The Higher Road
Forging a U.S. Strategy for the Global Infrastructure Challenge

A Report of the CSIS GLOBAL INFRASTRUCTURE TASK FORCE
as part of the CSIS RECONNECTING ASIA PROJECT

CO-CHAIRS
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CSIS CENTER FOR STRATEGIC & INTERNATIONAL STUDIES
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About CSIS

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In October 2018, CSIS launched the Global Infrastructure Task Force to help forge a bipartisan, public-private consensus on a strategy for U.S. success in today’s global infrastructure build-out. The task force is made up of a diverse set of experts with extensive experience in government, academia, multilateral institutions, and the private sector. Input from a core set of CSIS advisors has been invaluable to the insights and recommendations of this report, along with the perspectives of several outside experts from a variety of agencies and organizations, for which we are very grateful. This project was made possible by generous support from Bechtel Group, IBM, and the Inter-American Development Bank. Its findings reflect a broad consensus of the participants, but each recommendation is not necessarily endorsed by all task force members and advisors. Everyone who participated in this effort did so in an individual capacity and not on behalf of the organizations with which they are affiliated.
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Preface

A message from the co-chairs:

Over the next 15 years, more infrastructure is projected to be built globally than currently exists. Major countries around the world are actively pursuing the extraordinary range of both economic and strategic opportunities this epochal infrastructure transformation presents—activity that will continue and accelerate with or without U.S. involvement. But where that activity leads, including its long-term implications for the United States, hinges heavily on whether the United States acts strategically to protect and advance its interests. There are two paths forward, only one of which bodes well for the United States.

Without U.S. leadership, the global infrastructure build-out could lead to an intensification of competition and a potential fracturing of the global commons. Standards and rules could further multiply and diverge, creating low quality infrastructure and inefficiencies that constrain development. Spheres of influence would likely reemerge, with infrastructure ownership or control enabling economic and military expansionism. Just as global instability is rising, the U.S. military would almost assuredly face greater restrictions on its ability to project power. U.S. critical infrastructure would be more vulnerable to outside surveillance and meddling. China’s Belt and Road Initiative (BRI), among others—and the low-quality, fast-built infrastructure that often characterizes it—threatens to produce these very outcomes if the United States absents itself from the global infrastructure effort. This is a scenario that should be unacceptable to the United States and to most other nations of the world.

Without U.S. leadership, the global infrastructure build-out could lead to an intensification of competition and a potential fracturing of the global commons.

With focused U.S. leadership, far more positive outcomes are possible—if centered on markets and projects that are vital to U.S. economic and national security interests. The U.S. entry point to these markets and projects is quality infrastructure—both in technology and key physical structures, the two most fundamental building blocks for tomorrow’s growth—fueled by deep capital markets. In this regard, it is fortuitous that the stakes are highest in areas where U.S. strengths happen to be greatest. The United States...
is home to nine of the world’s ten largest institutional investors,² seven of the world’s ten largest technology firms,³ and eight of the world’s ten most valuable brands.⁴ U.S. innovation culture, technical expertise, financing capacity, and abundant and affordable energy resources and expertise are globally sought. The world’s developing economies want and need the quality and cutting-edge technology that U.S. firms provide.

Strategically exercising these strengths will amplify them. With focused U.S. leadership in the global infrastructure arena, U.S. companies can increase their access to the fastest-growing markets in the world, especially in Asia and Africa, where 90 percent of global population growth is projected to occur by 2050.³ Dynamic parts of the U.S. technology sector can continue to innovate and expand, increasing the number of high-paying jobs they now support. Rather than adopting a rulebook written elsewhere, the United States can play a key role in writing tomorrow’s infrastructure rules, including those that keep the digital economy open. Markets in the developing world can rise while retaining their independence.

To be sure, the United States has real infrastructure needs here at home and fewer public resources to put toward infrastructure than some of its partners and competitors, making prioritization even more essential. But America cannot afford only to look inward as the world beyond its borders is remade by this epochal infrastructure transformation.

The window for U.S. action abroad is closing as other countries respond rapidly to the world’s needs for infrastructure. Successful U.S. action will require sustained, bipartisan attention and cooperation with partners and allies. A world is still possible in which U.S. principles of freedom, openness, and resiliency are not just preached at home but practiced globally. This is the higher road. But time is short.

Stephen J. Hadley
Principal, RiceHadleyGates LLC

Amb. Charlene Barshefsky
Senior International Partner, WilmerHale
Executive Summary

Over the next 15 years, more hard infrastructure is projected to be built around the world than currently exists. This global build-out is already underway, and the changes it brings will only accelerate. Infrastructure projects, especially those in the transport, energy, information and communications technology (ICT), and water sectors, have long been recognized as the backbone of modern economies. Going forward, the new emerging digital infrastructure, including fifth-generation (5G) wireless networks, remote sensing, and other advanced technologies, will be of especially critical importance. As our infrastructure is transformed, so will be the economies it fuels, the regions it connects, and the global commons it underpins. These trends are too powerful and potentially beneficial for the United States to stop, and too consequential to ignore.

Now more than ever, infrastructure is a strategic issue. There is a spotlight today on infrastructure issues because of pressing global needs and competing visions for delivering these projects, with China’s Belt and Road Initiative (BRI) arguably the most significant and ambitious strategic initiative of the twenty-first century so far. The stakes are global and the impact fundamental to U.S. interests, in a number of different dimensions:

Commerce: The world needs an estimated $94 trillion in infrastructure by 2040, creating opportunities for U.S. contractors, energy producers and suppliers, technology developers, service providers, and investors. These opportunities can translate into U.S. economic growth, jobs, and return on investment.

Development: Infrastructure can be a powerful tool for promoting development, which can create new markets for U.S. goods and services and reduce security threats. The United States has a long-standing commitment to development both on humanitarian grounds and out of enlightened self-interest. A more advanced world is a world in which U.S. citizens will be more prosperous and secure.

Standards and rules: The states leading today’s infrastructure build-out will shape tomorrow’s technical standards and rules governing the usage of infrastructure, especially digital infrastructure. The result could be standards and rules that adversely affect U.S. commercial competitiveness, economic growth, values, and national security.

Military and intelligence: Maintaining the integrity of ports, pipelines, fiber-optic cables, and other critical infrastructure is important for U.S. security and the U.S. military’s ability to project power. This in turn can impact America’s ability to support its friends and allies.
and to provide the kind of global presence and leadership that advances U.S. prosperity and security.

**Alliances:** The interests of major U.S. allies and partners are increasingly converging as calls grow for expanding the availability of high-quality infrastructure. Cooperation with friends and allies can leverage America’s own efforts in favor of the right kind of infrastructure. Moreover, connectivity can be additive to U.S. relations—it is how we make new friends and reinforce or extend old bonds.

**Leadership:** Whether the United States takes a proactive role will enhance or undermine its standing globally and in multilateral institutions. But even more importantly, without focused U.S. leadership, the infrastructure built is unlikely to be the kind both that the world needs and that will benefit U.S. interests.

Given these stakes, it is encouraging to see U.S. policymakers according global infrastructure a higher priority. Most notably, the Trump administration has focused on infrastructure through its “Free and Open Indo-Pacific” strategy, including modest announcements related to financing and government coordination, and the signing of memoranda of understanding (MOUs) with U.S. allies. The Trump administration also supported the passage of the Better Utilization of Investments Leading to Development (BUILD) Act, which will consolidate the Overseas Private Investment Corporation (OPIC) and several development finance activities into a new agency, the U.S. International Development Finance Corporation (USDFC) with twice the resources and expanded authorities.

These recent U.S. efforts are necessary but far from sufficient, and China is filling the void. China’s Belt and Road Initiative promises over a trillion dollars of investment and has attracted more than 80 countries since it was announced in 2013. China has been willing to take its checkbook to places where the United States has often been unwilling to invest. China also brings the construction and engineering prowess and frequently the workers themselves to deliver projects, often in record time.

But the risks of this approach, often putting speed ahead of quality and Chinese interests ahead of local gains, are beginning to materialize in corruption, unsustainable debt, and other costs for the host country. The backlash against China’s BRI in the Maldives, Malaysia, and elsewhere underscores the enduring need for higher-quality infrastructure alternatives, which strengthen rather than diminish local development and control. It also provides an opening for the United States, its partners, and allies.

Seizing that opportunity, the CSIS Global Infrastructure Task Force was established to forge a bipartisan consensus, supported by actionable policy recommendations, for how the United States should approach the world’s infrastructure build-out. Of course, the United States also has considerable infrastructure needs at home, underscored by recent studies, congressional hearings, and advocacy. Without a doubt, investing in domestic infrastructure is critical for ensuring U.S. economic competitiveness, and ultimately, for sustaining U.S. power. Leading by example would also enhance U.S. efforts to promote quality infrastructure globally. With that global audience in mind, this report focuses on the significance of the infrastructure boom beyond U.S. borders, particularly in the developing world.
Make no mistake. The United States is way behind the power curve. Incremental improvements will not do. The United States needs to take a series of bold steps to become competitive and to play a leading role in those infrastructure areas and geographic regions of importance to it. Enabling and energizing private business and private capital will be critical, but government has an essential catalyzing role to play. Doing what is required will be an enormous challenge, but in our view, the challenge can be met if recommendations like those in this report are taken seriously and adopted.

*The United States needs to take a series of bold steps to become competitive and to play a leading role in those infrastructure areas and geographic regions of importance to it.*

The United States has unique strengths to offer: innovative companies, technical expertise, rule of law, abundant and affordable sources of energy, deep pools of private capital, a network of partners and allies, and leadership roles in relevant multilateral institutions. Moreover, a critical mass of countries is emerging that could provide more alternatives for meeting infrastructure needs while establishing sound international principles for transparency, quality, affordability, sustainability, resiliency, and social responsibility. U.S. leadership is required to harmonize these approaches, preventing fragmentation and ensuring that they are more than the sum of their parts. And collectively, the United States and like-minded countries and institutions must work together to try to convince China to adopt these same international principles so that the infrastructure that it will inevitably finance and build is of the quality, openness, and accessibility essential to the global commons.

Success also hinges on recognizing U.S. limitations. Given fiscal and political constraints, the United States has fewer public resources to put toward foreign infrastructure than some of its partners and competitors, making prioritization even more essential.

To make strategic choices, U.S. policymakers should adopt a three-part framework for setting U.S. priorities and effectively marshalling U.S. power.

First, compile an inventory of global infrastructure efforts and conduct an internal assessment to identify projects and geographies that are vital to U.S. economic and security interests. There are certain types of infrastructure (such as digital infrastructure) and certain geographic areas (such as the Americas and Europe) that we cannot allow China to dominate, much less monopolize, given our own national security and economic interests.

