

PIFS

Harvard Law School
Program on International Financial Systems

An Agenda for India and the United States

September 27 - 29, 2017

Final Report

India-U.S. Symposium on Building the Financial System of the 21st Century

The second India-U.S. Symposium on Building the Financial System of the 21st Century, jointly sponsored by the Harvard Law School Program on International Financial Systems, NITI Aayog, National Institute of Public Finance and Policy, and PLR Chambers, was held September 27-29, 2017 at the Taj Diplomatic Enclave in Delhi, India. Topics included regulation of financial markets and the global reform agenda, the evolving landscape for infrastructure finance, the future of India's financial markets, and financial inclusion and fintech. Participants noted several major economic and financial developments in India, including universal access to bank accounts and the introduction of the nationwide Goods and Services Tax (GST) system, which created considerable excitement about the potential for development of financial services. There was also extensive discussion of how to finance India's infrastructure gap.

Session 1: Regulation and Deregulation of Financial Markets and the Global Reform Agenda

In Session 1, participants discussed regulation and deregulation of financial markets and banking in the context of the global reform agenda. They assessed the progress and usefulness of the global agenda, sought to identify general principles that should guide financial regulators and supervisors, and discussed how these principles should be applied in the Indian context.

Global Regulatory Agenda

Participants discussed several aspects of the global regulatory agenda. While much of the discussion revolved around the Basel III standards, there was also some discussion of anti-money laundering (AML) mandates and derivatives regulation. Participants considered whether the agenda had contributed to the stability of the global financial system and whether it was appropriate to the needs of an emerging market economy like that of India.

There was considerable discussion about the Basel III standards, with opinions split as to whether their focus on capital buffers and leverage limits was the best way of ensuring financial stability. A number of participants were skeptical that capital was the most important element in preventing bank failures. They noted that few major banks in the US had seen their capital drop below regulatory requirements during the subprime crisis and that none had actually reached the point of insolvency. Thus, they argued, doing more of the same would not fundamentally alter the safety of banks. Rather, they observed that the common denominator in financial crises was contagion driven by the freezing of liquidity. Any financial institution could quickly find itself in trouble in such a situation, even if it had a healthy balance sheet, if it was reliant on short-term financing. Thus, they reasoned that the key to containing financial crises was an effective lender of last resort. (In this regard, it was noted with concern that in the US, the Dodd-Frank Act had unfortunately reduced the effectiveness and independence of the Fed in acting as lender of last resort.)

Other participants saw increasing capital buffers as likely to be useful in averting and managing crises. They were thus more supportive of the Basel agenda as a way of making global financial systems safer. This support was based on two separate arguments. First, some participants argued that higher risk-weighted capital buffers would have the effect of making banks more risk-averse and conservative. Although they acknowledged that there might be a trade-off between innovation and growth

on the one hand and stability on the other, they felt that avoiding financial crises was worth the costs in efficiency. A second argument was that, even if bank failures could not be avoided, higher capital buffers would shield taxpayers from the costs of bailing out depositors and other creditors.

Other participants were skeptical of the first of these arguments. While they acknowledged the political benefit of avoiding taxpayer-funded bailouts, they worried that heightened regulatory capital requirements would not reduce the likelihood of banks falling below capital adequacy requirements and thus triggering resolution. Moreover, they were suspicious of the assumption that increasing the stability of every bank in the system would necessarily improve system stability. They argued that regulators should focus on making the system more resilient by focusing on contagion and interconnectedness rather than on each individual financial institution. Finally, several participants worried that national regulators' implementation of Basel capital requirements, which in many cases took the form of ringfencing, was keeping the capital of internationally active banks fragmented and leaving them unable to shift capital to the places it would most be needed in an emergency.

A number of participants identified other aspects of the Basel agenda as hurting either the efficiency or stability of the global financial system. Several complained about the ways in which regulatory burden increased costs for banks, which had to be passed along to customers. Some also worried that economic growth was being harmed as capital and leverage rules made banks more risk-averse.

Meanwhile, some participants argued that Basel's focus on banks meant that, while banks were piling up capital and facing increasing compliance costs, customers were increasingly incentivized to shift their activities to other financial institutions including in shadow banking. Participants exhibited mixed feelings about this trend: while some worried that lighter regulation and supervision of non-banks made it more likely that a crisis might emerge from risky activities, others argued that market-based lending was an essential source of credit and financial innovation at a time when banks all over the world were becoming more conservative in their lending. Participants noted that shifts away from bank financing could be observed in many jurisdictions. While many of the global concerns over this trend focused on the US and Europe, participants observed that the shift away from banks was also occurring in developing countries including India and China. In the case of India, a number of participants pointed in particular to the rise of non-bank financial corporations (NBFCs) as filling the gap in bank lending, and some participants worried that the rapid expansion of NBFC lending might create new vulnerabilities in the Indian financial system. Others were more worried that Indian regulators had been too eager to impose banking regulation on non-banks, extending the "regulatory perimeter."

A different dynamic was seen in the recent practice of international "de-risking" (i.e., withdrawal from some developing economies) by global banks due to AML and know-your-customer rules; while that might make global banks less vulnerable to costly enforcement actions, some participants argued that it raised the likelihood of new crises in the global periphery. Several participants spoke of US and European banks that had withdrawn their business from emerging economies because of the costs of compliance—in some cases, even including even India and China. They felt that this was both bad for the emerging economies (which suffered from lack of access to financial services or from higher costs) and for the international banks themselves (which were forfeiting access to markets with a real potential for growth.

Many participants were concerned about what they saw as the ever-expanding reach of the Basel standards. They noted that Basel was originally focused relatively narrowly, on major internationally-active banks. But over time, many countries had chosen to extend the Basel rules well beyond the original mandate. In particular, several participants complained that in the US, legislators and regulators had "gold-plated" the Basel standards by adding to capital requirements and leverage limits. They argued that the higher standards were unnecessary and stifled economic growth by curtailing bank lending.

