Hudson Institute

OCTOBER 2024

US-India Economic Ties: To the Next Level and Beyond

A TAKSHASHILA-HUDSON ROUNDTABLE SERIES

This document is a result of a Takshashila-Hudson roundtable series that brought together experts, policymakers, and academics from India and the United States in March-April 2024 to discuss opportunities for the two nations to deepen their economic ties.

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Cover: People wave Indian flags as an Indian Space Research Organisation (ISRO) rocket carrying the Chandrayaan-3 spacecraft lifts off from the Satish Dhawan Space Centre in Sriharikota, an island off the coast of southern Andhra Pradesh state, on July 14, 2023. (Photo by R.Satish Babu / AFP via Getty Images)

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EXECUTIVE SUMMARY

This executive summary outlines the key recommendations for policymakers that emerged from deliberations at the Takshashila Institution–Hudson Institute roundtable series "US-India Economic Ties: To the Next Level and Beyond." Its recommendations are divided into four proposed areas for collaboration between India and the United States: trade and investment, ideas and human capital, technology, and methods and mechanisms.

Trade and Investment

Strengthening trade and investment ties between India and the United States requires a multifaceted approach. India has recently deployed schemes known as production-linked incentives (PLIs) to attract companies to set up manufacturing facilities in priority or strategic sectors—including electronics, pharmaceuticals, textiles, and white goods. Despite measures like PLIs, India's manufacturing growth has remained relatively stagnant. India would benefit on a much broader scale by limiting PLIs and instead focusing on simplifying import and export processes and reducing import duties and tariffs to create a more open trade environment. The government's recent announcement that it is simplifying processes through a single-window system, for example, will benefit not only large firms but also small firms that aspire to list on global platforms. India can also experiment with land acquisition and labor market reforms in select states before rolling them out countrywide. Additionally, New Delhi should invest more in critical infrastructure, such as freight rail and deep-water ports, to support economic expansion. To further attract investment and boost exports, at a time when there is a favorable geopolitical situation, the country would benefit from a regulatory system that is more predictable, transparent, and easier to navigate. Fostering state-level relationships and focusing on co-development could further enhance collaboration. For its part, the US should work to restore the effectiveness of the World Trade Organization (WTO) and avoid weaponizing international trade. Making globalization work more effectively is key to promoting interconnectivity and resilience.

Ideas and Human Capital

To attract top global talent and high-performing companies, India would benefit by making its cities more appealing and livable. This effort requires the active participation of states and municipalities. Leveraging cooperation between subnational governments can further support this goal, as India's state governments play a crucial role in attracting investment through the issuing of permits. Strengthening partnerships between American and Indian academic institutions is also critical. Instead of focusing solely on recruiting American universities to build campuses in India, New Delhi should explore symbiotic options like reciprocal study programs. India also needs to enhance the capacity and improve the quality of its higher education institutions. Creating a more open environment for research and collaboration requires not only easier access to funding but also a reduction of unnecessary bureaucratic hurdles. This in turn would facilitate intellectual collaboration. Both India and the US should streamline visa processes, making it easier for academics and thought leaders to collaborate. Additionally, the two nations' leaders should foster personal connections among corporate leaders. To attract the best talent, India needs policies that welcome foreign professionals.

Technology

To leverage the potential of collaboration in the technology industry, India and the United States should resolve disagreements over tariffs, regulatory barriers, and intellectual property rights. New Delhi and Washington need to prioritize cooperation in emerging technologies, such as artificial intelligence (AI) and synthetic biology, and make efforts to update regulatory frameworks to match the evolving tech landscape. Effective partnerships across academia, the private sector, and government should also be established. A coherent approach to US-China tech competition, moreover, would provide the private sector with clear guidelines aligned with both Indian and American national security interests. India would benefit by shifting its regulatory environment to be more export-friendly and internationally competitive. Increased support for and investment in the

biotech sector, including advanced purchase agreements and more robust intellectual property (IP) protection, would enhance growth and collaboration in this crucial field.

Methods and Mechanisms

The world's oldest democracy and the world's largest democracy share both values and interests. Both countries are multicultural, multiethnic, secular, pluralistic, and open societies. They also have a similar vision for the global security architecture, including a stake in pushing back against China's military and economic expansionism.

Washington and New Delhi also need to address differences through established channels, such as preexisting bilateral frameworks and strategic dialogues, with an understanding that differences, while inevitable, need not derail the working relationship. Sensitive issues are best managed discretely away from media attention. Informal, non-governmental diplomacy, such as CEO dialogues, can foster better understanding. India, for its part, should give its diplomatic agencies more leeway to conduct outreach. To this end, linking geostrategic and geopolitical objectives, offering political support for energy collaboration, and integrating trade into strategic dialogues can enhance cooperation. Establishing academic programs, collaborations with think tanks, and cultural exchanges can also promote deeper mutual understanding between the two nations, and make it easier for researchers, academics, and students to travel from country to country. Aligning norms and regulations can prevent conflicts over the transfer of sensitive technology and intellectual property. Prioritizing economic and strategic ties while expanding educational exchange programs would help create a stronger relationship. Finally, improving cooperation at the United Nations and in other multilateral forums would enhance both countries' ability to shape the international order.

INTRODUCTION

Background

Over the last two decades, India and the United States have strengthened their strategic partnership by focusing on defense and national security. However, trade disagreements have strained economic ties between the two nations. Resolving these disputes is essential for enhancing the bilateral partnership. In our endeavor to strengthen this partnership, Hudson Institute and the Takshashila Institution first organized a series of roundtable discussions in November and December 2021, at which leading scholars and policy practitioners from India and the US focused on opportunities for collaboration in the post-pandemic era. The final outcome of these roundtables, a policy brief, was widely circulated with policymakers from both nations.[1]

Since then, New Delhi and Washington have made concerted efforts to strengthen economic ties, notably through the initiative on Critical and Emerging Technology (iCET). Despite these advancements, further economic collaboration carries the potential to boost bilateral trade to $500 billion by 2030. To understand the leverage points that can advance this collaboration, Hudson Institute and the Takshashila Institution organized a second series of roundtable discussions in March and April 2024 to promulgate ideas that can shape the future direction of US-India economic relations.

The ideas in this paper reflect the broad consensus of these roundtables.

EXCHANGE: TRADE AND INVESTMENT

Background

Over the last 20 years, the US-India relationship has grown significantly, leaving behind the strains of the Cold War era when the two countries often disagreed on issues of geopolitics and economics. Economic relations between the two countries have deepened since the 1990s, but persistent trade disagreements continue to impede efforts to further boost these ties.

Currently, India and the United States conduct over $200 billion in trade annually, but achieving $500 billion in bilateral trade has been a longstanding goal.[2] With elections in both countries this year, policy uncertainty is to be expected. It is therefore critical that both sides maintain conversations so that the momentum can be picked up in the new year.

For India and the United States to build lasting trade ties, both nations need to recommit to enduring domestic reform and multilateral trade governance, especially under the WTO. To that end, this report recommends that India reduce protectionist measures and endeavor to attract investment.

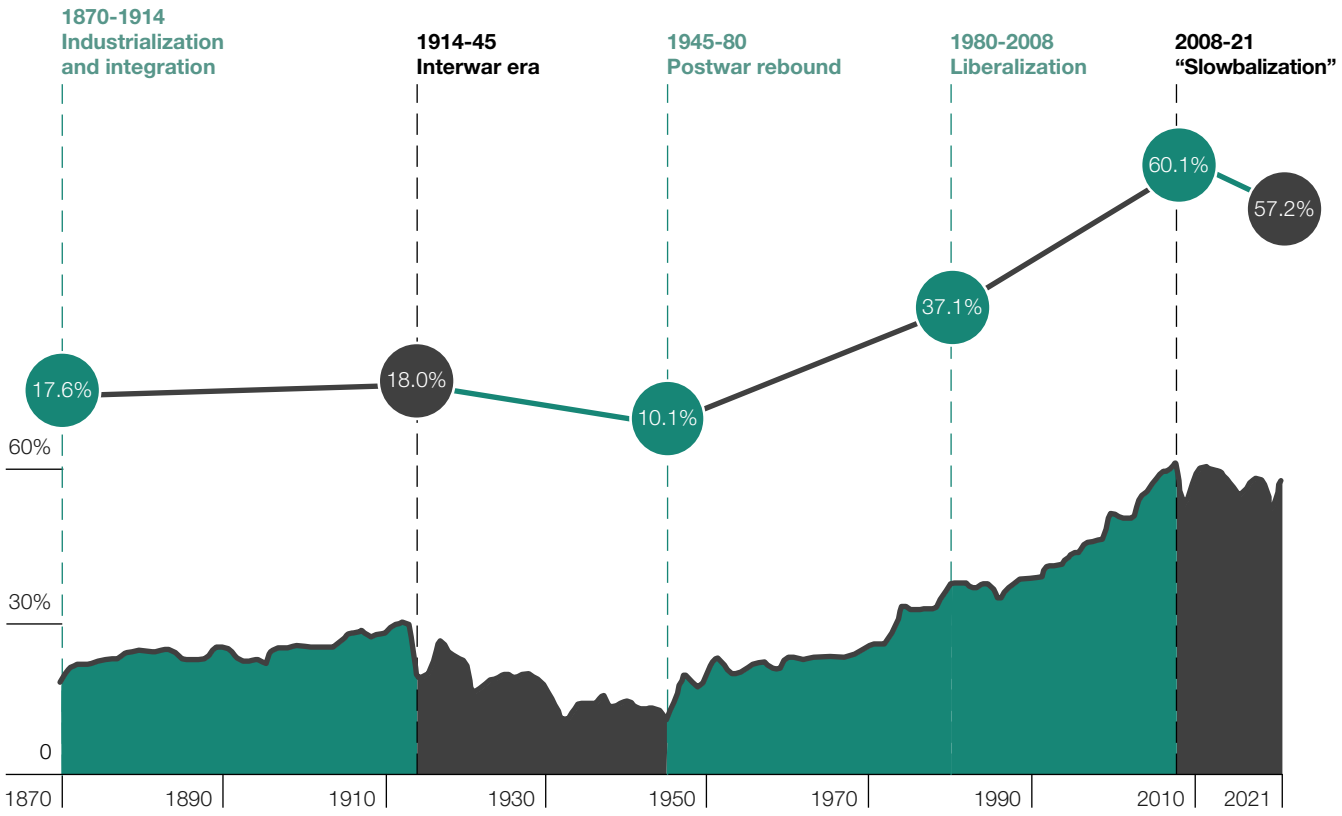
Globalization in Retreat

The post–World War II era witnessed an unprecedented explosion in globalization and trade, with global trade volume today being nearly 45 times what it was in 1950. The establishment of the WTO in 1995 also helped expand the volume of global trade.

While globalization had its heyday during the 1990s and early 2000s, it has faced pushback over the last decade or more. Several countries, both in the developing and developed worlds,

Photo: Commuters walk along platforms at the Churchgate railway station in Mumbai on January 31, 2024. (Punit Paranjpe / AFP via Getty Images)

Figure 1. Globalization Declines for First Time Since World War II



Source: Douglas A. Irwin, "Globalization Is in Retreat for the First Time Since the Second World War," Peterson Institute for International Economics, October 28, 2022, https://www.piie.com/research/piie-charts/2020/globalization-retreat-first-time-second-world-war.

have turned protectionist. The 2020 coronavirus pandemic simply accelerated that trend. While global trade has resumed, in the interim, national and private actors have moved to fortify and secure supply chains by moving them onshore or using trusted trading partners (i.e., friendshoring). The postwar era of frictionless trade has been replaced by one of impeded globalization, reflected by slowed growth in global trade (see figure 1).

In this era of impeded globalization, demand for some goods and services has increased, while the desire for others has stagnated or decreased as countries seek to mitigate risk. In the future, global trade might decrease, but trade within blocs for certain goods might increase. Strategic goods like rare earths and natural gas in Europe may indeed face restrictions, and the world will find it very hard to argue against agricultural tariffs or bans instituted in the name of domestic security.[3] Geopolitical competition between the West and China, the impact of climate change on supply chains, and disruptions caused by conflict are proving major impediments to global trade.

Figure 2. World Exports of Goods and Services as Percent of GDP

Source: Data for exports of goods and services (% of GDP); data for GDP (current US$), identifier NY.GDP.MKTP.CD, World Bank Open Data, 2023, https://data.worldbank.org/indicator/NY.GDP.MKTP.CD.

The peer rivalry between Washington and Beijing has created an environment in which many nations, especially in the developing world or the Global South, believe they are being forced to choose sides, creating tensions that disrupt commerce. American wariness of China has risen during the last two American administrations. The Biden administration's National Security Strategy spoke of the need to compete with China in manufacturing and high-technology domains, especially those that are strategic in nature. For example, the administration ordered investigations of Chinese-made electric vehicles (EVs) and Chinese cranes at US ports over surveillance-related concerns.[4]

Climate change has also impacted trade, especially maritime flows, as unpredictable weather patterns increase volatility in heavily trafficked sea-lanes. The Russia-Ukraine War and rising tensions in the Middle East have furthered these disruptions.