Second, use that assessment to deploy and incentivize U.S. public and private sector resources in those key infrastructure types and geographic areas, in close coordination with U.S. partners and allies. Public funds should be used as a force-multiplier, crowding in rather than crowding out private investment. Without alternatives for meeting pressing infrastructure needs, countries face the difficult and often politically impossible choice between a lower-quality project or nothing at all. It is in the U.S. interest to work with like-minded countries to provide such an alternative both for the immediate commercial benefits it will provide and for the long-term economic and security benefits that will come from the kind of global economy that high-quality infrastructure will produce (i.e., a
better market for U.S. goods and services and a more stable, developed, and peaceful world that does not threaten U.S. security or prosperity).

Finally, monitor and encourage the build-out of infrastructure that poses no risk to U.S. economic or security interests. In these less critical areas, Chinese infrastructure should be welcomed if it meets high standards of transparency, fiscal responsibility, sustainability, resiliency, and social responsibility. Although it is still early, China has demonstrated some interest in meeting global standards through the Asian Infrastructure Investment Bank (AIIB). The China Development Bank, China Export-Import Bank, and China’s other major infrastructure lenders should likewise replicate effective practices from established international financing and development institutions.

Along with this framework, the following seven elements are recommended for a U.S. strategy for global infrastructure, including specific implementation steps that are detailed in this report.

1. **Articulate a global vision** – U.S. government agencies are already pursuing valuable efforts around the world, including the “Free and Open Indo-Pacific” strategy, flagship programs like Power Africa, and recent initiatives like the Americas Grow (“America Crece”) in Latin America, among others. These efforts would be even more compelling if brought together under an overarching set of principles, especially openness, transparency, sustainability, social responsibility, local benefit, and resiliency.

2. **Work with allies and partners** – The United States should be a force multiplier, particularly in regions where U.S. partners and allies are more deeply embedded. There are a host of bilateral, regional, and international opportunities for collaboration, especially through the World Bank and other multilateral development banks (MDBs), the Group of 7 (G7), Group of 20 (G20), Asia-Pacific Economic Cooperation forum (APEC), and others.

3. **Elevate and lead the digital domain** – The overlap between U.S. strengths and interests is strong not only for traditional ICT infrastructure such as fiber-optic cables but also for 5G networks, the Internet of Things, and the application of new sensors and data management systems such as those in “smart cities.” How this digital infrastructure is created is critical for a safe and secure world and a safe and secure United States. The United States cannot afford to allow other countries to monopolize the world’s digital infrastructure or unilaterally dictate the standards and rules governing it.

4. **Power the world toward a sustainable future** – High-quality energy infrastructure promotes U.S. and host country energy security, underpins national and regional economic growth, supports strong social standards, and contributes to environmental goals by reducing particulate pollution and greenhouse gas emissions. These objectives can be advanced through government support of infrastructure development to enable cleaner-burning natural gas and liquefied natural gas (LNG) and other technologies, including wind and solar, that aid clean energy.

5. **Catalyze private sector financing** – Asset owners in Organization for Economic Cooperation and Development (OECD) economies collectively hold more than $55 trillion in assets under management, with only 1 percent of that figure allocated to infrastructure. Leveraging its private sector, a fully-functioning U.S. Export-
Import (EXIM) Bank, and its leadership in international development and finance institutions, the United States can help to move more of this money off the sidelines and into the global infrastructure effort.

6. **Build partner capacity** – The United States should expand its efforts to move officials in developing countries away from the practice of automatically picking the lowest bid while supporting the use of concepts like life-cycle cost analysis and objective evaluation criteria in making procurement decisions in order to promote sound, long-term economic development and fair competition among bidders. Of course, these efforts also hinge on mobilizing more financing.

7. **Bolster U.S. government expertise and coordination** – The United States government should recruit into its ranks more expertise in strategic infrastructure areas, especially digital infrastructure and private sector project finance, and improve government-wide coordination under the direction of an assistant to the president and deputy director of the National Economic Council for Global Infrastructure.

**BOX I: MOVING BEYOND THE TRADITIONAL: STRATEGICALLY DEPLOYING THE USDFC**

This report has a fairly robust list of recommendations. Here are three of them that will help to make the most of the new USDFC, which was established by the BUILD Act and is expected to become operational in October 2019:

1. **Create a Critical Global Infrastructure Connectivity Fund** focused on ICT (particularly 5G and other digital networks), transportation (particularly ports and airports), and power and energy. The USDFC would lead this effort, along with multilateral development banks and other like-minded bilateral development finance institutions, which would adopt measures (as suggested in this report) that incentivize commercial banks and pension and equity funds to join and provide both additional financing and project development assistance.

2. **Establish a Connectivity Compact** that embeds countries receiving these funds in the established international system of rules, standards, and good governance that should be applied to ensure quality infrastructure. The USDFC, U.S. Agency for International Development (USAID), and other key U.S. agencies would provide technical assistance to help these countries meet those requirements. This would include, for example, requirements for transparency, resilience against corruption, and using life-cycle cost assessments in procurement decisions.

3. **Crowd in private sector investors** by contributing $200 million from the USDFC to the Currency Exchange Fund (TCX), which helps mitigate exchange risk and develops local capital markets. By offering financial instruments, particularly swaps and forward contracts, this fund allows investors to provide borrowers with financing in their own currency. Doubling the size of this fund will reduce long-term exchange risk for private sector sponsors in public-private partnerships and similar project finance deals. A U.S. contribution of this size can be used to attract additional contributions from U.S. allies, partners, and the majority of MDBs.

Read the full task force recommendations on pages 25–35.
History’s largest infrastructure boom is underway. Over the next 15 years, more infrastructure is projected to be built around the world than currently exists. By 2040, an additional $94 trillion of global infrastructure investment will be needed to keep pace with massive demographic, environmental, and economic changes. If completed, these projects will carry more people, energy, data, and ideas further and faster than ever before. By 2050, for example, there would be 15.5 million miles of new paved roads, enough to circle the world more than 600 times. This global build-out will have profound implications for the economic, security, and environmental wellbeing of countries throughout the world, including the United States. The United States needs a strategy for contributing effectively to this effort while advancing its own interests in a world that is literally being remade.

Whether and how the world meets its infrastructure needs carries wide-ranging consequences, from developing local economies to shaping global networks. Rightly described as the backbone of economies, infrastructure is central to growth. Spending an additional 1 percent of global GDP on infrastructure would increase global GDP by 2 percent and GDP in developing countries by almost 7 percent, according to the World Bank. Infrastructure can also help countries tap into and benefit from global flows of trade, finance, people, and data. Countries with more connections to these flows grow by up to 40 percent more than less-connected countries. For all of these reasons, infrastructure is a critical tool for achieving the UN Sustainable Development Goals (SDGs) and other development targets.

Consider the world’s rising energy needs. According to the International Energy Agency (IEA), energy demand is set to grow 25 percent by 2040 and will require more than $2 trillion a year invested in new energy supplies. Meeting the SDGs is estimated to cost only 15 percent more but will require a broad reallocation of spending towards lower-carbon fuel sources. Nowhere is this challenge clearer than Asia, which during the same period will account for half the growth in natural gas demand, 60 percent of the rise in wind and solar, more than 80 percent of the increase in oil, and more than 100 percent of the growth in coal and nuclear (given declines elsewhere). Energy infrastructure will be relied upon to fuel economic growth and development but will increasingly be judged by its ability to alleviate energy poverty, get rid of harmful air and water pollution, and reduce greenhouse gas emissions.
Technology is changing the very essence of infrastructure. Increasingly, roads, pipelines, and other “traditional” infrastructure are incorporating digital aspects into their design, construction, and operations processes. New and more advanced technologies—cloud computing, remote sensing, and artificial intelligence—are being deployed in “smart cities.” New forms of transportation, from Hyperloop to autonomous vehicles, could become more widespread. Fiber-optic cables and wireless networks are reshaping communications, commerce, and security. No large-scale 5G networks have been rolled out yet, but according to one industry estimate, more than 1.5 billion people will subscribe to 5G networks by 2024. Policymakers are racing to catch up with these changes and address the challenges they present, especially in data security and privacy, as made evident by recent calls for global data rules.

Figure 1: 5G is expected to reach more than 1.5 billion subscribers in 2024

Despite widespread agreement about the importance of increasing infrastructure investment, two gaps stand in the way. The first gap is quantitative: the world’s infrastructure investment demands far exceed the world’s current ability to meet them. Developing Asia alone requires $1.7 trillion per year to maintain growth and adapt to climate change, according to the Asian Development Bank (ADB), but the region invests less than $900 billion a year. Allowing this gap to persist would mean sacrificing growth and other positive effects, from higher productivity to better healthcare access, that often accompany infrastructure investment. Recognizing the stakes, several international...
initiatives have elevated infrastructure as a priority in recent years, including the World
Bank’s Global Infrastructure Connectivity Alliance, the G20’s Global Infrastructure Hub,
and the AIIB, among others.

Figure 2: Developing Asia’s Infrastructure Needs

The second gap is qualitative. Not every road, power plant, or fiber-optic cable is
created equal. There is a wide spectrum of practices and standards for project selection,
construction, and operation. Some projects are built with long-term maintenance and
operations costs in mind, while others hide and defer these costs. Stemming from
different financing approaches and procurement practices, projects can differ in their
openness to competition, opportunities for participation among local firms, and demands
to transfer technology and expertise. Given that infrastructure lasts for several decades,
different approaches to social and environmental safeguards can have long-lasting effects.
Bridges to nowhere and other projects that are driven by political considerations rather
than commercial fundamentals should not be built at all. Done poorly, infrastructure
projects can destroy more value than they create.

Meanwhile, innovation is changing not only what infrastructure is, but also how projects
are planned, delivered, and managed. New ways to produce and use energy promise to
unlock opportunities for the more than one billion people without access to electricity
and the 2.7 billion people without access to clean cooking fuels. The emergence of 5G
wireless technology, the Internet of Things, and related developments that incorporate
more sophisticated sensing technology into highways, pipelines, electric grids, and other
connectivity infrastructure could boost productivity. With foresight and coordinated
planning, developing countries can leap-frog older methods and technologies and adopt
more efficient systems.

Of course, these new technologies also carry new challenges. For innovators, remaining
on the cutting edge of these developments requires making substantial investments
in research and development without the guarantee of short-term rewards. For
adopters, in a world of competing options, it is often difficult to decide which systems to choose. There is the risk of falling behind if new technologies are not deployed, and the countervailing risk of prematurely adopting a system that becomes incompatible with future innovations. Essential to all involved is establishing trustworthy data environments, a challenge that requires addressing privacy and security concerns as well as the movement of data across borders.

With new tools from innovation, and no consensus on bridging these two gaps, a competition is now underway. The world’s leading and emerging powers have competing visions for connectivity and different models for delivering tomorrow’s infrastructure.

China’s BRI is ambitious and ambiguous, as Box II outlines in greater detail. It promises over $1 trillion in new infrastructure projects, trade agreements, people-to-people ties, and coordination of policy in areas from health to agriculture. There is no agreed-upon definition for what qualifies as a BRI project. More than 100 countries are participating in the BRI, according to Chinese state media. Most participants are developing and emerging economies, but some EU member states have signed memorandums of understanding (MOUs) as well. Yet there are Chinese-funded projects in non-participant countries that share many of the same characteristics. The BRI officially launched in November 2013, but projects started years earlier are often counted. Since being announced, it has expanded to include the Arctic, cyberspace, and even outer space. By design, the BRI is more a loose brand than a program with strict criteria, but it evidences China’s global ambitions, both economic and military.

