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The Past & Future of Indian Finance

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Abstract

India's growth story depends on the vitality of its financial system. Within the span of five years, the Indian economy has endured two unprecedented shocks: the 2019 economic slowdown triggered by a financial crisis, and the COVID-19 pandemic. As we navigate the aftermath of these episodes, one vital question emerges: how resilient will India's financial system be in the face of future challenges? This paper embarks on three missions. First, it dissects the origins and aftermath of the Indian Financial Crisis of 2018-20, sparked by a run on the shadow banks. Second, it examines how India fortified its financial system in the wake of this financial crisis and the pandemic, consequently shielding itself from the global banking disruptions of 2023. Finally, it gazes ahead at potential challenges and opportunities, sketching a blueprint for key reforms. Overall, the future trajectory of India's economic growth, whether a modest 5.5% or a bold 7.5%, rests significantly on the progress of ongoing financial sector reforms.

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1 Introduction

Over the past three decades, India's growth has been extraordinary, lifting millions out of poverty. But this journey has not been without its challenges, particularly in the financial sector, which has encountered speedbumps along the way. As India continues to forge its economic path, the influence of the financial system will remain vital. The trajectory of this system will directly impact the futures of over a billion people in India and carry substantial implications for the global economy.

Guided by this understanding, this paper dives into the realm of Indian finance. We will focus on the Indian Financial Crisis of 2018-20 and the COVID pandemic of 2020-23.

On the eve of the pandemic, India was already grappling with a major economic slowdown. By March 2020, marking the end of the 2019-20 fiscal year's last quarter, GDP growth had steeply fallen to just 2.9 percent, a stark contrast from the 7 percent decade average. For the first time in over a decade, aggregate investment—accounting for a quarter of GDP—experienced continuous contraction, declining by more than 4% over three successive quarters. This paper asserts that the Indian Financial Crisis of 2018-20 was the primary driver of this slowdown, highlighting the financial system's critical role in India's growth story.

In parts I-III, we dissect the crisis through three lenses: (a) the accumulation of risks from 2000 to 2018, (b) the financial tremors triggered by two shadow bank defaults in 2018 and 2019, and (c) the widespread economic damage inflicted between 2018 and 2020.

In Part IV, we shift our attention to the crisis response, detailing the policy responses enacted to combat these financial challenges. We will also explore how government strategies bolstered the economy against the backdrop of the COVID-19 pandemic. These efforts eventually fortified the financial system but also served as a safeguard against the adversities faced by Western banks in the first half of 2023.

Lastly, in Part V, I highlight three central challenges facing India: (1) Addressing the funding imbalance between traditional and shadow banks ('The Great Funding Imbalance'), (2) Expanding credit accessibility across the country ('The Financial Deepening Hurdle'), and (3) Striking the right balance between economic growth, financial stability, and nurturing national champions ('The Growth Strategy Trilemma'). I also discuss the potential opportunities arising from India's digital payments revolution.

The key takeaway: The future trajectory of Indian growth, whether a modest 5.5% or a bold 7.5%, rests significantly on the progress of ongoing financial sector reforms.

1.1 A Quarter Century of Credit in India: Six Stylized Facts

India's financial ecosystem is an ensemble of diverse actors, each vital within their sphere. Formal credit in India is granted by three types of financial entities (Figure 1):

- *Scheduled Commercial Banks*: Encompassing public sector banks, private banks, and foreign banks.
- *Non-Scheduled Banks:* Cooperative banks, small finance banks, and payment banks.
- *Non-Bank Financial Institutions:* Nonbank financial companies (NBFCs) and development finance institutions (also known as All India Financial Institutions).

In addition, a substantial informal lending network exists, particularly vital for small and medium-sized enterprises.

Six critical observations about these credit providers in India can guide our analysis:

1. *Bank and nonbank assets as a percentage of GDP have doubled in the past 25 years:* In 2022, the combined assets of banks and nonbanks were 118% of GDP, a leap from 59% in 1997 (Table 1). Moreover, in 2022, credit from banks and nonbanks constituted approximately 70% of GDP, with banks contributing 52%, and nonbank financial institutions providing the remainder.

2. *Public sector's share of the financial ecosystem has decreased from 80% to 50%:* Public sector banks have historically been significant contributors to bank lending. In the late 1990s, these banks, together with government-directed development banks, made up nearly 80% of system assets. By 2022, their share was approximately 50%, with private banks and NBFCs filling the gap.

3. *Shadow banking (NBFCs) has grown six-fold and now represents one-sixth of the system:* In the last decade, shadow banking has gained momentum in the credit industry, which was traditionally dominated by commercial banks. By 2022, shadow banks made up over 16% of the financial system measured by assets. Most of these—more than 99%—are standard Non-Banking Financial Companies (NBFCs) and a type of NBFCs, housing finance companies.[1] These entities, while providing similar lending services as banks, usually depend more on wholesale funding and face

[1] Following the Financial Stability Board's (FSB) methodology, the Reserve Bank of India reported that NBFCs and HFCs constitute 99.7 percent of the "shadow banking" sector in India (RBI 2017).

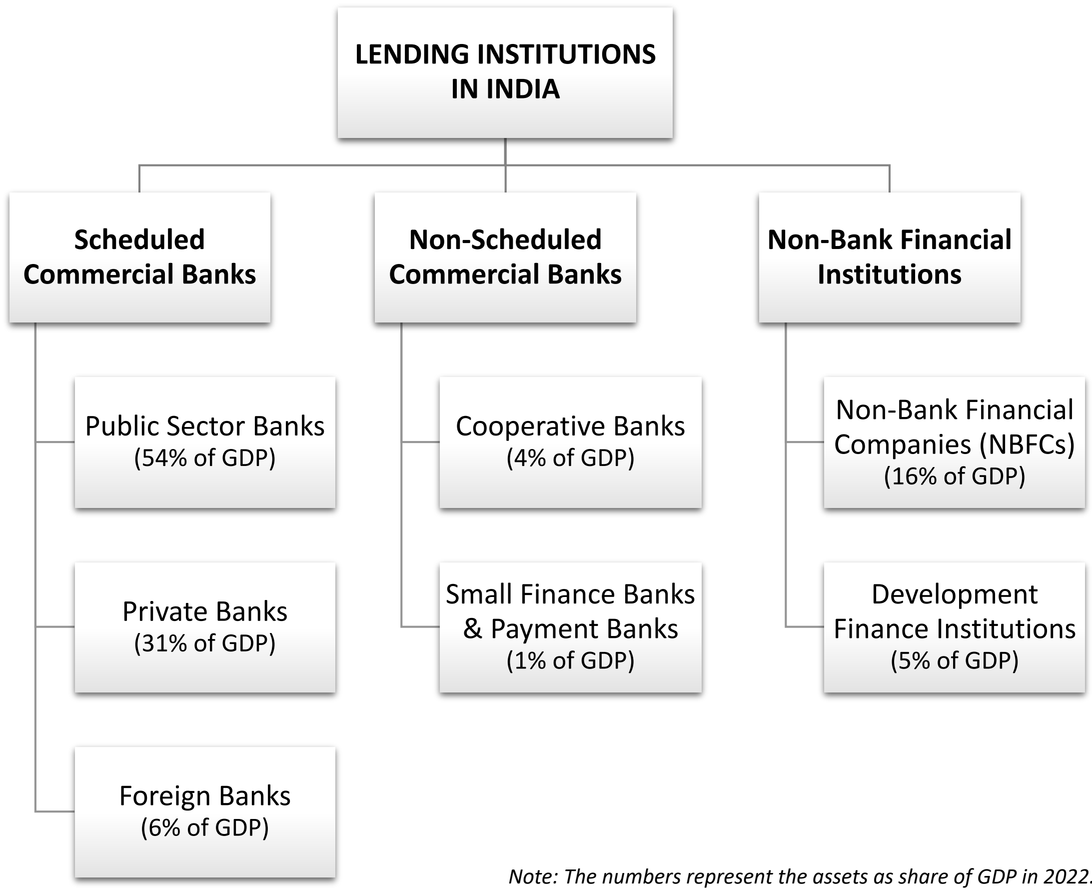


Figure 1: Lending Institutions in India and the Size of their Assets

BANKS & NONBANKS IN INDIA: 1997 vs. 2022

Category	Institution Type	ASSETS (in % of GDP) 2022	1997	Relative Growth (2022 vs. 1997)
Scheduled Commercial Banks	Public Sector Banks	54.1	40.4	134%
	Private Sector Banks	31.4	3.2	974%
	Foreign Banks	5.8	1.2	497%
Non-Scheduled Banks	Cooperative Banks	4.4	1.7	269%
	Small Finance Banks & Other Non-Scheduled Banks	0.9	0.2	470%
Non Bank Financial Institutions	Non Bank Financial Companies	16.3	2.6	621%
	Development Finance Institutions (AIFIs)	5.2	9.5	54%
	TOTAL	**118.2**	**58.8**	201%

Source: RBI, MOSPI, and author's calculations.

Table 1: Assets of Banks & Nonbanks in India

less regulation.[2] Mutual funds are key players in this shadow banking ecosystem, mobilizing resources from diverse sources and channeling them to these non-bank financial institutions. During the 2010s, these nonbanks contributed as much as a third or even half of the new credit in certain years, highlighting their growing prominence in the credit market.

4. *Foreign lending and borrowing account for less than 5% of assets and liabilities respectively:* The Indian financial ecosystem remains fairly self-contained, with foreign entities playing a minor role. Foreign banks contribute a small percentage of total credit, while banks' international assets constitute about 3% of total assets, and international borrowing stands at around 5%.

5. *Credit access across India remains uneven, with bank credit to GDP ratios in wealthier states up to three times higher than in poorer ones:* Credit access varies a lot across India, with many regions still facing limited access. Bihar and Uttar Pradesh (where about 1 in 4 Indians live) have credit-to-GDP ratios between 25-30%, compared to the national average of over 55%. This stark contrast highlights the critical need to increase credit access and financial inclusion, which can stimulate further economic development.

6. *Borrower-lender relationships play a crucial role:* The Indian financial system, with its plethora of specialized entities, relies heavily on borrower-lender relationships. Consequently, institutional failure or financial channel disruptions can significantly impact the real economy, given these relationships' essential role in maintaining credit flow.

1.2 Recent History: A Financial Snapshot

Historically, development banks or All-India Financial Institutions have been pivotal in providing long-term infrastructure lending. However, in the 1990s, several significant development banks faltered. This led to public sector banks (PSBs) assuming a more dominant role in infrastructure lending.

[2] The FSB defines shadow banking as "credit intermediation involving entities and activities outside the regular banking system" (FSB 2012). The FSB states that "the use of the term 'shadow banking' is not intended to cast a pejorative tone on this system of credit intermediation. The FSB has chosen to use the term "shadow banking" as this is most commonly employed and, in particular, has been used in the earlier G20 communications."

Throughout the 2000s, there was a surge in infrastructure lending in India due to the country's escalating infrastructure requirements. Public-private partnerships thrived during this period, and Indian banks, especially PSBs, ramped up their project finance involvement. By 2014, due to their widespread presence nationwide and their significant role in infrastructure lending, PSBs provided about 70% of total bank credit to the real economy.

This period also marked significant growth in total bank lending from both private and public banks. From 2005 to 2013, the total bank lending expanded by over 15% annually in real terms. Notably, banks' engagement in major infrastructure projects continued to rise, even against the backdrop of the global financial crisis of 2007-09.

However, by the early 2010s, the banking system faced challenges. Governance lapses in infrastructure projects significantly increased the risk of stressed assets in PSBs, and the system experienced a credit misallocation problem known as "loan evergreening" or "zombie lending." Under-capitalized banks rolled over loans to large, struggling borrowers to avoid declaring them as non-performing assets (NPAs). By 2016-17, these large borrowers constituted over half of the bank loan portfolios and almost 90% of NPAs in the banking system.

Recognizing the severity of this challenge, the Reserve Bank of India (RBI) prioritized addressing the non-performing assets problem in the mid-2010s. A pivotal development was the asset quality review, a regulatory exercise aimed at identifying and rectifying discrepancies in loan classification by banks. This process revealed substantial underreporting of non-performing assets, leading to a collapse in public bank lending. The sudden decline in credit availability created a vacuum that spurred the growth of shadow banks, or non-bank financial companies (NBFCs), which witnessed a surge in lending activity.