Meanwhile, in many economies, including India, Basel standards were being imposed across the board on banks, including ones with no international involvement. Moreover, many participants felt that the Basel standards, which had been created with complex US and European banks in mind, were inappropriate for the needs of most national banking systems, especially in emerging economies. In India, for example, strict entry restrictions and regulations on bank activities made banks' business models very different from those of major US banks. Also, many of the top Indian banks were publicly owned, making the notion of capital buffers much less meaningful.

Thus, many participants called for a return to the original, more limited vision that underlay the Basel standards. For the US, this would mean stepping away from gold-plating, and simplifying the implementing rules. For India, this would mean regulating domestically-oriented banks according to the needs and risks of the local economy. Moreover, a number of participants called for a rethink of the standards even for internationally-active banks, on the belief that strict rules were curtailing lending, and therefore economic growth. Participants agreed that this would be a political challenge, given the lingering hostility to banks in the aftermath of the global financial crisis; however, some argued that new opportunities might be arising to roll back some of the more onerous requirements, as anti-bank hostility and fears of the reoccurrence of financial crisis were being displaced by concerns over low economic growth.

Finally, a number of participants called for a new approach to creating and managing global standards that would be much more oriented to the needs of emerging

economies. Some suggested that, rather than what they saw as the top-down approach of Basel and FSB, IOSCO could offer a better model for coordination in principle while also adapting rules to the needs of each particular economy.

Regulation and Supervision

Turning to domestic regulation, many participants expressed concern about what they saw as a lack of proper differentiation among regulation, supervision, and enforcement. Much of the discussion on this issue focused on India, but several participants also argued that it was a concern in the US and elsewhere.

Separating the roles of regulation and supervision was seen by many participants as particularly important. They argued that financial regulation should focus on setting the rules for behavior of financial institutions, based on a set of clear principles and a good understanding of how financial institutions worked. The saw the goal of supervision, on the other hand, as supporting fairness and sectoral efficiency through ongoing dialogue with the regulated financial institutions. One common complaint among participants was that financial supervisors in India often still had the sense that their job was to control financial institutions' behavior, not to encourage them to compete and innovate while maintaining systemic stability. In the US, there were concerns about "supervision by enforcement," which made for an unnecessarily adversarial environment. Several participants also cautioned against what they saw as the danger that supervision could turn into an exercise in marking off checkboxes.

Many participants also argued that it was important that supervision be separated from enforcement—they worried that enforcement was inevitably adversarial rather than cooperative, and that when supervisors became enforcers, valuable opportunities for cooperation would be hampered. Several argued that an enforcement mentality prevented mutually profitable exchange of information between financial institutions and the regulators and supervisors that oversaw them. Thus, they also called for mechanisms to institutionalize two-way feedback. Many participants were complimentary of RBI and SEBI efforts to do so, and urged other regulatory and supervisory bodies in India to follow their lead.

Principles for Regulation and Supervision

Participants also discussed the principles that they believed should underlie financial regulation and supervision, in order to ensure system stability and fair business practices, while still supporting the financial system's ability to support the economy through lending and other financial services.

Many participants made the case that, in principle, regulation and supervision should be outcome-based. While they recognized that cost-benefit analysis was difficult for many rules, they felt that regulations should be designed to facilitate the efficient allocation of capital. Where regulations or supervision led to excessive costs, reduced access of borrowers to capital and credit based on their credit risk, reduced market

competition, or hurt the effectiveness of risk management, they argued that the rules and practices should be changed. In this regard, it was argued that regulators and supervisors needed always to maintain a "macroprudential mindset"—i.e., to keep an eye on the systemic effects, rather than just the behavior of each individual financial institution. Participants also recognized that in some cases (including perhaps India), the situation of a specific jurisdiction might call for regulations or supervisory strategies that deviated from global standards. In such cases, many participants felt that the needs of the jurisdiction should prevail over adherence to standards that were created for very different financial systems.

Participants recognized that effective regulation and supervision required a balance of independence and accountability—perhaps especially in India and the US, the world's two largest democracies. As large liberal democracies, both countries' financial regulations were seen as vulnerable to political swings, as well as to capture by important financial institutions. In the Indian case, some saw this as being exacerbated by the high degree of state ownership in the financial sector. A number of participants spoke positively about the experience of the US in setting up independent agencies such as the SEC and Fed, as well as the success of RBI and SEBI in India in establishing clear and consistent regulation and supervision. They urged Indian policymakers to continue to build on this model. At the same time, participants strongly advocated democratic and legal accountability for the actions of regulators and supervisors. One suggestion for squaring these two potentially competing demands was to focus legislative and court oversight on processes rather than outcomes.

New financial technologies were seen to pose both exciting new opportunities and significant regulatory challenges for regulators in both India and the US. There was considerable discussion of India's fintech revolution, which is addressed in greater detail in the summary of Session 4 (below). However, one principle that arose clearly from the discussion of fintech in India was what participants perceived as the need to move away from regulation based on strict segmentation of financial institutions, and toward a model of functional regulation that took into account the growing complexity of financial institutions, services, and products. This point was not only relevant to fintech. Indeed, the profusion of all sorts of new services and types of financial actors was seen as creating new pressures on regulators and supervisors to rethink this regulatory approach. Some participants felt that the recent creation of the new category of payments banks had opened the door to functional regulation. Others, looking to the rise of non-bank financial corporations (NBFCs), worried that the change was too slow. In some cases, NBFCs were able to fall outside the regulatory net, raising concerns about their effects on financial stability. Others worried more about the potential for stifling innovation by regulating NBFCs as banks even though they did not have depositors.