**BOX II: ALL ROADS LEAD TO BEIJING: CHINA’S BELT AND ROAD INITIATIVE**

As Chinese President Xi Jinping’s signature foreign policy effort, the BRI is striking for its breadth as well as its opacity. It drives across the Eurasian landmass and beyond in two grand sweeps: the ocean-based **Twenty-First Century Maritime Silk Road** and the overland **Silk Road Economic Belt**. Collectively, these efforts imagine a world where all routes lead to Beijing.
The BRI’s open-ended framework has expanded in recent years to include other economically and strategically important dimensions of China’s growing global footprint:

“Digital Silk Road” – Information technology has been part of the BRI’s maritime and overland dimensions from the beginning, with Chinese officials calling for the creation of an “information silk road” or “digital silk road.” The BRI’s digital dimensions are far-reaching, including fiber-optic cables, 5G networks, and devices that connect to these systems.

“Space Information Corridor” – Overlapping with the digital silk road, Chinese officials have called for creating a “space information corridor” that includes manned spaceflight, lunar exploration, high-resolution satellites, and other activities. They aim to expand China’s Beidou satellite navigation system, an alternative to the U.S. global positioning satellite (GPS) network, to provide global coverage by 2020.

“Polar Silk Road” – On January 28, 2018, China released its first official Arctic policy, which declared itself a “Near-Arctic State.” The document called for building a “Polar Silk Road” and encouraged Chinese companies to build infrastructure in the Arctic and conduct trial voyages.

China’s approach is fast and flexible. When a recipient country considers an offer from China, it typically interacts with a unified group of builders, financiers, and government officials. With less stringent social and environmental safeguards, Chinese projects often take less time to move from conception to construction and deal with risks as they arise. This differs from the “Western approach,” which involves dealing separately with a wider range of actors and often emphasizes mitigating risk earlier in the project evaluation process. Getting projects from idea to execution faster is appealing to politicians facing term limits. China will also work with any government and accept a wide range of repayment methods. It will convert otherwise unreasonable debt to equity, as it did in Hambantota Port when Sri Lanka could not repay its loans. For recipient countries, this approach magnifies incentives for starting projects and masks debt sustainability and other risks.

The world’s leading and emerging powers have competing visions for connectivity and different models for delivering tomorrow’s infrastructure.

China relies heavily on public financing, which is often opaque and designed to favor Chinese firms. Beijing’s own government-directed banks, led by the China Development Bank and the Export-Import Bank of China, have doubled in size since 2000, and Chinese lending to developing countries now exceeds the major Western-backed MDBs. China’s government-directed banks are less transparent than their multilateral counterparts. Projects are publicized after contractors are picked, and loan terms are rarely released publicly. China has so far refused to join the world’s other major official creditors, which belong to the Paris Club and agree to cap their lending rates, share information, and coordinate debt relief.
Chinese officials have expressed an interest in improving their practices through the AIIB, established in 2015 and based in Beijing. The AIIB’s founding president, Jin Liqun, has promised the institution will be “lean, clean, and green.” To date, the AIIB has modeled many of its policies off existing MDBs, with which it has co-financed a majority of its projects. Though the AIIB now has more members than the Japanese-led Asian Development Bank (ADB), in financial and operational terms, the AIIB is still an infant, lending a total of $1.7 billion in 2016, roughly a tenth of the ADB’s spending on infrastructure during the same period. Initial fears that the AIIB would take shortcuts in project practices and undermine the more experienced MDBs have not been realized. But it is too early to pass judgement, and continued scrutiny remains prudent.
Japan has been heavily involved in Asia’s infrastructure efforts for decades, especially in Southeast Asia. The CSIS Reconnecting Asia database shows that Japan is outspending China on transport projects in several Southeast Asian countries. Moreover, Japan has announced plans to support cooperation between Japanese and Chinese companies working in third countries. Far from an endorsement of the BRI, of which Japan has been skeptical, Japan’s engagement reflects continuing concern about the initiative and a desire to maintain its leading role as an infrastructure provider. These arrangements provide a window into China’s approach, and even more importantly, a seat at the table for exercising influence.

In response to the BRI, Japan has also sharpened its own vision. In 2016, Prime Minister Shinzo Abe unveiled the Expanded Partnership for Quality Infrastructure, a $200 billion effort to persuade countries to pay more up front for projects that advance sustainability goals and cost less over their lifetimes. Japan has been working to build support for this approach, and reflecting those efforts, the G7 released the Ise-Shima Principles for Promoting Quality Infrastructure in 2016 (see Box III, below).
The European Union has emphasized similar standards and principles. In May 2017, an EU delegation reminded China that the BRI should adhere to market rules, EU and international requirements and standards, and complements EU policies and projects. In April 2018, 27 of 28 national European Union ambassadors to Beijing signed a report noting that the BRI “runs counter to the EU agenda for liberalizing trade and pushes the balance of power in favor of subsidized Chinese companies.” The EU-China Connectivity Platform was established in 2015 to help coordinate its Trans-European Transport Network (TEN-T), which includes nine corridors, and BRI. In September 2018, the EU Commission announced building blocks for a strategy connecting Europe and Asia. It emphasizes “sustainable, comprehensive and rules-based” connectivity (see Box III, below). At the same time, individual EU member states, such as Greece and Poland, are actively pursuing and engaging in Chinese-led infrastructure development projects, some of which the EU has declined to fund.

**BOX III: ALLIED APPROACHES**

*The G7 Ise-Shima Principles for Promoting Quality Infrastructure* 50

- **Principle 1**: Ensuring effective governance, reliable operation and economic efficiency in view of life-cycle cost as well as safety and resilience against natural disaster, terrorism and cyber-attack risks
- **Principle 2**: Ensuring job creation, capacity building and transfer of expertise and know-how for local communities
- **Principle 3**: Addressing social and environmental impacts
- **Principle 4**: Ensuring alignment with economic and development strategies including aspects of climate change and environment at the national and regional levels
Principle 5: Enhancing effective resource mobilization including through PPP [public-private partnerships]

Connecting Europe and Asia: Building Blocks for an EU Strategy

- **Sustainable connectivity.** To drive productivity and create growth and jobs, connectivity investments need to ensure market efficiency and be fiscally viable. To respond to the challenges of climate change and environmental degradation, these investments have to promote decarbonization of the economy and respect high standards, based on environmental impact assessments. To further social progress, they need to adhere to high standards of transparency and good governance and give a voice to the people affected by the projects, based on appropriate public consultations. Connectivity policies should reduce negative externalities, such as environmental impact, congestion, noise, pollution and accidents. In short, connectivity has to be economically, fiscally, environmentally and socially sustainable in the long term.

- **Comprehensive connectivity.** Connectivity is about networks, and the flow of people, goods, services and capital that pass through them. This means transport links, by air, land or sea. It means digital networks, from mobile to fixed, from the internet backbone to the last mile, from cables to satellites. It also means energy networks and flows, from gas, including liquified natural gas, to electricity grids, from renewables to energy efficiency. Synergies between the three sectors, sometimes leading to innovative and new forms of connectivity, should be optimized. Connectivity has a crucial human dimension, and people’s interests and rights should be at the core of any policy.

- **International rules-based connectivity.** Rules and regulations are required for people, goods, services and capital to move efficiently, fairly and smoothly. Internationally agreed practices, rules, conventions and technical standards, supported by international organizations and institutions, enable interoperability of networks and trade across borders. In its internal market, the EU guarantees non-discrimination and a level playing field for enterprises and promotes an open and transparent investment environment while protecting its critical assets. The EU should continue to promote open and transparent procurement processes where companies should enjoy a level playing field.

Other powers are advancing their interests as well. India, which has objected to China’s BRI because it runs through Pakistan-occupied Kashmir, is strengthening connectivity on its borders and pursuing several high-profile projects beyond them. ASEAN’s Master Plan on Connectivity 2025 aims to strengthen physical, institutional, and people-to-people linkages among its member countries. South Korea’s ambitions encompass railways to Europe, Arctic shipping, and fiber-optic networks. Russia is pursuing several high-profile projects—a bridge into Crimea, new gas pipelines around Ukraine into Europe, and Arctic ports—and is a critical gatekeeper for Asia-Europe land routes, many of which must pass through its Eurasian Economic Union. From Azerbaijan to Zambia, nearly every nation has ambitions for greater connectivity.
The United States is now sharpening its infrastructure toolkit after decades of neglect. U.S. foreign assistance began to shift away from extensive infrastructure programs in the 1970s. The “New Directions” legislation, passed by Congress in 1973, accelerated the transition from providing loans to providing grants and from focusing on delivering large capital projects to providing technical assistance. These shifts, which occurred at many MDBs as well, were driven in part by development economists, who critiqued project lending, and by non-governmental groups, which advocated paying greater attention to social and environmental considerations. After declining for decades, infrastructure as a percentage of total investment at the MDBs began rising in the early 2000s. The primary avenue of U.S. support for foreign infrastructure projects is through its membership in the MDBs, which have highly experienced staffs, pool resources, and minimize the reputational risk that any single donor assumes.
There are several notable exceptions to the U.S. retreat from foreign infrastructure projects, however. For example, infrastructure reemerged as part of the U.S. foreign assistance strategies for Afghanistan and Pakistan. Between 2011 and 2016, the most recent five-year period on record, roughly 42 percent of U.S. foreign assistance for infrastructure has gone to Afghanistan and Pakistan. The results of those investments have been mixed at best, due not only to challenging security environments, but also partner capacity and governance challenges, among other factors. Competing priorities among U.S. government agencies also undermined project planning and execution.

The U.S. private sector has undertaken major foreign infrastructure initiatives, and U.S. technology companies have been at the vanguard of expanding global internet access. For example, Google’s Project Link and its independent successor, CSquared, have helped expand fiber networks in Uganda, Ghana, and Liberia. Facebook’s Free Basics initiative estimates that it has helped bring more than 100 million people online, and its Connectivity Lab experiments with new technologies for further expanding internet access. Microsoft’s philanthropic and commercial activities have helped bring affordable internet access to rural areas in the United States and around the world. As the following section explains in greater detail, a range of U.S. companies are also active as contractors, energy producers, suppliers, service providers, and investors, among other roles.

Another notable exception to the U.S. retreat from foreign infrastructure projects is Power Africa, which aims to add more than 30,000 megawatts of electricity generation capacity and 60 million electrical connections in sub-Saharan Africa by 2030. Since its creation in 2013, Power Africa has attracted more than $18 billion in financing to fund more than 117 power projects, creating over 12.5 million new electrical connections. It has

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**Figure 7: Infrastructure as a Percent of Investment Commitments, Decade Average**

![Graph showing infrastructure as a percent of investment commitments over decades from 1950s to 2010s.]