The subsequent demonetization on November 6, 2016 impacted the financial system by inducing an abrupt and substantial reduction in cash circulation. This move generated both short-term and long-term effects on various sectors, including shadow banking and real estate. Despite the initial liquidity crisis, demonetization indirectly benefited shadow banks by increasing deposits in the formal banking system and lowering interest rates, thereby boosting demand for credit from NBFCs.

The Indian financial system faced additional challenges with the high-profile defaults of Infrastructure Leasing & Financial Services (IL&FS) and Dewan Housing Finance Limited (DHFL) in 2018 and 2019, exposing the vulnerabilities within the shadow banking sector. These defaults set off a contagion effect, culminating in a liquidity crisis and loss of confidence in NBFCs, ultimately intensifying the economic slowdown.

The COVID-19 pandemic struck at a time when the Indian financial system was already grappling with these vulnerabilities. The pandemic's unprecedented disruption to economic activity and trade led to widespread job losses, business closures, and further strain on an already fragile financial sector. The government and the RBI implemented several unprecedented measures to cushion the economy. These included fiscal stimulus packages, moratoriums on loan repayments, and liquidity injections. However, the pandemic also introduced new challenges, including a delay in the repair of the financial system that was needed after the shadow banking crisis.

As the country navigates the post-pandemic landscape, it is crucial to address both pre-existing issues and those that emerged during the pandemic in order to ensure a resilient financial system capable of supporting India's growth and development goals.

1.3 The Indian Financial Crisis of 2018-20

The events that unfolded in India between the September 2018 and March 2020, although not widely recognized at the time, bear the hallmarks of a financial crisis. This notion may court controversy, but let's examine why it holds true.

A financial crisis is often characterized by severe disruptions in financial intermediation, widespread defaults, and panic-driven runs on banks. During this period in India, an unusual run on shadow banks occurred. Large institutional depositors withdrew from mutual funds, leading to a startling contraction in funding for commercial paper and debt markets, thereby disrupting financial intermediation. The subsequent defaults by IL&FS in September 2018 and DHFL in June 2019 caused a palpable sense of panic in the market, akin to a traditional bank run leading to severe economy-wide damages.

In labeling this a 'financial crisis,' my intent is not to alarm but to inspire a deeper exploration of these events. The financial sector is poised to play an instrumental role in India's growth narrative, yet it often remains sidelined in policy discussions. This could be due to the public's limited exposure to financial affairs. But by bringing these issues to the forefront, I hope to breach this barrier, encouraging everyone to engage in this critical dialogue and contribute to the discourse on India's financial future.

India's shadow bank run differed from a classical bank run, with large institutional depositors (e.g., corporates) withdrawing placements in mutual funds, which in turn ran on shadow banks by withdrawing funding from commercial paper and debt markets. Two system-wide runs occurred within months of each other, each triggered by a shadow bank default: Infrastructure Leasing and Financial Services Limited (IL&FS) in September 2018, and Dewan Housing Finance Corporation Limited (DHFL) in June 2019.

The total loss mutual funds incurred because of their exposure to IL&FS and DHFL was around Rs 0.025 trillion for each, adding up to roughly 0.2% of mutual fund assets or 0.01% of GDP.[3] However, these minor exposures caused major stress, resulting in similar dynamics as traditional bank runs. This led to massive system-wide outflows from the mutual fund industry. In response, mutual funds drastically cut funding to shadow banks, which subsequently reduced credit flows to the real economy. Due to inter-linkages between traditional and shadow banking systems, problems spread to traditional banks after DHFL's default, causing a steep decline in lending.

This raises two central questions regarding India's economic slowdown (Figure 2). First, why did the defaults lead to system-wide stress and such large outflows from mutual funds? Second, why did a relatively small shock have such a large, negative, economy-wide impact?

The paper seeks to answer these questions by examining the mechanisms that (1) led to the two system-wide runs on the shadow banking system, and (2) amplified these runs economy-wide. The explanation revolves around a series of mechanisms that I refer to as "India's macro-financial spiral" (Figure 3).

In brief, the IL&FS group defaulted on its debt obligations in September 2018. Rated AAA until its default by some credit rating agencies, the default shocked the financial system. Fears and uncertainties about hidden vulnerabilities in NBFCs and infrastructure/real estate sectors led lenders to reassess risks (circle 1 of Figure 3).

This initiated a flight to safety, starting with a system-wide run on the shadow banking system. The reasons include varying practices across mutual funds in valuing IL&FS debt and inconsistent timing of haircuts on such securities. This created a first-mover advantage, similar to a classic bank run, prompting investors to withdraw from mutual funds (circle 2 of Figure 3).

Limited funding access forced NBFCs to hoard liquidity and reduce new lending, impacting borrowers and real estate developers (circle 3 of Figure 3). As a result, credit

[3] As a guide to units used in this paper note that Rs. 1 lakh crore corresponds roughly to US$13 billion or about 0.5 percent of GDP in late 2010s.

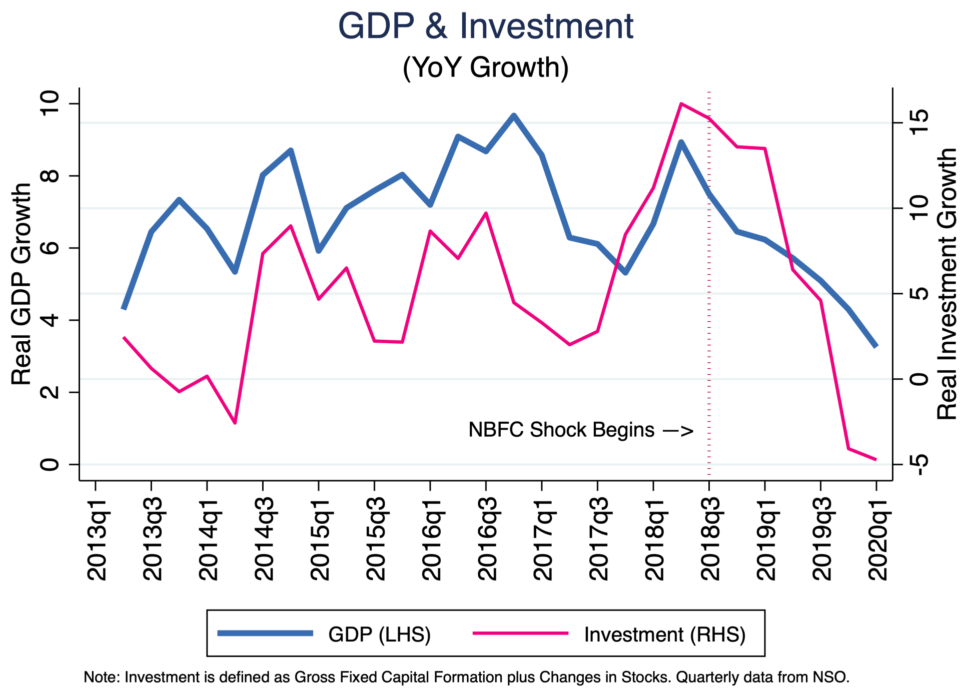


Figure 2: Pre-Pandemic Growth in Real GDP and Investment

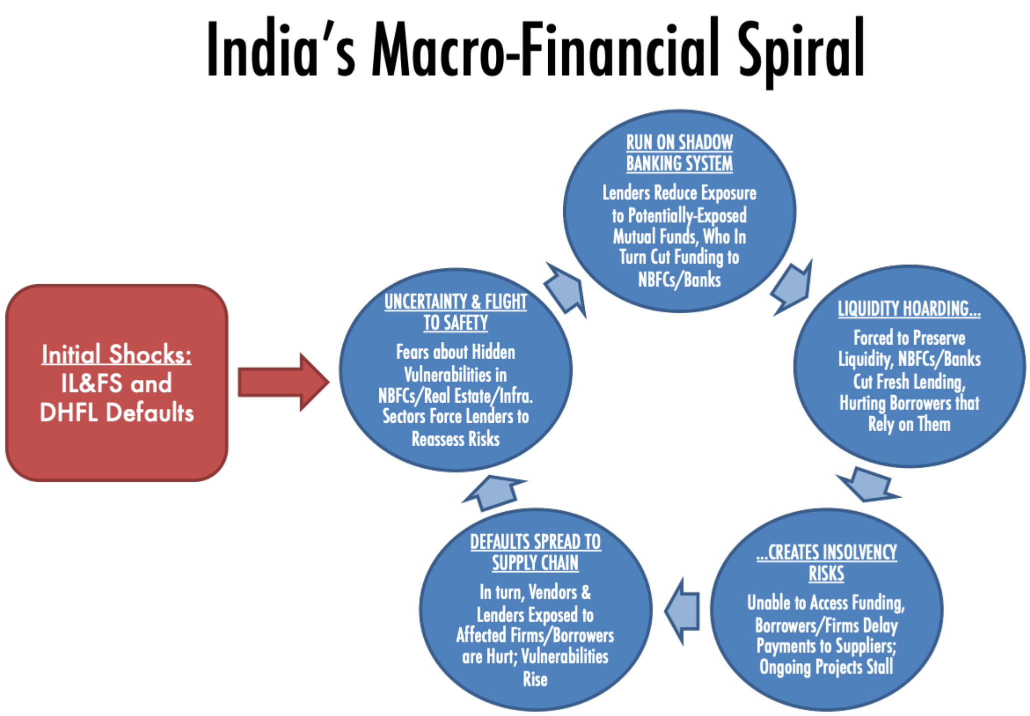
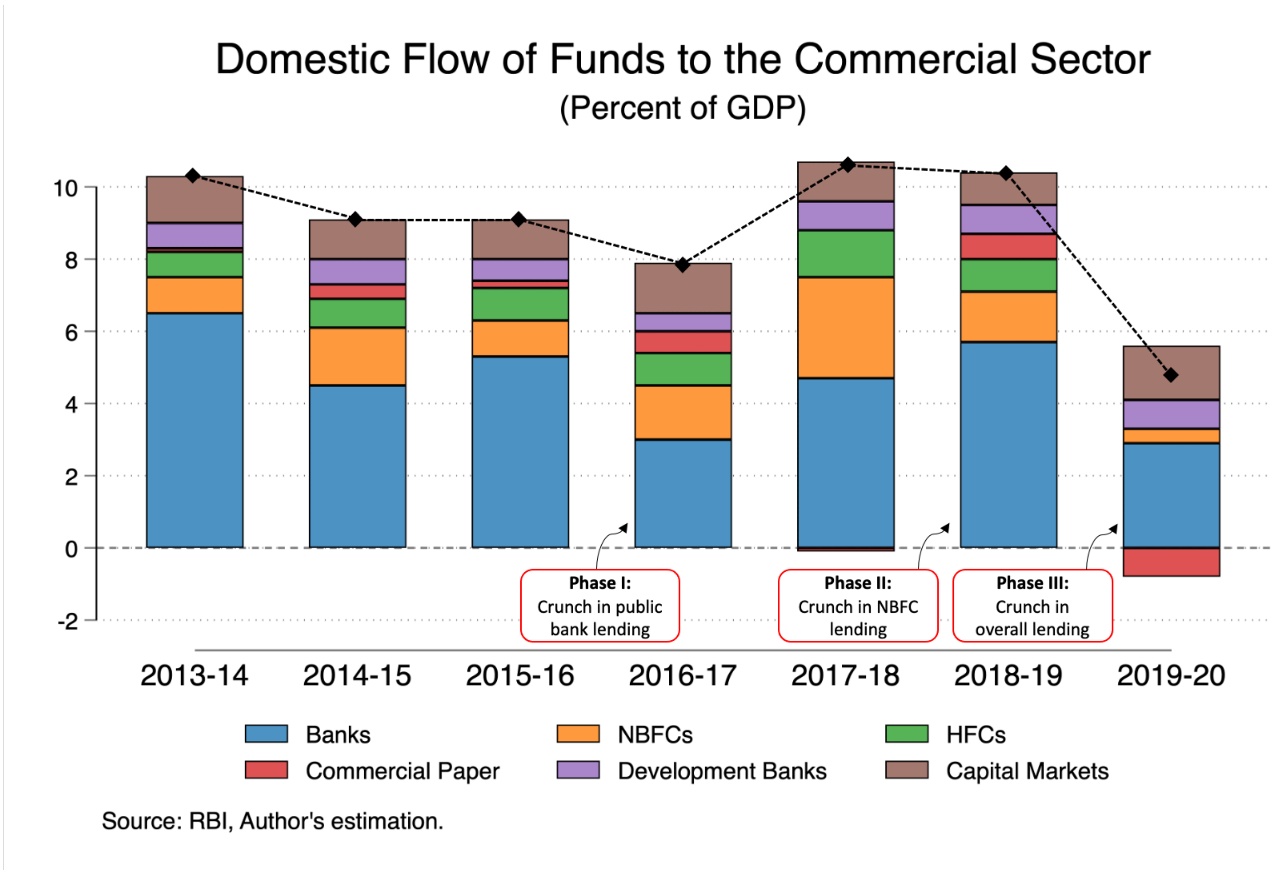


Figure 3: How the Indian Financial Crisis of 2018-20 Unfolded



Note: India's Fiscal Year (FY) is April to March. Thus, FY2019-20 (April 2019-March 2020) bears minimal impact of the pandemic since India's lockdown began in the last week of the fiscal year on March 25, 2020.