A number of participants also raised the issue of customer protection, which they saw as a core objective of financial regulation and supervision. In traditional terms, this

meant the need for a robust deposit insurance system, strong prudential regulation of banks and insurance companies, and protection against fraud and unfair practices. These principles were present in both India and the US, although the styles and objectives varied, particularly in regard to abusive practices. In India, participants observed that the government sought to shield customers from harm by restricting the products that could be offered and by entry barriers into financial services. In the US, in contrast, regulation of financial products was much more liberal, with transparency and disclosure being the primary requirements. (For example, payday lenders are legal, but are required to disclose all fees.) Several participants explained this contrast not only as a difference in regulatory philosophy, but also a recognition by Indian authorities that savers, investors, and borrowers often lacked the level of financial literacy required to understand the product. In the US, in contrast, financial literacy was assumed for many products and services, as long as costs and risks were made clear.

The rise of fintech was seen as offering a raft of new customer protection challenges. For example, participants saw a need to insure that financial institutions were doing their utmost to protect customer data from hacks and criminals. In addition to data protection, the issue of data privacy had become a major concern in both countries, and participants highlighted the importance of creating clear legal standards and then enforcing them. Transparency and disclosure, as well as financial education, could help in both cases, but many participants felt that governments needed to move quickly to define rights and responsibilities in the age of data mining and behavioral credit ratings.

Finally, there appeared to be a consensus among participants that regulatory, supervisory, and enforcement bodies should constantly be striving to build their capacity in terms of technical capabilities, IT, legal analysis, and economic analysis.

Session 2: The Evolving Landscape for Infrastructure Funding and Finance

In Session 2, participants discussed infrastructure financing in India. With the availability of bank financing in decline, participants looked to the need to discuss other means of funding infrastructure projects. There was a particular focus on bond markets, as a means of harnessing both domestic savings and foreign investment.

India's Appetite for Infrastructure

Participants agreed that India's needs for infrastructure were massive, citing studies by the Indian government or the Asian Development Bank. Poor infrastructure, particularly in transportation (roads, ports, airports) and power generation, was seen as creating bottlenecks to economic activity, while social infrastructure affected the health and welfare of much of the population.

While many participants lauded the federal government for having increased the rate of infrastructure investment over the last decade or so, they agreed that the existing funding sources—i.e., government spending and state-owned banks—would be insufficient to meet demand. Not only did they see fiscal space as limited, but they also had serious reservations about the bank-based financing model for infrastructure. One reason was the large amount of accumulated non-performing assets (NPAs) on bank balance sheets, much of which derived from politically motivated lending (including to infrastructure projects that did not pay off as promised). Moreover, Indian banks were not configured as development banks, so they both lacked the capacity to evaluate infrastructure and were subject to maturity mismatches.

Domestic Sources of Funds

While banks were not seen as the answer to the infrastructure funding challenge, participants noted that large amounts of money were potentially available domestically. These included small-scale savings that were currently tied up in cooperatives or in small-scale informal credit markets. They argued that the major challenge was to make those funds to available infrastructure projects through new products or vehicles.

Investor Base

In discussing how to channel domestic funds toward infrastructure, participants addressed both investor base and attributes of the bond markets. Developing an investor base was one major subject of discussion. Participants agreed that the key was to match investors with long-term liabilities with infrastructure projects with similarly long time horizons. Most infrastructure finance in India had traditionally been done by commercial banks, which participants considered to be inappropriate.

Banks' dependency on deposits created problems of maturity mismatch when funds were lent to long-lived infrastructure projects. Moreover, many participants argued that, while Indian banks had good capabilities in evaluating credit risk for working capital, they did not have the capacity to judge longer-term projects. This was seen to be particularly problematic in the build phase, where uncertainties as to costs and time to completion added to the general problem of estimating future payment streams. Finally, a number of participants argued that there remained a legacy of state-owned banks' deferring to pressure from public authorities to support politically important projects.

Participants agreed that it would be important, therefore, to expand the investor base. They discussed four investor types in this regard—pension funds, life insurance firms, mutual funds, and retail investors. Much of the discussion focused on inherently long-term institutional investors—i.e., pension funds and life insurers. Many participants saw substantial potential for growth of pension funds and life insurance, as the Indian economy becomes more prosperous. They expected funds under management to grow naturally based on economic development, and also noted supportive government policies to prepare for the eventual aging of the workforce. Despite the positive prospects for long-term institutional investors, participants noted that they had very limited impact to date on infrastructure due to restrictions on their investments to high investment grade securities. This issue arose in Session 3 as well. Many participants urged the government to reduce the restrictions on investible securities, while maintaining pension fund and life insurer fiduciary responsibilities.

Many participants also looked to the potential for retail investors to participate in infrastructure financing—primarily through mutual funds and investment trusts, but also through securities. A number of participants noted that fintech companies were creating platforms that provided new opportunities to offer such products to a much broader range of investors than ever before, as well as significantly lowering the marketing and transaction costs for them. They felt that the regulatory basis was in place for mutual funds and investment trusts to expand, but pointed out that investors had relatively little experience with them. Over time, however, they had the potential to be an important part of the infrastructure funding ecosystems if they proved to have good returns and investors understood the risks and maturity profiles inherent in infrastructure investing.

Products

Participants discussed a number of products that could make infrastructure financing more attractive. These included municipal bonds, public-private partnerships (PPPs), infrastructure debt funds (IDFs), investment trusts in infrastructure (InvITs), and various credit enhancement initiatives. There was also discussion of how more general issues in Indian bond markets affect infrastructure investment, but these are addressed more fully below, in Session 3.

