

Restarting the Post-Pandemic Indian Economy

Opportunities for India-US Collaboration in Trade,
Investments, Technology, and Human Capital Movement



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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 November and December 2021 to discuss opportunities for the two nation-states to collaborate in a fast-changing global order.

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Hudson Institute
1201 Pennsylvania Avenue, N.W.
Fourth Floor
Washington, D.C. 20004

+1.202.974.2400
info@hudson.org
www.hudson.org

Cover: A pedestrian walks past the Bombay Stock Exchange (BSE) building in Mumbai on November 26, 2021. (Photo by Punit Paranjpe/AFP via Getty Images)

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EXECUTIVE SUMMARY

This section summarizes key recommendations for policymakers based on deliberations at the Takshashila-Hudson roundtable series *Restarting the Post-Pandemic Indian Economy*. The recommendations are divided into four themes for India-US Collaboration: Trade, Investments, Technology, and Human Capital Movement.

1. Trade

The ongoing COVID-19 pandemic has adversely affected economies worldwide, necessitating the recovery of the trade economy. Economic nationalism has pushed many countries toward protectionism and restricted trade. The systemic deficiencies in the World Trade Organization (WTO) have hindered its role in facilitating trade. China benefited from the existing global trading system but is now trying to create its own order.

With the WTO's future uncertain, geopolitically adjusted global trade, characterized by a combination of regional trade blocs and smaller bilateral trade agreements, becomes the most likely route forward. The US would benefit if, instead of turning protectionist, it strengthened and participated in regional agreements. An increase in trade and openness would positively affect the Indian and US economies, and an openness to skilled laborers from India would benefit the US.

India needs to continue with trade reforms and refrain from having retroactive policies. The focus should be on diversifying supply chains and not simply on shifting the supply chain hub to the US. India must focus on improving infrastructure, developing an open and trustworthy framework, and rationalizing its tariffs. The country also needs to urgently address unfriendly policies that target foreign investors and must continue with reforms at both state and national levels. States in India should play a larger role in attracting foreign direct investment (FDI). Protectionist policies should be removed from the menu of options.

2. Investments

India's growth rate had been faltering. Investments as a share of GDP were falling even before the pandemic outbreak in 2020.

There was a further decline in investments during the pandemic. Since domestic savings and investment are not enough, higher FDI is vital for India to accelerate growth, reduce poverty, and increase employment.

Though US investors perceive India as an appealing market, they are wary of India's laborious regulatory framework, protectionist norms, and tax policies. Tariff hikes and protectionist measures make it difficult for foreign firms to operate out of India. Domestic content requirements disincentivize investors. Though India has raised FDI caps in several sectors, policies continue to require management and control to be in Indian hands. While the complicated labor laws increase transaction costs, retroactive tax policies erode trust. Foreign-funded investors are subject to a separate set of rules from those imposed on domestic investors. Policy unpredictability and inconsistency deter investment. There is a mismatch of sectoral understanding when it comes to US investment in India.

Investor-friendly policies and adequate responses to investors' issues with the bureaucracy would help India's economy. Another important issue for the country is its retroactive taxation, which harms the economy, and there are opportunities to simplify rules and regulations. Foreign and domestic investors also need a level playing field in the country. Greater autonomy for Indian states would allow them to attract investments. In particular, India needs more FDI in labor-intensive sectors. Greater engagement between policymakers and investors would help India achieve this goal, and more conversations between the US and India could address the sectoral mismatch.

3. Technological Cooperation

India and the US need to attempt to build defensive and offensive tools to restrict and attack the digital Sinosphere. India must build on its present strengths of being a software power. The US would benefit from supporting India in developing and distributing its "billion scale" platforms.

India and the US would benefit from recognizing how they can harmonize their capabilities to use services and create products for the end-users of space and defense technologies at both the civil and military levels. India's overreliance on Russia for military hardware can be an opportunity for the US to help India diversify its sources. India needs to reform its procurement policies.

A kind of cyber-NATO arrangement could help to align Indian and US data policy. Data extradition laws could allow US security agencies to investigate and act when India's cybersecurity is compromised. A regional data regulation approach could facilitate the growth of tech commerce.

The Quadrilateral Security Dialogue (or Quad) should set up a fund for semiconductor supply chain resilience. The focus should be on enabling the growth of centers for excellence that focus on comparative advantages. The historical lack of trust between India and the US over patent laws has a spillover effect on the life sciences technology sector. There is a need to build trust between Indian and American entities to access technologies such as gene editing, mRNA, and biosensors. India needs to undertake structural reforms regulating how intellectual property is created and generated.

4. Human capital movement

Indian immigrants in the US, as a group, are more educated than the local US population. The median household income of immigrants of Indian origin is twice the US average. The contribution of Indian immigrants to the US is immense. How-

ever, India has not successfully communicated its corporate contribution to the US. There is a failure to recognize the number of direct and indirect jobs created by Indian firms in the United States. Historically, India has benefited from emigration because, over time, many Indians returned to their country of origin and invested there. The COVID-19 pandemic is likely to affect labor flows even after the pandemic is over, leading to reduced cross-border migration.

India needs to create 20 million¹ jobs every year. For this to happen, India needs to move up the value chain. Indian educational institutions have huge vacancies. While a huge section of the population lacks access to skill development, some younger talented individuals prefer to migrate out for a more open political and social life.

India would gain by creating its own immigration policy that attracts talent from around the world. India urgently needs to address its lack of skilled workers and can explore mechanisms like career finance bonds. India needs to competitively market itself in the field of higher technological skills. Solutions such as a labor corridor for the Quad or the creation of a separate category of US visas for skilled workers from the Quad need to be explored. India and the US can also formulate a "twinning" arrangement in sectors like healthcare wherein US institutions can train Indian workers. Though India is one of the largest producers of scientific knowledge, Indian science is largely isolated as there is little collaborative cross-border research. US universities can benefit by having more Indian students.



