia and Pacific	Lower-middle income	Missing data
Tonga	East Asia and Pacific	Upper-middle income	Missing data
Ukraine	Europe and Central Asia	Upper-middle income	Missing data
Vanuatu	East Asia and Pacific	Lower-middle income	Missing data
Venezuela	Latin America and the Caribbean	Lower-middle income	Missing data

Category Results, Top 10 Scores

Table A13: Economics

Canada	North America	High income	60.9
The Netherlands	Europe and Central Asia	High income	52.5
Singapore	East Asia and Pacific	High income	52.1
Ireland	Europe and Central Asia	High income	51.8
Norway	Europe and Central Asia	High income	51.2
Denmark	Europe and Central Asia	High income	51.2
Germany	Europe and Central Asia	High income	50.3
Finland	Europe and Central Asia	High income	49.7
Belgium	Europe and Central Asia	High income	49.7
Japan	East Asia and Pacific	High income	49.6
Sweden	Europe and Central Asia	High income	48.2

Table A14: Security

Belgium	Europe and Central Asia	High income	93.24
Poland	Europe and Central Asia	High income	93.15
Portugal	Europe and Central Asia	High income	93.08
Romania	Europe and Central Asia	High income	92.79
Netherlands	Europe and Central Asia	High income	92.77
Germany	Europe and Central Asia	High income	92.28
United Kingdom	Europe and Central Asia	High income	91.40
Greece	Europe and Central Asia	High income	90.59
Spain	Europe and Central Asia	High income	90.01

Table A15: Geopolitics

Israel	Middle East, North Africa, Afghanistan, and Pakistan	High income	96.52
Canada	North America	High income	91.77
Guatemala	Latin America and the Caribbean	Upper-middle income	81.96
Dominican Republic	Latin America and the Caribbean	Upper-middle income	81.65
Mexico	Latin America and the Caribbean	Upper-middle income	81.65
Honduras	Latin America and the Caribbean	Lower-middle income	80.70
Colombia	Latin America and the Caribbean	Upper-middle income	80.38
Jordan	Middle East, North Africa, Afghanistan, and Pakistan	Lower-middle income	79.43
Nicaragua	Latin America and the Caribbean	Lower-middle income	75.00
United Kingdom	Europe and Central Asia	High income	67.72

About the Author

Romina Bandura is a senior fellow with the Economic Development and Prosperity Program at the Center for Strategic and International Studies (CSIS). She is an economist with 25 years of experience in international development research, policy analysis, and project management. Her current research focuses on development finance, strategic infrastructure, digital transformation, private sector development, and the future of work in developing countries. She also covers Ukraine's recovery and reconstruction, U.S. economic engagement in the developing world, and enhancing the reach and impact of the multilateral development bank system. Her work is often cited in prominent media outlets. Before joining CSIS in September 2017, she was a senior consultant at the Economist Intelligence Unit. She worked closely with clients to design research and manage projects that included index building, quantitative analysis, and strategies for investment and growth. She also held positions as an economist at the International Labour Organization's Washington office, a business manager at DAI's Economic Growth Sector (managing a $90 million private sector development portfolio of projects in Africa, Asia, and Eastern Europe), and a policy analyst for the UN Development Programme. Early in her career, she worked in the banking sector in Argentina and Ukraine. Ms. Bandura holds an MPA in international development from Harvard University's Kennedy School of Government and a BA in economics from the Universidad Católica Argentina, Buenos Aires.

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