*Source: Global Green Growth Institute*
also become the world’s largest public-private partnership for development, pairing the financial support of 12 U.S. government agencies with investments from 17 development organizations and 145 companies, half of which are U.S. firms. In March 2018, the Trump administration launched Power Africa 2.0 with an added emphasis on the initiative’s market benefits for U.S. companies in Africa.

The Trump administration’s other primary focus on foreign infrastructure is through its “Free and Open Indo-Pacific” strategy. In November 2017, OPIC signed an MOU with the Japan Bank of International Cooperation (JBIC) and Nippon Export and Investment Insurance (NEXI) that is intended to promote quality infrastructure in third countries. In July 2018, the administration announced $113 million in funding for four strategic initiatives in the Indo-Pacific region, one of which is “promoting sustainable infrastructure development.” In November 2018, OPIC, JBIC, and the government of Australia signed a trilateral MOU to facilitate financing in the Indo-Pacific region, including infrastructure and energy projects.

The Trump administration also supported the passage of the (BUILD Act, which will consolidate OPIC and several development finance activities into a new agency, the USDFC. Along with an expanded portfolio limit of $60 billion, twice OPIC’s earlier portfolio, the USDFC will have authority for equity finance, which OPIC has lacked, and will be allowed to denominate guarantees and loans in local currency, reducing currency exchange risk. Separately, the Trump administration has made energy infrastructure a major focus of its “America Crece,” or Americas Grow, initiative, which uses framework agreements with countries in Latin America to build energy markets and expand U.S. exports to those markets.

This renewed focus on infrastructure is promising, and the United States has several strengths to harness: innovative companies, technical expertise, rule of law, abundant and affordable sources of energy, deep pools of private capital, a network of partners and allies, and leadership roles in multilateral institutions. Moreover, U.S. partners and allies are currently elevating their own efforts rhetorically and marshalling greater resources. A critical mass is emerging that could provide more alternatives for infrastructure investment while establishing sound international principles for infrastructure quality.

The United States is now sharpening its infrastructure toolkit after decades of neglect.
The Stakes: U.S. Interests

The United States has a range of interests at stake: commercial, economic, and strategic. These interests are strongly shared by U.S. partners and allies, and the coordinated pursuit of them promises broader benefits for global development and commercial success. For example, working to further develop sound infrastructure principles will help create a context in which the United States will be more competitive and able to make its maximum contribution to the sustainable, socially responsible global infrastructure that the world so badly needs. While competition for individual commercial opportunities is often intense, it would be a mistake to view global infrastructure needs as a zero-sum game.

Commercial Interests

U.S. commercial interests in foreign infrastructure projects run the gamut from U.S. contractors, energy producers, and suppliers to technology developers, service providers, and investors. In recent decades, U.S. firms have generally become less dominant as primary contractors in foreign infrastructure projects. According to a recent global ranking of top international contractors by revenue, there were no U.S. firms in the top ten and only two U.S. firms in the top twenty. The list is dominated by European and Chinese firms, all of whom benefit from large and functioning export-import banks (see next page).

There is, however, an opportunity for U.S. firms to sell products in the global infrastructure boom. Honeywell, Caterpillar, and other U.S. companies that provide components for infrastructure projects and the tools to build those projects remain active around the world. For example, General Electric’s power technology has been installed in more than 180 countries and is used to produce a third of the world’s electricity. These companies offer advanced technology and reliable products. Another competitive edge is that U.S. firms are often willing to provide training for operating and maintaining assets as part of a package for their products. Clean energy technology, equipment, and services is another area of strength for U.S. industry, and many developing economies are prime markets for renewable energy projects.

U.S. firms are highly competitive in providing services for designing, delivering, and operating large projects. For example, U.S. firms are pioneering methods to design, test, and troubleshoot large projects virtually with cutting-edge software before actual construction begins. The benefits of this are evident not only in time and cost savings, but also in better safety records. The United States is the world leader in providing related
professional services, especially the financial, legal, and consulting services required to structure these complex transactions. Expertise in managing and operating large assets is another U.S. strength that presents commercial opportunities abroad.

**Figure 8: The Global Export Credit Competition**

![Map of global export credit competition](image)

Given these strengths, U.S. companies can perform well when the competition in foreign infrastructure markets is open and fair. At present, however, U.S. firms are often at an economic and diplomatic disadvantage. Outside the United States, many of the world’s largest construction firms benefit from direct state subsidies and functioning export banks. Foreign firms not only receive more sustained high-level diplomatic support, but that support is often better coordinated than U.S. commercial diplomacy. U.S. diplomats are barred from advocating for a single U.S. firm (“picking a winner”) if multiple U.S. firms are competing, deferring to the target country’s decision. While that approach is well intentioned, many U.S. competitors put forward a single firm, simplifying the target country’s decision.

U.S. investors also stand to benefit from the long-term returns that infrastructure projects can provide. Private investors have been increasing their exposure to infrastructure assets, raising a record $85 billion targeting infrastructure globally in 2018. But this is just scratching the surface: globally, institutional investors—such as pension funds, mutual funds, insurance companies, and others such as sovereign wealth funds—manage nearly $100 trillion. Less than 1 percent of that largess is invested in infrastructure, holding out the possibility that a modest increase could greatly expand the availability of investment, benefiting the private sector and recipients alike.
Expanding U.S. private investment in foreign infrastructure is a necessary but daunting task. In 2016, the United States allocated roughly $400 million in foreign assistance to infrastructure activities. Those numbers pale in comparison to the depth of private pools of capital. For example, the Oregon Investment Council, which oversees the Oregon Public Employees Retirement Fund and the state’s other trust funds, is considering an investment of up to $400 million in a private infrastructure fund that primarily targets OECD countries. There are similar examples in California, Maine, and other U.S. states, reflecting a growing interest among U.S. investors. But most U.S. infrastructure investment is domestic and most foreign U.S. infrastructure investment goes to OECD economies.

While competition for individual commercial opportunities is often intense, it would be a mistake to view global infrastructure needs as a zero-sum game.

The challenge is that too often, especially in emerging markets, potential rewards are not commensurate with perceived risks. The list of overarching risks is long and varied: environmental, social, health, and safety risks; inflation, foreign exchange, and other macroeconomic risks; idiosyncratic decisionmaking, contract disputes, weak rule of law, and other legal and political risks. The complexity of projects should not be discounted, and there is an assortment of construction and operations risks. Most large infrastructure projects are delivered late, cost more than expected, and deliver fewer benefits than promised—even in the best business environments. As a result of all of these challenges, there is a shortage of “bankable” projects that can promise enough upside. Unlocking greater pools of U.S. private capital will require innovative ways, including multilateral or direct insurance products, to adjust the current risk-reward calculus.

Economic Interests

Beyond its more immediate commercial interests, the United States also has a set of broader, medium and longer-term economic interests: promoting sustainable and inclusive development; setting standards that will ensure quality infrastructure and the ability of U.S. firms to compete on a level playing field while reflecting U.S. values; and maintaining the stability and effective, optimum performance of the major global systems that infrastructure impacts.

In the presence of competing models for delivering infrastructure, the United States has an interest in championing sustainable and inclusive approaches. For all the reasons mentioned in this report’s first section, infrastructure is widely recognized as an important dimension for all development strategies. Over time, the positive effects of better global infrastructure will also come back to the United States. As income levels rise and more people enter the world’s global middle class, these efforts will also expand future markets for U.S. goods and services. Those markets will be healthier and more open to U.S. exports if the United States plays an active role in their development.

U.S. leadership on infrastructure can help promote sustainable growth in emerging economies, which are expected to take on an even greater share of the global economy in
the coming years. After accounting for roughly half of global growth over the last decade, emerging markets will be responsible for roughly 70 percent of global growth through 2030 and half of global GDP, according to HSBC. Maintaining that growth will require meeting basic infrastructure needs while balancing other priorities. For all its potential benefits, infrastructure is no silver bullet for development, and over-investment in low-quality projects can crowd out other important priorities, including healthcare and education. Public debt in emerging and middle-income economies is close to 50 percent of GDP according to the International Monetary Fund (IMF), underscoring the need for careful project evaluation and prudent fiscal policies.

The United States also has an interest in promoting quality infrastructure. When improperly planned, infrastructure can result in environmental degradation such as deforestation, pollution, and flooding. Poorly built or operated projects can fuel corruption, displace vulnerable populations, and cost lives. For example, according to a study by the World Bank, countries that do not invest in road safety, including all phases of planning, design, and operation, could lose 7 to 22 percent in per capita GDP growth over a 24-year period. Projects that utilize local labor, transfer knowledge and expertise, and do not misuse resources promote better long-term development outcomes.

The states leading today’s infrastructure boom will shape tomorrow’s technical standards and stimulate innovation. Historically, the U.S. approach to standard-setting has been carried out through trade and investment agreements. While those tools remain relevant for setting standards from the top down, infrastructure projects provide an avenue for setting standards from the bottom up. Current choices about technology standards, such as which 5G networks to adopt, carry implications well beyond the immediate technology at hand, impacting a wider array of related technologies and shaping what might be thought of as a broader “ecosystem.” Once adopted, technical approaches and equipment choices are often difficult to change, even if a more practical or advanced technology becomes available. Beyond standards, active engagement in these markets by U.S. firms stimulates innovation, and ultimately it is innovation (and the capacity to apply it commercially) that determines competitive advantage. In other words, ceding ground to foreign competitors means ceding the prospects for U.S.-led innovations in infrastructure markets.

Hard infrastructure projects can even be a vehicle for shaping “soft” infrastructure. In July 2018, for example, China established two international courts to handle disputes under the BRI. Disputes are not uncommon, occurring in nearly one of every three joint construction ventures, according to one estimate. There are well-established and highly reputable international arbitral forums in New York, London, Hong Kong, and Singapore that have deeper experience handling these issues. By including provisions in its project agreements that require using courts in Beijing, China is advancing rules that reflect its own preferences, adjudicated by courts whose decisions may be politically directed. These

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developments, as well as construction in disputed territory, weaken international law and the rights of host countries.

The United States also has an interest in maintaining the stability and effective performance of the major global systems that infrastructure impacts. As the world’s population rises to 9.8 billion by mid-century, new infrastructure will be needed to avoid bottlenecks and keep people, finance, energy, data, and ideas flowing. The functionality of global transport depends on these investments.

The global energy system, underpinned by free markets, expanding patterns and volumes of trade, and transparency, is another major economic interest to the United States. These principles are essential for maintaining the energy trade, investment, and access to resources that enable U.S. economic growth. The U.S. shift from a major energy importer to a global producer and exporter of oil and natural gas buttresses U.S. efforts to counter temptation for resource nationalism and the use of energy as a diplomatic weapon around the world. For example, the export of U.S. LNG not only facilitates job creation and economic growth at home, but also diversifies the pool of LNG suppliers, encourages higher market liquidity, and helps develop LNG markets that can advance energy security.