There was considerable interest among participants in municipal bonds as an instrument to finance infrastructure, following the 2015 revision of the Issue and Listing of Debt Securities by Municipalities Regulations. Practically speaking, municipal bond issuance had become a new option for municipal governments to fund their operations. The first municipal bond issuance under the new law took place in Pune in June 2017. Many participants saw this as a successful test, and expressed the hope that more municipalities would use make use of the authority. This echoed the expressed hope of the federal government that municipal bond issuance would expand, and support the Smart Cities and other initiatives. There were some cautionary voices, however. It was noted that the conditions for issuing municipal bonds were quite strict, such that many municipal authorities would not be able to issue them. Some participants also pointed out that the appetite for municipal bonds among pension funds and insurance companies would depend crucially on the bond ratings, given the requirement that they only invest in investment-grade bonds. In many case, gaining investment-grade ratings would involve credit enhancements, including government guarantees. Still, the success of the Pune bond issue was seen as an important step in testing the usefulness of municipal bonds to improve local infrastructure.

In an IDF, banks could securitize their infrastructure loans, focusing primarily on derisked (post-construction) projects. IDFs can be set up either as NBFCs that issue bonds or as mutual funds. Several participants were enthusiastic about IDFs as a way of both offering an attractive investment product and addressing banks' NPA problems. However, the number and scale of IDFs remained limited, partly due to banks' unwillingness to realize losses and then sell off reliable income streams. A number of participants expressed optimism that this situation would change over time. Another new alternative was InvITs, which were created in cooperation with pension funds and other institutional investors and functioned as quasi-equity products.

Public-private partnerships (PPPs) were a longer-standing mechanism for attracting private investment to infrastructure, and indeed India had become a global leader in terms of total PPP funding. However, there had been a considerable slowdown since 2012 in new PPPs, which participants attributed to private investors' concerns about the quality of investments after the government had lowered standards for projects (including for land acquisition rights). Participants expressed mixed assessments of the prospects for PPPs to mobilize infrastructure. Some argued that previous successes suggested that there was considerable appetite for PPPs if managed well, as the public participation would reassure investors and reduce some of the risk. Others were more skeptical, arguing that PPPs remained more attractive in principle than in reality throughout the world; they suggested that the share of projects that could offer reasonable returns to investors through a PPP structure was more limited than proponents assumed.

Overall, participants agreed that government would inevitably play an important role in enticing private-sector funding of infrastructure, whether through regulation or credit enhancement. Credit enhancement could take the form of traditional credit guarantees, PPPs, or derisking of assets prior to securitization or bond issuance. As noted below, the public sector was also seen as having a very important role in ensuring the quality and performance of infrastructure projects.

Quality of infrastructure offerings

While Session 2 was in principle focused on mechanisms for financing infrastructure projects, many participants argued that a fundamental challenge was in many cases the infrastructure projects themselves. In particular, participants discussed three aspects of this challenge: build phase vs. operation phase, land acquisition, and public sector planning capacity.

Participants agreed that investors perceived a large difference between the attractiveness of funding projects at the build phase versus the construction phase. They saw construction phase financing, during which time the project would not be generating revenue, as being very challenging. This structural issue was compounded by the length and uncertainty of the build phase in many projects in India, which participants saw as resulting from issues such as land acquisition difficulties, changing priorities of political leaders, and poor planning. Most participants agreed that there were three basic solutions to the challenges of attracting greenfield investment. One option was government guarantees to reassure investors that that they would not be held hostage to vagaries of politics and legal issues related to construction. The main question was how much risk federal or state governments were willing to accept, and at what price. Alternatively, a number of participants suggested that private-sector investors would be much more willing to provide financing as a given project reached the operational stage, at which point there would be relatively predictable income streams. While this solution would address the concerns of bond investors, however, participants noted that many banks that held build-phase loans were unwilling to sell them off precisely at the moment that the projects began to generate revenue. The final option was to provide more equity-like investment vehicles for long-term investors, which would in principle allow them to better price in risk and to share in the upside as well as downside.

Participants also identified land acquisition as a major challenge for Indian infrastructure projects, particularly roads and railroads. While eminent domain remained an option for the authorities, many participants agreed that use of eminent domain is problematic in India for political and legal reasons. Since infrastructure projects often encounter many small landholdings, the challenge of assembling the necessary land to make a project viable leads to many negotiations, and failure to secure an agreement in even a relatively small number can lead to significant delays

or redesign of a project. Some participants suggested that more vigorous use of eminent domain could be beneficial in some cases, but others countered that both political norms and a very slow court system meant that it would seldom be worth the effort. Instead, they called for offering higher valuations on land, and ensuring that land rights had been mostly acquired before trying to secure funding. Some participants noted that one of the reasons why PPPs had tapered off after 2012 was that rules had been loosened to allow projects to start once land acquisition hit 50% of the total, rather than the 80% imposed previously.

Many participants also argued that planning capabilities were lacking in many cases, particularly at the municipal level. This was partly seen as a problem of government capacity, and participants agreed that public authorities should try to improve their capacity. Municipal level capacity was seen as a particular problem, however—given most municipalities' limited revenue bases, a number of participants argued that it may not be realistic to expect improvements across the board. Thus, they advocated greater support from the central government and more cooperation with the private sector in selecting and designing projects. A number of participants identified the Smart Cities program as a good step in the direction of sharing capabilities, as well as providing support for funding of projects.

Finally, many participants accepted that political and economic uncertainty were likely to continue to affect many projects going forward, even when they had entered the operational phase. Several referred to examples in which utilities were required to lower their fees or power plants that lost access to domestic coal, due to decisions made by local politicians. They saw this as a cost of doing business in India's highly democratic, federal system. A similar argument was made in terms of legal enforcement—i.e., that efficiency and consistency of contract enforcement was unpredictable, and often varied across state lines. While there might be some differentiation across states or localities, most agreed that investors would inevitably have to price in the risk that agreed conditions could change or that contracts would not be enforced as written.