INTRODUCTION

Background

India's economic growth has faltered over the last decade. In FY 2020–21, India witnessed its first recession in seven decades, in which the economy contracted by 7.3 percent.² The International Monetary Fund (IMF)³ has lowered India's GDP forecast for the fiscal year 2022–23 from 9 percent to 8.2 percent. With global upheaval and reluctance to implement reforms, achieving this target may prove difficult. Although India has adopted measures such as the new Insolvency and Bankruptcy Code and Goods and Services Tax to improve financial services and movement of goods, long-term Indian economic trends still appear inward-looking, and the old desire for self-sufficiency remains. This desire stands in sharp contrast to the government's ostensible goal of integrating further with global supply chains as a means of modernizing the economy and creating jobs, all of which require increased interaction with foreign players.

The last two decades have witnessed a deepening strategic partnership between India and the United States, especially for defense and national security. The people-to-people dimension

has also been strengthened. However, the economic peg of the relationship lags, primarily due to irritants and trade disagreements. Finding a way to enhance those relations is key to deepening the partnership in the coming decades.

India's economic recovery is critical not only for India but for its neighbors, and aiding this recovery is in the strategic interest of all of India's partners, including the United States. An India that trades more with its region and the world and that offers a level playing field to investors will be more likely to achieve its strategic goals. As India and the United States seek to rebuild their economies and those of the Indo-Pacific after being battered by COVID-19, we conducted a series of roundtables to bring together top scholars and leading experts from India and the United States to discuss opportunities for India-US collabora-

Photo: A new Boeing 787 Dreamliner being built for Air India rolls out of the hangar at Boeing's new production facilities on April 27, 2012, in North Charleston, South Carolina. (Photo by Paul J. Richards/AFP via Getty Images)

tion on the economic front. The themes of the discussion were as follows.

Themes

Trade

Although India and the US were involved in a tariff war, US exports to India—defense, energy, and commercial aviation—have increased. In the post-COVID world, the potential for healthcare trade is higher. There is also a possibility of rerouting supply chains away from China. Further, the US seeks greater access to India's agricultural and medical devices market. Thus, it is important to consider how trade ties can be leveraged to benefit both states. Further, how can existing tensions be reduced?

Investments

US FDI in India (USD 45.9 billion)⁴ tends to be lower than in other major Asian economies (Singapore USD 288 billion,⁵ China USD 123.9 billion,⁶ Japan USD 132 billion⁷). Indian FDI in the US is USD 5 billion. In recent times, there has also been an emerging trend of state governments engaging in economic diplomacy. While the Indian government is keen on FDI, the regulatory climate remains unpredictable. There is, therefore, the tremendous scope for growth in cross-border investments. It is important to discuss how higher foreign investments can be facilitated and what the key elements of India's commercial diplomacy should look like.

Technological Cooperation

The regulatory norms in India governing data localization, data privacy, and e-commerce continue to create friction and tension in India-US relations. Indians use multiple American digital platforms, and many US companies have back offices in India. However, confusion related to the jurisdiction of cross-border transactions hurts and hampers such efforts. How can these major disagreements be reduced to facilitate economic and commercial cooperation? China has been trying to carve out a Sinosphere⁸ in cyberspace. Can there be an India-US technological alliance to restrict the growth of a digital Sinosphere? Is

there scope for greater India-US technological cooperation in space and defense? Historically there has been a lack of trust between India and the US over patent laws. How can this distrust be broken to catalyze cooperation in life sciences?

Human Capital Movement

Domestic considerations have led US immigration policy to become more restrictive, impacting Indian students, short-term skilled professionals, and those seeking permanent residency in the US. The restrictive policies impact American and Indian businesses that rely on skilled human resources. The Biden administration's recent USD 2.3 trillion infrastructure plan aims to boost domestic manufacturing, overhaul the energy industry, reduce risks from climate change, and create jobs.⁹ The administration has proposed innovation funding of USD 300 billion over four years for research and development in artificial intelligence (AI) and other advanced technologies.¹⁰ The question is how Indian businesses and professionals can leverage these opportunities. Further, since the US is the largest source of remittances to India,¹¹ what should be the design of future immigration policies?

The roundtables were organized during the months of November and December 2021. Since then, the geopolitical and, consequently, the geoeconomic context has witnessed a dramatic shift with Russia's military invasion of Ukraine. There is a risk that the ongoing crisis might attract nation-states to the costly and wrong approach of self-sufficiency. Thus, it is even more important to look at the larger picture, reflect on the US-India economic relationship, and deepen ties in various domains. Keeping all this in context, the deliberations of the roundtables are even more significant now.

The following sections are based on the discussions during the roundtables. All speakers presented their distinct points of view, and there were productive discussions, as well as some disagreements. We have tried to highlight points on which there was a broad, if not perfect, consensus.



1. TRADE

Background

The ongoing COVID-19 pandemic has adversely affected economies worldwide, necessitating the recovery of the trade economy. The intensity of goods trade has diminished even though services have expanded in the past decade, hinting at structural shifts in global trade. The rise of economic nationalism has also pushed many countries toward protectionism and restricted trade. The pandemic has strengthened this tendency, as exemplified by Europe's ambition to create national champions¹² to compete with the US and China.

The World Trade Organization (WTO) is plagued by systemic deficiencies that hinder its role in facilitating trade. It has been unable to organize unanimous agreements or resolve disputes; its only success has been the Trade Facilitation Agreement. It has not been able to solve the north-south disputes that plague the system. Multilateral rounds, such as the Doha Round, have proven fruitless. The WTO now seems nonreformable, and it will

most likely be assigned new roles and projects, such as policing human rights and labor violations, thereby complicating its role. While the director-general might undertake reforms, the future of the WTO seems uncertain. The decoupling of China from the global trading system and the emergence of nationalistic perspectives with respect to supply chains raise doubts about whether coherent global systems will exist in the future.