**The states leading today’s infrastructure boom will shape tomorrow’s technical standards and stimulate innovation.**

Infrastructure is also critical for expanding access to the internet and protecting its freedom, openness, and basic functionality. Great strides have been made in global connectivity in recent years, but nearly half the world’s population still lacks internet access. How this half of the world becomes connected will impact which systems and rules become dominant. Not all countries support maintaining a free and open internet or responsibly sharing data across borders while also safeguarding privacy. Protecting the free exchange of data will require leadership in setting global standards as well as significant investments. It will cost $450 billion to connect the next 1.5 billion people, according to the Internet and Telecommunication Union. Who provides this infrastructure, and how it is provided, is of enormous consequence to the United States.

**Strategic Interests**

The United States has diplomatic, intelligence, and military interests that infrastructure projects can impact. These interests are primarily, but not exclusively, defensive. The overriding challenge to U.S. interests is preventing its competitors from using infrastructure projects to create dependencies and exploit vulnerabilities among weaker states to the detriment not only of those states but of U.S. interests and security as well. While most projects are not strategically important in their own right, there are some special cases—including ports, pipelines, communications networks, and other critical infrastructure—that often deserve greater scrutiny. Competitors can also accumulate influence through a portfolio of projects, enhancing their financial leverage, or in the case of ownership and operations, improving their access to strategic areas.
Technology is increasingly dual-use. In the coming years, the Internet of Things and related developments that incorporate more sophisticated sensing technology into highways, electric grids, and other connectivity infrastructure could boost productivity but also create new security challenges (see next page). More broadly, specialized knowledge of how communications systems are designed makes it easier to surreptitiously access them, whether for monitoring or more active measures. These risks can arise during both software and hardware design and development, creating challenges for supply-chain management of the components that go into infrastructure projects, as well as later during ongoing system support and maintenance.

Diplomatically, the United States has an interest in ensuring that infrastructure is not used to weaken or divide its partners and allies or to bribe them into supporting positions adverse to U.S. interests. Recent examples include Greece and Hungary preventing the EU from objecting to China’s territorial claims in the South China Sea after receiving promises of infrastructure and other investment. Yet most countries do not want to become overly dependent on any single lender, and their hedging provides opportunities for U.S. engagement.

Opaque lending practices allow U.S. competitors to use large projects to further increase their political influence, and in exceptional cases, to gain ownership of strategic assets. Large projects can be used to launder money, providing a source of leverage for the lender. For example, Chinese projects were allegedly inflated to help bail out Malaysia’s troubled state development fund. These practices stoke corruption and weaken the rule of law. The same lack of transparency increases the risk that projects fail, and that recipient countries are unable to manage and repay their debts. When countries are unable to repay, they can be compelled to offer ownership in state assets that they would not have otherwise sold, as Sri Lanka’s Hambantota Port illustrates. While borrowing dynamics vary widely, greater transparency would help avert these negative outcomes.

Connectivity infrastructure can be used coercively, and many infrastructure projects are dual-use. Russia, for example, has been willing to cut off gas supplies for political purposes, and as part of its illegal annexation, it has built a bridge into Crimea that can be used for commercial or military activities. Distinguishing between commercially driven and strategically driven projects is not always straightforward. Many of the same characteristics that make ports attractive for commercial vessels—deep harbors, strong connectivity to the mainland, abundant access to potable water and fuel—make them useful for military operations as well. The dual-use challenge itself compels careful consideration by the United States of its vulnerabilities and opportunities in the context of infrastructure involvement, whether for offensive or defensive purposes.
Alongside preventing and minimizing these strategic costs, the United States has an interest in using infrastructure as a positive tool for long-term strategic ends. To be sure, the link between infrastructure and influence is complex, and commercial success does not always guarantee positive political results in the short term. New connections are disruptive by nature and often carry unintended consequences. But in the longer run, the United States stands to gain from encouraging projects that are commercially sound. The United States can and should highlight the risks of low-quality approaches to infrastructure, but performance is the ultimate judge. Nothing draws a stronger contrast with projects that are pursued for dubious ends than projects that deliver on their promises. Ensuring that the United States is seen as a reliable and trustworthy partner is of long-term strategic importance.
Recommendations

A Strategic Framework for U.S. Priorities
This section proposes a three-part framework for setting U.S. priorities and effectively marshalling U.S. power. This framework is informed by an honest assessment of China’s BRI and U.S. capabilities in the global infrastructure build-out, the key points of which are summarized below.

THE BRI’S APPEAL: FINANCING AND SPEED
The initial political success of China’s BRI is instructive. A long and still-growing list of countries has signed onto the BRI because it speaks to the hopes and aspirations of developing countries. As many countries have become wealthier, their interests have progressed from covering basic human needs to issues like energy, power, trade, and investment. China has tapped into these interests by offering large amounts of government financing, working bilaterally, and promising to deliver projects quickly. It has been successful largely because it is willing to assume risks that other investors have not, whether legal or illegal. In too many cases, China’s offer is not the best choice but the only option for developing countries.

THE BRI’S RISK: UNWARRANTED DEPENDENCE
China’s approach carries great risks. Speed is often a function of China’s willingness to begin projects without adequate economic, social, and environmental assessments. Pushing risk further into the project cycle instead of mitigating it up front raises the likelihood of adverse outcomes and masks the true costs of projects. China’s willingness to provide financing is often tied to use of its own companies and workers, which delivers fewer benefits to local economies. The lack of transparency around Chinese financing facilitates corruption while obscuring motives and sustainability. These shortcomings are evident in the political backlash that has been mounting against the BRI.

U.S. STRENGTHS: DYNAMIC PRIVATE SECTOR, NETWORK OF PARTNERS AND ALLIES
The United States has its own strengths, especially its dynamic private sector and a global network of partners and allies. U.S. companies are innovative, technically advanced, and often package their services with capacity building for local workers. Along with a reputation for delivering reliable products and services, U.S. companies also bring with them best practices and adherence to the rule of law. The United States has deep pools
of private capital. The United States also has an unrivaled network of partners and allies, many of whom are already deeply involved in the global infrastructure build-out, and holds leadership roles in relevant multilateral institutions.

**U.S. Weaknesses Require Strategic Choices: Fiscal Limits and Setting Priorities**

Success also hinges on recognizing U.S. limitations. Given fiscal and political constraints, the United States has fewer public resources to put toward foreign infrastructure than some of its partners and competitors, making prioritization even more essential. Moreover, U.S. interests are concentrated in certain sectors and geographies.

To make strategic choices, U.S. policymakers should adopt a three-part framework that recognizes these constraints and leverages U.S. strengths:

1. **Identify projects vital to U.S. interests.** The U.S. government should compile an inventory of global infrastructure efforts and conduct an internal assessment to identify those projects that are vital to U.S. economic and security interests. There are certain types of infrastructure (like digital infrastructure) and certain geographic areas (like the Americas and Europe) that we cannot allow China to dominate, much less monopolize, given our own national security and economic interests.

2. **Mobilize resources toward high-priority areas.** Using the assessment, mobilize U.S. public and private sector resources into those key infrastructure types and geographic areas, in close coordination with U.S. partners and allies. Public funds should be used as a force-multiplier, crowding in rather than crowding out private investment. Without alternatives for meeting pressing infrastructure needs, countries face the difficult and often politically impossible choice between a lower-quality project or nothing at all. It is in the U.S. interest to work with partners and allies to make the effort to provide such an alternative both for the immediate commercial benefits it will provide and for the long-term economic and security benefits that will come from the kind of global economy that high-quality infrastructure will produce (i.e., a better market for U.S. goods and services and a more stable, developed, and peaceful world that does not threaten U.S. security or prosperity).

3. **Encourage projects that pose little or no risk to U.S. interests.** In these less critical areas, Chinese infrastructure should be welcomed if it meets high standards of transparency, fiscal responsibility, sustainability, resiliency, and social responsibility. Although it is still early, China has already demonstrated some interest in meeting global standards through the AIIB. The China Development Bank, China Export-Import Bank, and China’s other major infrastructure lenders should likewise replicate effective practices from established international financing and development institutions.

**Seven Elements of a U.S. Strategy for the Global Infrastructure Challenge**

Competing effectively in today’s global infrastructure contest will require a sustained and coordinated effort. It is a slow-moving development that will unfold in years and decades
rather than days or months. It is functionally and geographically vast, typically spanning the responsibilities of many agencies within the U.S. government. It requires grappling with both economic and security issues. The private sector, which the U.S. government can enable and encourage but does not direct or control, is another critical set of actors. Within the U.S. government, it will be tempting to delay action and difficult to coordinate an effective response.

With these challenges in mind, as well as the U.S. interests outlined in the preceding section, the task force recommends the following seven elements for a U.S. global infrastructure strategy. If adopted, these recommendations would result in a much more streamlined, substantially financed, and higher-quality project identification and delivery package than competing alternatives.

1. **Articulate a global vision** – The United States should unify and sharpen its infrastructure efforts with a global vision for infrastructure. U.S. government agencies are already pursuing valuable efforts around the world, including the “Free and Open Indo-Pacific” strategy, flagship programs like Power Africa, and recent initiatives like Americas Grow (“America Crece”) in Latin America, among others. These efforts already share many goals, and they would be even more compelling if brought together.

   A principles-based approach would provide an overarching banner. These principles will allow U.S. officials to offer a positive vision for global infrastructure that is outcomes-based and not framed in opposition to any single approach or state. Many of these principles will naturally align with those put forward by U.S. partners and allies, particularly the EU’s emphasis on sustainability and Japan’s emphasis on quality. They will strengthen the U.S. approach and draw a stronger contrast with lower-quality alternatives.

   The best approach would be to expand the guiding principles already articulated in the “Free and Open Indo-Pacific” strategy. Through that strategy, the Trump administration has rightly underscored the importance of openness and market fundamentals. It can broaden the appeal of this vision, and increase the contribution U.S. firms can make to it, by adding resiliency as a third guiding principle. Broadly defined, resiliency means supporting infrastructure with a longer view toward its full costs and benefits, so that it is both sustainable and high-quality. Collectively, these guiding principles would enhance the attractiveness of a U.S.-led infrastructure offering. The United States should also give concrete examples of how these principles can be realized in practice, as illustrated below.

   **FREE**
   - The rights of individuals should be protected through public consultation, participation, and when appropriate, timely compensation.
   - The sovereignty of countries should be respected, including for example, by prohibiting construction in disputed territory and handling project disputes through neutral and proven international arbitral courts.
   - Private-sector participation should be explored during the initial phases of project preparation.
OPEN
• Anti-corruption practices should be expanded globally and enforced, including by all countries joining the OECD Anti-Bribery Convention.
• Public procurement should provide a level playing field, while ensuring equal participation from local firms and workers.
• Loan terms should be transparent, including those with sovereign guarantees.
• Jobs and expertise should be shared with local communities through equal employment opportunities, capacity building, and training included with projects.