The Globalization Index provided by ETH Zürich KOF reflects these trends, noting that economic openness has leveled off

since 2018.[5] Likewise, in 2024 the Heritage Foundation's Index of Economic Freedom—which assigns aggregated scores to each nation based on its protection of property rights, its tax burden, the effectiveness of its judicial system, and government integrity—is at its lowest since 2001, reflecting "a world economy that . . . is 'mostly unfree.'"[6]

In 2023, worldwide trade in goods and services expanded by only 0.2 percent, the slowest rate of growth in the past half-century outside periods of global recession. Trade in goods alone shrank by two percent over that same year. The World Bank estimates that the period from 2020 to 2024 will mark the slowest half decade of trade growth since 1990.

Policymakers, moreover, are increasingly favoring protectionism. The World Bank reports that the average number of trade agreements per year over the 2020s has dropped to five, less than half the average from the early 2000s. In 2023, countries imposed nearly 3,000 trade restrictions, five times as many as in 2015.[7] The number of WTO disputes has also fallen, sinking from 38 in 2018 to 8 in 2022.[8] An underutilized WTO signifies weakened faith in the multilateral institution's ability to arbitrate disputes.

Yet the global decline in trade cannot be pinned entirely on the rising tide of populism or the effects of the pandemic. Exports as a percent of global GDP also declined substantially during the 2008 financial crisis, from 31 percent to 26.4 percent (see figure 2).[9] After a three-year rebound, the figure declined again in 2012 at the conclusion of China's burst of economic growth. Despite these headwinds, today global exports remain approximately 30 percent of global GDP.[10] It is still unclear if this resurgence indicates the beginning or the end of a larger trend.

The Pandemic's Effect on Trade

The global coronavirus pandemic and the ensuing lockdowns applied a major shock to the world's supply chains. Worldwide exports of goods and services declined in 2020, sinking to 26.4 percent of global GDP from 28.3 percent in 2019, while global GDP declined to $85.27 trillion from $87.78 trillion. As the world gradually reopened, the global economy rebounded. By 2022 global GDP reached $100.88 trillion, of which exports of goods and services accounted for 31.1 percent in 2022.[11]

Yet the global rebound from the pandemic did not mark a return to the pre-2020 status quo. Lockdowns and national efforts to insulate critical supply chains sent shocks through the global economy. Private and national actors have subsequently taken significant steps to de-risk supply chains. The International Monetary Fund (IMF) reports that the use of terms such as "friend-shoring," "nearshoring," "onshoring," and "reshoring," in corporate presentations increased nearly twentyfold between 2018 and 2022.[12] Pandemic stressors also gave rise to initiatives such as China Plus One, a business strategy to avoid investing solely in China.

Yet China, as of 2023, remained the world's largest exporter, exporting 14 percent of the world's goods measured in value.[13] While China's exports remain competitive, full decoupling from Beijing is unlikely to occur. In a post-pandemic marketplace driven by desires for stability, predictability, and resilient infrastructure, any economy hoping to become a competitor to China must illustrate that it can offer effective supply chain substitutes. As faith in multilateral institutions declines, nations that can provide both a compelling strategic reason for bilateral agreements and a stable investment climate will likely find willing investors.

In the public sector, pandemic-era supply chain shocks exposed a strategic vulnerability. As a result, multiple governments took steps to insulate supply chains to ensure access to critical materials, such as Washington's use of the Defense Production Act to ensure a supply of vaccine ingredients.[14] Today, governments increasingly view trade and supply chains through the lens of national security. This strategic outlook on trade will likely lead nations to prioritize bilateralism over multilateralism, limiting a

country's trade leverage vis-à-vis its rivals. This preference for tailoring trade policy to meet strategic needs has limited the ability of multilateral institutions to function effectively, as the decrease in WTO disputes and the increase in strategic bilateral trade initiatives demonstrate.[15]

Geopolitical Friction

Post-pandemic conflicts have been another source of supply chain risk. As the unipolar post-Cold War world gives way to a new era of multipolarity, strategic blocs are increasingly interested in arbitrating trade disputes outside multilateral institutions. Russia's 2022 invasion of Ukraine and instability in the Red Sea have reduced the reliability of maritime shipping lanes, limited the availability of foodstuffs, and reinforced the trade of critical materials as a strategic lever.

Critical minerals and fossil fuels remain sources of state competition; nations that produce them in excess reap the benefit of global dependencies. Of the estimated 120 million tons of rare earth deposits worldwide, 44 million are in China. The People's Republic of China (PRC) conducts 60 percent of the world's rare earth mining and 85 percent of its rare earth processing.[16] Beijing refines 95 percent of the world's manganese, 73 percent of its cobalt, 70 percent of its graphite, 67 percent of its lithium, and 63 percent of its nickel.[17] In the first four months of 2024, Russia supplied 16 percent of Europe's liquefied natural gas (LNG). Russian LNG currently comprises 7 percent, 32 percent, and 49 percent of France's, Spain's, and Belgium's natural gas imports, respectively.[18] Taiwan has a 68 percent market share in the world's semiconductor industry and produces approximately 90 percent of the world's advanced chips.[19] States with control of such critical materials routinely leverage their supply to influence policy, trade, and security outcomes.

Despite Western efforts to decouple and de-risk from value chains threatened by Russia's invasion of Ukraine or China's expansionist moves, overdependence on unreliable supply chains remains a significant risk to the global economy. Further, onshoring supply chains is cumbersome. Consider electric vehicles. If an American EV company wanted to build a battery plant in the United States, it would still have to import materials from China. Companies also need research and development, talent, and other resources that are not always available domestically.

As global instability mounts, state actors are increasingly interested in isolating supply chains to deny their adversaries access to critical materials and entice potential allies with access to otherwise limited resources. Friction between states emerges when strategic interests and trade interests collide. As efforts to insulate supply chains from geostrategic risk increase, nations increasingly turn to bilateral negotiations to de-risk trade.

A Lack of Trust

Concerns over the resilience and dependability of supply chains and other strategic considerations have eroded the critical lynchpin of global trade: trust. For decades, the General Agreement on Tariffs and Trade (GATT) facilitated the spread of multilateral exchange, with countries rarely invoking national security exemptions to restrict markets.

This willingness to engage in open trade has diminished. Japan's de-risking from China and Washington's increased reliance on the screening procedures of its Committee on Foreign Investment in the United States (CFIUS) reflect a prioritization of national security concerns that complicates global trade relations.[20] For example, the Biden administration is reluctant to allow Nippon Steel, a company based in Japan, a US ally, to purchase an American steel manufacturer, US Steel, on national security grounds (though, as of this writing, CFIUS has not made any recommendation to the White House on the deal and is allowing the companies to refile their application).[21]

For most of the last half-century, countries exercised restraint in using national security exemptions to trade, recognizing how easily trading relationships can unravel: if one country begins blocking exchange and investment, others are likely

to follow, catalyzing a cascade of protectionist measures. But now nations' willingness to leverage global interdependence in the service of their own national security interests has weakened the practice of free and open multilateral trade.[22] China, for one, is actively seeking to create dependence on its own goods and markets in an effort to weaken multilateral forums around the world.

Climate Change Concerns

Climate change and extreme weather patterns are also disrupting supply chains and shipping routes. Increased climate hazards, such as floods and heatwaves, impact maritime and land-based shipping, causing delays and higher costs. Low-land coastal areas, often critical hubs in global trade networks, face heightened risks from rising sea levels and storm surges. A drought in 2023 imposed significant shipping delays and costs upon cargo ships crossing the Panama Canal, which manages 3 percent of maritime trade volume worldwide and nearly $270 billion in cargo each year. The early months of 2024 saw a 36 percent reduction in ships crossing the canal compared to the prior year.[23]

Climate changes highlight another vulnerability for supply chains: widespread climate volatility can impose widespread costs, forcing nations to shift production sites and reroute shipping. Dramatic weather incidents can also cause mass death or widespread relocation. The rise in climate-related hazards has increased de-risking in climate-resilient areas and created new markets for technologies that mitigate climate hazards.

Trade Takes a Backseat to National Security

Instability wrought by pandemic lockdowns, the rise of armed conflict, and climate change has led many governments to weaponize trade in the service of broader national security concerns. The supply chain shocks of the last four years have illuminated significant strategic vulnerabilities. Nations increasingly seek to leverage commerce and trade to punish adversaries, entice allies, and insulate their own interests. Economic concerns have emerged downstream of national security priorities.

Developments in the US-India relationship illustrate this dynamic. In May 2022, the two countries created iCET,[24] which is a joint initiative that seeks to increase cooperation between industry and government in the development and use of cutting-edge technologies. iCET seeks to facilitate trade in goods otherwise restricted by US regulations on the transfer of military technology to other countries. It was designed to induce closer strategic ties between Washington and New Delhi,[25] and demonstrate that for both India and the US national security interests trump concerns over trade.

Whither Globalization?

Despite the stresses of the last four years, globalization is here to stay. The rise of domestic populism, pandemic- and war-induced shocks to supply chains, and emerging geopolitical friction have prompted many nations and private industries to reconsider a free and open model for global trade. But the laws of comparative advantage, the persistence of trade dependencies, and ongoing security considerations make a fully protectionist or non-globalist future unlikely. The IMF's World Economic Outlook forecasts a 3.3 percent increase in worldwide trade for 2025, three times greater than the increase in 2023. The report assesses that a reduction of global conflict, recovery from pandemic restrictions, and growth in emerging markets will spur a rise in global trade.[26] While the ongoing protectionist currents may limit the realization of such optimistic forecasts, these predictions highlight the resilience of globalization.

Yet globalization will likely continue in an impeded manner, informed by a decline of the rules-based international order, the rise of intra-bloc trade, increased economic integration among allies, and a renewed focus on supply-chain resilience and national security.

The decline of the rules-based order that has undergirded global trade since World War II is driven by rising protectionism, growing geopolitical tensions, and unilateral policy shifts in major economies. As nations allow national security concerns to inform what once were purely business decisions, trade disputes will likely proliferate, while the enforcement of international trade rules will likely weaken. A more fragmented global trading system will almost certainly emerge.

Intra-bloc trade—in which regional bodies like the European Union (EU), the Association of Southeast Asian Nations (ASEAN), and the Southern Common Market (MERCOSUR) prioritize relations among member nations—will also significantly supplant larger worldwide trade arrangements. This shift is influenced by strategic security considerations, currents of economic nationalism, and a widespread desire to create more resilient supply chains. Blocs will likely work to insulate supply chains from external instabilities.

As such, economic integration among allies will increase, as nations focus on creating seamless trade and regulatory environments within established blocs. This could include the expansion of free-trade agreements (FTAs), the harmonization of standards, and joint investment initiatives to enhance economic coherence and resilience. While FTAs will still play a crucial role, other mechanisms such as mutual recognition agreements and regulatory cooperation frameworks will also be key to streamlining trade processes and bolstering economic collaboration. Countries may seek to boost trade and integration with nations that may not be obvious trade partners but share security interests.

Governments and industries will increasingly prioritize supply chain resilience and national security, leading to the *friendshoring,* or reshoring of critical supply chains within allied nations. These strategies aim to mitigate risks that arise from geopolitical tensions and disruptions by consolidating production and supply networks among trusted partners. Nations may seek to secure access to essential resources, diversify supply sources, and enhance their domestic production capabilities.

A Profile of US-India Trade

The trade relationship between India and the United States has progressed significantly since India's liberalization in the 1990s but still faces challenges. The US runs a $370 billion trade deficit with China[27] and a $50 billion deficit with India. This has been a positive trend for New Delhi, as its trade balance with Washington has more than doubled in the 10 years between 2014 and 2024, going from $22 billion to $50 billion.[28]

Total trade between the two countries is growing, albeit slowly. The Trade Policy Forum (TPF) has been instrumental in achieving growth even in the face of disagreement. The TPF has helped to resolve seven WTO trade disputes, establish tariff concessions, and forge progress on intellectual property and agricultural agreements.

However, certain constraints prevent the trade relationship between India and the US from reaching its full potential. Both nations exhibit protectionist tendencies that complicate trade dynamics. Pauses in global exchange, such as those affecting LNG exports from the US, have adversely impacted India, which relies on these imports. Additionally, the cost of doing business in India, higher than in China, makes it less attractive as a manufacturing base. This results in competition from other emerging economies like Vietnam and Indonesia, which are more cost-effective manufacturing hubs. India's PLIs incentivize foreign and domestic companies to invest in the country, but its import duties and tariffs for raw materials, capital equipment, and intermediate goods remain extremely high. Hastily crafted, disruptive, and arbitrary policies also stifle investment in India and inhibit investment from US firms; over the last 10 years, India has raised its duties on imported goods from 13 percent to 18 percent.

Foreign direct investment (FDI) in India is also highly concentrated geographically. Over 80 percent of FDI in India goes to

four states—Maharashtra (31 percent), Karnataka(21 percent), Gujarat (16 percent), and Delhi (13 percent)—and largely to major cities in those states.[29] While these four states benefit from reliable infrastructure and a healthy business environment, the rest of India lags. And while the country has many development projects in the pipeline, too many bureaucratic hurdles prevent these from ever seeing completion. As a result, both domestic and foreign investment in the country has declined.

India would benefit greatly from wide-ranging reforms that make it a better place to do business. The establishment of new technical institutes, research and development facilities, skill-intensive programs, and vocational job training would all improve workforce employability issues and the country's business climate. The government should also decrease bureaucratic hurdles for business, lower the wait time for imports and exports at ports, and increase the capacity of its freight railways.