China's growing economic prowess has also proven to be a complication. There is tremendous inconsistency in the WTO when it comes to the treatment of China. China's inclusion in the WTO was based on the premise of ensuring that the large

Photo: Supervisors handle absorbent strips of Coviself Rapid Antigen Test (RAT) kits to self-test for the COVID-19 coronavirus at the Mylab Discovery Solutions manufacturing facility in Lonavla, some 90 km south-east of Mumbai, on January 18, 2022. (Photo by Punit Paranjpe/AFP via Getty Images)

Chinese economy became a part of the global trading system. However, after benefiting from the existing system, China now believes it has no stake in the system's existence and is creating its own order. It has already decided to decouple from the global trading system and form its own Asian system. Further, China is no longer a low-cost labor market destination. The "dual circulation"¹³ of the economy has increased consumer purchasing power, leading to an increase in wages, which will weaken the competitive advantage of companies that produce in China. Yet the country is still very competitive in production and claims its place in low-value-added production.¹⁴ Though countries like Bangladesh and Vietnam have shown potential in this domain, a lot still needs to be done in low-value-added businesses. There seems to be no substitute for China's know-how and existing infrastructure, as evidenced by companies remaining in China on a large scale despite the trade war and the pandemic. China is also leading in diversification, and its Free Trade Agreement with Vietnam serves its supply chains. However, it is uncertain whether Vietnam will substitute or weaken China's position. Chinese companies will grow stronger as they use regional supply chains to their own advantage, bolstered by arrangements such as the Regional Comprehensive Economic Partnership (RCEP).

Key Discussion Points

The Future of Trade Agreements

With the WTO's future uncertain, geopolitically adjusted global trade, characterized by a combination of regional trade blocs and smaller bilateral trade agreements, becomes a possible route forward. There has been enormous acceleration toward preferential trade deals, such as bilateral agreements, which are commonplace now. However, even trade deals pose their own problems. Though India signed trade deals, it experienced only a marginal expansion of trade. The expansion of multilateral and bilateral trade deals, especially related to issues such as intellectual property rights (IPR), might not necessarily be linear as countries resisting liberalization could act as hindrances. Multilateral trade agreements might not have an optimistic future, as evidenced by the US desire to continue imposing high tariffs on

China by turning the agreement into a negotiating tool to counter the latter's IPR violations.

The US would benefit from taking the lead in strengthening and participating in regional agreements, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). However, over the last few years (from the end of the Obama era through Trump and now Biden), the US seems to be turning protectionist. The present US administration's trade policy seems unclear. But it seems that it has to operate in such a manner to meet two overarching goals—tackle climate issues and introduce a new "New Deal." Thus when it comes to China, the US is presently more focused on getting China to commit to protecting the environment. However, this effort might be in vain, as China continues building coal plants and importing liquefied natural gas (LNG) to meet its target of doubling per capital incomes in the next 15 years.¹⁵ The Biden administration may have to rethink its trade policy and the direction it wishes to take.

Evaluating India's Domestic Policies

While geopolitically adjusted trade is highly probable, domestic policy and politics also play an important role in the possible expansion of trade. An increase in trade and openness will positively impact the Indian and US economies. Moving forward, India needs to decide whether it wishes to simply be an exporter of finished goods abroad or to become a part of the global value chains. Further, India remains difficult to negotiate with. Instead of continuing with trade reforms, over the last seven years it has reversed those that existed. Issuing retroactive policies has hurt the investors that India is trying to attract. Similarly, instead of accusing foreign companies of breaking Indian law, a more amicable approach may hold consultations with companies to address concerns. India's current trade policies have hurt its global image and require policymakers' attention. While the country tries to create global champions, its efforts should continue side by side with encouraging global investment.

The pandemic and past years have also shown the consequences of overreliance on global supply chains. Even with the Make in India initiative, the Indian government has found it difficult to explain to India's labor force of 500 million that manufacturing will not be the same as before. The real jobs are in sales, distribution, and transportation. The pandemic also exposed vulnerabilities in domains in which India has dominated in the past. Over the last few decades, India built a reputation for affordable vaccines and medicines, but these rely on supply chains that were severely impacted by the pandemic. This affected the affordability and availability of the products and led to a lack of vaccines both for domestic consumption and for fulfilling global promises.

Potential of a US-India Partnership

Although foreign businesses are eager to enter the Indian market, forming a trade deal between the US and India has been difficult. The focus should also be on diversifying supply chains and not simply on shifting the supply chain hub to the US. The major reason to engage with China was its massive population size, which could also become the basis for the US to look to India. The US and India have strong links, and there is potential for development in areas such as software development. Improvements in domains such as infrastructure and the development of an open and trustworthy regulatory framework could help India become a leading manufacturer. Unilaterally reducing tariffs would also enable India to become a viable market for businesses leaving China.

Policy Recommendations

- Investing more in information technology (IT) services would benefit India, as these were not affected by the pandemic and are set to expand further in the next five to ten years.
- Investing in building infrastructure would enable India to improve its supply chains with Southeast Asian economies. Encouraging greenfield investments¹⁶ from Southeast Asian businesses in India would also help.
- Building on its existing capacity to develop software for open radio access networks being developed by the US and Japan would be strategically useful for India. India's expansion of the aerospace industry demonstrates its capabilities in this domain and indicates its vast potential in microchip production.
- India could thwart criticism by urgently addressing its approach toward foreign investors. While giving due appreciation for these investors' need to comply with local laws, the government could temper its approach so as not to arouse concern about regulatory stability. Changes in tax rules and accusations of lawbreaking against companies have a chilling effect on investments. Instead, the goal should be to highlight India as a destination for job-creating investments, such as those in e-commerce and other technology-related fields.
- India is not a part of the CPTPP, so it should find it easy to engage with the US on the issue of e-commerce and find a resolution to the irritants.
- There is a need for domestic reforms at both state and national levels. The bureaucracy's unwillingness to shoulder key responsibilities in the area of trade might hinder India's future prosperity in trade domains.
- State-level bureaucrats need to be informed about the role states can play in attracting foreign direct investment (FDI), and Delhi should not be the sole focus for the same.
- Policies that promote protectionism should be removed from the menu of options, as protectionist policies can act as roadblocks in trade discussions.
- The Biden administration's openness to the movement of skilled laborers from India to the US can aid in the development of key industries, such as pharmaceuticals.
- Using online platforms has made delivering lectures across countries easier. They could be utilized in collaborations between the two countries for teaching and research expansion.