Figure 4: Domestic Flow of Funds to the Commercial Sector

growth slowed down, affecting the real economy, especially those sectors that relied heavily on shadow banking for credit. The real estate and construction sectors were hit particularly hard, given their dependence on NBFCs and HFCs for financing.

The slowdown in the real estate and construction sectors led to a decrease in aggregate demand, putting further stress on the economy (circle 4 of Figure 3). This economic stress, in turn, led to lower corporate revenues and reduced repayment capacity, increasing the risk of further defaults in the shadow banking system (circle 5 of Figure 3).

The increased risk of default fueled the flight to safety, reinforcing the cycle of stress in the financial system (circle 6 of Figure 3). This feedback loop between the financial system and the real economy created a macro-financial spiral, amplifying the impact of the initial shock from the defaults of IL&FS and DHFL.

A few months later, the default of DHFL restarted this spiral, with the impact this time also spreading to banks, as the default of DHFL deepened worries about the entire financial system's cross-exposures to the troubled NBFC and the real estate sectors.

To understand the sequence of events and to recognize how big and severe the credit crunch was, it is useful to examine the decline in credit flow to the system in more detail (Figure 4). One can break down the decline in credit flow into three phases. Phase I corresponds to the crunch in public sector lending after the introduction of an asset quality review (AQR) of banks in 2015. Phase II corresponds to the crunch in lending from NBFCs after the default of IL&FS in September 2018. Phase III corresponds to the crunch in overall lending after the default of DHFL in June 2019. The paper discusses each phase in detail. In all that follows, it is important to remember the magnitude of the collapse in domestic lending to the private sector, which fell from nearly 10 percent of GDP in fiscal year 2018–19, to roughly 3 percent in FY2019–20 (i.e., excluding funds from the capital markets).

Some Puzzles

In addition to answering the two questions posed above, the paper also attempts to answer some enduring questions about the growth slowdown, including: (1) why did the problems in the NBFC sector spill over to the traditional banking system? (2) Was there still a liquidity shortage despite significant quantities of aggregate liquidity creation by the RBI? (3) Did credit flow fall due to a lack of credit supply or credit demand? (4) Why did monetary policy transmission to deposit and lending rates weaken? (5) Why did the government securities yield curve steepen?

In responding to these questions, one key theme will be the role of asymmetric information. Due to heightened uncertainty about the solvency of some NBFCs, adverse selection issues may have gripped the market (Akerlof 1978). In turn, the NBFCs and other financial institutions exposed to them were being compelled to send a credible costly signal to project strength to the market (Spence 1978). Thus, amid the uncertainty, financial institutions were compelled to demonstrate strengthening of their loan books and addressing of asset-liability mismatches, at the cost of sacrificing fresh lending.

Another key theme will be a shortage of funding liquidity in the system. The liquidity crunch is also a central explanation in the authorities' own diagnosis presented in the 2019–20 Economic Survey of India chapter titled "Financial Fragility in the NBFC Sector" (GOI 2020). Like many central banks, the RBI has tools to inject funds into the banking system, but the effectiveness depends on whether this liquidity reached all critical parts of the financial system. During fiscal years 2018-20, the RBI's liquidity strategy focused on (1) injecting significant aggregate liquidity into the system through open market operations, and (2) encouraging banks in turn to channel the "excess" aggregate liquidity to the NBFC sector and other financial institutions facing liquidity shortages. While helpful, this approach did not sufficiently address liquidity shortages (in the pre-pandemic period)—which persisted in various key pockets of the financial system and triggered liquidity hoarding by NBFCs and banks alike.

1.4 Fighting the Crisis & the Pandemic

In Part IV, I review the government's policy responses in 2018 and 2019, as well as the COVID-19 emergency response and significant policy reforms from the past five years.

From implementing accommodative monetary policies and emergency liquidity provisions to introducing loan repayment moratoria and credit guarantee schemes for MSMEs, the authorities implemented a wide range of measures to fortify the economy. These measures were instrumental in strengthening the financial system and ensuring its continued functioning even in the face of unprecedented challenges.

Moreover, these concerted efforts did more than just strengthen the financial system domestically. They also acted as a protective shield, insulating the Indian financial system from the adverse circumstances that led to the collapse of several Western banks in 2023.

While the global banking sector was grappling with a series of bank failures after the default of Silicon Valley Bank in March 2023, the Indian financial system, fortified by proactive repair and restructuring initiatives, demonstrated resilience. The focus on addressing asset-liability mismatches after the IL&FS default, along with different business models, and the recent restructuring of potentially weak links (such as YES Bank), ensured that Indian banks were well-prepared to weather the global banking storm.

1.5 Reform Priorities

Part V concludes with three post-pandemic challenges India must address to foster a robust financial sector conducive to growth. These challenges include bridging the funding gap between traditional and shadow banks ('The Great Funding Imbalance'), widening credit access across all geographies ('The Financial Deepening Hurdle'), and grappling with the 'Growth Strategy Trilemma' that policymakers encounter when balancing growth, stability, and nurturing national champions. Additionally, the paper touches upon the opportunities borne out of India's digital payments revolution and the ways to build on important reforms such as the 2016 Insolvency and Bankruptcy Code (IBC).

To tackle these challenges, the paper posits a reform agenda centered on ten policy areas: strengthening regulation and supervision, managing systemic risk, improving asset quality, enhancing the framework for bad loans and bankruptcy, reforming public sector banks, restructuring the financial sector, deepening the financial sector, improving monetary policy transmission, improving the emergency liquidity framework, and supporting real estate transactions. Through these reforms, India can lay the groundwork for a more resilient and stable financial system that bolsters long-term growth and development.

1.6 Related Literature & International Comparisons

The study of macro-financial linkages in India is becoming an expanding area of research. Several scholars and committees have contributed to the discussion around financial reform priorities for India. The Narasimham Committee I (1992) provided recommendations for banking sector reforms, while the Narasimham Committee II (1998) examined financial sector reforms more broadly. The Nayak Committee (2014) analyzed the governance of bank boards in India and made relevant recommendations.

More recently, Chari, Jain, and Kulkarni (2019) study the origins of the NPA crisis in the 2010s. Acharya and Rajan (2020) discussed the need for reforms in the banking sector and present a comprehensive set of recommendations. Meanwhile, Gupta and Panagariya (forthcoming) offer a thorough argument for the privatization of public sector banks, providing policy recommendations to support their proposal. I also draw on my recent work on the design of the privatization strategy (Agarwal Forthcoming)and on macro-finance linkages (Agarwal 2022)

Further, Subramanian and Felman (2019) and the 2019-20 Economic Survey of India (GOI 2020) brought early attention to several financial sector vulnerabilities and their associated macro-financial implications. India's experience adds to the growing body of international evidence that unaddressed financial system stress can result in a broader economic growth slowdown, especially if liquidity problems turn into insolvency issues.

When it comes to international comparisons, this paper draws on the extensive literature on macro-financial issues since the global financial crisis of 2007-09. There are some similarities between the pre-pandemic turmoil in Indian financial markets and the U.S. financial crisis of 2007-09. Both episodes saw an increase in uncertainty and a flight to safety, a run on the shadow banking system, a collapse of the commercial paper market, and significant amplification of the financial shock that affected the real economy (Gorton and Metrick 2012; Kacperczyk and Schnabl 2010). However, one key distinction between the two episodes is that India's pre-pandemic financial turmoil saw relatively fewer large financial institutions affected. This is reminiscent of the U.S. savings and loans crisis of the 1980s and 1990s, where over 1,000 out of approximately 3,200 savings and loan associations failed. While the resilience of a few big financial institutions prevented the financial turmoil from escalating into a full-blown financial meltdown, it may have initially led to a lack of urgency in policy action. Specifically, there was reluctance to inject targeted liquidity into the troubled corners of the financial system and conduct a diagnostic of the non-bank financial sector to restore confidence.

The recent collapses of Silicon Valley Bank, Signature Bank, and Credit Suisse have generated renewed interest in financial stability issues and macro-financial risks. In this context, India's experience with managing systemic risks and vulnerabilities in the financial sector can provide valuable lessons for researchers and policymakers. By studying India's approach to addressing these challenges, other countries can gain insights into effective crisis management strategies and policies to mitigate the risks of future failures.

Part I

Three Key Macro-Finance Developments between 2000-2018

2 The Rise & Fall of Infrastructure Finance

2.1 Shift from DFIs to Public Banks (Before 2010s)

The Decline of Development Finance Institutions In 1947, when India gained independence, there were few banks capable of offering long-term industrial financing. To catalyze growth, the government founded development financial institutions (DFIs) to supply term finance to various industries, forming the "DFI model."

The primary DFIs were the Industrial Development Bank of India (IDBI), the Industrial Credit and Investment Corporation of India (ICICI), and the Industrial Finance Corporation of India (IFCI). By the 1990s, they contributed to 80% of project financing (Mathur 2003). IDBI funded infrastructure projects, ICICI provided long-term industry finance, and IFCI financed industrial projects.

The RBI and the government backed DFIs with direct funding and other support. A key funding channel was the RBI's National Industrial Credit (Long Term Operations) Fund, which supplied concessional loans to DFIs. The DFIs then provided term finance to the private sector at lower interest rates than those for short-term loans to increase the attractiveness of long-term investment in industry and infrastructure.

However, the DFI model faltered in the 1990s. The early 2000s economic slowdown unveiled non-performing assets and governance issues, burdening the government with fiscal costs. Consequently, ICICI merged with ICICI Bank, IDBI became a commercial bank, and IFCI's net worth turned negative in the early 2000s.

This decline of DFIs happened when the corporate debt market was still underdeveloped (Ray 2015). This prompted public sector banks and NBFCs to take on infrastructure lending in the early 2000s. Government initiatives and regulations supported PSBs in funding long-term infrastructure projects, while large NBFCs focused on infrastructure finance, becoming vital industry financiers.

Boom Years of Public Sector Banks Lending to Infrastructure To meet India's growing infrastructure needs, the government ramped up investment in the 2000s. Public-private partnerships flourished, and Indian banks increased project finance exposure. With the decline of DFIs, public sector banks (PSBs) played a key role in this expansion of credit to large infrastructure and energy projects. They provided 70% of total bank credit to the real economy by 2014.

Between 2005 and 2013, Indian banks rapidly expanded lending, with both private and public banks increasing lending by around 25% annually. When external financing decreased during the global financial crisis of 2007-09, bank exposure to large infrastructure projects expanded (Sen 2018).

Despite weakened capital positions and deteriorating balance sheets after 2010, public banks maintained lending growth on par with private banks until FY2013-14, increasing their vulnerability. However, much of this rapid lending eventually became nonperforming, setting the stage for Phase I of India's financial sector challenges.

2.2 Emergence of Stress (2010–14)

Governance lapses in infrastructure projects, particularly those under public-private partnerships, significantly increased the risk of stressed assets in PSBs, according to Singh and Brar (2016).

The banking system faced a credit misallocation problem by the early 2010s, known as "loan evergreening" or "zombie lending" (Acharya 2017). Under-capitalized banks were rolling over loans to large, struggling borrowers to avoid declaring them as nonperforming assets (NPAs).