Meanwhile, even though US companies have had some success in manufacturing defense products in India, demand-side problems persist. For example, military procurement processes pose challenges, as US firms face arduous bureaucratic gauntlets and are often required to share technologies to receive permission to manufacture in India. These efforts are further complicated by concerns over intellectual property rights.

The likelihood of a comprehensive FTA between the US and India appears low at present. Efforts to develop robust trade ties since the early 2000s have yet to result in an FTA, largely due to protectionist policies on both sides.[30] Indian initiatives like PLI schemes and Make in India aim to boost domestic manufacturing and FDI without increasing the ease of doing business or pressure to accept imports.[31] The US has also embraced protectionist measures, including its departure from the Trans-Pacific Partnership (TPP) and its establishment of tariffs on steel and solar products under the Trump administration. The Biden administration has continued this trend, demonstrating its reluctance to rejoin TPP and establishing Buy American manufacturing initiatives.[32] For an FTA to materialize, both nations would need to compromise, a scenario that seems unlikely in the current climate.

US-India Investments

The investment relationship between India and the United States has seen dramatic growth but is not without its challenges. US investment in India surged from $2.38 billion in 2000 to over $50 billion by 2022.[33] While this is a positive trend, it still trails the $126 billion the US invested in China in 2022.[34] Despite the growing willingness of American firms to back India, various logistical and policy issues limit investment. Infrastructure deficiencies, such as inadequate power and water access, combined with complex government initiatives like PLI schemes, disrupt the natural flows of the market and stifle widespread industrial development across India.

New Delhi's approach to foreign direct investment has also been mixed. While the country has attempted to attract FDI through initiatives like Make in India, the results have been inconsistent. FDI inflows into India fell by 43 percent in 2023, while fellow China Plus One competitor Vietnam saw a 32 percent increase in the same period.[35] India's reluctance to join key regional trade agreements like the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) further hampers its ability to attract and sustain foreign investment over competitors like Vietnam, Indonesia, and Thailand. The uneven distribution of FDI within India also reflects the need for more balanced regional development to enhance India's attractiveness as an investment destination.

Firms looking to invest in India, and even those currently investing in the country, desire certainty. In the absence of guarantees or dialogue between policymakers and private enterprises, investors will continue to consider other countries for investments that could have gone to India, imposing an opportunity cost on the country and hampering its competitiveness.

Policy Recommendations

Reduce PLIs, Tariffs, and Import Duties

Reducing PLIs would mitigate the inefficient allocation of government resources and help industries with natural competitive advantages thrive. Eliminating these incentives would help foster a competitive business environment that attracts foreign investors and cultivate industries that would be more competitive, both domestically and abroad. Reducing or eliminating tariffs and import duties would make it easier for companies to manufacture in India, especially in high-tech sectors that require significant resources and in labor-intensive sectors where India has existing expertise. Reducing tariffs across the board would also help provide a predictable business environment for investors.

Focus on Open Trade Rather Than Industrial Policy

De-emphasizing industrial policy that artificially supports certain industries, and instead focusing on open trade, would allow resources to flow to competitive sectors. This would promote efficiency and innovation and help businesses compete in a fair market environment. Open trade would attract foreign investment by creating a more predictable and welcoming business climate. India should also cultivate transparency (digital processes) and efficiency in its permitting and clearance process. By utilizing its size and undoing the red tape it has strung up around its market, India can grow its economy.

Ensure Knowledge about Single Window for Exports

India recently launched a single window for exports that will help large companies as well as small firms. However, widespread education about the program is needed. If micro, small, and medium enterprises (MSMEs) don't know the resource is there, they will never use it, especially as e-commerce exports have become a promising new avenue for Indian small businesses to join global supply chains. Many small firms that want to list their products on Walmart, Amazon, and other global platforms could get clearances quickly. This will in the long-term diversify India's business landscape and help small businesses gain market share.

Experiment with Innovative Policy Measures

Using its most successful states as labs for ambitious policies, such as land and labor reforms, would help India limit risk while optimizing policy effectiveness. These pilot projects would provide insights and evidence to planners in New Delhi and could attract international investment and accelerate broad regulatory improvements.

Make Regulatory Systems More Predictable and Transparent

Enhancing the predictability and transparency of regulatory systems would reduce uncertainty for foreign investors and foster a more attractive business environment. Clear-cut and consistent regulations would streamline business operations and compliance, increasing efficiency and reducing costs. India should also reduce import restrictions and focus on having consistent tax and tariff regimes. As major players, both public and private, seek to de-risk supply chains, eliminating outsized risks from India's regulatory climate would strengthen US-India trade relations.

India needs to address the perception that the playing field is tilted in favor of a select few domestic companies with privileged access to the government. Such perceptions negatively impact the investment decisions of both foreign and domestic companies and disadvantage other domestic companies that don't have privileged relationships.

Leverage State Capacity

India's state capacity has gradually increased over the last several years. India should leverage this capacity to implement and enforce policies that benefit domestic and foreign businesses. New Delhi can utilize existing administrative systems for effective business governance, including the enforcement of intellectual property

rights. India should not use its increased state capacity for coercive actions that create a chilling effect on business and investment.

Build Heavy Infrastructure, Including Freight Rails and Deep-Water Ports

India should focus on its infrastructure to compete for global market space with China. Although pillars of Indian industry—like Maharashtra, Karnataka, Gujarat, and Delhi—continue to grow, the wealth of globalization should be more equally spread across the country. Constructing production-ready factories, increasing transport options to move goods and people, and building ports to facilitate exports across India are key to developing a resilient economy.

Facilitate State-Level Relationships

States in India should highlight their areas of expertise, emphasizing what they can offer to investors and how effectively they can address challenges as they arise. Focusing on specifics is crucial for India to spread its wealth and broaden its skill base.

Focus on Co-development with International Partners

India cannot afford to become isolated in a globalized world. Access to foreign markets and the ability to become a net exporter is imperative for the success of the Indian market. Focusing on co-development with India's international partners would increase economic prosperity, improve access to opportunities in labor and business, and stabilize international relationships.

Roundtable Speakers

Anupam Manur	Professor, The Takshashila Institution
Atman M. Trivedi	Partner, Albright Stonebridge Group
Ingrid Henick	Vice President, The Cohen Group
Malachy Nugent	Vice President, Financial Services, US-India Strategic Partnership Forum
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EXCHANGE: IDEAS AND HUMAN CAPITAL

Background

A country's human capital—the collective skills, knowledge, and experience of its population in aggregate terms—can be its biggest strength. As a country of over 1.4 billion people, India has an advantage on this front. But the full potential of India's human capital remains untapped. For India to become a fully developed economy, reduce poverty, increase employment, and achieve its foreign policy goals, it needs to invest more in its human capital resources.

India's people have benefited not only the nation but also countless other countries. It is fitting that the world's most populous country has the world's largest diaspora, with over 17.5 million Indian citizens living abroad.[36] India ranks highest among countries that benefit from global remittances.[37]

While remittances are an important source of foreign currency, and India benefits from having its citizens in other countries, the loss of some of India's best and brightest hampers long-term growth and development domestically. Many Western and Gulf countries have benefited from hosting foreign nation-

Photo: A display of the rover Chandrayaan-3, which landed near the lunar south pole in August 2023, at the Visvesvaraya Industrial and Technological Museum on March 8, 2024, in Bangalore, India. (Pallava Bagla via Getty Images)

als. India, however, hosts a relatively small number of expats, particularly highly educated foreign nationals who could contribute to its development in fields from science to corporate governance.

Just as India has benefited from the global exchange of ideas over the centuries, New Delhi needs to promote the free exchange of ideas today. Many American businesses still view India as an opaque market that is impervious to change and new ways of doing business. While the government can do its part to ease investment restrictions and build reliable infrastructure, personal connections between business leaders and corporations would do just as much to promote long-term growth.

Universities are a key source of human capital. Indians form the single largest contingent of foreign students in the US,[38] and are well represented in almost every sphere of American society and politics. India's university system is developing rapidly, creating an opportune moment to strengthen connections with universities and academic institutions in the United States. Cooperation between American and Indian universities holds great potential for both countries.

The Exchange of Ideas and Human Capital Between the US and India

Growing, but Not to Its Full Potential

Human capital remains a critical linkage between the US and India, mediating the flow of both ideas and people between the world's oldest and largest democracies. In 2022, nearly 269,000 Indian students and 16,000 Indian researchers studied in the United States.[39] Such ties, however, are one-sided. Despite strong business and tech exchange, the scope of reciprocal academic interaction between the US and India has been persistently limited. In the 2019–20 academic year, only 1,736 American students studied abroad in India.[40] Despite the advent of new South Asian Studies concentrations at many US universities, department chairs of high-ranking schools note that such fields of study are undertaken largely by South Asian students.

In recent years, the United States government has incentivized academic exchanges with India. The 2021 Quad Fellowship (announced by the partners of the Quadrilateral Security Dialogue—India, Japan, Australia, and the US) provides funding to 100 students in science, technology, engineering, and math (STEM) fields to study in the United States.[41] Both iCET and the US CHIPS and Science Act of 2022 reinforce the need for technology development and exchange in critical fields, partially through workforce education and training.[42]

The kind of high-level technology- and information-exchange initiatives common between Europe and the US since the Cold War are lacking between Indian academics and their American counterparts. There are several reasons for that, some historical and some bureaucratic. During the Cold War, it was easier for Indian scholars to travel to the Soviet Union; even after the end of the Cold War, Washington maintained restrictions on sharing high-end science and technology with Indian scientists and engineers.[43] The US State Department has a long backlog of visas that grew even deeper during the COVID-19 pandemic,[44] and the Indian visa system is also prohibitively restrictive for American researchers.

In the United States, moreover, interest in India, both in and out of academia, lags outside of diaspora circles. India was never a threat or an ally during the Cold War, so the American academe never built the vast scholarship on India that it did on Russia, China, Europe, or Latin America.[45] Similarly, American security partnerships with South Korea and Japan benefit from extensive educational and cultural exchanges supported by world-class institutions, a model that has yet to be fully realized between New Delhi and Washington. Both nations should do more to enhance India's appeal as a destination for academic and cultural pursuits.

The Promise of GCCs

During the COVID-19 pandemic, many companies set up global capability centers (GCCs).[46] These facilities are designed to increase productivity by placing business support workers, contact centers, and enhanced information technology support services in one location. Even after the pandemic, many companies continue to use GCCs to improve efficiency.

In fact, GCCs may be changing the corporate environment and providing new avenues for employment and revenue generation. While these centers have historically been employed by multinational corporations to answer questions for consumers, a market for addressing technical issues important to India is starting to form. This rise in demand is likely to allow GCCs to cater to India's economic demands, like focusing on solutions that tackle the rising pollution crisis.

India's Limitations in Attracting Global Talent

Historically, India has suffered from an outflow of talent to the US. For New Delhi to achieve its goals, it needs to reverse that flow and recruit not just returning Indian talent but also talent from around the world. American soft power, after all, stems in part from its attractiveness to people across the globe.

India, similarly, needs to open itself up to global talent. Even if some capable Indians decide to pursue opportunities in the West, it is possible for the country to entice and welcome the brightest minds from Africa and East Asia.

But for this to happen, New Delhi needs to strengthen its internal education systems and make it easier for foreign students to work in India after completing their education. By promoting itself as a model for open immigration in the region, India could become a tech hub capable of competing with the West.

One way for India to attract the best and brightest minds to the country would be to make it easier for people to obtain non-immigrant visas. By removing bureaucratic obstacles, New Delhi could attract academics and other professionals for short periods of time. When these academics go back to their home universities, they would serve as informal ambassadors for India, informing their peers and encouraging others to travel to India to research, study, and teach.

The Exchange of Ideas and the Development of Human Capital

The Corporate Role

Indian information technology service companies have led the conversation on India's efforts to establish itself as a tech hub, somewhat overshadowing the growth of GCCs. But GCCs have become a force to be reckoned with. Currently, 1,580 centers exist, and forecasts project that 1,900 will be in business by 2025 and 2,400 by 2030,[47] employing roughly 5 million people.[48] India is also establishing a growing number of series-b and series-c companies.[49]

The country's human resource advantage can enable rapid growth for companies operating in India. Many of these companies stay in the country to contribute to an ecosystem beyond software, in sectors like hardware, biotech, or pharmaceuticals. GCCs benefit from this diverse economic ecosystem.

Recent years have also seen a significant increase in the number of startups in India concentrating on deep technology, a field focused on providing tech solutions based on substantial technological or engineering challenges. Notably, over 3,000 of the 27,000 technology startups in India are in this field. Many of them face challenges raising capital, given their substantial wait time for return on investment (ROI).[50] A partnership with the United States could be highly beneficial for these companies. Additionally, the sector stands to gain from the Indian government's establishment of a 1 lakh crore fund—equivalent to ₹1 trillion ($11.9 billion)—dedicated to deep tech.[51]

Climate technology presents another opportunity for collaboration between India and the United States. Both countries face substantial climate-related challenges, particularly in agriculture. As climate impacts deepen, the need is growing for innovation in climate technology. This mutual challenge offers a unique opportunity for partnership between Washington and New Delhi.

The application of technology in agriculture also offers a massive value proposition, not only for India but also globally. This sector represents another promising area for US-India collaboration, with the potential to address shared needs while generating significant revenue for both countries.