RESILIENT
• Life-cycle cost assessments, which account for a project’s full costs, including its operations and maintenance, should be standard practice.
• Environmental sustainability, including lowering carbon emissions and adapting to climate change, should be included in life-cycle assessments.
• Debt sustainability should be evaluated with stress tests, not only for individual projects but also at the national level with other known or planned obligations in mind.
• Technological sustainability, where solutions can adapt to future innovations rather than be “locked in” and require more costly replacement.

SPECIFIC IMPLEMENTATION STEPS
• Work with friends, allies, and other parties, building on what others have already announced, to develop a set of principles to guide the global infrastructure effort.
• Announce those principles with a speech by the U.S. president or vice president at a major economic forum, making clear that this is a collaborative and economically-driven approach, not U.S.-centric or politically motivated, and that it is intended to benefit developing economies.
• Lead an effort to secure their adoption or endorsement by major international institutions and organizations.
• Publicize the risks and costs—both short- and long-term—of low-quality approaches.

2. Work with allies and partners – The United States has a network of allies and partners around the world that bring different strengths to global infrastructure, especially additional investments, technical expertise, linguistic skills, and cultural connections. There are a host of bilateral, regional, and institutional opportunities for collaboration, especially through the World Bank and other MDRs, the G7, G20, APEC, and others. Different interests and policies will make some partners better suited for cooperation in specific areas. For example, the World Bank does not provide support for oil and gas development, but the United States can work with other partners such as Japan and Australia to support those goals in priority regions such as Southeast Asia. The United States should be a
force multiplier of these efforts, particularly in regions where U.S. partners and allies are more deeply embedded.

**SPECIFIC IMPLEMENTATION STEPS**

- Conduct an allied assessment of critical infrastructure, building on the Department of Homeland Security’s efforts to identify and protect critical infrastructure abroad, with an early warning system for high-risk projects.

- Create an allied infrastructure fund for protecting strategic interests.

- Cement and broaden support for quality infrastructure principles by extending and refining areas of agreement at the G7 to the G20, APEC, and other forums.

- Operationalize existing bilateral and trilateral MOUs with Australia and Japan by launching one demonstration project under each framework in the next 12 months.

3. **Elevate and lead the digital domain** – The overlap between U.S. strengths and interests is especially strong in the digital domain, broadly defined to include not only traditional ICT infrastructure such as fiber-optic cables and 5G networks but also the application of new sensors and data management systems such as those in “smart cities.” The technology that enables data sharing and the standards and rules underpinning it are fiercely contested. The United States cannot afford to allow other countries to monopolize the world’s digital infrastructure or dictate the standards or rules governing it.

The United States also brings unique advantages to this space. U.S. firms are world leaders in many of the key technologies, and maintaining that edge will require not only investments in domestic R&D but also opening up foreign markets. Another advantage is that ICT infrastructure generally costs less than transportation and other sectors, and like energy infrastructure, it is more attractive to the private sector because it offers more ways to recoup investments.

**SPECIFIC IMPLEMENTATION STEPS**

- Increase U.S. federal R&D funding for emerging digital technologies such as next-generation telecommunications, AI, and quantum computing, particularly for basic research. These funds could be directed toward acquiring and enabling national AI test beds and shared quantum computing assets in the Department of Energy (DOE) national laboratories, or through U.S. government cooperation with private or university labs.

- Secure 5G networks by working with allies to develop common technical and security standards for 5G. This could be accomplished through mechanisms built on the “Five Eyes” group with expanded participation among likeminded nations.

- Support private-sector efforts through the development of incentives to expand U.S. participation in international bodies developing standards for 5G and work with European and Asian allies to create a common approach to counter Chinese efforts to politicize and dominate the 5G standards process.
• Build upon and expand existing mechanisms for information sharing and common standards for review of foreign investment in critical infrastructure and advanced technologies and for technology transfer in multilateral bodies like the Wassenaar Arrangement.

• Build consensus among partners and allies that ICT infrastructure should be a priority for the World Bank, ADB, and other MDBs, especially catalyzing private investment into this sector.\textsuperscript{101}

• Include binding rules on issues such as data localization and cross-border data flows in future trade agreements, including a broad plurilateral agreement on e-commerce.

• Expand the U.S. digital attaché program, which helps U.S. companies increase exports and navigate digital economy policy challenges, to all markets with a U.S. Commercial Service presence.

BOX IV: ANSWERING THE 5G CHALLENGE

The U.S. government cannot allow a single provider to dominate 5G technology, which will become the backbone for tomorrow's digital economy. A winning U.S. strategy for 5G must include a mixture of defensive and offensive measures, including those outlined below.

Protect critical systems: For a narrow subset of U.S. government systems, it is worth sacrificing resources and performance for security. But creating secure supply chains for microelectronics, in which the chain of custody for components is closely controlled, is expensive. Such systems also tend to be updated less frequently and quickly fall behind state-of-the-art technology. Trying to take such a high-security approach to the country's entire 5G infrastructure would be self-defeating, but these disadvantages can be justified in special cases, particularly for U.S. defense and intelligence systems.

Bolster ability to operate in unfriendly environments: It is likely that many 5G systems procured even by U.S. allies and partners, and perhaps even by U.S. companies, will include equipment from a variety of sources, some of which will raise serious national security concerns. The United States needs to develop—for itself and interested other countries—an IT and communications architecture that cannot be compromised by intrusion, espionage, data theft, or denial of service attacks, even if resting on equipment from unreliable or suspect sources.

Innovate with allies: In addition to increasing U.S. federal R&D funding for emerging digital technologies, the U.S. government should reevaluate providing other incentives—to both U.S. companies and companies of U.S. friends and allies—so that countries have a range of alternatives for acquiring their 5G systems.

Expand global market access: Innovation begins with investments at home, but the 5G competition is global, and success ultimately hinges on improving U.S. access to foreign markets. The United States, its friends, and allies should press other countries including China to open their markets to competition from non-Chinese suppliers.
The solutions above are possible if pursued with a sense of urgency. National security requirements can be met without sacrificing the openness that makes U.S. companies competitive. The answer to the 5G challenge is to double down on U.S. strengths.

4. **Power the world toward a sustainable future** – Energy is the lifeblood of the modern economy, yet there are 1 billion people worldwide without access to energy, including 600 million in sub-Saharan Africa alone. Energy is also the prerequisite for numerous other efforts including ICT infrastructure, HIV/AIDS and malaria health efforts, smart cities, water systems, and agriculture. Modern economies cannot grow without energy, and more power than ever will be required in the years ahead.

U.S. prioritization of energy infrastructure development will promote U.S. and host country energy security, underpin national and regional economic growth, support strong social standards, and contribute to environmental goals by reducing particulate pollution and greenhouse gas emissions. All of these objectives can be advanced through government support of infrastructure development to enable cleaner-burning natural gas, which will in turn enable affordable, reliable, and cleaner power generation and related industries such as advanced manufacturing.

The rise of the United States as a major global exporter of LNG is a major factor in improving the accessibility of the natural gas supply around the world, yet cost competition still favors higher carbon-emitting coal in many developing economies. China’s ability to provide turn-key solutions on large-scale power projects is a major competitive advantage, but Power Africa has proven that there is room and desire for more than one source of power projects in developing countries.

Clean energy technology, equipment, and services is another area of strength for U.S. industry that merits elevated attention in U.S. infrastructure outreach, as many developing economies are prime markets for renewable energy projects. Energy infrastructure engagement should account for its emissions implications, examine the host economy’s energy needs in a comprehensive manner, and prioritize fuels and technologies that can best aid the host economy’s need for universal and stable energy as well as its clean energy transition. For these reasons, the United States should promote lower-carbon sources, including wind and solar, and lead the development of more efficient storage and transmission technologies, including smart grids, advanced battery storage, and other technologies that are reshaping power markets and infrastructure needs.

Moreover, the United States has an unparalleled wealth of expertise in collecting and analyzing energy data (as exemplified by the U.S. Energy Information Administration (EIA)), as well as designing and operating electricity transmission and distribution systems (as exemplified by various regional power operators). This expertise should be at the forefront of U.S. infrastructure engagement in order to thwart any energy infrastructure build-out that is driven by an immediate commercial gain and does not align with the long-term needs and welfare of the host communities.
SPECIFIC IMPLEMENTATION STEPS:

- Expand Power Africa to cover all developing countries. This could be done in two phases: first expanding to cover the entire Indo-Pacific region, and subsequently worldwide. At roughly $900 million per year, this would be a significant and worthwhile investment in reducing global energy poverty, on par with other signature U.S. aid efforts, such as Feed the Future, and at a fraction of the cost of the President’s Emergency Plan for AIDS Relief.

- Enhance the advisory capacity of energy and electricity technical and regulatory experts when considering energy infrastructure financing under the USDFC.

- Expand energy data exchange with developing economies, including the provision of capacity-building assistance, commensurate with resource increases (e.g., EIA budget).

- Continue to play a leading role with like-minded countries within the OECD on energy and financing policy and urge non-OECD governments (e.g., China) to abide by the same standards as OECD governments in the use of public finance for coal-combustion technology exports.

5. **Catalyze private sector financing** – Trillions of dollars in public and private finance is needed to meet the growing infrastructure needs of developing countries. Developing countries will need to look beyond foreign aid and official development assistance (ODA) to target new sources of capital for these needs. Globally, institutional investors—such as pension funds, mutual funds, insurance companies, and others such as sovereign wealth funds—manage nearly $100 trillion, less than 1 percent of which is invested in infrastructure. Developing countries can fill the gap in financing for infrastructure by increasing domestic resources for infrastructure through tax administration reforms (tax revenues already amount to about $500 billion in Africa), but more domestic resource mobilization will not be enough. Much of the increase in infrastructure investments will need to be financed by development finance institutions (DFIs), MDBs, private sector investors, pension funds, and sovereign wealth funds. Once fully operational, the USDFC will play a key role. OPIC is already playing an important role in crowding in private sector and other types of financing for infrastructure needs; this role will continue to grow in importance once it becomes the USDFC in October 2019.

SPECIFIC IMPLEMENTATION STEPS:

- Encourage DFIs and MDBs to use their grant monies to provide first-loss guarantees for projects and reimburse investors if losses exceed a predetermined amount.

- Create a Critical Global Infrastructure Connectivity Fund focused on ICT (particularly 5G and other digital networks), transportation (particularly ports and airports), and power and energy. The USDFC would lead this effort, along with MDBs and other like-minded bilateral development finance institutions, which would adopt measures (as suggested in this report) that
incentivize commercial banks and pension and equity funds to join and provide both additional financing and project development assistance.

- Contribute $200 million from the USDFC to the Currency Exchange Fund (TCX), which helps mitigate exchange risk and develops local capital markets. By offering financial instruments, particularly swaps and forward contracts, this fund allows investors to provide borrowers with financing in their own currency. Doubling the size of this fund will reduce long-term exchange risk for private sector sponsors in public-private partnerships and similar project finance deals. A U.S. contribution of this size can be used to attract additional contributions from U.S. allies, partners, and the majority of the MDBs.