Can Foreign Finance Help?

While participants agreed that the bulk of infrastructure financing in India would continue to come from domestic sources, there was also considerable discussion of the potential for mobilizing foreign investors. A number of participants advocated attracting foreign investors both to expand the pool of available funds and to leverage the expertise of investors who had experience with infrastructure financing elsewhere in the world.

Part of the call to expand the participation of foreign investors was simply about money. Between the limited fiscal capacity of the Indian government, the declining lending by banks, and the still-limited domestic investor base, a number of participants agreed that foreign participation could have a positive impact on the

amounts that could be devoted to infrastructure projects. Moreover, many infrastructure projects had foreign currency needs that could more effectively be met by Eurodollar bond issues than by other means.

A number of participants also argued that increasing foreign investor participation in infrastructure finance could also contribute to better project management and financial deepening. Several pointed to the example of the IFC, whose participation in project finance was seen to have improved the planning and management of the projects in which it had participated in India (including PPPs). Experienced private equity investors could play a similar role. Moreover, as in the case of IFC-supported projects, such partnerships could improve the capacity of the domestic partner, creating larger ripple effects down the road.

Thus, there was considerable interest in understanding the needs and concerns of potential foreign investors. The issues discussed fell into several categories. One was the depth, quality, and liquidity of India's bond markets, which would be the major avenue for foreign portfolio investors. These issues are addressed below, in Session 3. Another generic concern was currency risk. The lack of hedging instruments and the continued existence of capital controls were seen as making many fund managers reluctant to invest in rupee-denominated securities. Those without the intention of staying invested in India for the long-term were likely to demand higher returns than infrastructure projects would provide. Alternatively, foreign investors could avoid currency risk by investing in dollar-denominated bonds outside of India. A third option was masala bonds (rupee-denominated bonds issued outside the country); although this would not reduce the currency risk, it was hoped that issuance in London would expand the pool of foreign investors. Based on the attractiveness on the success of recent masala bond offerings, many participants advocated raising the limits on masala bond issuance, but they also recognized that this instrument did not solve the problem of currency exposure.

Private equity firms offered another potential source of infrastructure financing. Unlike bond investors, private equity could also seek to partner in PPPs or similar structures. If able to bring relevant expertise to the table, they could benefit economically by adding value to the projects they funded. A number of participants were enthusiastic about the potential contribution of foreign private equity, arguing that an equity model of financing would be more helpful than bond financing in funding the build phase of projects and in directly improving the quality of projects. They pointed to increasing interest and participation on the part of foreign private equity. However, they also noted that generic challenges like currency risk and the paucity of exit options (including securitization and secondary bond markets) remained.

Finally, some participants questioned how much the Indian government and financial institutions really wanted foreign financial participation. They noted long-standing concerns about foreign ownership in the Indian economy, which *de facto* persisted in

the form of currency controls, approvals, and difficulties of contract enforcement. Alternatively, as some put it, what cost was India willing to pay to attract foreign money? A number of participants argued that many infrastructure projects were wanting investors (whether foreign or domestic) "to accept fixed-income returns for taking on equity risk."

Lessons from US Infrastructure Finance?

A final topic of discussion in Session 2 was whether the US experience with infrastructure finance offered useful lessons for India. Although some criticized the US for what they saw as its crumbling infrastructure and complicated fiscal politics, others argued that the US still have valuable lessons from which India could learn.

Participants observed that much of US infrastructure spending was financed by bonds at the state or local level, including bonds issued by public corporations such as turnpike or port authorities. The US municipal bond market was by far the world's largest, and it operated in a largely decentralized manner. This kept funding costs low, while a large infrastructure of rating agencies and institutional investors ensured that bond prices reflected risks. Issuing authorities also had various options regarding the mechanism by which investors were paid, ranging from project revenue to general-revenue bonds and with varying levels and types of credit guarantees. The institutional investor base also guaranteed easy access to funding for bonds of varying quality. A number of participants agreed that the US municipal bond market, and the institutional investor base on which it relied, offered a good model for Indian infrastructure finance in the long run.

US infrastructure finance also relied on models besides the classic municipal bond or public corporation model. For example, private investors or corporations could also participate in infrastructure building or operation through equity, management, privatizations, or leasing arrangements. PPPs, on the other hand, remained a relatively minor element of infrastructure finance in the US, and some participants argued that relatively few projects were appropriate for PPPs and that the pool of qualified participants in PPPs was limited.

Another observation was that, even in the US, government subsidization was an important element of the success of financing measures, whether in the form of municipal bonds or other arrangements. In the case of bonds, even where governments did not offer not a guarantee, the federal tax deductibility of most state and municipal bonds meant that the federal government was effectively subsidizing the projects. In other cases, including PPPs and other arrangements, government guarantees were often available, whether in the form of a formal credit guarantee or the public authority taking ownership of the risky asset.

There was also some discussion of land acquisition. Several participants observed that the US had a well-established set of rules on land acquisition that extended to

frequent use of eminent domain when deemed necessary. Eminent domain was a tool available at any level of government, but was subject to approval by courts in terms of not only of necessity of seizure but also of valuation. These participants suggested that India could learn from the US experience, and make more extensive use of eminent domain for infrastructure development. Other participants felt that the US example was not directly relevant to India. They noted different political norms, and also pointed out that the Indian court system was not only slow, but also not necessarily open to the use of eminent domain in many cases. Thus, they argued that the best method of land acquisition remained bargaining with landowners.

Finally, it was noted that rule of law and enforcement of covenants and contracts had been instrumental in the growth and success of US infrastructure financing. Clear and accepted rules on how to manage bankruptcies or breaches of contract, along with consistent enforcement by courts, gave investors confidence in purchasing municipal bonds or entering into contracts with municipal authorities.