While significant opportunities exist for India and the US to collaborate on technology, these efforts are threatened by regulatory challenges, particularly due to inconsistency and unpredictability in the development of new technologies. Indian AI regulators, for example, recently posted new guidelines governing this emerging technology only to withdraw them almost immediately.[52] Yet despite an underdeveloped regulatory framework, Indian innovators wish to take aggressive risks in tech development.

The Role of Nonprofits

Private-sector resources abound in India, and American dollars support foundations and nonprofits. However, these funds often face restrictions on their use. At the same time, a new wave of Indian philanthropy is emerging, with 3.4 million nonprofits across the country, highlighting how additional money could potentially help address India's vast needs.[53] Local philanthropy is playing an increasing role and stands to benefit from American resources.

However, current restrictions, particularly India's Foreign Contribution Regulation Act (FCRA), cap this potential. These restrictions reflect a longstanding mistrust of foreign funding that dates back to the Cold War.

Academic Collaboration

While collaboration between Indian and American researchers is strong in STEM fields, there is significant untapped potential for partnerships in applied economics, political science, and social sciences at all academic levels.[54] This includes collaboration even at the most basic level of data collection.

One possible reason for this untapped potential could be India's historical ambivalence toward foreign ideas and outside involvement in its education sector, often due to concerns about extraneous influences in politics. Although there have been attempts to Westernize or modernize elements of India's schools, these have usually been driven by strategic or economic interests. The prevalence of English speakers in India and institutional structures broadly aligned with those of the West have led some to perceive a similarity between India and the US that may not in fact exist.

Additionally, over the past decade India's universities have been marked by increasing litigiousness and restricted academic freedoms.[55] This has made foreign universities—with which Indian institutions aspire to partner—more reluctant to invest in India. Growing sensitivities around the conflict between Hindu nationalism and liberalism, specifically, have contributed to this environment of reduced academic freedom in educational institutions.

Further, there is a widespread perception of distrust in the quality of data produced by Indian institutions, which has brought skepticism from foreign researchers.[56] Access to data in India also tends to be quite limited, as Indian researchers are often more guarded than their American counterparts about publishing findings openly.

Interest in India or the subcontinent in American universities has traditionally been concentrated in fields like anthropology, sociology, and language studies. The departmentalized study of India or South Asia is rare in most American

universities, especially in political science and international relations departments. Further, the abundance of languages spoken in India—Hindi, Sanskrit, Urdu, and Tamil, just to name a few—makes the study of India difficult in a way that the study of monolingual countries is not. Thus, deep interest in Indian studies in the US remains limited to a small group of people. And since India has long been neither a staunch ally nor an enemy of the United States, American universities have historically deprioritized the study of India and Indian languages. As a result, the foreign universities with which Indian institutions of higher learning tend to partner are often of poor quality.

The opacity and arbitrariness of India's visa process also disincentivize academics and international students from visiting the country.[57] If an aspiring scholar does manage to set up shop in India, the difficulty of repatriating money earned there means that his or her challenges have only just begun. These practices and barriers effectively disincentivize intellectual investment in the country.

It is just as difficult for prestigious Western universities to establish campuses in India. Countries that seek such presences normally work to attract and subsidize educational institutions—see New York University's campus in Abu Dhabi for one prime example. Due to a latent Indian fear of American cultural imperialism, the most likely areas of collaboration between the US and India will continue to be in technical schools rather than in the humanities or social sciences.

Policy Recommendations

Make India's Cities More Attractive to Investors

India is often too difficult for foreign businesses to navigate. Fixing this starts at the local and state level. States and urban local bodies (ULBs) should simplify the regulatory and permitting framework for foreign investors and increase funding for the critical infrastructure upon which key industries rely. Subnational governments can make the investment process easier, and should actively seek partnerships with major international corporations to create low-regulation laboratories of investment and innovation.

Leverage Cooperation Among Subnational Governments

The federal nature of the US and Indian governments presents underexplored opportunities for collaboration. Rather than seeking to micromanage economic and cultural cooperation on a national level, both Washington and New Delhi would do well to facilitate more state- and city-level connections. State-level governments are particularly important, as they often have direct power to build infrastructure, issue permits, and fast-track project reviews. State-to-state agreements can also simplify cultural and intellectual exchange.

Help American Universities to Play a Larger Role in Indian Higher Education

Indians have already demonstrated a tremendous appetite for an American university education: over a quarter-million Indians are studying in the US during the 2023–24 school year.[58] While bringing the American university system to India is more challenging than sending Indians to American universities, the opportunity for cooperation is real. Study abroad programs could deepen ties and help put India on the radar of American administrators. More academic and research cooperation is also an important step, with the opening of satellite campuses in India a potential goal that would require concessions from both sides. Washington and New Delhi should also explore the possibility of US-India collaboration to set up institutions for technical education.

Strengthen Indian Institutions of Higher Education

Higher education institutions are proliferating rapidly in India, and government intervention can help them grow. Scam universities and low-quality degrees increasingly plague the Indian market, taking advantage of a population hungry for education.

Here the state can be a constructive actor. A more transparent and visible system of accreditation would increase trust in the system and stop Indians from being defrauded.

Yet New Delhi needs to take care to avoid even the appearance of ideological interference. American universities have a high level of academic independence, and if their Indian counterparts want to attract international partners they have to mirror this norm. Grants and other forms of state support should not be contingent on ideological conformity.

Beyond ideological involvement, other forms of micromanagement can also be deeply damaging. In an era when institutions of higher learning are growing rapidly, the Indian bureaucracy should allow the free market to function, ignoring the impulse to centrally plan and pressure universities to fill niches according to civil service diktats. In the long term, encouraging innovation and demand-driven growth would build a more robust and sustainable university system than one driven by micromanagement.

Create a More Open Environment for Research and Collaboration

New Delhi should work to foster a more open environment for research and collaboration. The government should publicly celebrate the role of Indian scientists and academics in international projects, highlighting them as exemplars. Beyond this, the state can also ensure the financial viability of research projects by easing regulations that complicate international grant proposals and directing research and development funding to collaborative projects.

Streamline Visa Processes

The two countries' respective visa regimes are a damaging barrier to growth. In the US, politically toxic debates over immigration have made visa reform challenging, but politicians should work to demonstrate the value of liberalizing the visa regime for Indian academics and thought leaders without being seen as soft on immigration. Indians and Indian-Americans have already played outsized roles as key drivers of US growth, particularly in tech, and they have more to contribute. It should be easier for Indians to get short-term visas to the US. This change would maximize the potential for corporate and academic cooperation while ensuring that Indian-born talent still makes its way home.

The Indian visa regime is equally self-sabotaging. Americans with much to contribute to the Indian economy are needlessly kept away, due to an opaque bureaucracy and senseless institutional inertia. There will never be enough American specialists in India to deprive Indian nationals of professional opportunities. As such, New Delhi should do more to recruit high-skilled American workers.

Foster Corporate Cooperation

A more open bilateral visa regime would bring a myriad of benefits, demystifying India for American business leaders. Indian government and civil society leaders should cultivate a web of bilateral personal ties across corporate sectors, such as by organizing summits and conferences to bring the best and brightest of both countries together.

Attract Global Talent

India should also work to attract and retain talent from abroad and reverse the outflow of high-skilled individuals to other countries. An important part of this effort will be making Indians comfortable with having non-Indian CEOs. Many of the largest companies in the US are led by foreign nationals; in an era of multinational corporations, this norm needs to be introduced to India. The Indian government should fundamentally alter its approach to the workforce: rather than thinking of individuals as potential liabilities or easily replaceable commodities, India has to see human capital as an asset of national importance. A whole-of-government change in perspective is needed to retain and attract talent.

Roundtable Speakers

Arun M Kumar	Managing Partner, Celesta Capital
Irfan Nooruddin	Hamad bin Khalifa Al-Thani Professor of Indian Politics, Georgetown University
Narayan Ramachandran	Co-Founder, The Takshashila Institution; and Chairman, TeamLease
Naveen Jha	Senior Fellow, Advanced Leadership Initiative, Harvard University
Neeraj Kaushal	Professor of Social Policy, Columbia School of Social Work
Rahul Sagar	Global Network Associate Professor of Political Science, New York University Abu Dhabi
Ramkumar Narayanan	Executive Vice President, Technology and Services, FIS India and Philippines

EXCHANGE: TECHNOLOGY

Background

Indian leaders have long championed the country's technological potential, but to achieve its regional and global ambitions, India will need partners, both in its region and beyond. The ideal partner, which shares a similar strategic vision as India and has the capability to help India achieve its goals, is the United States. While New Delhi currently enjoys a free trade agreement with ASEAN, it does not have one with the US, limiting both countries' potential for cooperation in defense and technology.

Successive American and Indian administrations have over the last two decades built the substructure for a strong partnership in the tech field. The administrations of Prime Minister Manmohan Singh and President Barack Obama reaffirmed the importance of this cooperation when the two leaders adopted the Defense Trade and Technology Initiative (DTTI) in 2012.[59] Designed as a groundbreaking program to help the two nations sidestep red tape and bureaucratic roadblocks, the initiative highlighted a renewed American focus on the subcontinent. Other milestones of cooperation would follow, as Washington designated India a major defense partner and admitted it to the Missile Technology Control Regime (MTCR) in 2016.[60]

Despite these promising developments, the partnership for which each side had hoped failed to materialize under DTTI. Larger projects under the initiative required significant transfers of technology that ultimately proved too difficult. Plans like those for the RQ-11 Raven mini unmanned aerial vehicle (UAV), for roll-on and roll-off kits for the C-130 military transport air-

Photo: Sharmila Yadav, a certified remote pilot trained under the government-backed Drone Sister program, operates a drone to spray liquid fertilizer over a farm in Pataudi, India, on February 29, 2024. (Sajjad Hussain / AFP via Getty Images)

craft, for mobile electric power systems, and for other defense products all failed to take flight under DTTI.[61] As a result, the initiative offered only a meager return on investment for low-scale projects.[62]

The initiative lacked a cross-agency framework to facilitate communication between Washington and New Delhi.[63] As a result, agencies from both governments acted with little coordination. Therefore, where DTTI once promised to do away with bureaucratic obstructions, it effectively made communication more difficult.

Despite the weaknesses of DTTI, Washington and New Delhi have not given up on co-development. The iCET, which the Modi and Biden administrations developed in 2022 and launched in 2023,[64] aims to make these development dreams a reality. The initiative seeks to bolster ties between Indian and American institutions in a way DTTI never could.

iCET encourages collaborations between governments, academic institutions, and private sector actors in both countries. The initiative is designed to give each nation's national security advisors key roles in facilitating collaboration between private sector players and academic institutions. Where DTTI produced inadvertent segmentation in agencies and institutions, iCET has given Washington and New Delhi a forum to discuss the technological innovations they would like to see in the field of defense procurement.

To fully realize the potential of innovation under iCET, several factors need to align. The private sector, in particular, has a critical role to play. It holds the key to the cutting-edge technologies that India seeks, but certain conditions should be met before private players are willing and able to engage. Most importantly, the private sector has to see a clear business case for deeper collaboration. On the academic collaboration front, it is expected that academia on both sides would focus on the basic sciences involved in these technologies and enrich each other in developing technology. But this collaboration is limited because of the asymmetry between the two countries. While the US has significant depth in many of these frontier technologies, India's progress has been more modest.

Additionally, licensing remains a major issue, as US officials fear that passing sensitive technology to India may inadvertently put it into Russian hands. This limitation impedes not only defense procurement but also the exchange of dual-use technologies—innovations with both defense and commercial applications—like advanced semiconductors and artificial intelligence.

On top of these concerns, the American private sector must also deal with India's domestic policies, some of which limit its viability as a manufacturing base. High tariffs and a focus on domestic production make it difficult for manufacturers to make a profitable return on their products. Schemes like PLIs may encourage specific sectors, such as drone manufacturers, to produce within India, but they do so at the cost of India's global competitiveness.[65]

Yet Washington and New Delhi have made efforts to share technology over the past five years. President Joe Biden and Prime Minister Narendra Modi issued a joint statement in 2023 placing technology at the forefront of the US-India relationship.[66] These efforts have already started to bear fruit in the manufacture of the GE Aerospace F414 engine and India's Tejas MK2 indigenous fighter. These developments have led some experts to say that the era of technology denial between the US and India is over.[67] The nations' increasing business-to-business collaboration in electronics is also encouraging.

Assessing the Risks Posed by Chinese Tech Companies

When discussing technology cooperation between the United States and India, the specter of a rising China has done much to drive Washington and New Delhi together. The prospect of a possible conflict with Beijing along the Line of Actual Control

and the accelerated pace of Chinese military maneuvers have motivated India to improve its technological capabilities. For the US, the possibility of a Chinese invasion of Taiwan presents a threat of its own, while the coercive behavior of China in the global market requires the US to rethink how to minimize the risk of engaging with Beijing.

The US has led the charge in the global campaign to de-risk from China. For Washington and many of its allies, China presents an existential threat to the global order, as US Secretary of State Antony Blinken remarked in a 2022 speech. Blinken asserted that "China is the only country with both the intent to reshape the international order and, increasingly, the economic, diplomatic, military, and technological power to do it. Beijing's vision would move us away from the universal values that have sustained so much of the world's progress over the past 75 years."[68] Meanwhile, as AI becomes more powerful, the US wishes to ensure that China does not dominate the field by leveraging its position in the global order to extract benefits from competitors or threaten rivals.