Both banks and large borrowers had strong incentives to continue evergreening loans. By 2016-17, these large borrowers made up over half of the bank loan portfolios and almost 90% of NPAs in the banking system (RBI 2019b).[4] International experience has shown that zombie lending can be costly, as unproductive firms are kept alive by subsidized credit while more productive firms are starved of credit (Peek and Rosengren 2005; Caballero, Hoshi, and Kashyap 2008).

The Reserve Bank of India (RBI) recognized this challenge as a priority in the mid-2010s and took steps to address it.

[4] The RBI defines a large borrower as one with aggregate fund-based and non-fund based exposure of Rs 50 million and above.

2.3 AQR & Addressing the "Stressed Asset Problem" (2014–)

After 2014, the Government of India implemented the 4Rs strategy to restore the health of the banking system. The strategy comprised four components: recognition of NPAs transparently, resolution and recovery of value from stressed assets, recapitalization of public sector banks, and reforms of the public sector banks and the wider financial ecosystem.[5] This marked a significant shift in the banking system.

RECOGNIZE. The asset quality review (AQR) initiated in 2015 was a crucial step to *recognize* the problem. The RBI withdrew regulatory forbearance on restructured loans and conducted an in-depth inspection of bank loan books. The AQR revealed significant hidden vulnerabilities in the bank balance sheets of both public and private banks. Reported NPAs tripled between March 2013 and March 2017, reaching about 10% system-wide. The public sector banks were particularly weak, as shown in Figure 5.[6]

RESOLVE. To *resolve* and recover value from stressed assets, the Government of India passed the Insolvency and Bankruptcy Code in 2016, which overhauled the insolvency system.[7] The framework was hailed as a landmark reform that aimed to resolve the cases of distressed debtors in a time-bound and creditor-driven manner.

RECAPITALIZE. To *recapitalize* public sector banks, the Government of India announced a recapitalization package of Rs 2.11 trillion in October 2017. This was a critical step to allay fears about contagion from public sector banks to the rest of the financial system.

REFORM. To *reform* weak banks, the RBI put them under special watch and imposed limits on bank activities, including restrictions on lending and distributing dividends. By the end of 2017, 11 public sector banks and one private bank were under RBI's prompt corrective action framework. In addition, on August 30, 2019, the Ministry of Finance announced mergers of public banks, amalgamating 10 of them into four entities. The intervention aimed to protect taxpayer liability by returning public sector banks to profitability and mitigating the need for future government capital injection.

[5] See the Government of India press release: https://pib.gov.in/Pressreleaseshare.aspx?PRID=1578985

[6] The analysis presented in Figure 5 and 6 replicates and extends the work presented in (Acharya (2018a), RBI speech). To the best of my knowledge, Acharya (2018a) was the first attempt to highlight and distill the dynamics of PCA and non-PCA banks.

[7] Please see https://www.mca.gov.in/Ministry/pdf/TheInsolvencyandBankruptcyofIndia.pdf

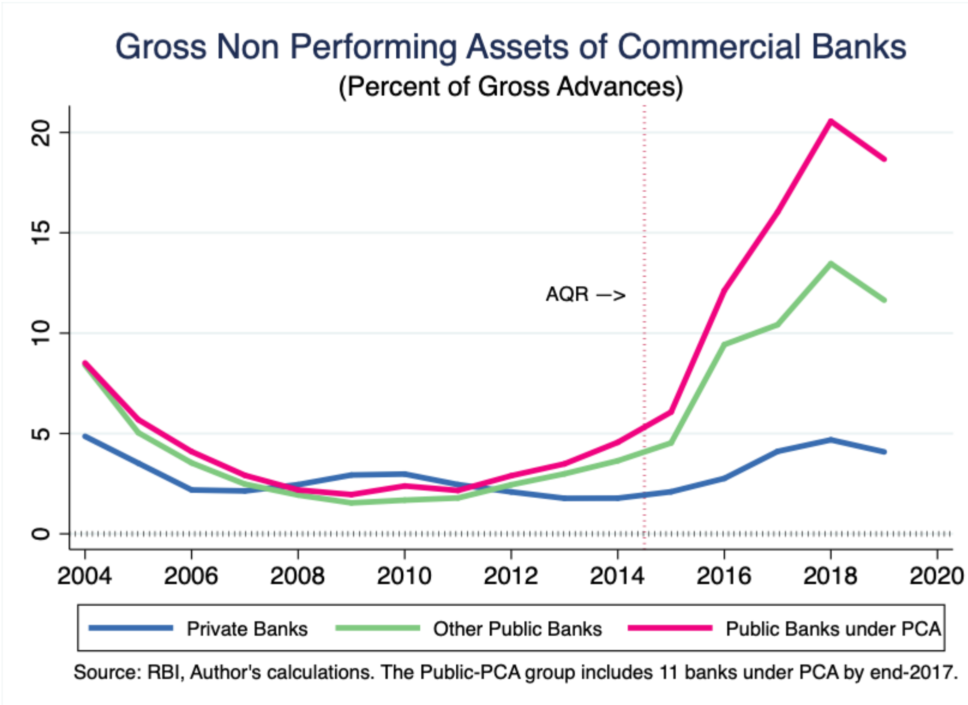


Figure 5: Nonperforming Assets of Commercial Banks

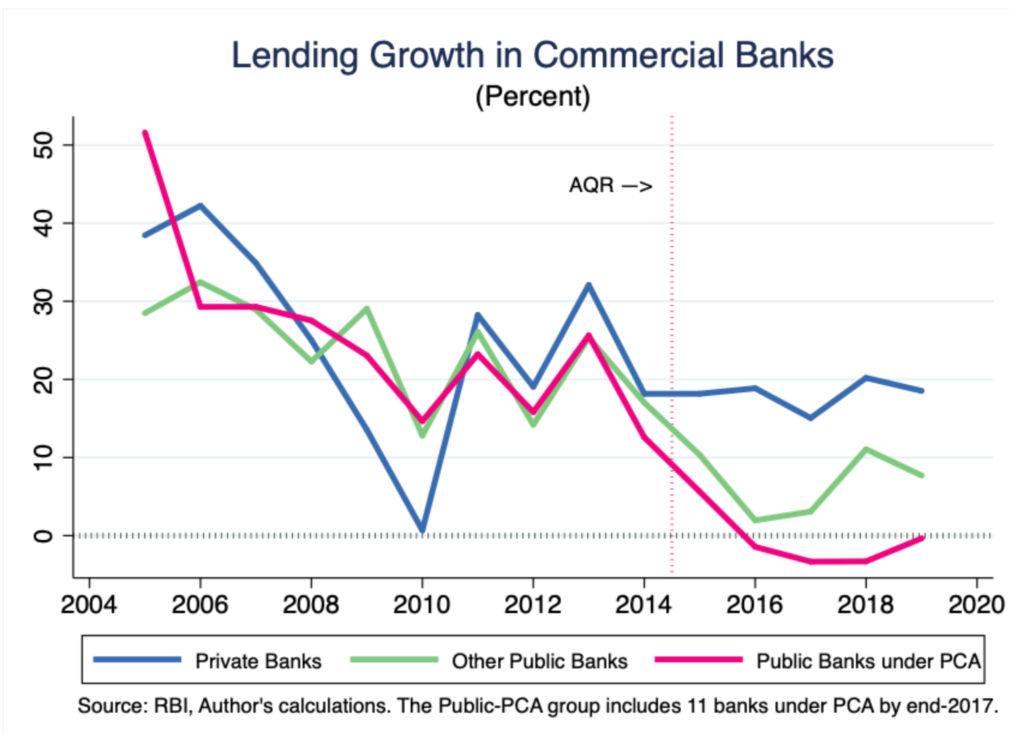


Figure 6: Lending Growth in Commercial Banks

2.4 Sharp Decline in Public Sector Banks' Lending (2014–)

After the asset quality review, the lending growth of public banks sharply declined (Figure 6). This was due to three main factors. First, the RBI required lenders to begin insolvency proceedings under the Insolvency and Bankruptcy Code if a borrower was delinquent for 180 days. Initial disciplinary actions were targeted toward the largest defaulting borrowers, which reduced lending as the RBI put an end to the evergreening of loans to large firms. Second, weak banks under prompt corrective action had limits on new lending until they fixed their identified weaknesses. Third, the asset quality review required banks to improve the quality of their assets and reconsider their lending model by moving away from riskier sectors to previously untapped (and potentially safer) segments.

Kulkarni et al. (2019) confirm that the asset quality review and the RBI's regulatory intervention resulted in a 10% increase in recognition of distressed assets, with a more pronounced effect in weaker banks.

Banking sector reform also triggered corporate balance sheet repair, as leverage had grown during the boom years. While reforming the banking system was a much-needed priority, until the repair of banks and corporates was complete, lending from public sector banks to the real economy, particularly to large industries, remained muted.

3 Rise of the Shadow Banking Sector & Demonetization

3.1 Non-Bank Financial Companies & Housing Finance Companies

NBFCs and HFCs are considered shadow banks, making up over 99% of the shadow banking sector in India ((RBI 2017)).[8] According to the Financial Stability Board (FSB), shadow banking involves credit intermediation through entities and activities outside the regular banking system (FSB 2012).[9]

While NBFCs and HFCs have different business models, they share the key feature of making loan provisions dependent on short-term funding, as opposed to banks that are

[8]Following the FSB's methodology, in the RBI reported that the NBFCs and HFCs constitute 99.7 percent of the 'shadow banking' sector in India.

[9]The FSB states that "the use of the term "shadow banking" is not intended to cast a pejorative tone on this system of credit intermediation. The FSB has chosen to use the term "shadow banking" as this is most commonly employed and, in particular, has been used in the earlier G20 communications."

mainly deposit-financed.[10] They largely depend on public funding, with bank borrowings, debentures, and commercial paper accounting for 70% of their liabilities.[11]

NBFCs have become a significant credit provider to the economy, offering up to 20-30% of the total flow of credit, especially as conventional banks deal with their stressed asset problem. Certain sectors, such as real estate, SMEs, infrastructure, and vehicle/auto loans, are highly dependent on financing from NBFCs, as shown in Figure 7. NBFCs play a critical role in deploying credit to the real estate sector.

The NBFC sector is dominated by about 263 non-deposit taking systemic institutions (or NBFC-ND-SI), which account for about 86% of the system. The government-owned NBFCs, particularly the two largest NBFCs (Power Finance Corporation and REC Limited), hold about 40% of total assets as of March 2019.

As of March 2019, there were 99 HFCs, of which only 18 were deposit-taking. Non-governmental companies owned about 95% of the HFC sector assets.

In 2019, the RBI classified HFCs as a type of NBFC, bringing them under the NBFC category. Therefore, this paper often uses the term "NBFCs" to refer to both. The total assets of large NBFCs and HFCs stood at Rs 46 trillion, or about 25% of GDP. Additionally, over 10,000 small NBFCs exist, for which data is limited.

3.2 The Rise of Shadow Bank Lending (2013–18)

After the asset quality review, growth in bank lending fell below 3% in 2016-17, as banks strengthened their balance sheets and set aside large provisions for bad debts they had just recognized.[12] As a result, strong demand for credit in certain segments of the market remained unmet. This led to two major shifts in credit creation.

First, most new bank credit came from private banks, which emerged from the asset quality review with relatively stronger capital positions, giving them space to lend. Con-

[10] Compared to several advanced countries, the shadow banking system in India—dominated by NBFCs—remains relatively small, with an estimated 20 percent of GDP in assets in 2019, but it has come to play a critical role in the Indian financial system and economy.

[11] While about 10,000 NBFCs operated in India in 2019, market share was concentrated in just a handful. The largest 263 (classified as systemically important (SI)) accounting for 86 percent of total sector assets, while the top 50 accounted for about 75 percent of market share. In addition, about 88 NBFCs are allowed to take deposits from the public under some restrictions (called NBFCs-D), and accounted for about 13.7 percent of total assets of the NBFC sector as of March 2019.

[12] Provisions are funds that banks are required to set aside to pay for anticipated future losses. See RBI's updated Prudential Framework for Resolution of Stressed Assets for more details at https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11580&Mode=0.