Round Table Speakers

- **Dr. Devashish Mitra**, Professor, Syracuse University
- **Dr. Irfan Nooruddin**, Professor, Georgetown University
- **Katherine B Hadda**, Adjunct Fellow (Non-resident), Center for Strategic and International Studies
- **Dr. M Govinda Rao**, Councilor, The Takshashila Institution
- **Mark Linscott**, Senior Advisor, The Asia Group
- **Narayan Ramachandran**, Co-founder & Senior Fellow, The Takshashila Institution
- **Dr. Pravin Krishna**, Professor, Johns Hopkins University
- **Ravi Kanth Devarakonda**, Senior Journalist
- **Thomas J Duesterberg**, Senior Fellow, Hudson Institute



2. INVESTMENTS

Background

The COVID-19 pandemic has impacted economies and investments around the world. In the case of India, the pandemic shed light on prevailing factors in the country that had slowed economic growth even before the pandemic. These factors, compounded by the pandemic, led to a decrease in gross fixed capital formation¹⁶ in the country. Further, investors from Organization for Economic Co-operation and Development (OECD) countries have to deal with interest rate volatility, leading to a reduction in investor confidence. While the US recognizes India as an attractive market, US firms are wary of investing in the country for various reasons.

From the second quarter of 2016 to the fourth quarter of 2019, India's growth rate declined from 9.7 to 3.01 percent.¹⁷ The GDP contracted 7.3 percent in 2020–21.¹⁸ Investments between 2011 and 2012 formed 39 percent of India's GDP but

fell to 31.7 percent even before the pandemic outbreak in 2020.¹⁹ There was a further decline in investments during the pandemic due to structural problems, such as those of increasing non-performing assets (NPAs) in the banking system, the unwillingness of corporations to invest, and reluctance on the part of banks to give loans. Thus, for job creation and economic growth, investment needs to increase manifold, and FDI is of particular importance as dependence on domestic savings is unlikely to be adequate.

The share of FDI in India's GDP has been low historically. In the first six months of 2021, when the OECD countries experi-

Photo: An employee checks a laminated solar panel at the Vikram Solar manufacturing plant in Oragadam in the southern Indian state of Tamil Nadu on October 13, 2021. (Photo by Arun Sankar/AFP via Getty Images)

enced a surge in investments, India received less than USD 23 billion²⁰ of the USD 870 billion global FDI. It amounted to just 2.6 percent of the global FDI. The historical Indian bias against FDI also needs to be done away with. Higher FDI will aid in the acceleration of growth, which will also help address poverty and unemployment. India needs to create nearly 20 million jobs per year.²¹ Since the domestic savings and domestic investment are not filling this gap and aiding in job creation, FDI becomes vital. Further, FDI will bring in advanced technology, which will aid in making India more competitive.

Though data indicates that Singapore and Mauritius are the largest investors in India, it is important to note that most of the investments from these countries are in US dollars. US investors provide funding through these countries for administrative and taxation reasons. The US perception of India is that of an appealing market, largely due to the latter's size and young population. However, American businesses are wary of India's laborious regulatory framework, protectionist norms, and tax policies, all of which disincentivize foreign players. The potential for growth in the Indian market is huge and American firms wish to invest in this market. The International Monetary Fund projects that India will see a growth of 8.2% in 2022.²² This is a strong rebound outside of the "base effect."²³ Foreign companies prioritize that, which is why foreign investment held firm in India in the past year. India is also a viable alternative to China, and the US is currently aspiring to decouple from China. US firms prioritize India as an important sizable market outside of China and envision India emerging as a destination for manufacturing products. However, various hurdles restrict a mutually beneficial partnership between India and the US.

Key Discussion Points

Though the US is interested in moving away from dependence on China, India has not been successful in attracting American businesses that had manufacturing investments in China. When global businesses look at India as a destination for investment, the country's private sector is acknowledged as improving in

various sectors and is seen as investor-friendly with attractive returns. However, when it comes to big-ticket investments (such as infrastructure) that intersect with either national or state governments, there is not much improvement in perception.

Barriers to Investment in India

Tariff hikes and protectionist measures make it difficult for foreign firms to operate out of India. The US State Department report²⁴ on investment in India highlights the US wariness of these measures. It states that India's "new protectionist measures, including increased tariffs, procurement rules that limit competitive choices, sanitary and phytosanitary measures not based on science, and Indian-specific standards not aligned with international standards, effectively closed off producers from global supply chains and restricted the expansion in bilateral trade." Further, current policies in which the Indian government favors procurement of goods from businesses with 50 percent or more domestic content give preferential market access and price advantages to domestic firms. If goods with less than 50 percent of domestic content are sold, they have to be priced higher. Over the years, India has raised FDI caps in several sectors; however, the government insists that management and control still need to be in Indian hands. The 6 percent equalization levy introduced for online advertising by foreign firms and the 2 percent equalization levy imposed on e-commerce and foreign firms further complicate the situation.

Even the definition of *e-commerce* has been expanded and retroactively enforced. India drafted and introduced the new Model Bilateral Investment Treaty (BIT) in 2016, but this treaty still does not protect investment interests. It bases the protection of investment rights on vague terms such as *duration of investment* and on how much an investment contributes to the country's development. Further, labor laws are very complicated and restrictive, even though progress has been made in reforming some of them. They are inflexible when it comes to input use. The restrictions on firing labor act as restrictions on hiring as well. The 2012 retroactive taxation²⁵ policy eroded trust in

the country for a long time, and even though the government finally removed the policy²⁶ after losing multiple court battles,²⁷ the legacy of mistrust remains. The country's taxation structure is such that foreign companies face double taxation: they pay taxes for the same product or service in another country and again in India.

The way India's regulations are structured, foreign-funded investors are subject to a separate set of rules from those imposed on domestic investors. This does not create a level playing field and deters firms from investing in India. Though India's attitude toward foreign investors has changed in recent times, with reforms such as liquidation of FDI and reduction in business tax, the positive impact of these decisions has been negatively affected by policy unpredictability and inconsistency.

The government would benefit by establishing a reputation for being pro-market rather than pro-business. India is an untapped market with enormous potential, and the government needs to take advantage of this. States should also be awarded a certain level of autonomy when it comes to attracting investment. Even with reforms, investors are not convinced that India has changed. The government needs to do more than sign memorandums of understanding (MoUs) and make every effort to ensure that each business investment is a success story.

Mismatch of Expectations

There is also the larger issue of mismatch of sectoral understanding when it comes to US investment in India. Companies invest in other markets because of comparative advantage, but this advantage has been lost when it comes to India and the US. FDI in India in 2020 was approximately USD 64 billion,²⁸ and 50 percent of it was invested in the information technology sector. Thus, this sector was able to attract investment even during the pandemic, indicating the confidence of the rest of the world in the sector. However, instead of building on this opportunity, India expects the US to invest in the energy, manufacturing, and infrastructure sectors even though firms are not

interested in them. India's strength is generic pharmaceuticals, but it is never invited to expand in this field in the US. The mismatch of expectations on both ends hampers the development of a productive relationship.