Washington is also concerned that the emergence of Chinese technologies could undermine US capabilities in the event of conflict. These fears led Washington to ban US government contractors from using equipment made by the Chinese company Huawei.[69] The Biden administration has also taken executive action to prevent the use of sensitive technologies by Chinese firms seeking to bulk transfer the sensitive personal data of Americans.[70]

Dependence on China as a manufacturing hub undermines American interests, as it gives Beijing leverage to act with impunity. China's placement in the global supply chain is also of concern: a possible Chinese invasion of Taiwan could take out a key competitor in the semiconductor industry. In response to these worries, the US has moved to diversify its supply chain, committing to onshoring and friendshoring efforts that take key supply chain routes out of China. US Secretary of Commerce Gina Raimondo has reaffirmed these efforts, claiming that the US intends to invest in its domestic chip manufacturing industry and produce 20 percent of the world's logic chips by 2030.[71] As for friendshoring, the US has begun to look for partnerships from Europe to Japan, and India has become an important part of American operations in the technology space.

In a series of speeches in 2022, US National Security Advisor Jake Sullivan highlighted AI, biotechnology, and green technology as industries that are relevant to US national security. This puts Washington in direct competition with Beijing in important ways. AI requires semiconductors, and green technology needs innovation in EVs, which rely upon critical minerals that largely come from China.[72]

Washington's hardline stance comes with its own set of challenges, however, as companies become concerned with possible penalties levied against them for operating in China. Thus, companies today face additional challenges as national security and industrial policies combine to dictate where they can operate, increasing the costs they incur, denying them comparative advantage, and increasing the risks they face.

If the US placed controls on Chinese products because of their dual-use potential, these restrictions could affect the economies of US allies like Japan, South Korea, and the Netherlands. This happened in October 2022 when the US Bureau of Industry and Security (BIS) enacted controls on Chinese exports of advanced semiconductor manufacturing technologies.[73] In its desire to tamp down on its adversaries, Washington runs the risk of unwittingly stirring resentment among its allies.

Restrictions like those made by the BIS also disrupt the plans of global industry and Western technology leaders. Among those affected by the October 2022 controls were American chip manufacturers Nvidia, Intel, and AMD, which all suffered a loss of revenue and jobs. Though these companies maintained their positions as market leaders, the US should aim to enact more

tailored policies against its rivals. This is especially true when companies struggle to find manufacturing alternatives to China.

Challenges in US-India Tech Collaboration

The unpredictability of India's policymaking environment marks a significant challenge to deeper collaboration between India and the United States in the technology industry. Often, new policies are introduced without sufficient input from relevant industries, leading to inconsistencies and uncertainties that deter foreign investment.

Incoherence in Policymaking

India's approach to policymaking has been disruptive for business. Changes in import tariffs or regulatory requirements associated with the Make in India initiative have increased operational costs and logistical challenges for potential investors. Moreover, Indian policymaking often suffers from internal contradictions, as the country's use of PLIs and import tariffs demonstrates. Companies are encouraged to produce within India and are compensated for adding value to the Indian economy. But if those same companies purchase materials from outside the country, those incentives disappear.

Tariffs and Trade

India's current tariff and regulatory regimes limit its competitiveness as a tech hub. The country faces a strategic choice: whether to create a tariff structure that protects the domestic market or one that promotes India as an export base. This decision is pivotal in determining whether businesses find India a more attractive option than countries such as Vietnam, Taiwan, or Mexico.

High import duties on electronic components have made it expensive for manufacturers to produce goods in India, leading some companies to consider relocating their production facilities to countries with lower tariff barriers. To enhance its competitiveness, India should reassess its tariff policies and consider reducing import duties on key components while providing incentives for domestic production.

New Delhi has begun to realize that simultaneously implementing both its PLI schemes and its current tariff policies is counterproductive. Its move to reduce import tariffs on certain mobile phone components signals a positive shift toward promoting exports. However, further clarity and consistency are needed.

The Unlikelihood of a Comprehensive Free-Trade Agreement

Given the unlikelihood of a comprehensive FTA between India and the US in the near term, sector-specific agreements offer a pragmatic alternative. In September 2024, India was formally integrated into a US-led initiative—the Minerals Security Finance Network (MSFN)—that aims to strengthen cooperation among members to secure supply chains for critical minerals. The MSFN stems from the Minerals Security Partnership (MSP), established by the US in 2022. India was inducted to the MSP in June 2023.[74]

In August 2024, India and the US signed a security of supplies arrangement, which allows American defense companies to manufacture and source products from India. The two countries are also expected to sign a reciprocal defense procurement agreement, which will "promote rationalization, standardization, interchangeability, and interoperability of conventional defense equipment."[75] All of these developments will in the long run enable Indian businesses to participate in government procurement process and incentivize American businesses to increase their operations in India, offering clear benefits tied to specific commitments.

A sector-specific agreement in the field of semiconductor manufacturing is one possibility. The US could provide technical assistance and investment in India's semiconductor industry; in return, India could offer preferential access to the rare earth minerals essential for semiconductor production. Such targeted agreements could enhance collaboration and address mutual strategic interests.

Trade policy remains a significant bottleneck in US-India tech collaboration. India's cautious stance on global trade agree-

ments needs reassessment. Joining and engaging in negotiations for initiatives like the Information Technology Agreement (ITA3) could position India more favorably in the global tech landscape. Increased investor confidence and a collaborative approach with the US could facilitate better terms and more constructive participation in such agreements.

India's reluctance to join the ITA2 agreement, which aims to eliminate tariffs on a wide range of tech products, has limited its access to global markets.[76] By reconsidering its position and engaging in ITA3 negotiations, India could gain access to new markets and attract foreign investment in its tech sector.

The Broadened Scope of Trade Negotiations

The Office of the United States Trade Representative (USTR) has broadened the scope of its portfolio to include trade-adjacent issues like labor rights, human rights, and environmental concerns. This expansive approach complicates trade negotiations with India. The Biden administration's focus on national security has added another layer of complexity to efforts to deepen tech cooperation with India, forcing New Delhi to navigate these broader concerns while aligning its policies with broader strategic and economic goals.

For example, the US has raised concerns about labor conditions in India's tech industry, which could become a sticking point in future trade negotiations. Addressing these issues by improving labor regulations and enforcement could help India build a more favorable trade relationship with the US. By focusing on enhancing policy coherence, reassessing trade policies, and pursuing strategic agreements, Washington and New Delhi can build a stronger tech partnership.

Tech Investment in India

India has emerged as a hub for technology investments, attracting global tech giants and fostering a vibrant startup ecosystem. The Indian government has actively promoted initiatives such as Digital India and Startup India, which have catalyzed the growth of tech investments. Additionally, India's large consumer market and its pool of highly skilled tech professionals make it an attractive destination for foreign firms.

India has recently received large-scale investments from multiple American industry giants. The Center for Strategic and International Studies reports that Micron Technology, Lam Research, Applied Materials, Google, Microchip Technology, and Advanced Micro Devices have announced plans to invest billions of dollars in human capital, infrastructure, and manufacturing in India.[77] In addition to this growing interest, several other US-based corporations, like Walmart and IBM, have been operating in India for years.

Challenges for Firms Investing in India

Even with investment increasing, policy coherence remains a significant hurdle for firms willing to invest in India. Indian regulatory agencies routinely fail to communicate relevant rules and regulations, resulting in diktats that are frequently overlapping or even contradictory. The process for obtaining the necessary licenses and permits can be incredibly slow and lead to delays and higher costs. Moreover, New Delhi's data protection rules are labyrinthine and often require firms to make significant efforts and adjustments to comply with vague frameworks. Taxation and enforcement are also unpredictable and arbitrary, with government audits and raids of foreign firms occurring without warning or cause.

In the US, strict export controls governed by the International Traffic in Arms Regulations (ITAR) limit the extent of technology transfers. As India moves toward seeking technology transfers rather than technology sales, especially in the defense industry, ITAR limits the ability of Indian partners to utilize American platforms. Steep regulatory barriers may also inhibit the extent of technology transfers. Moreover, following Prime Minister Modi's June 2023 visit to Washington, DC, American policymakers voiced concern over the scope of tech transfers to India, noting that New Delhi was asking for exceptions to longstanding

American regulatory regimes without providing sufficient returns.[78] In pursuing expanded access to dual-use technologies, India sought access to platforms that even close US allies, including Japan and Britain, do not have.

Policymakers need to also address barriers to human capital. Visa access remains an issue for would-be investors from each nation. Long and complex bureaucratic processes stymie the ambitions of tech, research, and finance professionals, hindering collaboration and talent exchange.

Current US-India Collaborations

The United States is the third-largest investor in India, with FDI totaling $63 billion between April 2000 and December 2023.[79] The US is also India's second-largest trading partner and export destination after China. In fiscal year 2023, bilateral trade between India and the US reached a record $128.78 billion.[80]

The transfer of dual-use, critical, and emerging technology has arisen as a promising area of the US-India relationship. iCET has fostered substantial optimism in a growing Indian defense industry. As the China Plus One strategy has emerged in the post-pandemic era, American private industry has signaled increased interest in incorporating Indian researchers and manufacturers into their value chains.

iCET marks a significant shift in the tone of the US-India tech relationship. Technology sanctions imposed by the US after India's 1998 nuclear tests saw the world's largest democracy excluded from a critical phase of global technology research and development. When Washington lifted these sanctions following the signing of the US-India Civil Nuclear Agreement, interest in facilitating the transfer of dual-use technology between the two countries rose.

The initiative has garnered acclaim for its role in fast-tracking the approval of a deal between GE Aerospace and the Indian state-owned Hindustan Aeronautics (HAL) to coproduce the F-414 engine for the Indian Tejas jet. Negotiations for the American transfer of the Stryker armored fighting vehicle and Javelin anti-tank system further contribute to the optimism around both iCET and US-India defense technology ties.[81]

Meanwhile, India has invested in its defense manufacturing economy. Its latest budget, released in July 2024, allocates 75 percent of the 1.29 lakh crore ($15.3 billion) budget to procuring capital acquisitions from domestic sources.[82] Despite a net decrease in defense spending between 2023 and 2024, India's latest budget allocates 400 additional crores ($47.6 million) over the previous year to advanced defense technology development schemes.[83]

Human capital remains a key link in the US-India defense technology relationship. Indian Americans have founded approximately 8 percent of American high-tech firms, and 15 percent of Silicon Valley startups. Indian Americans lead 2 percent of Fortune 500 companies, including Alphabet and Microsoft. First-generation immigrants from India founded 11 percent of the top 50 AI startups in the US.[84]

American industry has also invested in human capital in India. In 2023, the US tech company Lam Research committed to a ten-year scheme to educate and train 60,000 Indian engineers in nanotechnology and semiconductor manufacturing.[85] Applied Materials has also committed to spending over $300 million to establish a collaborative engineering center in India, pledging "to bring Applied's engineers together with suppliers and academic institutions to accelerate development and commercialization of technologies for semiconductor manufacturing equipment."[86]

These private sector interactions highlight the interest US firms have in leveraging India's strengths in deep tech, biotech, and advanced manufacturing. Venture capital activity in India, particularly in deep tech, has surged, although challenges remain in scaling startups and attracting consistent venture capital

amid infrastructural and regulatory constraints. India's growing biotech sector presents opportunities for affordable biomanufacturing, despite hurdles in funding and in the enforcement of intellectual property laws.

Academic and industrial collaboration between India and the United States could benefit from enhanced coherence and strategic alignment. While India's ambition to become a hub for global data centers and advancements in digital public infrastructure offer new avenues for cooperation, these aspirations are tempered by concerns over data protection, cybersecurity, and transparency.

To capitalize on these opportunities, both New Delhi and Washington should focus on resolving trade disagreements, enhancing policy coherence, and creating clear frameworks for regulatory and licensing processes. Building capacity in bureaucratic institutions, aligning strategic goals, and fostering an environment conducive to innovation and investment are other crucial steps.

Opportunities for transfer and investment abound for both India and the United States. The startup ecosystem in both nations, with reform, could prove promising for venture capital. As the US seeks to decouple from China, India's biotech industry could prove vital in manufacturing and developing vaccines and antibiotics. With the emergence of state and nonstate cybercrime, cybersecurity provides another fruitful avenue for cooperation.

Strengthening the Startup Ecosystem

India's startup ecosystem has seen remarkable growth in the past decade alone: India has over $10 billion in venture capital activity and has seen a 200 percent increase in deep-tech startups since 2017.[87] Despite ongoing challenges afflicting venture capital in India, startups in defense, biotech, and cybersecurity can offer American industry and investors ample opportunities to capitalize on emerging geostrategic needs.

In the absence of domestic buyers for indigenous deep tech in India, the Innovation for Defense Excellence (IDEX) initiative has boosted the startup ecosystem by providing small-scale grants to startups addressing critical defense challenges. Startups that successfully deliver solutions are guaranteed procurement contracts exceeding the amount of the initial grant or loan allocation.

For its startup ecosystem to thrive, India needs to build its capacity for tech development in universities, labs, and the public sector. A limited understanding of technical concepts among many public employees currently hinders effective policymaking in many government ministries.