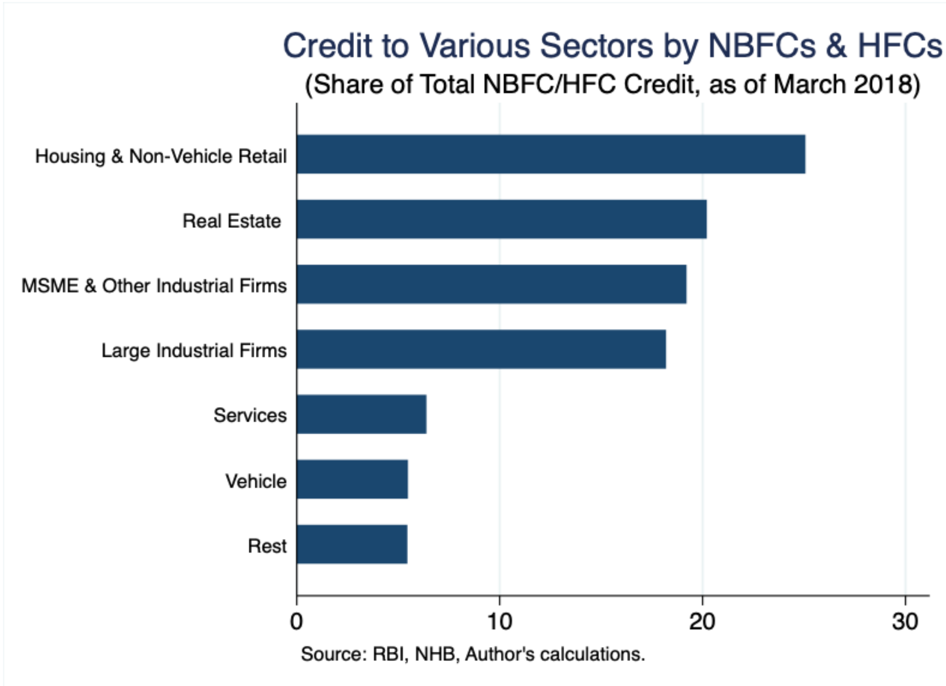


Figure 7: Credit to Various Sectors by NBFCs & HFCs

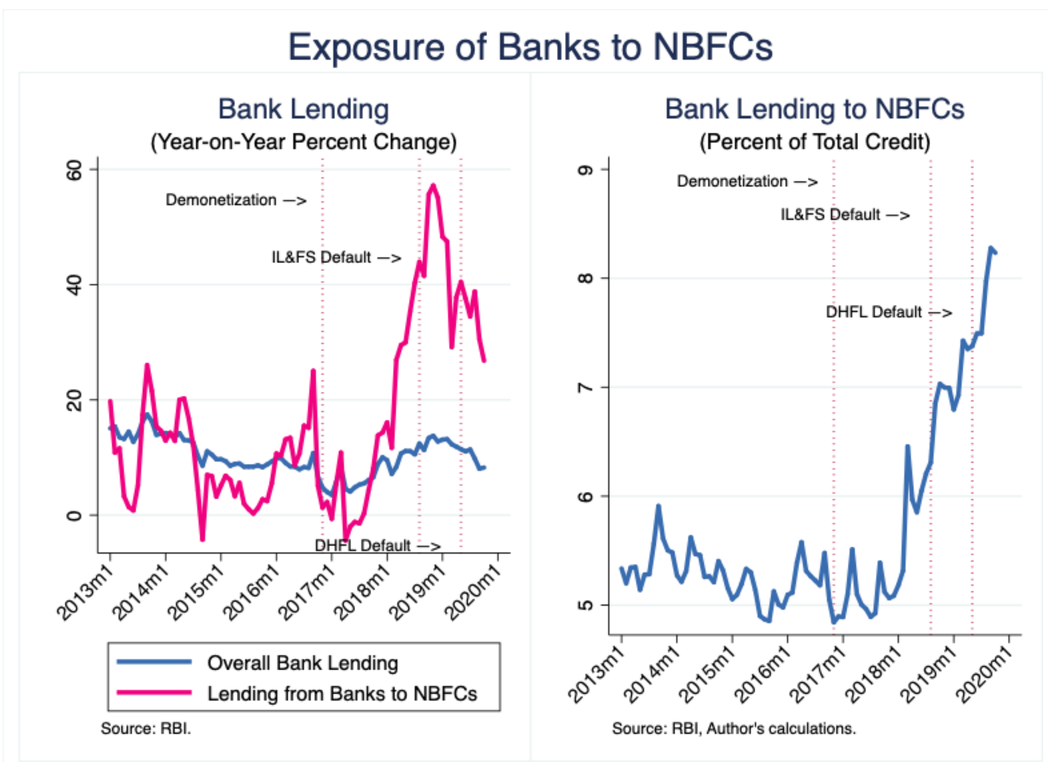


Figure 8: Exposure of Banks to NBFCs

sequently, their share in new lending to the real economy went from about 25% to 80% by FY2015-16 and to nearly 100% by FY2016-17.

Second, the interlinkage between banks and NBFCs increased significantly. The NBFCs often operate in niche markets and geographies where traditional banks are absent. This customer relationship and geographic advantage enabled NBFCs to quickly deploy funds to the real economy, including priority sectors.[13] Thus, instead of solely relying on direct lending, banks (both private and public) found it profitable to channel part of their funds to NBFCs, who in turn lend to the real economy. Demonetization in 2016 accelerated this process.

Bank exposure to NBFCs was concentrated among a few NBFCs, increasing banks' vulnerability to default by a single large NBFC. By 2018, more than half of bank lending to NBFCs went to the top 10 NBFCs, while the top 30 NBFCs held 80% of bank lending (RBI 2019a).

3.3 Demonetization and its Impact (2016–17)

In November 2016, the government announced the sudden invalidation of two widely circulated banknotes, the Rs. 500 and Rs. 1000 denominations. This move, aimed at combating corruption, black money, and illegal assets, eliminated a staggering 86% of the country's currency overnight.[14] The demonetization episode significantly altered the Indian financial system. It led to a surge in low-cost deposits into the banking system, creating an abundance of liquidity. After decelerating for a few years, deposit growth surged to 10% during 2016–17, much of which went to the relatively healthier private banks.

The demonetization had two crucial impacts on credit flow to the commercial sector. First, flush with liquidity, the supply of bank credit accelerated in 2017–18, with private banks providing the majority of the incremental credit. Second, commercial banks channeled a significant portion of the excess liquidity to the NBFCs (as discussed above). Post-demonetization, lending from banks to NBFCs rose from 0% to about 60% year-on-year. As a consequence, bank exposure to NBFCs rose from just below 5% at the end of 2016 to

[13] The RBI requires banks to lend 40 percent of their adjusted net bank credit to certain priority sectors, including agriculture, MSMEs, export credit, education, housing, renewable energy, etc.

[14] A few years later, in May 2023, the authorities announced the withdrawal of the 2000-rupee note from circulation. The note, introduced into circulation in 2016, remained legal tender but citizens were asked to deposit or exchange these notes by Sept. 30, 2023.

about 8.5% by the end of 2019, as shown in Figure 8.

Before the troubles in IL&FS emerged, two types of fragilities had become entrenched in the system.

- First, NBFCs evolved to have opaque balance sheets, some with risky exposure to real estate developers, home loans, and infrastructure projects, which were increasingly being funded by "runnable" short-term debt instruments and credit lines from banks. This combination of opacity and asset-liability mismatch exposed them to significant run risk, setting the stage for Phase II of India's financial turmoil, which was triggered by the default of IL&FS.
- Second, linkages increased between the traditional banking sector and the shadow banking system. This set the stage for Phase III of India's financial turmoil, which was triggered by the default of DHFL (which is discussed in a later section).

4 Increased Exposure to Real Estate

4.1 The Rise of Real Estate Lending (2013–18)

The real estate crisis can be traced back to the lending boom in real estate between 2013 and 2018. While public sector banks were focused on restructuring large loans to infrastructure and energy projects, both NBFCs and private banks were providing credit to the economy, much of which was directed to the real estate sector.

According to the RBI's December 2019 Financial Stability Report, much of the new lending since 2013-14 from NBFCs and private banks went to the real estate sector. Their examination of 310 large real estate companies showed that the aggregated exposure of the financial system to the real estate sector had approximately doubled, with housing finance companies and private banks increasing their share sharply. However, this figure might understate the banking system's exposure to the real estate sector, as it does not account for the indirect exposure of banks to the sector through lending to NBFCs.

Based on supervisory data published by the RBI, the total exposure of banks to the real estate sector (directly and indirectly through NBFCs) grew 14-18% annually, despite a sizable fall in overall credit during this period (Figure 9, panel B). The analysis also reveals that the direct exposure of public banks to the real estate sector barely grew over

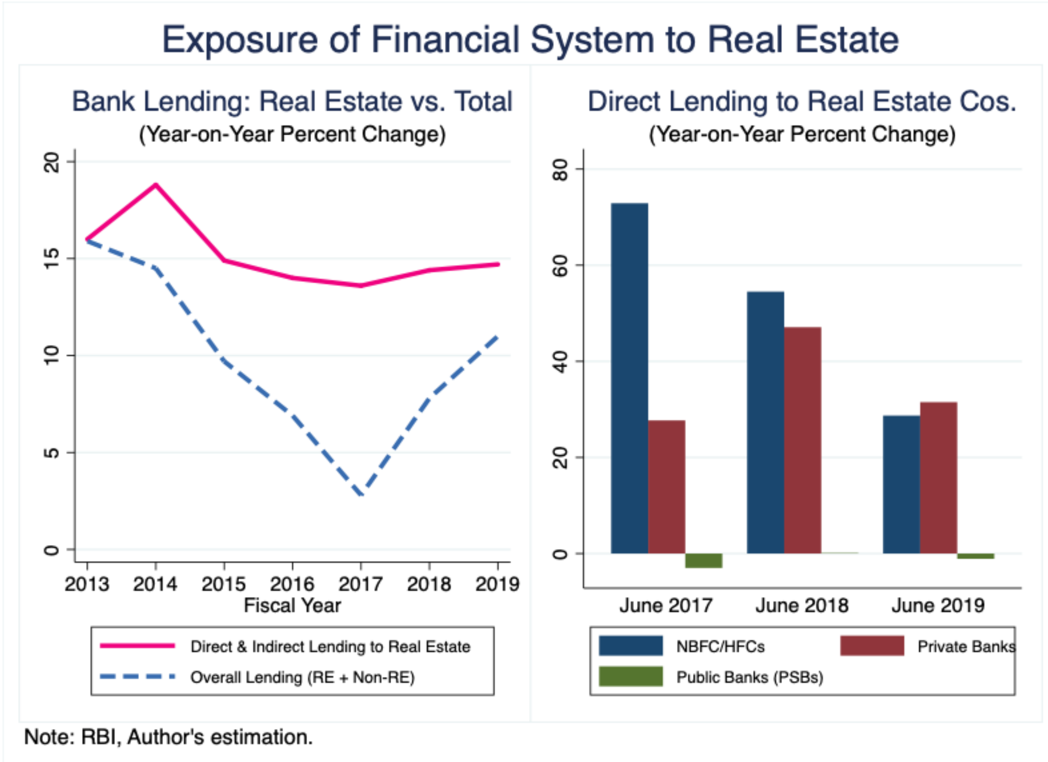


Figure 9: Exposure of Financial System to Real Estate

the past few years, but their indirect exposure through NBFCs grew by about 12% each in FY2017 and FY2018 and 7% in FY2019 (Figure 7, panel A). Thus, the exposure of real estate is not restricted to NBFCs and private banks alone, as some public banks also have exposure to real-estate-focused NBFCs (RBI 2019a).[15]

At the peak of the real estate sector lending cycle, banks found themselves exposed to real estate in three ways: (1) direct lending to real estate developers, (2) indirect exposure to NBFCs highly exposed to real estate developers, and (3) mortgage and personal loans to individual borrowers collateralized by real estate.[16]

[15]Moreover, the report found that "the flow of funds to the sector has continued, notwithstanding a general slowdown in credit growth documented earlier. Since September 2018, when the IL&FS induced risk aversion was noted, all categories of financial intermediaries have increased their exposures to REs (real estate companies), the sharpest being that of HFCs."