India as an Investment Destination

India provides the US with growth opportunities. From a financial perspective, the US and Europe have been living in a low-interest environment in recent years. Due to this, pension plans in the US cannot meet their obligations unless they deliver 7-8 percent total returns each year. It is difficult, if not impossible, to achieve this level in the fixed income markets alone, although returns are again growing in these markets. These returns can potentially come from India, and possible areas of investment are manufacturing and infrastructure. Investing in the latter would allow people to invest in ten-year projects and earn returns between 9 and 12 percent. Such returns would not only meet but also exceed the expectations of US pension plans. Thus, US firms can benefit from access to these sectors in the Indian market, and Indian firms would benefit from foreign investment.

Policy Recommendations

- India and the US will benefit by addressing the sectoral mismatch through informed conversations, ensuring both sides have a comprehensive understanding of where the mismatch exists. It will also help the US get a more sophisticated understanding of India as a destination for investment.
- India needs to have mechanisms wherein investors can voice their opinions and provide insights to policymakers. There should be greater clarity about the policymaking process.
- Businesses would prefer if India ensured a public comment period for any new regulations that affect businesses.
- Expanding investment in the IT sector needs to be a priority for India, which can expand its services sector.
- The US should continue to engage with India in data, e-commerce, and services. Indian policymakers would benefit by making informed policies that are investor friendly.

- India would benefit from addressing the challenges posed by the judicial system, such as public interest litigation (PIL), which is seen as tiresome and risky.
- India would benefit from addressing problems that investors face when dealing with the bureaucracy and tax authorities.
- India needs to encourage investment in employment and focus on attracting FDI for products that labor-intensive sectors produce locally. Consulting with investors to determine which goods are a priority and addressing tariff and tax issues may be strategic. This approach would allow India to take advantage of its cheap labor and allow the US to focus on India and not China.
- India would gain from avoiding new restrictive regulations that hurt the growth of employment-intensive sectors like e-commerce.
- Expanding the number and size of its special economic zones and autonomous economic zones with relaxed labor laws would encourage investment in India.
- India needs to commit to a no-retroactive taxation policy to inspire trust in investors. Confusing Goods and Services Tax (GST) slabs and multiple GST rates also worry foreign investors and should be dealt with swiftly. India's setting up of a concrete trade structure will lead to larger investments in the future as trade is the leading edge of any country.
- India would gain by formulating a tariff and infrastructure policy to reduce tariffs. Reduced tariffs will promote exports from India.
- There is a need for a level playing field for foreign and domestic investors, which can happen only if India addresses laws that give preferential treatment to the domestic market.
- India would benefit from granting states greater autonomy and aiding them in initiating better policies that help attract investments. State governments should ensure stable investor-friendly tax regulations.
- Instead of expanding the Production Linked Incentive (PLI) schemes, India would gain by focusing on improving the business, tax, and trade environment. Pro-business policies like PLI are unlikely to eliminate the present pro-market handicaps.
- The Indian government would benefit by upholding the true spirit of federalism and ensuring that all states reap the benefits of investments.

Round Table Speakers

- **Anupam Manur**, Assistant Professor, The Takshashila Institution
- **Atman M. Trivedi**, Managing Director, Hills and Company
- **Dr. Devashish Mitra**, Professor, Syracuse University
- **Ingrid Henick**, Vice President, The Cohen Group
- **Dr. Irfan Nooruddin**, Professor, Georgetown University
- **Dr. M Govinda Rao**, Councilor, The Takshashila Institution
- **Malachy Nugent**, Vice President, Financial Services, US-India Strategic Partnership Forum
- **Mukul Gulati**, Co-founder & Managing Partner, Zephyr Peacock Management India
- **Ridhika Batra**, Vice President, Corporate Affairs, Mahindra Rise



3. TECHNOLOGICAL COOPERATION

Background

Over the last 30 years, China has been trying to carve out a Sinosphere in cyberspace. This Sinosphere attempts to disrupt the liberty and freedom that the internet offers. It prioritizes surveillance and state control, and it values the collective more than the individual. Relations between the US and India have strengthened at the strategic level to counter China’s domination project. There is deeper convergence over interests, values, and objectives than ever before. However, what is still needed is convergence at the micro-level—policies, commercial engagements, and positions on the movement of labor, capital, and goods.

While it is sensible to move technology supply chains away from China to lower the risk associated with existing arrangements with China, India and the US are prioritizing the construction of a domestic network of supply chains. We believe this approach has flaws because India and the US do not have

yet have the capacity to replace global supply chains with national industries.

A better approach may be to shift the production of these services to multiple countries, where they can be produced at competitive prices, and India can replace China as a significant player in the technology industry.

Key Discussion Points

[An India-US Technological Alliance to Restrict the Growth of a Digital Sinosphere](#)

While we have established that there is a lack of action at the micro-level from India and the US to tackle Chinese technological dominance, an attempt needs to be made to build

Photo: Google logo outside its office in Gurugram, Haryana, on September 7, 2018. (Photo by Nasir Kachroo/NurPhoto via Getty Images)

defensive and offensive tools to restrict and attack the digital Sinosphere.

Defensive tools would focus on restricting the growth of a digital Sinosphere. For instance, they could include the US campaign against Huawei, heightened investment screenings proposed by India and the US, and restrictions on investments in Chinese AI and procurement from China. All of these measures have their drawbacks but can be used surgically in strategic sectors to counter China. On the other hand, offensive tools will focus on what can be done to oppose the Sinosphere. What tools can we use to preserve and reinforce an alternative to the Sinosphere? These need to be viewed through the lens of policy, data governance, and commercial dynamics, and market power. All of this must be within an ecosystem that is democratic, inclusive, and reflects values shared by India and the US. A digital-regional trade agreement does not seem to be in the cards, but can the US or India lay down a precedent?