Poor oversight of mergers and acquisitions substantially limits access to venture capital in India. Venture capital and private equity professionals often lament the wave of companies relocating from India to the US to take advantage of a more friendly investment climate. This practice, known as "flipping," often occurs when founders are looking to sell their startups and find themselves hindered by an overregulated market. For India to maintain its wealth of startup capital, it should permit the founders of startups to sell to Indian companies, lest it risk the continued flight of valued capital overseas.

Effective policymaking and capacity building will permit investors to support India's startup ecosystem. Cooperation in biotech and cybersecurity holds potential as an avenue of US-India cooperation.

Biotech Cooperation

Biotechnology presents a fruitful yet underutilized area of potential cooperation between Washington and New Delhi. Shortages of crucial materials needed to produce vaccines during the pandemic highlighted the importance of stable and secure supply chains located domestically or among trusted trade partners. As American industry seeks to decouple from China, India provides a potential solution to its major supply chain and research challenges.

India's biotechnology sector is rapidly growing. The world's oldest democracy hosts over 760 biotech companies that support over 800 products and technologies. India's biotech industry is forecast to grow to $150 billion by 2025 and $300 billion by 2030, with a compound annual growth rate of 17 percent.[88]

The US invested $1.2 billion in biotech projects as part of its National Biotechnology and Biomanufacturing Initiative.[89] India, for its part, announced an exclusive biomanufacturing scheme in its recent budget.[90] Collaborative efforts between the American National Science Foundation and the Indian Department of Biotechnology highlight the potential for joint ventures between the two nations. Although India boasts a growing biotech sector—with over 6,000 startups and more US Food and Drug Administration–approved plants than any other country—limited venture capital and political support make scaling startups challenging.[91]

Emerging biotech could impact seven of the top ten traded products between India and the US, including pharmaceuticals, plastics, apparel, and organic chemicals. Synthetic biology holds the potential to transform these sectors and create unprecedented opportunities for cooperation.

To foster and enhance biotech cooperation, Washington and New Delhi should increase manufacturing capabilities through advanced purchase agreements and better incentive structures. This would mitigate risk for startups, ease the cost of building biomanufacturing infrastructure, and leverage India's strengths in affordable scaling. India should also explore the possibility of setting up a biomanufacturing hub with its partners in the Quad. To improve confidence and interest from US venture capital and private industry, India should also strengthen the enforcement of intellectual property laws and bolster its domestic patent systems and courts. Enabling foreign partners to protect their investments would create a friendly investment climate, not only for biotech but also for all other industries. In biosecurity, the focus should be on cooperation rather than competition. The US-India biosecurity agenda should prioritize enhancing pandemic preparedness and developing a uniformly trained workforce. India should ensure policy coherence and strengthen its bureaucratic capacity to fully leverage this opportunity for collaboration.

Cybersecurity Cooperation

Cybersecurity presents another potentially fertile area for cooperation. The July 2024 CrowdStrike service outage, which brought global infrastructure to a grinding halt, highlighted ongoing vulnerabilities in shared systems and platforms. The emergence of China as a malicious actor on the cyber front provides an opportunity for the US-India security relationship to expand into the digital realm.

A market forecast from investment management company JLL suggests that the rise of AI will attract over $5.7 billion in investment to India's data center industry by 2026.[92] New Delhi's goal of becoming a global data center hub and service-based economy creates substantial opportunities for joint US-India efforts in cybersecurity.

Despite these opportunities, roadblocks to effective US-India cybersecurity collaboration remain. Differences in data protection policies and concerns over digital sovereignty complicate cooperative efforts. India's digital public infrastructure (DPI) projects raise questions among American policymakers, investors, and private industry about transparency, data collection, and usage controls. Washington's inconsistent tech regulations and data privacy protections weaken trust on the India side. Joint dialogues, clear communication, and the alignment of strategic goals in the digital theater would reduce points of friction.

India's Information Sharing and Analysis Center (ISAC), a nonprofit cybersecurity research institute and watchdog, provides a joint platform for threat reporting and information sharing.[93] Further joint initiatives across industry, government, and non-governmental organizations could help India and the US expand their cyber relationship.

Bridging Departmental Gaps

Recent policy changes suggest that government officials recognize the need for change. The recent reduction in import tariffs on mobile phone components reflects a shift toward greater openness. However, poor coordination between New Delhi's Ministry of Electronics and Information Technology (MeitY) and Ministry of Commerce and Industry often results in conflicting regulations and inconsistencies that stifle innovation and investment.

Additionally, capacity building within bureaucratic institutions remains a critical challenge. India would benefit greatly from improved coordination among departments, such as Commerce and MeitY, to ensure coherent and consistent policymaking. Enhancing the capacity of regulatory bodies to manage and implement policies effectively would support India's ambitions of becoming a global leader in technology and manufacturing.

Policymakers often lack the technical expertise to effectively regulate technology. Indian regulatory bodies, for instance, still have not developed a comprehensive list of deep tech innovations. Investing in training and development for government officials and fostering inter-departmental collaboration can equip policymakers with the technical expertise they need.

On the American side, investors and private industry are routinely confused by shifting national security objectives. This creates substantial regulatory uncertainty. Policymakers from both countries should do more to ensure policy coherence in the domain of dual-use technology.

Policy Recommendations

Ensure Policy Coherence

Policymakers in New Delhi need to reconcile their desire to encourage domestic manufacturing with their goal of creating a genuinely competitive market. Additionally, India should enhance its bureaucratic capacity and make taxation and enforcement more predictable. Firms cannot comply with vague rules and regulations.

Reconsider ITA3 and Resolve Trade Disagreements

By re-engaging in ITA3 negotiations, India could gain access to new markets and attract more foreign investment in its tech sector. Its 2023 resolution of outstanding WTO disputes was a good start. Both Washington and New Delhi should aim to reduce tariffs, regulatory impediments, and unenforced violations of intellectual property laws.

Focus on Emerging Technologies

The US and India have recognized the benefits and dual-use potential of emerging technologies, including AI. Both governments should facilitate cooperation in research and development for emerging tech and update regulatory frameworks to reflect the changing economic landscape.

Formulate a Coherent Approach to US-China Tech Competition

Since the Trump administration drew greater attention to China's threat to the rules-based international order, American national security priorities have shifted. This shift has been met with a mixed reception in the private sector, for which China remains a vital business partner. By establishing a coherent and clear approach to US-China tech competition, Washington and New Delhi can help the private sector invest and trade in ways that are aligned with each nation's national security interests.

Encourage Exports and Acquisitions

Currently, the regulatory climate in India makes acquisition and manufacturing difficult for foreign nations. Strategic deregulation can make India competitive with Vietnam and Mexico as export-based economies.

Increase Support for Biotech

Biotech is an emerging yet underexploited field that carries significant opportunities for American industries looking to detach

from China. Incentives like advanced purchase agreements and the strong enforcement of intellectual property laws would drive growth in this industry. India should explore the possibility of setting up a biomanufacturing hub with its partners in the Quad. The US-India biosecurity agenda should also prioritize enhancing pandemic preparedness and developing a uniformly trained workforce.

Streamline Visa Processes

Washington and New Delhi should reduce barriers to the effective maximization of human capital. Long and complex visa acquisition processes are a barrier for tech, research, and finance professionals, and hinder collaboration and talent exchange. Both nations should make it easier for an ambitious worker to get a visa.

Roundtable Speakers

Adam Hammer	Co-Founder and Chief Executive Officer, Roadrunner Venture Studios
Anand Raghuraman	Director, Global Public Policy, Mastercard
Ashley J. Tellis	Tata Chair for Strategic Affairs; and Senior Fellow, Carnegie Endowment for International Peace
Naganand Doraswamy	Managing Partner and Founder, Ideaspring Capital
Paul Triolo	Partner for China and Technology Policy Lead, Albright Stonebridge Group
Pranay Kotasthane	Deputy Director and Chair, High Tech Geopolitics Programme, The Takshashila Institution
Shambhavi Naik	Head of Research and Chairperson, Advanced Biology Programme, The Takshashila Institution

EXCHANGE: METHODS AND MECHANISMS

> **"We have no eternal allies, and we have no perpetual enemies. Our interests are eternal and perpetual, and those interests it is our duty to follow."**
>
> —Lord Palmerstone, British Prime Minister, 1848

Background

Favorable geopolitical currents have deepened the US-India relationship over the past two decades. For the two countries to build even stronger ties that can better withstand geopolitical and domestic crosscurrents, they need to first build trust.

Political Trust Between India and the US

"We have no eternal allies, and we have no perpetual enemies. Our interests are eternal and perpetual, and those interests it is our duty to follow."[94] These words, spoken in 1848 by Lord Palmerston, reflect the idea that in international relations there are no permanent friends or enemies, only permanent interests. Yet even states that cultivate relationships based on shared interests require trust to collaborate effectively.

After 77 years of diplomatic relations, how deep is the level of trust between the world's oldest and largest democracies? Despite a strategic partnership that has deepened over the last two decades, India and the US have salient differences on the economic and strategic fronts. Historically, India has been protectionist and skeptical of trade and, as a post-colonial country, keen to maintain its strategic autonomy and avoid entangling alliances. India's geography also demands a dual focus on the Eurasian and maritime spheres, and a more accommodating view of Russia than Washington at times prefers. For both countries, China remains a key threat and an important driver of military, economic, and technological cooperation.

Photo: Visitors try Apple devices displayed during the inauguration of the first Apple Store in India on April 18, 2023, in Mumbai, India. (Anshuman Poyrekar / Hindustan Times via Getty Images)

Trusted Partners?

For New Delhi and Washington to build a partnership based on trust, it is critical to understand how both countries identify their most trusted partners.

Analysts have often discussed whether values or interests define the relationship between the United States and India. Though India prides itself on being the world's largest democracy, its foreign policy has always been based on considerations of realpolitik rather than ideology. The United States, on the other hand, has historically felt most secure in partnerships that involved shared values and democratic inclinations. For the last several years, many analysts have worried that eroding democratic norms and attacks on minority rights in India could cause friction in its relationship with the US; after all, one of Washington's benchmarks for considering a nation a trusted partner has been whether that country adheres to democratic principles. India's successful elections in May and June 2024 went a long way to demonstrating the strength of its democracy and assuaging American concerns.

But the debate over Indian democracy emphasizes how, from a traditional American perspective, convergences in geostrategic objectives that lack shared underlying values will always put a ceiling on an alliance's potential. Though Saudi Arabia has been an American ally since the Cold War, for example, the nation's different values and systems of governance have limited the extent of its partnership with the US.

For India, however, shared values are less important than common security concerns. When assessing a potential ally, India poses litmus tests: do the countries align on Pakistan, Kashmir, and, increasingly, China? Over the last two decades, the United States has proven that it is a dependable partner for India, most recently seen during the India-China border conflict in 2020, when, according to one analysis, the US provided both diplomatic and material support to India. "The United States provided information and intelligence and expedited delivery of equipment, including two MQ-9B surveillance drones and specialized gear for extreme cold weather conditions."[95] This confidence-building measure highlights how important shared security concerns are for New Delhi.

It also illustrates how the United States and India have both shared values and shared interests. As two multi-religious and multi-ethnic democracies, the two countries have much in common in the people-to-people sphere. Since the end of the Cold War, however, the two countries have also had shared threats. The military and economic rise of China has deepened the US-India partnership in ways that no planned initiative could.

China's emergence has reinforced how American policymakers have long seen India as a partner to counter the ambitions of Beijing. During the 1962 India-China War, the United States and United Kingdom supported India with both military and economic aid, while the Soviet Union, an ally of communist China, remained on the sidelines.

Additionally, every American National Security Strategy for the last two decades has emphasized the importance of India as an American partner, placing it at the core of a network of partnerships and alliances across the Indo-Pacific region.

Yet New Delhi and Washington consider Beijing from different perspectives. India's shared border with China, coupled with its asymmetric force posture and unrealized great power aspirations, means that the world's largest democracy does not operate with the same strategic assumptions as the world's oldest. To ensure a lasting relationship with the United States, India may need to tolerate Washington's different approaches to the asymmetric threat Beijing poses.

Recent developments suggest reasons for optimism about the US-India relationship. The emergence of iCET, the inauguration of the Indo-Pacific Economic Framework for Prosperity (IPEF), and growth in bilateral trade and people-to-people relations herald a stronger bond.

iCET, in particular, has galvanized both nations. GE Aerospace's memorandum of understanding with Hindustan Aeronautics to coproduce F-414 fighter jet engines in India, as mentioned earlier, has electrified defense planners in Washington and New Delhi alike.[96] The success of this joint venture demonstrates how New Delhi is seeking opportunities for confidence building with Washington.

The US and India are learning to work with each other. While the threat of Chinese encroachment on their spheres of influence may be driving New Delhi and Washington together, the two nations share enough interests and values so that the relationship can deepen in the coming years.

Increasing Trust Between India and the US

As the West continues to accuse China of "market distorting practices," Washington is likely to continue its search for trusted partners in Asia.[97] As one recent report assessed, "Because of the size of its economy and the volume of its trade, the PRC . . . is uniquely positioned to be able to use its state-directed approach to the economy to eliminate foreign competition and amass market power."[98] This approach, to say the least, does not sit well with American policymakers.

Accordingly, then President Obama certified India as a major defense partner in 2016, and iCET aims to facilitate a trade dialogue and the exchange of critical high-level technology.[99] Developments in defense technology cooperation that would have been previously unlikely, such as the authorization of the aforementioned GE engine deal and increased investments in semiconductors, now propel the relationship between Washington and New Delhi forward.