[16]Note that given the size and diversity of the Indian economy, we must appreciate variations within sectors. In this context, while several developers were under stress, non-negligible demand remained in some geographies and segments (such as for affordable housing).

4.2 Negative Shocks to the Real Estate Sector and Downside Risks

The Indian real estate sector was already under pressure before the IL&FS default. The government implemented the Real Estate Development and Regulation Act (RERA) in May 2017, which required developers to keep advance payments in a dedicated bank account. This regulation squeezed a key source of working capital for the sector.

After the IL&FS default, fresh lending to the real estate sector declined sharply, leaving many projects stalled and resulting in unfinished construction sites, unpaid vendors, laid-off workers, and buyers who had pre-purchased units without homes. In September 2019, the stock of unfinished housing inventory in 35 top cities was estimated to be nearly 1.3 million units, with nearly 1 million concentrated in the largest eight cities alone.[17] Worse, the stock of unsold inventory in these cities had grown by 5 percent year-on-year since September 2018, when the NBFC shock began. Based on the sales rate at the time, it would have taken approximately 3½ years to sell off the unsold inventory, which was especially high in major cities such as Mumbai, Delhi, and Chennai (Figure 10). In addition, housing prices were under pressure pre-pandemic due to excess supply, leading to a contraction since mid-2019 when adjusted for inflation (Figure 11).

Excess supply put pressure on real housing prices, which declined after mid-2019. The rise in stalled real estate projects raised serious concerns about some banks and non-banking financial companies (NBFCs). The illiquidity problems of real estate developers had turned into insolvency problems, with nonperforming loans already on the rise in the sector. Moreover, worries remained about potentially bigger write-downs in the future. Underwriting standards may have loosened in recent years, as the financial system accelerated lending to the real estate sector, while leverage on developers' and buyers' balance sheets increased significantly, leading to high debt servicing burdens relative to their incomes. These concerns around the financial system's exposure to the real estate sector were driven by both a higher risk of default and lower recovery rates.

Exposure was sizable, amplified by the intricate interconnectedness between banks and NBFCs. Fitch Rating's India division estimated that about $10 billion (or 0.4 percent of GDP) of developer loans were due for repayment in the first half of 2020, with several NBFCs and banks directly exposed to these loans. Banks also had sizable indirect exposure through their lending to the NBFCs. Therefore, a rise in defaults in these loans could have had a significant impact across the financial system.

[17] See second quarter (Q2) FY2019–20 Residential Real Estate Market Report by Liases Foras.

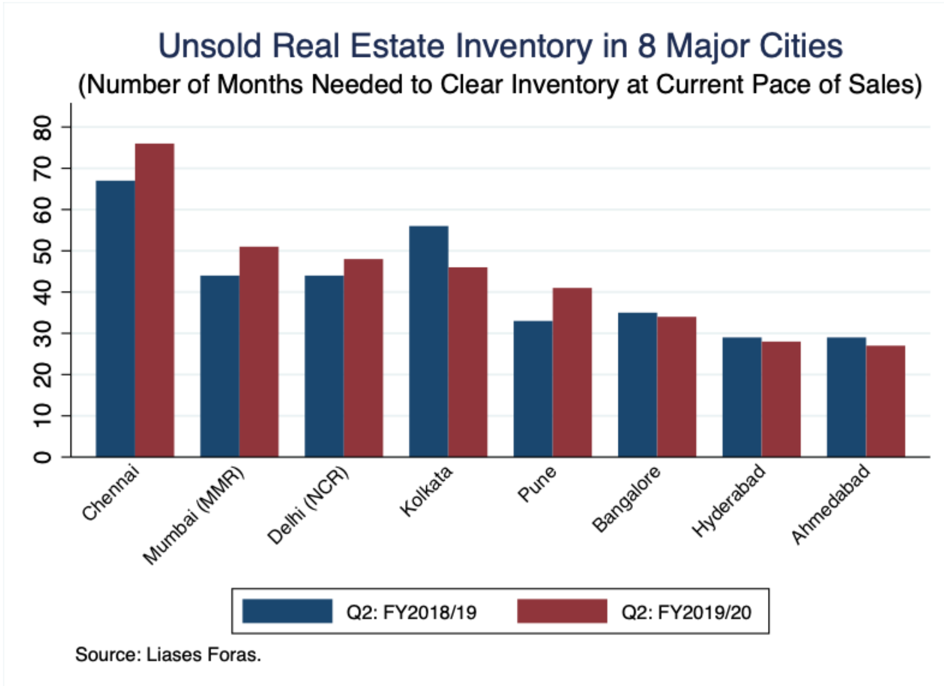


Figure 10: Unsold Real Estate Inventory

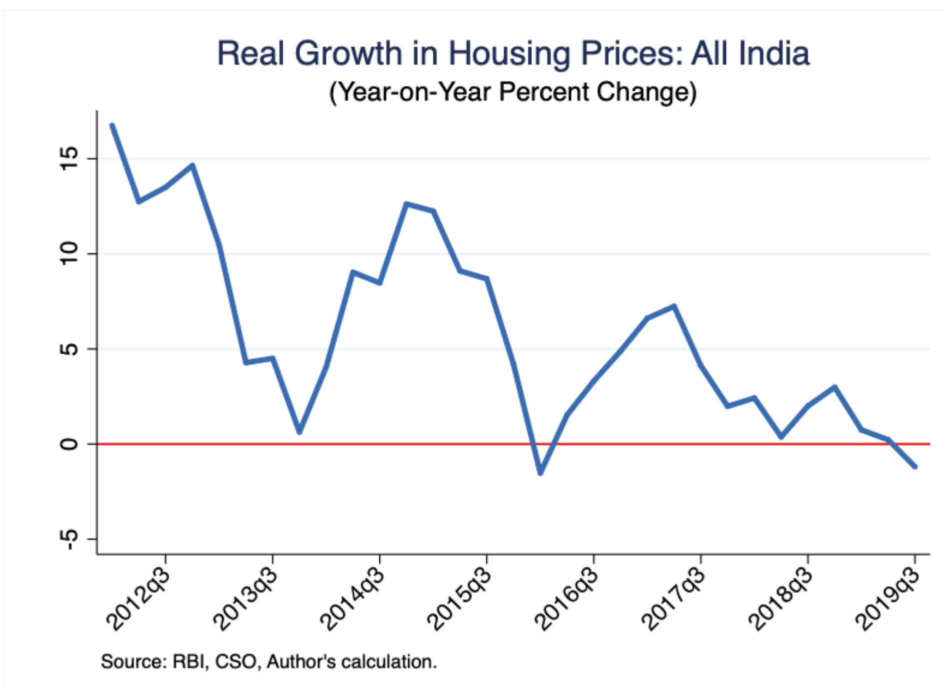


Figure 11: Real Growth in Housing Prices

Part II

The Defaults of IL&FS and DHFL (2018 and 2019)

5 IL&FS Default and NBFC Lending Collapse (2018)

5.1 The IL&FS Default: June–September 2018

IL&FS had been established in 1987 as an infrastructure project finance company. However, over time, the company expanded to become a conglomerate with 302 entities, with a focus on infrastructure development and financial services (Figure 12). By March 2018, the group's reported assets had grown to Rs 1.2 trillion (about 0.7 percent of GDP), making it one of India's biggest companies. IL&FS had a wide range of stakeholders, including private and foreign partners, and a significant stake from state-owned companies.

IL&FS was involved in both financing and developing infrastructure projects. However, many of the group's infrastructure projects had long investment horizons (often over 10 years), which it initially financed through medium-term loans from banks. Banks had become less willing to roll over these loans in recent years, leading IL&FS to increase its reliance on short-term borrowing by issuing commercial paper and debentures. By March 2018, 35 percent of IL&FS liabilities were due to be paid to creditors within 12 months.[18] Additionally, IL&FS was operating with very high leverage, with a debt-to-equity ratio reaching 17:1 by March 2018.[19] The combination of an asset-liability maturity mismatch, high dependence on short-term wholesale funding, high leverage, an opaque balance sheet, governance concerns, and large exposure to stressed infrastructure/real estate sectors created a perfect recipe for a financial tragedy.

In June 2018, a subsidiary of IL&FS delayed the repayment of inter-corporate deposits and was unable to service some debt obligations. This led rating agencies to downgrade some of IL&FS subsidiaries below investment grade in July, putting funding pressures on the group (although still rated AAA). On September 4, 2018, it was revealed that the

[18] Based on reported current liabilities as a share of current and non-current liabilities in the consolidated financial statement in the 2018 annual report.

[19] This information is based on "IL&FS: One Year Progress Report" of October 1, 2019.

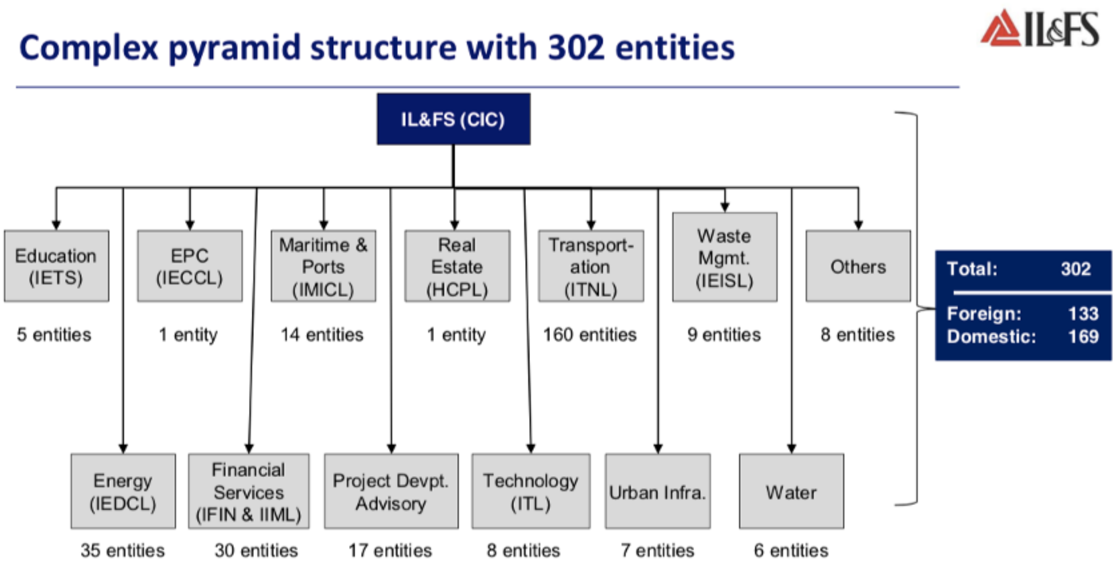


Figure 12: IL&FS Organizational Structure

IL&FS group and its subsidiary had defaulted on short-term bank loans of Rs 1,000 crore and Rs 500 crore, respectively, to a development finance institution (SIDBI), followed by a series of defaults in subsequent weeks. By the end of September 2018, IL&FS had external borrowing of almost Rs 1 trillion, making it a systemic player with significant exposure to the financial system and to public sector institutions. Public banks and institutions held a majority of IL&FS debt.[20] The moment of reckoning arrived on September 21, 2018, when fears about widespread defaults by IL&FS shook markets, affecting the commercial paper market and mutual funds. The 30-share Sensex index fell 1,128 points before partially recovering, while non-banking financial companies (NBFCs) were hit hard, with the DHFL share price falling 60 percent at one point in intraday trading.

To calm markets, the Reserve Bank of India (RBI) and the Securities and Exchange Board of India (SEBI) issued a rare joint statement emphasizing that they were closely monitoring the situation and stood ready to take action if necessary. To contain the risks to the system and avoid contagion, the Government of India filed a petition before the National Company Law Tribunal (NCLT) against the IL&FS Board. The NCLT allowed the government to supersede the previous board of IL&FS and appoint a new board to carry out an orderly resolution of IL&FS, motivated by substantial public interest in ensuring

[20] According to a petition filed before the NCLT by the Government of India an estimated Rs 0.57 trillion of IL&FS debt obligations, out of over Rs 0.9 trillion, is from public sector banks and institutions.

such an outcome. At that stage, a further wide-scale default from the group would have threatened financial stability in addition to direct adverse impact on the real economy due to IL&FS' prominent role in the infrastructure sector.