Session 3: The Future of India's Financial Markets

In Session 3, participants discussed the future of India's financial markets. They looked at equity and bond markets, investor base, and regulation and supervision. They also considered the role of foreign investors in Indian financial markets. Many participants offered positive assessments of accomplishments to date and of future prospects, while acknowledging a number of significant challenges to the growth and effectiveness of the markets.

Growth and Opportunities in India's Financial Markets

Participants observed that Indian capital markets had developed rapidly since the establishment of SEBI and the National Stock Exchange in 1992. Stock markets were seen as particularly well-developed, and participants noted that the market benefited from sophisticated electronic trading platforms. According to a number of participants, India's equity markets compared favorably with global standards in terms of reliability, execution, and settlement, although liquidity remained relatively low.

Bond markets had also expanded dramatically in recent years. The value of outstanding bonds had risen rapidly, as had the number of issuers. Investors now had access not only to bonds issued by government entities and banks, but also an increasing number of non-financial corporate bonds. Still, participants agreed that Indian bond markets remained at a relatively early stage in their development. Total bonds outstanding remained low relative to GDP and issuers remained limited primarily to federal and state government, state-owned financial institutions, and blue-chip companies.

Meanwhile, derivatives markets remained at an early level of development, although the range of derivatives had expanded to include commodities derivatives, interest rate swaps, credit default swaps, and various currency derivatives. The lack of counterparties and still-limited range of products contributed to low liquidity and relatively high costs of hedging. An important recent development was the shift of commodities derivative regulation from the Ministry of Agriculture (which some participants argued was most concerned with controlling commodity prices) to SEBI. The recent decision to allow alternative investment funds was also seen as promoting use of derivatives, as the funds would use derivatives for hedging and liquidity purposes. There was also praise for India's trade repository rules. However, some participants complained that regulators' lingering suspicions of "speculation" led them to pursue policies and guidance that discouraged trading by financial institutions, leading to reduced market liquidity.

Participants were generally impressed with the quality of Indian financial regulation and supervision, particularly singling out SEBI and RBI. However, they also identified new regulatory challenges for India that ranged across competition, microprudential

stability, and investor protection, among others. Participants also urged Indian financial regulators and supervisors to continue to improve their capacity through initiatives ranging from training to improving IT systems.

Several questions arose as to how best to address the needs of India's financial system. Many participants asked whether the existing approach to regulation, based on functional segmentation and institution-by-institution regulation, was appropriate for a financial system in which new products and services were blurring the lines between banks, NBFCs, insurance companies, securities firms, and new financial intermediaries such as payment banks and crowdfunding platforms. Thus, a number of participants argued that it was essential to start preparing to regulate financial services by function rather than by institution, although some worried that this would be difficult to manage in the Indian context. Another concern was over how to best to regulate NBFCs. It was noted that to date, regulators had essentially extended the perimeter of banking regulation to the lending activities of non-banks; while some participants considered this an effective way of preventing shadow banking from creating a financial crisis, others argued that this approach stifled innovation in credit provision and would reduce the funding options for non-traditional borrowers like SMEs. Finally, there was considerable discussion of whether existing regulators were prepared for the new challenges of digital finance, including not only new types of financial institutions and services, but also issues of data privacy and security. These points are addressed in Session 4.

Bond Market Challenges

As noted, bond markets had expanded considerably in terms of both quantity and number of issuers. Growing investor interest in India's bond market reflected several factors, including both macro and micro factors.

At the macro level, Indian debt was seen by many participants as attractive from a global perspective. The Indian economy had strong growth prospects, while inflation was low and stable and the fiscal situation was strong. Debt was also low by emerging economy standards. Given the constraints on bank lending due to NPAs and the demand for debt financing by government (infrastructure) and corporates, bond markets appeared to have considerable room for growth.

Micro factors also supported interest on the part of investors. A year after the report of the Khan committee on corporate bond markets, most of its recommendations had been implemented, including standardization of issuance, trade depositories, provisions for credit enhancements, clarification of default rules, and passage of the insolvency and bankruptcy act. At the same time, SEBI was implementing stricter disclosure and transparency rules, and RBI was pushing large borrowers to the bond market. And regulators had been increasing the limits on corporate bond issues, particularly for infrastructure bonds, while also seeking to reinvigorate the municipal bond market.

However, participants also expressed a number of concerns about Indian bond markets. Not only did the total size remain relatively small in comparison to other Asian emerging economies, but variety was also limited. Corporate bonds in particular were limited to a small number of issuers—and as participants noted, approximately two-thirds of corporate bonds were issued by financial institutions and only about a quarter were issued by private non-financial firms. With most investors demanding highly-rated bonds, there was also a lack of opportunity for many firms to access funds through bond issuance.

For a number of participants, the biggest concern was lack of liquidity of secondary markets. Functionally, they argued, Indian bond markets were simply an analogue of bank lending. Without liquid secondary markets, spreads were larger than in comparable markets, reducing the attractiveness of investing in bonds and impeding price discovery.

To address these challenges, participants discussed a variety of policy responses. Some of these were specific to bond markets, such as creating bond guarantee funds, encouraging new products such as covered and green bonds, and allowing repurchase agreements to encourage secondary markets. One prescription that appeared to be universally supported was for the Ministry of Finance and RBI to establish a benchmark yield curve for government bonds by regular MOF issuance of long-maturity bonds (starting with 10-year); participants argued that without such a benchmark, price discovery would be impeded. Finally, participants agreed that implementation of new default and bankruptcy rules would have a profound effect on the attractiveness of bonds to investors, and especially to the viability of bond financing for companies that did not receive the highest grade investment ratings.