Indian companies are also becoming part of the global supply chain for US companies. Micron now has a $2.75 billion chip factory in Gujarat. Last year, India's defense industry totaled $2 billion in exports, 35 percent of which went to partners in the US. 60,000 Indian workers in the semiconductor industry are being trained by American experts in India.[100] These exchanges help build trust between the two nations.

Political, Diplomatic, and Security Engagement

While the relationship between the US and India needs time to develop into a trusted partnership, political, diplomatic, and security engagement between the two countries is arguably deeper than it has ever been. Engagements like the 2+2 ministerial dialogues between the US secretaries of state and defense and their Indian counterparts have strengthened the bilateral relationship.

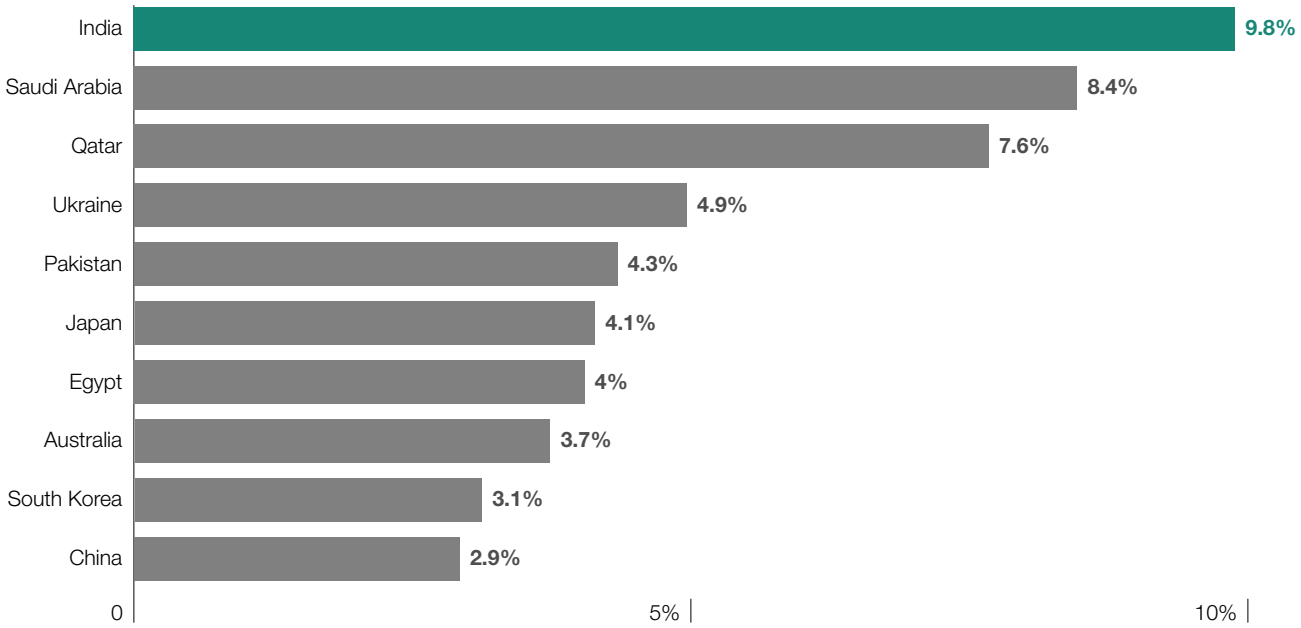
Not only has iCET helped the two countries further their relationship by fostering a technology ecosystem that is open, accessible, and secure,[101] but it also created momentum for the formation of a bilateral Defense Industrial Cooperation Roadmap.[102] The roadmap outlines priority technologies for the two countries, such as engines and munitions.

The GE deal is one result of these engagements,[103] coming as it did only eight years after the Obama administration designated New Delhi as a major defense partner.[104] Forming a strong defense relationship with India further is important for the West because the country is the world's largest importer of global arms (see figure 3).[105]

With support and technical assistance from the US, India could produce more home-grown military equipment without relying on foreign sources, like Russia, than it has in the past. New Delhi, for its part, hopes to maintain its non-alignment policy while bolstering its unique relationship with the US and receiving technology to reach its strategic goals.

In addition to expanding opportunities for established players in the Indian defense market like Hindustan Aeronautics, another initiative has opened an innovation bridge between American and Indian startups. Formally known as INDUS-X, the initiative

Figure 3. Share in Global Arms Imports



Source: Dinakar Peri, "India World's Top Arms Importer Between 2019-23: SIPRI", *The Hindu,* March 12, 2024, https://www.thehindu.com/news/national/india-worlds-top-arms-importer-between-2019-23-sipri/article67943114.ece.

provides funding to Indian companies for public-private partnerships involving the US government.[106] To catalyze this effort, Washington and New Delhi held a two-day summit in early 2024,[107] and announced multiple projects after its conclusion involving AI, drones, semiconductors, and UAVs.[108]

INDUS-X and iCET have made it clear that both nations prioritize long-term research and development cooperation,[109] especially in maritime security and intelligence, surveillance, and reconnaissance (ISR) efforts. While India's navy may be underdeveloped, there is an understanding that it needs to improve to reach its lofty goals.[110] With the specter of a rising China threatening the Indo-Pacific, the maritime arena bears close monitoring.

A strong partnership between the world's largest and oldest democracies brings significant benefits to both countries. The large number of non-resident Indians (NRIs) in the United States only bolsters this bond. When Modi came to Washington, he received a warm welcome from NRIs, many of whom maintain strong connections with India even if they are not currently Indian citizens.[111]

Yet while the relationship between the United States and India is arguably stronger than ever, sources of friction still threaten to disrupt it.

The relationship between India and Russia will continue to trouble the US-India partnership. Washington understands that New Delhi views Moscow as a counterbalance against Chinese dominance of the Eurasian landmass. While American policymakers would like to wean New Delhi off its military dependence on Moscow, they know this will take time. India's bonds

with Russia are a longstanding legacy of the Cold War, when the Soviets helped build India's military capacity while Washington chose to arm Pakistan.

Just as New Delhi is cognizant of the importance of its bonds with the US and the threat from China, it is also pragmatic about its relationship with Russia. Over the last decade, India has begun to reduce its dependence on Russian equipment: in addition to Russia, the top four suppliers of defense equipment to India include Israel, France, and the US. India's largest challenge is that many of its critical legacy platforms, such as tanks and submarines, continue to be of Russian origin.[112] While many expressed surprise that India did not criticize Russia's invasion of Ukraine, New Delhi has always been reluctant to involve itself in any conflict outside its immediate region. And even though India has avoided public criticism of Moscow, Modi has expressed his concerns in meetings with Russian President Vladimir Putin.

India's continued skepticism of American ties with Pakistan will also impact New Delhi's willingness to trust the United States, while Washington's view of Russia as a malign actor will limit the extent to which any US administration will share military technology with a country that still purchases Russian equipment. These differences, while not to be minimized, will not prevent fruitful collaboration.

Both countries are also constrained by domestic political concerns. While India's Ministry of External Affairs is certainly capable, it is remarkably small compared to the US Department of State. As a result, Indian diplomats have a limited bandwidth to engage with global partners. Similarly, India lacks the personnel to closely monitor developments in the United States, and often lacks a bureaucratic understanding of how the American system functions.

Additionally, while the US and India have a similar vision of the threat China poses, their attitudes differ toward Afghanistan, Pakistan, and Bangladesh. For India, the American presence in Afghanistan maintained pressure on Pakistan and contained terrorist threats. So according to New Delhi, the US withdrawal from Afghanistan created a regional security vacuum that hurt Indian interests.

Moreover, India and the United States still have to grapple with their complicated collective past. New Delhi's coziness with Moscow and Washington's relationship with Islamabad continue to be points of contention. Both nations would be wise to address such differences discretely. Issues that grab the media spotlight could cause public controversy and thus raise political pressure, which could derail years of diplomatic efforts and trust-building.

Any relationship has its disagreements. As India and the US pursue closer ties, the two nations should facilitate further dialogue and address any disagreements as they arise.

Trade and Investment Frameworks

Economic ties between the United States and India have grown to reflect the complex interplay of trade interests, geopolitical considerations, and technological advancements that define the twenty-first-century global order. As two of the world's largest democracies and economies, the relationship between Washington and New Delhi has far-reaching implications for international commerce, technological innovation, and strategic balance, particularly in the Indo-Pacific region. As both nations grapple with the challenges posed by China's ascendancy, climate change, and the disruption of global supply chains, their collaboration has taken on new dimensions. Over the past two decades, this relationship has undergone a notable transformation into a more nuanced strategic partnership.

The two nations' recent settlement of seven long-standing WTO disputes marks a significant milestone in their evolving economic relationship. By opting to negotiate solutions rather

than rely on the traditional WTO dispute settlement mechanism, India and the US demonstrated a willingness to prioritize direct discussions. The negotiations, which encompassed sectors such as steel, aluminum, renewable energy, solar products, and exports, reflect a strategic accommodation of mutual interests.

Both nations made significant concessions to reach these agreements. For instance, the United States agreed to grant market access to Indian steel and aluminum products under the exclusion process of Section 232 of the Trade Expansion Act of 1962. In return, India agreed to remove retaliatory tariffs on certain American products. This reciprocal arrangement is expected to have substantial economic benefits: India's steel and aluminum exports are set to rise by approximately 35 percent.[113] Washington made its decision to lower its steel and aluminum duties to benefit India, despite the potential cost to other trading partners.

That the two nations were able to resolve these disputes is due in part to the success of the TPF. Established two decades ago, the forum has matured into a robust platform for addressing bilateral trade issues. With five active working groups focusing on tariffs, non-tariff barriers, agricultural issues, and other critical areas, the TPF facilitates technical discussions and decision-making, and has brought tangible outcomes in trade.

Other recent developments have also fostered cooperation in critical sectors such as semiconductors, pharmaceuticals, and clean energy. The India-US Commercial Dialogue, for instance, produced a memorandum of understanding that led to significant US investments in India's semiconductor industry, reinforcing both countries' goals of diversifying and securing their supply chains, particularly in high-tech sectors. The additional establishment of the US-India Strategic Trade Dialogue reflects the growing importance of technology and export controls in the bilateral relationship. The dialogue aims to increase awareness of US technology controls among Indian tech users and facilitate smoother trade in sensitive technologies while also addressing security concerns.

Though India has opted out of the trade component of IPEF, its participation in other areas of the initiative—supply chains, clean energy, infrastructure, tax, and anti-corruption—signifies a commitment to regional economic cooperation. The June 2023 IPEF ministerial, moreover, established common working groups in areas such as clean technologies and supply chains, indicating potential for progress despite the framework's limitations. India's selective engagement in the forum reflects its strategic priorities and its cautious approach to international agreements.

Looking ahead, several areas show promise for future cooperation, including foundational agreements on critical minerals, customs facilitation, and high-tech trade; a willingness to address non-tariff barriers; increased inspections from the US Food and Drug Administration; Washington's potential restoration of Generalized System of Preferences (GSP) benefits for India; ongoing discussions on a social security totalization agreement; and efforts to recognize India as a designated nation under the Trade Agreements Act.

Despite these positive developments, challenges remain. The uncertain future of IPEF and the unlikelihood of a comprehensive US-India FTA in the near term underscore the need for continued bilateral economic engagement. While both nations frequently emphasize the importance of their relationship, they lack specific, measurable targets that would allow them to define success. This makes it difficult to assess progress and adjust strategies accordingly.

While the US-India relationship is often described in terms of shared values and democratic principles, these abstract concepts do not guarantee concrete economic outcomes; without well-defined goals, the partnership risks strategic

drift. Moreover, the nations' economic relationship suffers from a lack of imagination in exploring new areas of cooperation. Despite the vast potential for collaboration between the world's largest and oldest democracies, most bilateral trade efforts remain focused on IT services, diamonds, and minerals. There has been little innovation in identifying new areas of mutual benefit, particularly in non-defense civilian areas. While some progress has been made in the trade of LNG, other potential growth sectors such as rare earth minerals, semiconductors, and advanced manufacturing remain underexplored.

Moreover, while China's emergence as a common adversary has brought the US and India closer, basing a long-term partnership on countering Beijing is inherently reactive and potentially unstable. Geopolitical dynamics are fluid, and a shift in China's global posture could disrupt ties between Washington and New Delhi. A more robust and sustainable partnership built on positive mutual interests would prove more stable in the long term than a union based on confronting a shared adversary.

A focus on China could also lead the US and India to focus on national security concerns at the expense of trade. Over the past several years, each country's national security advisor or external affairs minister has made many more visits to their counterpart than either nation's trade representatives have made. This suggests that trade and economic issues are being treated as secondary concerns, potentially undermining the foundation of a comprehensive bilateral relationship. This signals to stakeholders that trade policy is subject to shifts in national security priorities, slows progress on key trade initiatives, and limits exploration of new areas for economic cooperation. Despite the establishment of multiple dialogue mechanisms, such as the TPF and IPEF, the neglect of economic concerns is why bilateral trade between India and the US stood at $118.8 billion in 2022 despite its potential for greater growth.[114]

As mentioned previously, New Delhi's defense ties with Moscow also present obstacles to the growth of bilateral trade between the US and India. For India, it is important to maintain a diverse set of defense partners. New Delhi's negative experience with US sanctions over its nuclear weapons program has driven it to avoid overreliance on any single country. Diversification in defense procurement not only ensures a steady supply of military equipment but also provides strategic autonomy, allowing India to pursue its foreign policy goals without undue external influence. But this policy makes Washington wary of providing New Delhi with cutting-edge defense technologies that could end up in Russia's hands.