5.2 The Collapse of NBFC Lending (2018-2020)

The NBFC sector suffered system-wide disruption following the collapse of IL&FS. Funding costs for most institutions surged, and some struggled to access funding markets, while those with strong fundamentals maintained access at higher costs. To make up for the shortfall, NBFCs increasingly turned to bank financing between March 2018 and March 2019. This shift saw bank lending increase from around 24% to 30% of total lending, while debentures' share fell from around 50% to 40%. The cost of borrowing in the commercial paper market spiked for NBFCs, and their issuance of commercial paper declined sharply.

The IL&FS crisis highlighted two types of vulnerability in the NBFC sector. Firstly, it exposed funding vulnerabilities for some NBFCs with sizable asset-liability mismatches, which made those with a greater need to roll over short-term debt exposed to unforgiving investor sentiment immediately after the default. Secondly, concerns mounted over credit risk in NBFC loan books. NBFC lending had grown rapidly, and the IL&FS shock prompted investors to scrutinize their asset quality before funding them. It brought attention to asset quality concerns and exposure of NBFCs to the ailing infrastructure and real estate sectors. With easy access to funding cut off for most NBFCs, the sector as a whole slowed down its lending plans, clogging another important flow-of-funds channel to the real economy. This, in turn, triggered a liquidity crunch across the entire economy, with the liquidity problems morphing into insolvency problems, leading to more defaults and further deterioration in corporate/financial sector health. This macro-financial spiral is discussed further in a later section.

6 DHFL Default and Aggregate Lending Collapse (2019)

6.1 Vulnerabilities in Banks Exposed to NBFCs Emerge

During Q2 2019, concerns mounted about the potential spread of shadow banking troubles from NBFCs to the broader financial system. Banks' quarterly results released in

April 2019 revealed ongoing issues with stressed assets and brought greater clarity to exposures between banks and NBFCs. This prompted markets to scrutinize bank lending to NBFCs and focus on banks with exposure to stressed groups such as DHFL, IL&FS, and Reliance Housing.[21] In response, the RBI directed banks to disclose their loans outstanding to IL&FS and the provisions required against this exposure, highlighting the linkages between banks and NBFCs.[22] As a result of the increased scrutiny, bank stock performance diverged, with the market differentiating between supposedly healthier banks and the rest.

6.2 The DHFL Default: June-August 2019

Dewan Housing Finance Corporation (DHFL), incorporated in 1984, provided loans for housing and residential properties, loans against property, construction and project finance, and SME lending. The company's focus on tier II/III cities and suburban areas of metropolitan cities allowed it to provide financing to an urbanizing India. As of March 2019, DHFL had about Rs 1.2 trillion in assets (or 0.63 percent of GDP).

DHFL faced trouble following the IL&FS default, which highlighted NBFC asset liability mismatches and growing concerns about liquidity and credit risks. The IL&FS default caused a sharp increase in yields of debt paper issued by NBFCs, including DHFL, in the secondary market. The effectiveness of credit rating agencies' due diligence was also questioned in light of IL&FS's AAA rating, adding to uncertainty about hidden vulnerabilities in NBFCs, especially those exposed to the ailing real estate sector.[23]

Following the IL&FS debacle, credit rating agencies became more vigilant. In February 2019, DHFL's short-term debt instruments were downgraded, and the company's man-

[21] For more information see https://theprint.in/economy/nbfc-crisis-threatens-another-bad-loan-crunch-for-indian-banks/250834/

[22] For more information see:
https://economictimes.indiatimes.com/industry/banking/finance/banking/disclose-exposure-to-ilfs-rbi-tells-banks/articleshow/69029143.cms?from=mdr

[23] According to the RBI's December 2019 Financial Stability Report (RBI 2019a): "Over the last year, there have been growing concerns over the liquidity and credit issues at NBFCs and HFCs, starting with defaults on short term obligations by IL&FS followed by a sharp rise in the yields of certain debt papers issued by DHFL in the secondary market. These episodes have warranted a review of the framework under which credit rating agencies (CRAs) are operating. Inability to detect emerging financial troubles in the IL&FS group on time has also raised questions on the effectiveness of due diligence by CRAs. In November 2018, in its continued efforts to enhance the quality of disclosures made by CRAs and strengthening the rating framework, Securities and Exchange Board of India issued various guidelines to CRAs such as disclosure of parentage support, group companies and a specific section on liquidity."

aging director resigned. Funding pressure on DHFL surged as it struggled to roll over its short-term debt, resulting in further rating downgrades. By May 2019, the company stopped accepting and renewing fixed deposits due to a credit rating revision.

Despite its efforts to shore up liquidity, DHFL was unable to find a strategic investor, sell significant portions of its loan book, or draw liquidity from bank credit lines or the debt market.

DHFL's default on its interest servicing obligations on June 4, 2019, triggered a series of payment defaults and a downgrade of its debt issuances to default by rating agencies. The mutual fund sector was hit hard, with several funds exposed to DHFL experiencing a decline in net asset value (NAV) and investors pulling out their money. The outflow of funds caused a major disruption in India's wholesale funding market.

In the following months, DHFL continued to default on its payments and entered into talks with creditors and bondholders to restructure its debt. However, the company was unable to find a strategic investor to restore investor confidence or draw liquidity from bank credit lines or the debt market. On July 15, 2019, DHFL reported significant losses and defaults in its regulatory filings.

6.3 Contagion to the Rest of the Financial System: Summer–Autumn 2019

DHFL's series of defaults caused concerns about the exposures of banks and debt funds to DHFL and other NBFCs. The mood in the financial markets was already grim, with Punjab National Bank reporting a second instance of fraud worth $0.55 billion. Benchmark equity indices took a hit, and banking and NBFC stocks sold off sharply. Altico Capital, a real estate-focused NBFC, defaulted on external commercial borrowing on August 12, 2019. Eight days later, insolvency proceedings were initiated against Housing Development and Infrastructure Limited (HDIL), a real estate firm, for failure to repay Rs 522.3 crore, affecting the balance sheets of several banks exposed to HDIL.[24]

Subsequently, hidden exposures of Punjab and Maharashtra Cooperative (PMC) Bank to HDIL were revealed, prompting the RBI to place the bank under directions to protect its funds and prevent erosion. These developments crystallized concerns about the

[24] Later, in October 2019, lenders to Housing Development and Infrastructure Limited learned that they must set aside provisions for their entire exposure to the real estate developer, as required by RBI's prudential norms when a borrower is classified as fraudulent.

banking-NBFC-real-estate nexus and deepened investors' worries about the entire financial system's cross-exposures to the troubled sectors.

Meanwhile, DHFL was in discussions with creditors throughout the summer, but by September, it was evident that the resolution had stalled, and creditors and bondholders were unable to reach an agreement. To expedite the resolution of DHFL, the Government of India introduced a special interim framework for insolvency resolution of financial service providers under the Insolvency and Bankruptcy Code (IBC) on November 15. To contain systemic risks, the RBI superseded the DHFL Board of Directors on November 20 and appointed an administrator to expedite the orderly resolution of DHFL under the IBC. DHFL became the first financial company to be referred to the NCLT under the code.

6.4 Aggregate Lending Collapse (2019Q3 to 2020Q1)

The DHFL and Altico defaults and troubles at Punjab and Maharashtra Cooperative Bank could be compared to a quick sequence of undersea earthquakes. While they were widely reported, their immediate impact was not felt nor fully understood by the wider economy. Nevertheless, the occurrence of these events—in the shadow of the IL&FS collapse less than a year earlier—forced a major re-assessment of risks in the system.

In the aftermath of these events, the financial markets were gripped by high uncertainty and flight-to-safety behavior—as if they were waiting for the tsunami to come. They crowded onto the limited space on the highest peak possible, abandoning any ground that could possibly be hit by the incoming tsunami. Thus, the ample liquidity available from RBI operations flowed to the strongest firms, while investors remained averse to firms/banks that may be exposed to vulnerable sectors/borrowers. A situation of "too much money chasing too few good assets" materialized—with the strongest firms/banks outperforming the rest by a big margin.

In turn, this led banks and NBFCs to predominantly focus on demonstrating to the markets that they had strong fundamentals. Thus, banks and NBFCs prioritized balance sheet repair and strengthening asset-liability matching rather than fresh lending. These dynamics led to a total collapse of lending in the system, with nearly no new lending coming from banks or NBFCs to the commercial sector (see Figure 4).

Figure 13 provided a timeline of events presented thus far and explained the macro-financial linkages in the Indian system. The numbered events (in black boxes) referred to the following sequence of events:

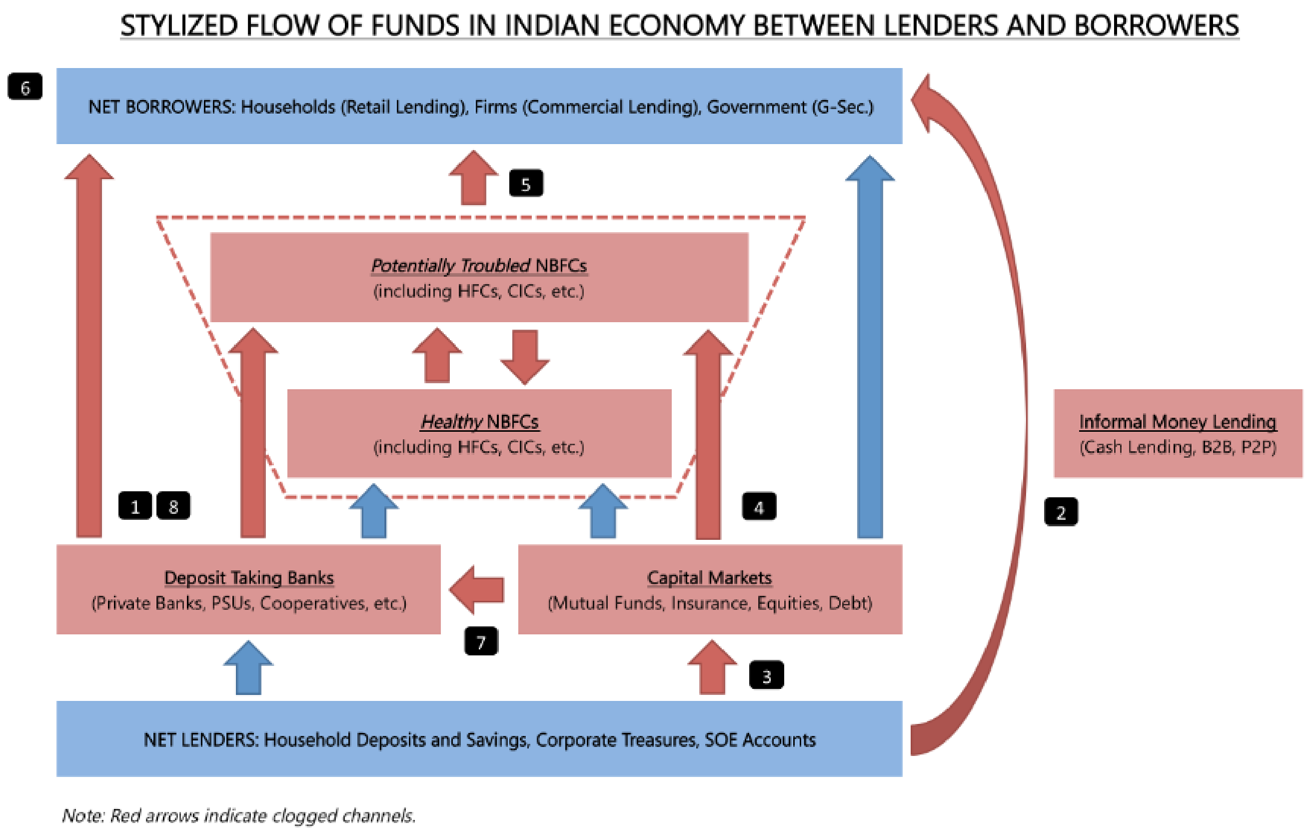


Figure 13: Stylized Flow of Funds in India

1. Before the NBFC shocks, a significant share of public banks were already under the prompt corrective action framework, which placed supervisory limits on bank lending, restricting bank loan growth from the scheduled banking sector.

2. Meanwhile, post-demonetization restrictions on cash transactions and income tax regulations discouraged informal money lending channels, leading to a decline in the volatility of cash.