- Task the USDFC with facilitating $50 billion of U.S. pension fund investments in developing country infrastructure projects over the next five years. The USDFC’s new equity investment authority will also expand its agency “halo” effect to attract new fund investor sources.

- Approve a new president and board for the EXIM Bank. Currently, the EXIM Bank can only finance up to $10 million per transaction, and $40 billion of transactions are frozen until the board is confirmed. Resolution of the EXIM board’s quorum deficiency and reauthorization of a bigger, more robust export credit agency will also resurrect EXIM’s “halo” effect in attracting private investors into large projects.

- Contribute to the World Bank’s Global Infrastructure Facility (GIF), which aids recipient countries with project financing, planning, preparation, and structuring efforts. As of 2019, the facility has received approximately $84 million in capital contributions. Considering the transformative effect that it has on the flow of external private capital, it is important that the United States support the GIF by allocating significant funds.

6. **Build partner capacity** – A critical means of enabling quality and sustainable infrastructure for the developing world is the development of local capacity. Robust public institutions that can operate openly and transparently remain fundamental to attracting capital and promoting sustainable development. Further, strong public institutions have an enhanced ability to uphold the rule of law and practice good governance while holding infrastructure project developers accountable. These characteristics boost the confidence of capital markets and the investor community and can unlock trillions of dollars’ worth of private capital needed to close the global infrastructure gap.

Public-sector procurement practices are a key determinant of governance, openness, and transparency. Public-sector officials are at the forefront of making decisions that impact investments in infrastructure projects in developing countries. In some cases, close to 20 percent of a country’s GDP flows through the hands of public officials. For decades, these officials have been encouraged to pick the “lowest-cost” bidder, without regard to long-run operational costs or longevity. Additionally, a lack of transparency can foster a culture of corruption at the expense of the long-run public good when ostensible “low costs” are used as a smokescreen.
Donor countries have a significant incentive to aid these officials with the tools and technology to move away from the practice of reflexively picking the lowest bid while training them to use concepts like life-cycle cost analysis and objective evaluation criteria to guide their procurement decisions and promote long-term economic development. With more than 60 percent of the world population expected to live in an urban setting by 2050, city and sub-national governments with large urban populations should be the target audience for these efforts. Recognizing these dynamics, the U.S. Trade and Development Agency (USTDA) established the Global Procurement Initiative, which helps public officials in emerging economies to better understand the real total cost of ownership of goods and services for infrastructure projects.

**SPECIFIC IMPLEMENTATION STEPS:**

- Through key agencies such as USDFC and USAID, the United States should establish a “Connectivity Compact” with MDBs and other like-minded bilateral development finance institutions, that embeds countries receiving funds from the Critical Global Infrastructure Connectivity Fund (see previous recommendation) into the established international system of rules, standards, and good governance that should be applied to ensure quality infrastructure. U.S. agencies would provide technical assistance to help these countries meet those requirements. This would include, for example, requirements for transparency, resilience against corruption, and using life-cycle cost assessments in procurement decisions, revealing the real cost of ownership.

- Support USAID’s domestic resource mobilization efforts, especially those that include political economy considerations, broaden the tax base, improve efficiency in collection, and curtail tax evasion. Increased developing country tax revenue could be used to finance infrastructure projects while creating new opportunities for U.S. companies.

- Equip the two major debt management facilities operated by the World Bank and the IMF to offer technical assistance to help countries assess and manage their debt better. The donor community should also lead China, a new donor, to contribute to this facility and move to Paris Club standards.

- Lead donor countries into leveraging their bilateral agencies to expand partnership programs like those developed by USTDA. The United States can also exercise its leadership in the major regional development banks to scale up the efforts of the bilateral agencies. This includes, for example, helping MDBs to train a larger number of public officials in developing countries to adopt the new procurement standards that account for life-cycle cost assessments.

- Support existing and proven international commercial court systems to resolve disputes over complex commercial transactions and facilitate faster delivery of infrastructure projects. A legal support fund that primarily caters to low-income countries must accompany this system.
7. **Bolster U.S. government expertise and coordination** – The U.S. government should increase its expertise in several priority areas, many of which are highlighted in the recommendations above. For example, expanding the digital attaché program will require recruiting or training qualified commercial officers. In many developing and emerging markets, U.S. commercial officers are underrepresented or absent. There are less than two dozen officers across all of Africa and the Middle East combined, for example.112 Catalyzing more private-sector investment will also require U.S. officials to develop a better understanding of how the private sector evaluates projects.

Better coordination across U.S. government agencies is needed as well. Infrastructure spans the responsibilities of many U.S. agencies: Defense, State, Treasury, Commerce, Transportation, Homeland Security, USAID, USTDA, the Millennium Challenge Corporation (MCC), EXIM Bank, and others. Interagency debate is important, leading to better informed decisions when managed well. But overlapping responsibilities can result in confusion and delays that hamper the ability of the U.S. government to take positions and erode the ability of U.S. firms to compete against faster counterparts.

**SPECIFIC IMPLEMENTATION STEPS:**

- Model interagency collaboration on infrastructure finance on USAID’s Power Africa initiative, which brought together 17 different U.S. agencies and 145 companies. To kick-start this collaboration, a trusted organization outside the U.S. government could create a six-month task force that brings together representatives from each of these agencies and infrastructure developers, emerging market fund managers, pension fund representatives, and investment consultants.

- Expand the Infrastructure Transaction and Assistance Network (ITAN), an interagency body announced as part of the Indo-Pacific strategy, to help coordinate U.S. infrastructure activities globally.113

- Hold quarterly infrastructure trainings, led by the USDFC and including the private sector, USAID, and MCC staff, for U.S. foreign service economic officers.

- Make U.S. investment promotion an explicit objective of the U.S. Commercial Service, co-equal to U.S. export promotion.

- Create an assistant to the president and deputy director of the National Economic Council for Global Infrastructure to coordinate all these efforts, with ultimate authority for final decisionmaking in the event of interagency disputes.
Appendix | Selected CSIS Research and Writing

CHINA’S DIGITAL SILK ROAD  
*CSIS Event, February 2019*  
Launched in 2013, China’s Belt and Road Initiative strives to improve infrastructure, trade, financial integration, and people-to-people bonds across more than 80 countries. Its digital dimensions are far-reaching, including fiber-optic cables, 5G networks, satellites, and devices that connect to these systems. On February 5th, the CSIS Reconnecting Asia Project hosted a discussion of these developments and their implications for U.S. economic and strategic interests. Access at https://www.csis.org/events/chinas-digital-silk-road.

INFLUENCE AND INFRASTRUCTURE: THE STRATEGIC STAKES FOR FOREIGN PROJECTS  
*CSIS Report, Jonathan E. Hillman, January 2019*  
This report illustrates how states use foreign infrastructure to advance strategic objectives. Some avenues for influence are intuitive, while others require a more detailed understanding of how infrastructure projects are conceived, financed, built, and operated. With an eye toward illuminating current issues, this report draws from examples throughout history and shows how China is updating and exercising tactics used by Western powers during the nineteenth and twentieth centuries. With developing Asia alone requiring $26 trillion in additional infrastructure investment by 2030, these issues, and the strategic implications they carry, are likely to intensify in the coming years. Access at https://csis-prod.s3.amazonaws.com/s3fs-public/publication/190122_Hillman_InfluenceandInfrastructure.pdf.

CHINA’S BELT AND ROAD AT FIVE  
*CSIS Event, October 2018*  
Five years ago, Chinese president Xi Jinping announced the Belt and Road Initiative (BRI), a trillion-dollar plan that aims to connect more than 70 countries via an overland “belt” and a maritime “road.” On October 1, the CSIS Reconnecting Asia Project hosted a half-day conference examining China’s BRI, including the challenges, risks, and opportunities it poses for the United States. Access at https://www.csis.org/events/chinas-belt-and-road-five-0.
FINANCING AND IMPLEMENTING THE QUALITY INFRASTRUCTURE AGENDA
CSIS Report, Daniel F. Runde and Sundar R. Ramanujam, September 2018

The demand for quality infrastructure in the Indo-Pacific region and beyond is both a challenge and an opportunity for the international community. Public finance on its own cannot close the infrastructure gap, and with foreign aid limited to a few hundred billion dollars each year, the global demand for quality infrastructure will require financing from diverse sources including the private sector, multilateral development banks (MDBs), and others. Conventional development assistance can be leveraged to catalyze private finance participation and create new opportunities for investment in several meaningful ways. Support for crowding in private investment is also a crucial part of the Trump administration’s National Security Strategy, which calls for “strengthened cooperation with allies on high-quality infrastructure” in Asia. Access at https://www.csis.org/analysis/financing-and-implementing-quality-infrastructure-agenda.

CHINA’S BELT AND ROAD IS FULL OF HOLES
CSIS Report, Jonathan Hillman, September 2018

Five years after it was announced, China’s massive Belt and Road Initiative (BRI) has yet to materialize on the ground as promised. According to Chinese officials, the BRI includes six economic corridors that will carry goods, people, and data across the Eurasian supercontinent. But a statistical analysis of 173 infrastructure projects finds that Chinese investment is just as likely to go outside those corridors as within them. The BRI appears to be less coordinated than Beijing hopes and some critics fear. Access at https://csis-prod.s3.amazonaws.com/s3fs-public/publication/180917_ChinasBelt_final.pdf.

CHINA’S MARITIME SILK ROAD: STRATEGIC AND ECONOMIC IMPLICATIONS FOR THE INDO-PACIFIC REGION
CSIS Report, Edited by Nicholas Szechenyi, March 2018

China unveiled the Twenty-First Century Maritime Silk Road (MSR) in 2013 to boost infrastructure connectivity in Southeast Asia, Oceania, the Indian Ocean, and East Africa. There is a shortage of infrastructure investment across the region and most nations have welcomed Chinese funding. But there are questions about the economic viability and the geopolitical intentions behind China’s proposals. To shed light on some of these themes, CSIS has commissioned seven experts to unpack the economic and geostrategic implications of the MSR. Their research is presented in this volume. The essays begin with analysis of four infrastructure projects, three by China under MSR and one by India as a counter to MSR: Kyaukpyu (Myanmar), Hambantota (Sri Lanka), Gwadar (Pakistan), and Chabahar (Iran). Access at https://csis-prod.s3.amazonaws.com/s3fs-public/publication/180404_Szechenyi_ChinaMaritimeSilkRoad.pdf.

WHAT IS THE U.S. TRADE AND DEVELOPMENT AGENCY?
CSIS Report, Daniel F. Runde, Romina Bandura, and Brunilda Kosta, January 2018

This report takes a closer look at the USTDA, one of the more important soft power tools that the United States has at its disposal. Apart from analyzing the functions and mandate of the agency, the report looks at how the USTDA has tools that, if properly leveraged,
CONSTRUCTING A NEW GLOBAL ORDER
CSIS Event, December 2017

As Asia's infrastructure competition unfolds, interest in how infrastructure investment is carried out has been rising. China's Belt and Road Initiative, which aspires to connect nearly two-thirds of the global population and 60 percent of its GDP, along with other infrastructure initiatives across the region have raised the premium on understanding different approaches. On December 18, 2017, the CSIS Simon Chair and the Stanford Global Projects Center hosted a public presentation series comparing Chinese and Western approaches to infrastructure investment. Access at https://www.csis.org/events/western-and-chinese-infrastructure-development-abroad.