Domestic Investor Base

Participants considered one of the major challenges to both equity and bond markets to be the limited domestic investor base. Despite growth in the investor base and the establishment of a number of new players, the pool of institutional investors remained small. In particular, investors in the bond market comprised a small set of pension funds, life insurance companies, banks, and mutual funds. Meanwhile, investors in the bond market tended toward buy-and-hold strategies, leading to low turnover and weak price discovery. Foreign investors, while growing, remained marginal players for the most part.

Participants discussed at length how to expand the domestic investor base. There was particular attention paid to pension funds (although it was noted that a parallel story could be told for life insurance). Participants noted that pension funds, with their long time horizons and mission of building principal, were a natural place to look for growth in holdings of both equities, bonds, and infrastructure finance. However, they remained a relatively small player, for two reasons. First, participants noted that the penetration of pension funds was relatively low, largely due to the vast size of India's

informal economy and the prevalence of small firms in the private-sector economy. A number of participants argued that the time was right for the establishment of more pension funds, because of the growth of the economy and the financialization of household savings due to demonetization (whereby households converted many of their old banknotes to bank deposits). Second, pension funds remained tightly regulated. They were allowed to invest only in top investment-grade bonds, while limiting investments in other classes including equities and alternative investments. For many participants, the most urgent task in expanding the domestic investor base and invigorating financial markets was to reduce the restrictions on pension funds and insurance companies.

Participants also agreed that it would be important to continue expanding mutual funds, exchange-traded funds, and investment trust offerings. Many participants saw these as the primary way in which individual investors would enter the financial markets—they saw this as crucial not only for the development of markets, but also for providing households with opportunities to earn positive returns on their savings.

Other Challenges Facing India's Financial Markets

Participants highlighted several other challenges affecting India's financial markets. A major set of issues for many participants related to rule of law, including contract enforcement, default rules, and bankruptcy. Participants spoke appreciatively about the new insolvency and bankruptcy law and about SEBI's efforts to create a clear framework for handling defaults. However, they worried that the court system would be unable to effectively implement these rules. This was partly due to questions about *how* courts would enforce the rules, but many participants argued that the more important question was *how long* enforcement would take. They noted that the Indian court system was extremely overburdened, leading court cases to drag on for years in many cases. This was compounded by the ability of defendants to further extend cases through multiple appeals. A number of participants noted that, in the past, by the time a bankruptcy had been finally approved, there was often little left for the plaintiffs to collect.

The challenges of bankruptcy, default, and contract enforcement were seen as contributing to the weakness of Indian bond markets. Investors were extremely wary of holding bonds except those issued by the government, state-owned enterprises, or the very strongest private firms, as they were uncertain whether they could collect in the event of a default. To some extent, it was argued, weaknesses in the court system could be addressed by alternative methods of conflict resolution, such as arbitration or enforcement actions by SEBI or other regulatory bodies. But for many legal issues, there was for the moment no option but the courts.

Participants identified financial technology as another major challenge going forward. They noted that capital markets had been big adopters of financial technology, and that this had already had significant effects in terms of streamlining

of trading, settlement, position limits, and smart order routing systems. Several participants predicted that machine learning and artificial intelligence would further revolutionize financial markets, especially in asset management. Blockchain was also seen as a disruptive technology that could challenge exchanges, repositories, and other central information collection organizations. Like other countries around the world, Indian regulators would need to think carefully about how to regulate and supervise financial services and transactions in the new environment. Particular challenges included how to regulate transactions recorded in distributed ledgers and how to track smart contracts, as well as rules regarding financial institutions' technological capacity, data security, provisioning and risk management. Participants agreed that this would also require regulators and supervisors to make significant investments in IT, personnel, and training.

Session 4: The Inclusion Agenda—Broadening Access to Finance & the Role of Fintech

In Session 4, participants discussed digital financial inclusion in India. They noted the extraordinary measures taken by the government in recent years to offer universal access to financial services and to shift economic activity away from cash and into transactions. They discussed at length the potential for digital financial inclusion to transform the lives of the poor. However, they also expressed concern about whether India was prepared for new challenges such as data privacy and security.

India as Global Leader in Digital Financial Inclusion

Participants discussed at length the rapid progress of digital finance in India, and its spread through previously unbanked sectors of the population. They pointed in particular to three initiatives.

First, the 2014 launch of India's *Jan Dhan Yojana* program introduced universal access to bank accounts, verified through biometric data. Participants lauded this as the world's largest and most ambitious effort to expand access to financial services, with nearly 300 million new accounts having been opened since the program began. Some noted, however, that India's program might not be a viable model for all emerging economies, since India had mandated that banks establish the accounts without charge. They felt that this was feasible only because of the extent of state ownership and regulation in the banking system. One of the most immediate impacts had been in the form of digital payments. The new systems enabled instant transfers of value at low costs via mobile phones, which the Indian people had found extremely attractive for paying for goods and services, even in remote areas of the country. Mobile payments had also become a dominant technique for remittances, allowing workers to send money home to families with greater certainty and at lower cost than other methods, including money transfer companies and *hawalah.*

Participants also discussed the 2016 demonetization. This consisted of a Reserve Bank of India policy in 2016 to ban the use of old 500 and 1000-rupee bills and to require holders of such bills to exchange them for new 500 and 2000-rupee bills that differed from the old ones in color, size, theme and location of security features and design elements. A number of participants were critical of the effort. They pointed out that the government's expectation of uncovering large amounts of "black money" had not been met, and argued that the costs of demonetization—including not only direct costs but also lost time and disruption of commerce—were not justified by the meager results. Other participants had more positive evaluations of demonetization. While they acknowledged that stated goals such as cleaning up black money had not been realized, they saw demonetization as an accelerant for the shift to digital payments across all strata of society. Despite the short-term disruption, they felt that the long-term benefits of shifting payments away from cash made up for them.