Taking India's "Billion-Scale" Digital Platforms to Other Countries in the Indo-Pacific Region

India is a software power; it is important to recognize that and build on its present strengths. For instance, India is fundamentally changing how online platforms are being built for the "billion scale" in correspondence with its population, and these include services that allow for greater access to information and public services in health, finance, and education. There needs to be a focused approach toward making these platforms available to other Asian countries. The biggest advantage is that they can be replicated immediately for development because these systems exist and are currently in use in India.

The US can be a key player in helping India scale up these projects, ensuring quality output and building trade networks by opening markets for regional trade. Collaboration with the US can come through FDI and the exchange of technology.

Technological Cooperation in Space and Defense through Greater Private-Sector Engagement

Space and defense must be assessed critically given that modernization in these sectors is occurring worldwide. There is a prominent government monopoly in these areas. The lack of private-sector participation in generating intellectual property has resulted from policies that do not accommodate investors looking to participate in the market.

From the US perspective, India is treated only as a buyer in the market for space and defense technologies, and there is a lack of recognition of how each country's capabilities can be harmonized to use services and create products for end-users of space and defense technologies, at both the civil and military levels. The first step toward long-term collaboration is looking at harmonizing the data generated by the fleet of satellites from both countries and allowing our agencies to utilize these applications to gather information.

From the defense perspective, some specific areas where India and the US can cooperate are satellite internet, maritime domain awareness, and downstream space services. For building downstream space applications, the barriers to entry for a US defense firm looking to set up R&D infrastructure in India are low, and this could be an area where India-US defense cooperation can grow in the future. The specific advantage of setting up R&D firms is that they will not require industrial licensing. Given India's IT background, these firms can have immense potential to thrive in the country.

On the geopolitical front, a good start would be for India to come on board with the Artemis Accords²⁹ to expand its space interests and cooperation. Defense needs to be addressed at the political level, and this ensures an honest conversation about Russia. Seventy percent of armed forces equipment in India is Russian, and the US needs to look at this as an opportunity when India is looking to diversify its sources of military hardware. The Ukraine crisis demonstrates the need for India

to move away from its deep dependence on the Russian military and presents an opportunity for American firms to offer high-technology equipment to India.

At the administrative level, India could try to explain its policy to integrate Russian equipment into its own forces and with hardware sources from multiple other countries. This could assuage US concerns about its own platforms being compromised by Russian systems. However, it will be a difficult task, made even more difficult with the Ukraine crisis. On the commercial level, defense decisions are multifaceted; they include not only military effectiveness or commercial considerations but also political motives. As long as both countries continue to deepen their strategic partnership, understand each other's compulsions, and support free trade, we expect strong India-US defense cooperation.

A Multilayered Approach to Addressing China's Dominance in Artificial Intelligence Technologies

India and the US will benefit from mutual support in creating an alternative artificial intelligence (AI) ecosystem that increases acceptance and trust in AI. China is using AI to increase government control while empowering its businesses and consumers. This will remain its long-term approach and will lay the foundation for an atmosphere in which AI is viewed through a negative lens due to its application in state surveillance. Instead, India and the US need to build an alternative ecosystem that uses AI to identify government fraud, increase access to personalized education and health, and promote access to markets and democracy for social empowerment. Currently, a largely defensive approach is simply denying market access to Chinese AI companies, but this will impede digital innovation as China is likely to be the leader in providing digital services. Instead, taking a multilayered approach by developing actionable criteria for AI applications, such as transparency, performance, and accountability, will allow for oversight of AI.

Maximizing Data-Sharing with Adequate Safeguards

Data is wrongly seen as a rivalrous national good. To align Indian and US data policy, a kind of cyber-NATO arrangement could

help. In this alliance, countries can commit to strengthening cybersecurity norms and protecting each other from information attacks by adversaries.

Second, increasing cooperation through data extradition laws allows US security agencies to investigate and take action when India's cybersecurity is compromised. In such a case, data gives us an opportunity to create organizations such as a cyber Interpol. These policies would shift the focus from a "your data vs. my data" approach to a regional data regulation approach, which also facilitates the growth of tech commerce. To make meaningful technical and innovative progress, the US must invest in early-stage technological ideas in India and recognize that start-ups are the best equipped to operate domestically.

Breaking the Shackles of Distrust to Catalyze Cooperation in Life Sciences

In the life-sciences domain, there has historically been a lack of trust between India and the US over patent laws, first with generic companies between 1970 and 2000, and in the last two decades related to drug efficacy and differences between Indian and US standards for patents. There is a spillover effect of this distrust on life sciences technology, and a prime example is the Indian government's intolerance toward Pfizer's mRNA vaccines³⁰.

There is a need to build trust between Indian and American entities to access technologies such as gene editing, mRNA, and biosensors for surveillance. This can be done through demonstrations by India of its interest in advancing its R&D efforts and larger investments in the sector. From a bio-surveillance point of view, India has some valuable pieces of technology to offer and the human power to enable that. India has the requisite digital infrastructure to gather and analyze data at large scale. It also has the labor skills to carry out this data analysis.

Data-sharing in this sector can lead to value creation, and the goal of policies should be to maximize beneficial data-sharing.

Safeguards need to be put in place to restrict data breaches, respect civil rights, and ensure there are no harms to individuals and intellectual property. But restricting secondary reuse where it's beneficial for like-minded countries would only deter technological cooperation.