Nonetheless, the US-India defense relationship has made considerable strides. Washington has become an important defense supplier to India and has signed defense contracts worth over $20 billion since 2008.[115] Moreover, endeavors such as the DTTI and recent agreements underscore the deepening defense ties between the two countries. Yet the gradual and conditional nature of defense technology transfers between the two countries—often accompanied by stringent end-use monitoring and compliance requirements—underscores how both nations have yet to fully embrace each other.

Bilateralism and Minilateralism

The last several years have seen bilateral efforts to build trust assume new significance in US-India relations, particularly when it comes to technology cooperation. In the post-pandemic era, and amid growing concerns about China's economic influence, both countries have prioritized building resilient supply chains and technology ecosystems. India's decisions to exclude Chinese vendors from its 5G network infrastructure and establish an office in its National Security Council to vet technology vendors underscore this shift. Today, American and Indian professionals work together on cutting-edge technologies, in a tangible manifestation of cooperation on the ground level.

This focus on high-stakes collaboration in specific sectors follows the bilateral or minilateral approach that has arguably been more effective in building trust than traditional trade negotiations in larger forums. The growing emphasis on one-on-one or minilateral frameworks that involve smaller groups of states working together on specific issues allows both India and the US to advance shared interests while navigating domestic political constraints and divergent positions on certain global concerns. Initiatives like IPEF and iCET exemplify this approach by focusing on areas of mutual benefit such as supply chain resilience, clean energy, and next-generation technologies. These targeted collaborations allow both nations to address shared concerns without the constraints of broader multilateral institutions.

The effectiveness of the minilateralist approach is evident in agreements like the GE jet engine deal. As global challenges become more complex and traditional multilateral institutions suffer gridlock, minilateral arrangements are becoming a defining feature of contemporary global diplomacy.

Similarly, Washington and New Delhi's unprecedented settlement of their WTO disputes outside of that organization's dispute resolution framework is likely to influence how other nations resolve trade differences. The resolution of these disputes marks a notable departure from the acrimony that has historically characterized US-India trade relations. It signals a new era of pragmatism and cooperation, driven by mutual recognition of the strategic importance of a successful economic partnership. This shift toward bilateral problem-solving comes at a time when many question the efficacy of multilateral trade institutions and highlight the potential effectiveness of minilateral frameworks.

Since political and economic complexities make a comprehensive FTA between the US and India unlikely for the foreseeable future, both nations have shifted their focus to building cooperation in specific areas of comparative advantage. The emphasis on these strategic areas reflects a recognition of the United States' critical role as the world's largest economy and consumer market, as well as an appreciation of its deep capital markets.

Historical precedents underscore the transformative potential of access to US markets. Western Europe's economic growth in the 1950s and 1960s, Japan's rise throughout the mid-1980s, and China's recent economic transformation were all accelerated by liberal access to the United States. For India, leveraging similar opportunities—even if doing so requires occasional concessions—could be crucial for its economic growth. Minilateral initiatives provide India with more opportunities to access US markets.

Minilateralist endeavors have allowed India to reap benefits in other ways. India's participation in the Artemis Accords, a series of non-binding initiatives between the US and other nations establishing the norms to be followed in the use and exploration of outer space, illustrates New Delhi's willingness to engage in international agreements outside traditional United Nations structures. By joining the Artemis Accords, India not only aligns itself with US-led technological partnerships but also asserts its growing space capabilities on the international stage. Similarly, New Delhi's participation in the I2U2 grouping (India, Israel, the United Arab Emirates, and the United States) shows its willingness to consider new approaches to regional cooperation. This initiative allows India to deepen its engagement in the Middle East alongside the US.

The India–Middle East–Europe Economic Corridor (IMEC) provides another example of how New Delhi is using minilateral initiatives to pursue its expanding strategic and economic interests. The IMEC initiative helps position India as a key player in reshaping global supply chains and trade routes. By offering an alternative to China's Belt and Road Initiative, this project underscores New Delhi's proactive approach to regional economic integration and infrastructure development. India's

involvement in the negotiations between Israel and the United Arab Emirates that ultimately resulted in the Abraham Accords marks another significant diplomatic shift toward greater flexibility and engagement.

IPEF offers an additional demonstration of the potential of minilateral approaches. The framework offers a flexible structure for regional economic cooperation that addresses contemporary challenges in global trade. By focusing on supply chain resilience, clean energy, and digital standards, IPEF aims to create a more inclusive and sustainable economic architecture in the Indo-Pacific region. India's participation in the initiative, though selective, reflects its desire to shape regional economic norms. Its focus on practical, project-based cooperation, furthermore, demonstrates a shift toward tangible outcomes rather than broad, aspirational agreements, and potentially offers a much-needed counterbalance to China's growing influence in the region.

The US and India have significantly expanded the scope of their partnership, doing more together now than ever before. Their shift toward bilateral and minilateral frameworks extends to efforts in deregulation, particularly in sectors like energy and capital markets. By demonstrating policy consistency and creating globally relevant financial centers such as Gujarat International Finance Tec-City (GIFT City) aims to enhance its attractiveness to American capital.

Finally, the Quad has emerged as a pivotal minilateral arrangement that goes beyond conventional security cooperation to address critical economic and technological issues as well. Its focus on strategic sectors underscores a fundamental shift in how its participants perceive and approach economic partnerships. Unlike traditional trade agreements, which often focus on market access and tariff reductions, the Quad entwines economic cooperation with broader strategic objectives. These include efforts to enhance supply chain resilience, develop critical technologies, and promote infrastructure investment in the region.

The Quad's joint statements and working groups consistently highlight the importance of building trust among its members by setting standards and developing norms for emerging technologies and economic practices. Working together on cybersecurity, AI, quantum computing, and space-related technologies, Quad members are positioning themselves to play a significant role in shaping the economic order of the future. The Quad, like the Artemis Accords, demonstrates how strategic cooperation through minilateral frameworks can directly influence India.

However, it is important to note that while minilateral efforts like the Quad offer significant opportunities, they also present challenges. Without coordination, the existence of multiple overlapping minilateral arrangements can fragment alliances. The exclusion of other significant regional players from these frameworks, moreover, could potentially accelerate competition in unintended ways.

Policy Recommendations

Focus on Mutual Interests

Trusted partners and allies can disagree without derailing their relationship. Washington and New Delhi should view the ability to weather criticism as a sign of an enduring partnership. The shared objective of curbing China's influence has given the US and India an unprecedented overlap of interests. To sustain their relationship, both nations should strive to identify and strengthen areas of agreement, especially outside the realm of state security. Regular dialogues and joint initiatives involving trade bodies and private industry can help consolidate convergences.

Manage Differences Through Established Frameworks

Although India and the US share strategic objectives, the two nations have a long history of divergence as well. India's longstanding ties with Russia, for one, do not sit well with American policymakers. Leaders from both nations can preserve the bilateral relationship by minimizing public disputes and managing

controversial incidents behind closed doors. This can help prevent disagreements from becoming partisan issues or escalating and causing long-term damage to the bilateral relationship. Preexisting bilateral frameworks and strategic dialogues can provide a mechanism to address disputes and find mutually beneficial solutions.

Increase Bureaucratic Bandwidth

India should expand the bandwidth of its Ministry of External Affairs, which is small compared to the US State Department. As a result, India's diplomats cannot do as much as they could with more institutional support. Improving the capacity of India's key institutions would strengthen its diplomatic ties with multiple nations.

Offer Political Support for Collaboration in Energy

Government backing is crucial for advancing joint ventures in critical minerals, natural gas, oil, and thorium. As energy, minerals, and source materials for electronic components become increasingly fraught areas of competition, tactical collaboration will help both Washington and New Delhi. Political support for cooperation, including in the private sector, is critical for strengthening currently limited supply chains.

Integrate Trade Discussions Into Strategic Dialogues

Incorporating trade discussions into strategic dialogues on defense and diplomacy would make the US-India relationship a more well-rounded partnership. It would also help align trade policies with strategic objectives, provide another mechanism to resolve trade disputes, and open new avenues for economic collaboration. As trade interests between the two nations are often at odds, the continued prioritization of strategic cooperation can ensure the persistence of the relationship despite trade disagreements.

Make Academic Collaboration Easier

Increasing the frequency of academic exchanges would lead to better-informed policies and deeper bilateral cooperation. Such exchanges promote goodwill and create lasting ties between citizens of both countries. They also help share best practices, foster innovation, and enhance mutual understanding. India should cultivate a more open academic environment to attract talented international scholars by eliminating bureaucratic hurdles; a more open academic environment enhances India's global reputation as a hub for education and research. New Delhi should also ease visa restrictions for academics, students, and researchers to deepen the exchange of intellectual and human capital.

Maximize India's Access to US Markets

India should work to gain greater access to US markets by reducing trade barriers, leveraging bilateral agreements, ensuring the protection of intellectual property, and deregulating its domestic economy. As the China Plus One framework emerges, India's inconsistent and arbitrary regulatory enforcement routinely limits its ability to be a viable "plus one" partner for private industry. Ensuring policy consistency and policymaking coherence while leveraging bilateral agreements would broaden India's access to US markets.

Align Technological Norms, Standards, and Regulations

Establishing common standards would make Washington more comfortable transferring dual-use and benign high-value systems to India. Moreover, a shared set of norms on technology and intellectual property enforcement would cultivate private-sector confidence in Indian markets, research, and manufacturing.

Expand Educational Exchange Programs Beyond the STEM Fields

Academic ties between India and the US are strong: in the 2022–23 academic year, nearly 269,000 Indian students attended American universities. However, most of the two nations' academic partnerships are in the STEM fields. Expanding educational exchange programs beyond the STEM disciplines could expand opportunities in each nation.

Improve Cooperation at the United Nations and in Other Multilateral Forums

Although India and the US share many strategic objectives, the nations have a long history of disagreements in multilateral forums, including the UN and WTO. Improving cooperation in these venues could help Washington and New Delhi present a united global front and enhance their ability to reinforce a rules-based global order.

Roundtable Speakers

Arun Kumar Singh	Nonresident Senior Fellow, Carnegie India; and former Ambassador of India to the United States
Daniel Markey	Senior Advisor, South Asia, United States Institute of Peace
Indrani Bagchi	Chief Executive Officer, Ananta Aspen Centre
Katherine B. Hadda	Senior Visiting Fellow, Center for Strategic and International Studies; and former United States Consul General in Hyderabad, India
Lisa Curtis	Senior Fellow and Director, Indo-Pacific Security Program, Center for a New American Security
Manoj Kewalramani	Fellow-China Studies and Chairperson, Indo-Pacific Studies Programme, The Takshashila Institution
Narayan Ramachandran	Co-Founder, The Takshashila Institution; and Chairman, TeamLease
Ranjan Mathai	Former Indian Foreign Secretary, and former Indian High Commissioner to the United Kingdom
V.S. Seshadri	Senior Fellow for Economic Security, Delhi Policy Group, and former Ambassador of India to Slovenia and Myanmar

ABBREVIATION LIST

AI: Artificial intelligence

ASEAN: Association of Southeast Asian Nations

BIS: The US Bureau of Industry and Security

CFIUS: Committee on Foreign Investment in the United States

CPTPP: Comprehensive and Progressive Agreement for Trans-Pacific Partnership

DPI: Digital public infrastructure

DTTI: Defense Trade and Technology Initiative

EU: European Union

EV: Electric vehicle

FCRA: Foreign Contribution Regulation Act

FDI: Foreign direct investment

FTA: Free-trade agreement

GATT: General Agreement on Tariffs and Trade

GCC: Global capability centers

GIFT City: Gujarat International Finance Tec-City

GSP: Generalized System of Preferences

HAL: Hindustan Aeronautics

I2U2: India, Israel, the United Arab Emirates, and the United States

iCET: initiative on Critical and Emerging Technology

IDEX: Innovation for Defense Excellence

IMEC: India–Middle East–Europe Economic Corridor

IMF: International Monetary Fund

IP: Intellectual property

IPEF: Indo-Pacific Economic Framework for Prosperity

ISAC: Information Sharing and Analysis Center

ISR: Intelligence, surveillance, and reconnaissance

ITA: Information Technology Agreement

ITAR: International Traffic in Arms Regulations

LNG: Liquefied natural gas

MeitY: Ministry of Electronics and Information Technology

MERCOSUR: Southern Common Market

MSFN: Minerals Security Finance Network

MSP: Minerals Security Partnership

MTCR: Missile Technology Control Regime

NRI Non-resident Indian (in the US)

PLI: Production-linked incentive

PRC: People's Republic of China

Quad: The Quadrilateral Security Dialogue among India, Japan, Australia, and the US

RCEP: Regional Comprehensive Economic Partnership

ROI: Return on investment

STEM: Science, technology, engineering, and math

TPF: Trade Policy Forum

TPP: Trans-Pacific Partnership

UAV: Unmanned aerial vehicle

ULB: Urban local body

USTR: United States Trade Representative

WTO: World Trade Organization

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