The third initiative was the introduction of the nationally-administered goods and services tax (GST). While the purpose of GST was to improve the efficiency of tax collection, it also created incentives to shift more transactions away from cash and toward electronic payments. Participants felt that vendors found it much easier to calculate, charge, report, and remit to the government the GST they collected using electronic payments than to manage these functions using cash.

Participants agreed that the combination of these three initiatives had had a transformative impact on the people's engagement with financial services throughout the economy, particularly in terms of payments. The burgeoning of bank accounts had also had important effects, particularly on the efficiency of government transfer payments.

Despite the rapid spread of digital finance, many participants agreed that India's experiment with digital financial inclusion was still at an early stage. They argued that biometric identification and universal bank accounts were an important start, but should be understood as platforms on which additional services would be built. The *Jan Dhan Yojana* accounts—many of them held in "payment banks" created by mobile operators—were largely used only for storing value and making or receiving payments. While these were seen as extremely useful services, many participants envisioned the development of a much broader array of services, including credit, insurance, investing, crowdfunding, and P2P. They characterized this as the "India stack," all built on the platform of biometrics and universal accounts.

Participants spoke of a variety of ventures that were seeking to take advantage of the new financial inclusion platforms. They observed that, with hundreds of millions of new accounts, nearly all of them linked to mobile phones, developers of financial services and smart phone applications had an enormous incentive to create new products to meet the needs of users. This was creating an extremely competitive market place and driving down costs for users. Many participants were particularly eager to see new products that would allow savers to get returns on their savings, including through investment products and P2P lending. Noting that mutual fund apps were already available, some anticipated that additional fund management products like robo-advising would not be far behind. In addition, many participants predicted that new, data-centered models of credit analysis would revolutionize lending to households and SMEs, creating more effective credit profiles at much lower costs than were possible under existing, bank-managed methodologies.

Challenges for Fintech and Digital Inclusion

Despite the general enthusiasm for digital financial inclusion, some participants raised concerns about ways in which these efforts could go awry. Many were particularly concerned with consumer protection. Others expressed concerns about the sustainability of the financial model underlying the India stack.

Financial sustainability of the underlying platform was a concern for several participants. While they felt that it was appropriate for competition among financial institutions and developers to separate winners and losers, they noted that universal biometric identification and bank accounts acted as public infrastructure on which all the other functions relied. That infrastructure had been created through a combination of public funding, pressure on state-owned banks, and the desire of some private-sector firms to get in on the ground floor. Already, some participants saw cracks in this model, as some of the telecom companies that had registered as payment banks had decided to relinquish their licenses. Many felt that continued public sector involvement in providing the accounts infrastructure was unavoidable.

Consumer protection was of particular concern to participants. They worried that the expansion of digital financial services for previously unbanked populations would raise a host of new problems. One concern was the potential for fraud at a large scale. Several participants pointed to the example of China, where internet finance had burgeoned in recent years, but which had also suffered from a raft of fraudulent enterprises and pyramid schemes. In addition to outright fraud, there was also considerable concern about the potential for abusive practices, such as high fees or excessive risk-taking by financial service providers.

Data privacy and security were also identified as of crucial importance to the success of digital financial inclusion. Participants noted that the Indian Supreme Court had recently ruled for the first time that the Constitution guaranteed a right to privacy. While it was not yet clear how this ruling would be operationalized in terms of digital finance, participants felt that it was an important principle to prevent abuse of people's personal information. Data security was also seen as extremely important, since so much of a person's life would revolve around his/her biometric identification.

While participants recognized the importance of good regulation and enforcement to ensure consumer protection, they also agreed that financial education would be of crucial importance going forward. With so many new entrants to the world of financial services, the learning curve appeared particularly steep. Many participants noted approvingly that secondary schools were now requiring courses in financial literacy; still, they saw the need for a multi-pronged, ongoing system of financial education to ensure that users benefited from digital financial inclusion.

Challenges of Fintech Regulation

The rapid spread of fintech and digital financial inclusion was seen by many participants as presenting significant challenges for Indian financial regulators. Some of these related to issues addressed above, including how to ensure consumer protection, data privacy, and data security.

In the case of India, traditional modes of financial regulation posed an additional challenge to fintech regulation. One concern voiced by a variety of participants was that financial regulation in India had been segmented and based on particular institutions rather than functions. With the advance of fintech, many of the functions that were once tied to particular institutions were being rearranged across a variety of players, some of which (such as telecoms or crowdfunding platforms) did not even consider themselves to be financial institutions. A number of participants argued that this was actually an opportunity to rethink regulatory structure, and to reorganize it around functional rather than institutional lines. The creation of the category of payment banks was seen by some participants as a step in this direction.

While many aspects of fintech were seen to complicate the task of regulators, supervisors, and enforcement agencies, some participants suggested that fintech could actually solve problems as well. They noted, for example, that fintech offered new opportunities for tracking transactions and therefore detecting violations of tax law, insider trading, and other important rules. Some were also excited by the potential of blockchain technology to create self-executing contracts (allowing, for example, the elimination of escrow since transactions could clear simultaneously) or even to substitute for existing modes of enforcement through a publicly visible distributed ledger. Given the difficulties of contract enforcement in the Indian court system, this appeared to be a very attractive prospect. Some participants were less sanguine about this possibility, noting that neither the technological nor legal bases of some of these claims were well established. For example, if something were to go awry in the execution of a blockchain-based contract, it was unknown who would have legal responsibility for verification that sat on distributed ledgers.

Finally, as with many of the regulatory issues that were discussed at the symposium, participants agreed that public authorities would need to invest in regulatory capacity. By this, they meant not only IT hardware and expertise, but also the development of legal tools that were appropriate to the characteristics of fintech.

Program on International Financial Systems (PIFS)
134 Mount Auburn Street, Cambridge, MA 02138
www.pifsinternational.org