Policy Recommendations

- Instituting Bubbles of Trust: The US, India, Japan, Australia, and Singapore can form a trading corridor and begin the exchange of cybersecurity, information warfare, and high-tech services, allowing free movement of people and trade. Then they can expand this bubble over time to involve multiple players, as a bilateral agreement between only India and the US will not suffice to overcome China's domination project.
 - The US would benefit from supporting India in developing and distributing its "billion scale" platforms. India's FDI policy needs to be accommodative and allow for large-scale facilitation of these projects. India should be open to investments that focus on increasing its research and development (R&D) output because it currently stands at 0.7 percent of GDP and is much lower than that of US and China, which produce research output above 2 percent of their GDP.
 - India needs to undertake structural reforms regulating how intellectual property is created and generated.
 - Further reforms to procurement policies are also needed for sectors such as space and defense to facilitate private-sector involvement in space technology in India.
 - India would benefit by taking cues from the US to develop policies such as the NASA Space Act Agreement, Indefinite Delivery, and Indefinite Quantity Procurement Means, which empower the private sector to take risks and become an active contributor to the innovation of space and defense technologies.
 - As of now, restrictions exist on US companies looking to set up R&D facilities in India in the defense sector, but this needs to be worked around. An increase in FDI limits to 74 percent is good, but pushing this to 100 percent would be ideal to help the US-India partnership grow. It is a myth that the US is not providing high-tech equipment to India—the iStar program³¹ and F21³² are examples, but decisions about which tech to pursue are still being made on a case-by-case basis. Private-sector involvement would give India the capabilities to engage with these decisions more efficiently.
- Both countries would benefit from a policy with a multilayered approach to buying AI technology from China. It should focus on setting actionable criteria for trading AI applications. These could include limits on transparency, performance, and accountability to embrace technological innovation from China with a secure, protected approach.
 - There is a need for a people-centered approach to automation. This can be done through training centers that teach employees how to take advantage of the advances in automation technology. It can help remove the stigma that employment is at risk with technological development caused by information systems.
 - A Quad fund for semiconductor supply chain resilience should be set up. Allied cooperation is a necessity, not a choice, and a China-style attempt at building national self-reliance in semiconductors would be detrimental. Enabling the growth of centers for excellence that focus on comparative advantage is essential. The US and India have immense potential for building new semiconductor design architectures, whereas Japan could be roped in as an ally to focus on semiconductor manufacturing.
 - A cyber-NATO for the virtual world that is borderless would help address concerns regarding data imperialism. Further, an alliance between the US and Indian IT services sectors to enable data-sharing to create value and alignment on cybersecurity for data extradition would benefit both countries.

Round Table Speakers

- **Aditya Ramanathan**, Associate Fellow, The Takshashila Institution

- **Anand Raghuraman**, Vice President, The Asia Group
- **Daniel Castro**, Vice President, Information Technology and Innovation Foundation
- **Eric B Brown, Senior Fellow**, Hudson Institute
- **Dr. Harsha Vardhana Singh**, Senior Fellow, Brookings Institution
- **Mihir Mahajan**, Adjunct Fellow, The Takshashila Institution
- **Naganand Doraswamy**, Adjunct Faculty, The Takshashila Institution
- **Pranay Kotasthane**, Chair, High Tech Geopolitics Programme, Takshashila
- **Narayan Prasad**, Co-Founder, Satsearch
- **Nitin Pai**, Co-Founder and Director, The Takshashila Institution
- **Saurabh Chandra**, Co-Founder, Ati Motors



4. HUMAN CAPITAL MOVEMENT

Background

The COVID-19 pandemic has reduced outward migration and increased return migration, with net migration amounting to zero. This is particularly concerning for India as Indians are the largest group of international migrants and the most highly educated migrants.³³ More than 60 percent of Indian migrants in the United States have come in this century,³⁴ and Indians are now the second-largest group of immigrants in the country.³⁵

According to the International Migration Outlook 2020 report, Indian migrants are also the second-largest group migrating to OECD countries.³⁶ The contribution of immigrants in the US is immense. They constitute 10 percent of the entire population, 16 percent of all inventors, and 22 percent of those filing citations and patents.³⁷

Furthermore, 71 percent of immigrants of Indian origin in the US were born in India, and the rest were born in the US.³⁸ Most immigrants are below the age of 18 years. Indian immigrants in the US are also more educated than the rest of the US population. While almost 40 percent of all Indians living in the US have a postgraduate degree, the corresponding number for all Americans is just 11 percent.³⁹ Even the median household income of immigrants of Indian origin is twice the US average.⁴⁰

Data from the last three years indicates that movement of international students from China to the US is flattening. The Chinese-to-Indian student ratio is becoming less steep in many

Photo: Students attend a class on December 6, 2021, at the Indian Institute of Technology (IIT) Bombay campus in Mumbai, where Twitter CEO Parag Agrawal studied. (Photo by Sujit Jaiswal/AFP via Getty Images)

universities, with more Indian students being admitted. Thus, the US and India have a relationship that can be built upon further to reap more benefits.

However, there are uncertainties that might restrict this relationship from developing further. The COVID pandemic is likely to impact labor flows, leading to reduced cross-border migration. The emergence of the gig economy in both India and the US can add to these uncertainties. The future labor flow patterns will be shaped by how firms treat gig workers and how much value gig workers see in working for these firms.

India has not successfully communicated its corporate contribution to the US. Hence there is a failure to recognize the number of direct and indirect jobs created by Indian firms in the United States. Indian firms have been building collaborative relationships with US universities to engage in R&D, resulting in value addition for both the universities and the firms. However, these success stories have not been marketed well.

Historically, India has benefited from brain drain because, over time, many Indians returned to their country of origin and invested here. However, brain drain poses a real danger to India, based on fears that India is not investing enough in developing its own human capital and is losing valuable resources to foreign nations.

Key Discussion Points

India's Brain Drain

In the last 50 years, no other country has shown brain drain as acute as that of India. There are 95,000 Indian-born PhD holders in the US, while India produces 25,000 PhD holders a year.⁴¹ If 10 percent of Indian PhDs are of the caliber that is presently produced in the US, India has given roughly the equivalent of 50 years of what it produces in India annually to the US as human capital. India's students are more likely to migrate to the US for their master's, as a master's in the US aids in gaining employment in the US and in recouping the investment made in education.

Further, approximately 5 percent of all doctors in the US were trained in India,⁴² which indicates massive positive selection. More than half of the most expensively trained Indian physicians (i.e., trained at the All India Institute of Medical Sciences) live in the US.⁴³ The return rate is almost zero. In the past four years, India has lost 130,000 citizens due to threats emerging from the current political situation and to the mindsets of younger Indians searching for a liberal environment now absent in India.⁴⁴

India's Employment Challenge

India's young demographics and lack of opportunities could be a recipe for disaster if the right policies are not implemented. Each year, 18 million people reach the age of 18. India's agrarian sector presently has a surplus of 100 million people. The country needs to create 20 million jobs every year to combat this issue.⁴⁵

However, India created only 2 million jobs per year before the outbreak of the pandemic. Knowing full well that job creation is critical to India's economic growth, India has failed to create opportunities on par with those in countries such as the US. As economies seek to grow, one way to create job opportunities is to move up the value chain. India, however, has failed to do so (i.e., it has not been able to produce more sophisticated goods and services that generate higher value), while China has succeeded.