QUALITY INFRASTRUCTURE: ENSURING SUSTAINABLE ECONOMIC GROWTH
CSIS Report, Daniel F. Runde, January 2017

Global infrastructure demand is estimated at approximately $3.7 trillion annually, with the majority of that demand generated in developing countries. Asia alone will require more than $700 billion annually to support its growing infrastructure needs through 2020. As developing countries continue to experience population growth, rapid urbanization, and economic and industrial expansion, the need for effective and high-value infrastructure will remain acute. In the context of this gap and the global efforts to achieve the newly agreed-upon Sustainable Development Goals (SDGs), there is a clear window of opportunity to bring a new approach to infrastructure that focuses on delivering the best long-term value for each infrastructure investment. Access at https://csis-prod.s3.amazonaws.com/s3fs-public/publication/170109_Runde_QualityInfrastructure_Web.pdf.

THE ROLE OF U.S. SOFT-INFRASTRUCTURE IN INFLUENCING THE RECONNECTING OF ASIA
CSIS Commentary, Daniel F. Runde and Aaron Milner, November 2016

This commentary looks at how the United States can leverage various institutions and tools such as bilateral agencies, multilateral development banks, trade, the international financial system, and its relationships with close friends and allies and play a central role in shaping how Asia reconnects through soft infrastructure. Access at https://www.csis.org/analysis/role-us-soft-infrastructure-influencing-reconnecting-asia.

DEVELOPMENT FINANCE INSTITUTIONS COME OF AGE
CSIS Report, Daniel F. Runde, Conor Savoy, Dirk Willem te Velde, Paddy Carter, and Alberto Lemma, October 2016

This report argues both that policymakers and DFI shareholders need to better understand the unique role of DFIs in the wider aid architecture and that DFIs themselves need to address development challenges more forcefully in order to remain effective players and improve their contribution to development goals in the future. The report also looks at where DFIs fit within the evolving development finance architecture, the potential roles
they could play in shaping private sector development policy, the significant development impact they have, and finally, future directions. Access at https://csis-prod.s3.amazonaws.com/s3fs-public/publication/161021_Savoy_DFI_Web_Rev.pdf.

**BARRIERS TO BANKABLE INFRASTRUCTURE**  
*CSIS Report, Daniel F. Runde, Helen Moser, and Erin Nealer, March 2016*

This report discusses the estimated $1 trillion annual global infrastructure gap and provides recommendations on how U.S. agencies and multilateral development banks can better incentivize private sector investment in global infrastructure. While many private companies are looking to support infrastructure projects with readily available capital, they have not found a viable project pipeline. The study first provides background on the global infrastructure gap and explores the current state of play of the various public, private, and multilateral actors who work on infrastructure projects in the United States and globally. Access at https://csis-prod.s3.amazonaws.com/s3fs-public/publication/160308_Moser_BarriersBankableInfrastructure_Web.pdf.

**GLOBAL INFRASTRUCTURE DEVELOPMENT: A STRATEGIC APPROACH TO U.S. LEADERSHIP**  
*CSIS Report, Daniel F. Runde and Conor M. Savoy, March 2016*

China’s recent global infrastructure development initiatives serve to place it at the center of Asian regional and worldwide economic activity, while also meeting a critical need in the developing world. In marked contrast, the United States lacks a strategic approach to supporting global infrastructure investment. Access at https://csis-prod.s3.amazonaws.com/s3fs-public/publication/160324_Runde_GlobalInfrastructureDevel_Web.pdf.
About the Co-Chairs

**Ambassador Charlene Barshefsky** is senior international partner at WilmerHale in Washington, D.C., where she chairs the firm’s International Trade, Investment and Market Access Practice Group. She represents multinational companies and private equity firms on their global market access, investment and acquisition strategies, including negotiations with foreign governments and private parties. Prior to this, Ambassador Barshefsky was the United States Trade Representative (USTR) from 1997-2001, and acting and deputy USTR from 1993-1996. As a member of President Bill Clinton’s Cabinet, she was responsible for the formulation of U.S. trade policy and the negotiation of hundreds of complex trade, market access, and investment agreements across the globe, including China’s historic WTO agreement, and global agreements in financial services, telecommunications, high-tech products, and cyberspace. She has been a scholar at the Woodrow Wilson International Center for Scholars and the recipient of numerous academic, industry, and professional honors. She is ranked as one of the most influential lawyers in the United States. She is on the Boards of the American Express Company, the Estée Lauder Companies, and a former board member of Intel Corporation and Starwood Hotels & Resorts Worldwide. She is also a trustee of the Howard Hughes Medical Institute, a member of the Council on Foreign Relations, and a non-resident senior fellow at Yale’s Paul Tsai China Center.

**Stephen Hadley** is a principal of RiceHadleyGates LLC, an international strategic consulting firm founded with Condoleezza Rice, Robert Gates, and Anja Manuel. Mr. Hadley is also board chair of the United States Institute of Peace (USIP) and an executive vice chair of the Board of Directors of the Atlantic Council.

Mr. Hadley served for four years as the Assistant to the President for National Security Affairs from 2005 to 2009. From 2001 to 2005, Mr. Hadley was the Assistant to the President and Deputy National Security Advisor, serving under then National Security Advisor Condoleezza Rice. Mr. Hadley had previously served on the National Security Council staff and in the Defense Department including as assistant secretary of defense for international security policy from 1989 to 1993.

During his professional career, Mr. Hadley has served on a number of corporate and advisory boards, including: the National Security Advisory Panel to the Director of Central Intelligence, the Department of Defense Policy Board, and the State Department’s Foreign Affairs policy Board. He is a member of the Aspen Strategy Group.
About the Project Directors and Editors

Matthew P. Goodman is senior vice president, senior adviser for Asian economics, and holds the Simon Chair in Political Economy at CSIS. The Simon Chair explores current issues in international economic policy, with a focus on the Asia-Pacific region. Before joining CSIS in early 2012, Goodman served as director for international economics on the National Security Council staff, helping the president prepare for G20 and G8 summits. He was also White House coordinator for Asia-Pacific Economic Cooperation (APEC) and the East Asia Summit. Prior to the White House, Goodman was senior adviser to the under secretary for economic, energy, and agricultural affairs at the U.S. Department of State.

Goodman has extensive experience in both the public and private sectors. Before joining the Obama administration in 2009, he worked for five years at Albright Stonebridge Group, a global business advisory firm based in Washington, D.C., where he was managing director for Asia. From 2002 to 2004, he served at the White House as director for Asian economic affairs on the National Security Council staff. Prior to that, he spent five years at Goldman, Sachs & Co., heading the investment bank’s government affairs operations in Tokyo and London. From 1988 to 1997, he worked as an international economist at the U.S. Treasury Department, including five years as financial attaché at the U.S. embassy in Tokyo. Goodman holds an MA in international relations from the Johns Hopkins School of Advanced International Studies (SAIS) and a BS in economics from the London School of Economics and Political Science (LSE). He is a life member of the Council on Foreign Relations and is chairman emeritus of the board of trustees of the Japan-America Society of Washington, D.C.

Daniel F. Runde is senior vice president, director of the Project on Prosperity and Development, and holds the William A. Schreyer Chair in Global Analysis at CSIS. His work centers on leveraging American soft power instruments and the central roles of the private sector and good governance in creating a more free and prosperous world. Previously, he led the Foundations Unit for the Department of Partnerships & Advisory Service Operations at the International Finance Corporation. His work facilitated and supported over $20 million in new funding through partnerships with the Bill and Melinda Gates Foundation, Rockefeller Foundation, Kauffman Foundation, and Visa International, among other global private and corporate foundations.
Earlier, Mr. Runde was director of the Office of Global Development Alliances at the U.S. Agency for International Development (USAID). He led the initiative by providing training, networks, staff, funds, and advice to establish and strengthen alliances, while personally consulting to 15 USAID missions in Latin America, the Middle East, and Africa. His efforts leveraged $4.8 billion through 100 direct alliances and 300 others through training and technical assistance. Mr. Runde began his career in financial services at Alex. Brown & Sons, Inc., in Baltimore and worked for both CitiBank and BankBoston in Buenos Aires, Argentina. He received an MPP from the Kennedy School of Government at Harvard University and holds a BA, cum laude, from Dartmouth College.

Jonathan E. Hillman is a senior fellow with the CSIS Simon Chair in Political Economy and director of the Reconnecting Asia Project. At CSIS, he leads an effort to map and analyze new roads, railways, ports, and other infrastructure emerging across the supercontinent of Eurasia. His research focuses on the intersection of economics and foreign policy, including trade, globalization, economic statecraft, and China’s Belt and Road initiative. He has written on U.S. foreign policy and national security issues for the Wall Street Journal, the Los Angeles Times, the National Interest, and other outlets.

Prior to joining CSIS, he served as a policy adviser at the Office of the U.S. Trade Representative, where he directed the research and writing process for essays, speeches, and other materials explaining U.S. trade and investment policy. At USTR, he contributed to the 2015 U.S. National Security Strategy, the President’s Trade Agenda, and numerous Congressional testimonies. He has also worked as a researcher at the Belfer Center for Science and International Affairs, the Council on Foreign Relations, and in Kyrgyzstan as a Fulbright scholar. He is a graduate of the Harvard Kennedy School, where he was a Presidential Scholar, and Brown University, where he was elected to Phi Beta Kappa and received the Garrison Prize for best thesis in international relations.

Erol Yayboke is deputy director and senior fellow with the Project on U.S. Leadership in Development (USLD) and Project on Prosperity and Development (PPD) at the Center for Strategic and International Studies (CSIS). His specific research interests include U.S. foreign assistance, the role of the private sector in the developing world, good governance, migration, forced displacement, development economics, and innovation-led economic growth. Previously, he served in several capacities with the Hillary Clinton presidential campaign and was a program/research manager on the Evidence for Policy Design (EPoD) team at the Center for International Development at Harvard University's Kennedy School of Government. Mr. Yayboke also has long-term field experience working for organizations (Global Communities, Save the Children, and AECOM International Development) in Iraq, Afghanistan, South Sudan, and the Somali Region of Ethiopia, serving in various senior country and project management roles. He is a member of the board of directors for the Andi Leadership Institute for Young Women, a Washington, D.C.-based nonprofit. Mr. Yayboke holds an MPA from the LBJ School of Public Affairs at the University of Texas at Austin and a BBA in international business also from the University of Texas at Austin.
Endnotes


50 “G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment,” Ministry of Foreign Affairs of Japan.


59 Ibid.

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