India's educational institutions presently have huge vacancies. Even institutions such as Indian institutes of technology (IITs) and management (IIMs) have vacant faculty positions. Although the National Education Policy is a step in the right direction, India's political parties are parochial about the issue of people from abroad teaching in India and being part of its universities. India is also losing younger talented individuals who prefer to migrate out for a more open political and social life.

Based on current trends, US and Indian businesses might prefer to set up office campuses in Eastern Europe or India

and operate through a hybrid mechanism. If resources can be brought over to these campuses, they will collaborate and co-innovate.

The pandemic created the possibility of a new work arrangement with most of the work being done remotely. However, services such as teaching and healthcare have suffered under this model. As these services are in high demand, there is an opportunity to construct a policy that focuses on training teachers and healthcare providers. A “twinning” arrangement, wherein a training institution (such as a medical school) in a developed country partners with a similar institution in a developing country, can aid this.

Changing Perception of Entrepreneurship

The previous generation of Indian entrepreneurs worked long hours to raise funds for their businesses. The current generation, however, can raise capital with ease, and there is an explosion of entrepreneurs in India. This is due to the largely amicable business atmosphere created over the years.

After attaining their education in the US, some students choose to return to India. There is a growing public perception that working as an entrepreneur or business owner is aspirational.

Even US venture capitalists recruited and trained human resources from India and increased trade between Indian IT companies and other businesses which exported to the US. Thus, India should work on building itself up as an investment destination for foreigners and Indians alike.

Possible Collaboration in the Domains of Science and Technology

India is the fifth-largest producer of scientific knowledge,⁴⁶ but Indian science is largely isolated as there is little collaborative cross-border research. Collaborations between American and Chinese scientists are more common despite the security concerns. US restrictions on admitting or enrolling PhD students

from Chinese universities who have connections with the Chinese military create a huge opportunity for India.

India is among the highest emigrant patent filers in the US, and the US gains the most from such patent filing behavior. Although India has made many changes to its own intellectual property regulations and protections, more still needs to be done to change India’s reputation as a country with weak patent protection laws.

There also needs to be an open conversation about India’s FDI in the US. Since Indian governments and corporations do not mention Indian FDI, it often goes unrecognized in the US.

Indian corporations have largely focused on building collaborative relationships with universities for R&D. They have taken care not to focus solely on Ivy League universities, an openness that is welcomed by the universities they have chosen to collaborate with, and this has also boosted hiring by these universities. There is, however, a lack of open communication with Indian corporations about this issue.

According to the National Foundation for American Policy, every 1,000 PhDs blocked every year from US universities costs an estimated USD 210 billion in expected loss of value of patents produced at universities over ten years and nearly USD 1 billion in lost tuition over a decade. This could result in universities struggling to retain faculty as they seek to teach high-performing students. It is thus an open opportunity for India to fill the gap between itself and the US. This effort is in the strategic interests of both India and the US.

As efforts to combat climate change are prioritized around the world, clean energy is a potential field of collaboration between the US and India. However, presently, the US is not the gold standard for this kind of energy—electric vehicle (EV) manufacturers and related businesses prefer China and Germany. This potential collaboration might be lost if the US does not introspect and focus on developing and financing clean energy.

Policy Recommendations

- India would gain by creating its own immigration policy. The experience of China has shown that if it chooses, a government can attract students who go abroad to get trained. Presently, there is more of a push factor in India as people want to leave and settle abroad, creating a gap in the country. India's immigration policy should focus on attracting talent from around the world.
- Addressing its lack of skilled workers, as it has a huge population but lacks skill development, would benefit India. Career finance bonds can help increase skilling by providing at-risk loans to people who want to learn, and the borrowers repay the loan if they get a job. These bonds can be sold using the finance market, which will allow for a structured project and bring on board multiple partners, such as the government and financial advisors. Over time, data collection by these training programs will reveal the institutions with the highest returns. The market will also know what kind of jobs are needed and the skills required for them.
- India needs to competitively market itself in the field of higher technological skills. This has a strategic element as it is what the US needs to compete with China. Partnerships such as the Quad can help in this endeavor. Solutions such as a labor corridor for the Quad or the creation of a separate category of US visas for skilled workers from the Quad need to be explored.
- Channeling energies into fields such as the generic pharmaceutical business, in which it is experienced, would benefit India. The pharmaceutical world is moving toward using AI-assisted techniques, and India should plan to use its expertise in AI to its advantage.
- When it comes to clean technology, the US can do better, as other countries are leading in this sphere. If it wishes to partner with India, it could prioritize ties with India in this sector.
- Even though mobility and migration will be limited due to the pandemic, teaching and healthcare will not be completely remote. Investments should be made in these fields. India and the US can also formulate a “twinning” arrangement in which US institutions train Indian workers.
- India would gain by making it easier for foreign individuals to set up businesses in the country, which the Foreigners Registration Office hinders. More recommendations related to increasing foreign investments in India are mentioned in the section “Investments.”

Round Table Speakers

- **Alan Rosling**, Co-Founder & Director, ECube Investment Advisors
- **Arun K Singh**, Senior Counselor, The Cohen Group
- **Dr. Devesh Kapur**, Professor, Johns Hopkins University
- **Dr. Dilip Ratha**, Head, KNOMAD
- **Dr. Irfan Nooruddin**, Professor, Georgetown University
- **Jon Baselice**, Vice President, Immigration Policy, US Chamber of Commerce
- **Kapil Sharma**, Founder, Kapstone Strategies
- **Katherine B Hadda**, Adjunct Fellow (Non-resident), Center for Strategic and International Studies
- **Dr. Neeraj Kaushal**, Professor, Columbia University
- **Sridhar Krishna**, Senior Scholar, The Takshashila Institution
- **Dr. Vijay Bhargava**, President, Nejay Consultants

SPECIAL MENTION

Aditi Pathak, Dr. Aparna Pande, Dr. Irfan Nooruddin, Dr. M. Govinda Rao, Pranay Kotasthane, Rohan Pai, Sarthak Pradhan, Sayem Raina, Siddhidhatri Mishra

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1201 Pennsylvania Avenue, Fourth Floor, Washington, D.C. 20004
+1.202.974.2400 www.hudson.org