3. The IL&FS default created fear of hidden vulnerabilities and forced lenders to re-assess risks in NBFCs and, in particular, sectors such as real estate and infrastructure, leading to a run on the money market/debt mutual funds potentially exposed to the troubled NBFCs/sectors.

4. Mutual funds and banks cut exposure to potentially troubled NBFCs/sectors to reassure customers, leading to a crash in commercial paper and short-term debt markets.

5. More robust NBFCs, striving to stand out from their weaker counterparts, focused on strengthening their loan books and liquidity positions, which curbed fresh lending.

6. Borrowers and sectors highly dependent on NBFCs were impacted, ongoing projects stalled, and liquidity problems gradually turned into solvency problems across the supply chain.

7. A second NBFC default, of DHFL, led to another re-assessment of risks in mutual funds and commercial bank exposure to NBFCs and real estate, leading to a second run on mutual funds, with the problem now spreading to private sector banks.

8. Under pressure, the commercial banks was forced to improve liquidity and contracted lending to the private sector.

Part III

Why the Defaults Led to a Slowdown: Macro-Finance Spiral

Part II highlighted the significant stress in the Indian financial system, leading to increased uncertainty and flight-to-safety behavior, ultimately affecting funding costs, credit flows, and the overall economy. This part explains how the financial stress has amplified impacts on the real economy through the macro-financial spiral (Figure 3).

Section 7 presents evidence of rising uncertainty and flight-to-safety behavior, while Section II documents the run on the shadow banking system. Section 8 examines the collapse of lending from non-bank financial companies (NBFCs) and liquidity hoarding by these firms. In Section 9, we explore the spillovers to the banking system and liquidity hoarding by banks. Finally, Section 10 presents evidence of the broader economy-wide impact of financial stress and the amplification of the financial shock in the real sector.

7 Rise in Uncertainty and Flight to Safety

To document the rise in uncertainty, flight to safety, and demand for liquidity, this section presents four types of evidence.

7.1 Evidence 1: Rise in Credit Spreads

One method to assess the increased demand for safety or liquidity is by examining the spread between AAA-rated bonds and the yield of 10-year government securities (G-Secs). Although AAA-rated bonds are viewed as low-risk, their yields are often higher than government bonds with similar maturity—largely due to the safety and liquidity that government bonds provide, especially in times of economic uncertainty. This difference in yield is known as the "convenience yield." Krishnamurthy and Vissing-Jorgensen (2012) have quantified this convenience yield, highlighting the special position of U.S. Treasuries among other safe U.S. dollar assets.

In the Indian context, however, the convenience yield may not have the same interpretation due to the non-negligible interest-rate risk associated with government securities, given the size of bank exposure to G-Secs and the high duration of the bonds (Acharya 2018b). Therefore, movements in G-Sec yields can have a significant impact on bank profitability, making them not entirely risk-free for banks (see discussion below). Nonetheless, it is informative to examine the Aaa/G-Sec spread around the stress events.

A second measure of the rise in demand for safety is the corporate bond spread between AAA-rated bonds and relatively lower-rated bonds such as Baa, Aa, or A-rated bonds. In advanced countries, much of the literature focuses on the Baa/Aaa spread (Bernanke and Gertler 1995; Hakkio and Keeton 2009). However, since the Baa market is small and illiquid in India, this analysis will focus on the Aa/Aaa spread. (The results are similar for the A/AAA spread.)

During good times, the yield on these bonds will exceed the yield on Aaa bonds by a small margin, as investors perceive the difference in default risk between Aa and Aaa bonds to be relatively small. However, during periods of increased risk perception or decreased willingness to bear risk, investors may demand a higher yield on Aa bonds, causing the Aa/Aaa spread to widen and reflecting a flight to quality. Furthermore, investors may worry that within the A-rated category, some A bonds are riskier than others, leading to a problem of adverse selection that causes the A rating to move even further above the Aaa yield. Therefore, the Aa/Aaa spread may also capture increases in information asymmetries.

Figure 14 examines the trends in both these measures in India around the key stress events. The two measures provided insight into different aspects of the story. Firstly, after demonetization, the Aa/Aaa spread fell by about 100 basis points (bps) as large amounts of liquidity entered the financial system, allowing debt markets to easily access funding. In this period, the market perception of relative risk between Aa and Aaa corporates securities declined. However, this trend immediately reversed after the IL&FS default. With a sharp decline in debt funds, the Aa/Aaa spread climbed back from about 50 bps to 150 bps in a few months. Then, as the spreads were starting to stabilize at a new equilibrium, the DHFL default occurred, leading to another spike in the Aa/Aaa spread. As of the end of 2019, Aa rated corporates had to pay about 200 bps more than Aaa - rated corporates to borrow in the debt markets. This was 150 bps higher than the spreads observed pre-IL&FS-default.

As for the Aaa/G-Sec spread, a similar rise was seen in the spread after the IL&FS

default, with the relative borrowing cost for Aaa -rated corporates increasing by about 50 bps immediately after. However, the response of the spread after the DHFL default was markedly different, with the spread registering no discernible movement immediately after, and possibly declining by about 10 bps in the months since. This may be due to the rising fiscal concerns in the second half of 2019, which may have reduced bank appetite to buy long-duration G-Secs (more on this below).

7.2 Evidence 2: Rise in Interbank Spreads

At least two measures of financial stress are relevant from the interbank market perspective: (1) the TED spread and (2) the spread between interbank rates and the policy rate (referred to as the "MIBOR spread" for India).

The TED spread is the difference between the 3-month interest rate on interbank loans and on 3-month government securities (T-Bills). Although not a closely tracked measure in India, this spread has been the focus of considerable literature since the global financial crisis. The MIBOR spread is similar, and is calculated as the difference between the 3-month interest rate on interbank loans and the RBI policy repo rate. Both indicators measure the funding cost that banks charge each other over the short term.

The interbank spreads can be higher than the rate on a Treasury bill or the policy repo rate of the same maturity for three reasons: (1) default risk, (2) liquidity risk, or (3) adverse selection. Default risk arises when lending banks are concerned that the loan may not be repaid, while liquidity risk arises when banks anticipate an unexpected need for funds before the loan matures. Adverse selection occurs when lending banks have difficulty assessing which borrowing banks are good or bad risks. These two spreads can capture three distinct aspects of financial stress: flight to quality, flight to liquidity, and asymmetry of information between buyers and sellers of financial assets (Hakkio and Keeton 2009).

Figure 15 portrays the TED spread in India surrounding the critical stress events. The interbank market seems to demonstrate a similar picture of stress as the corporate debt market. After demonetization, the surplus cost of interbank borrowing declined from about 50 bps to zero, as a considerable amount of liquidity entered the system. As re-monetization occurred, this trend partially reversed, but interbank borrowing costs stayed very close to the government's cost of short-term borrowing. In late 2017, when the RBI imposed the prompt corrective action framework on several banks, the interbank rates' cost surged immediately by around 100 bps, which was somewhat offset by RBI's

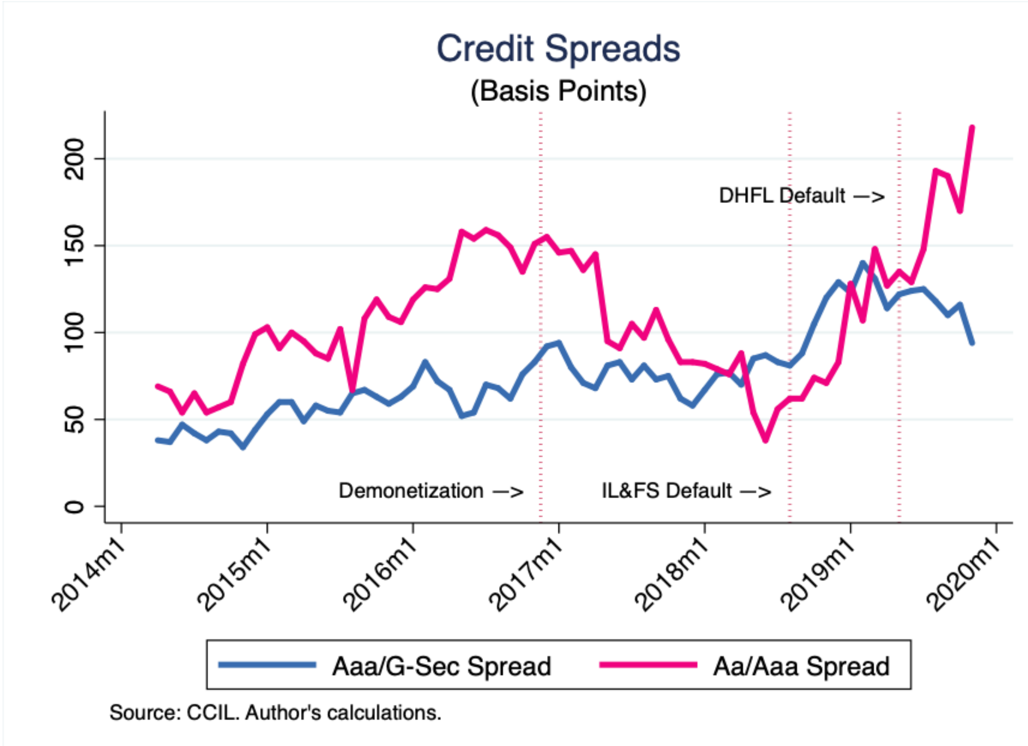


Figure 14: Credit Spreads

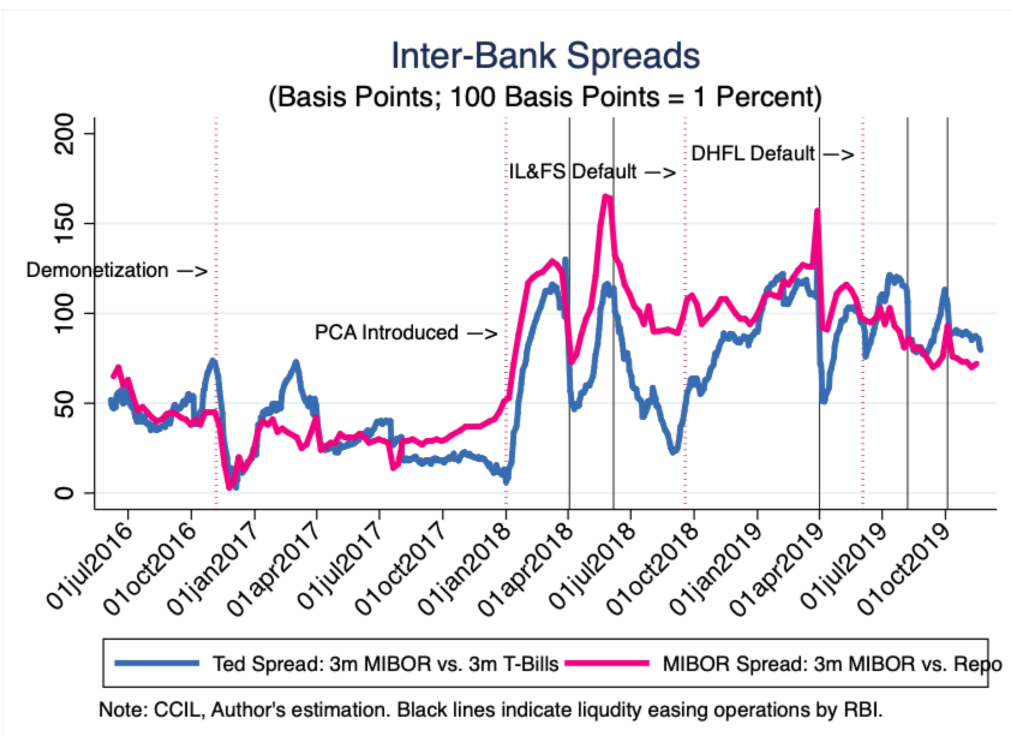


Figure 15: Inter-Bank Spreads

liquidity easing operations. The cost of interbank borrowing increased again by 50 bps immediately after the default of IL&FS, and a similar increase of about 40 bps was observed after the DHFL default. Despite significant liquidity easing operations by the RBI in 2019, the interbank borrowing cost measured by the TED spread stayed elevated, indicating the persistence of strains in the interbank market. This is more evidence consistent with a potential flight to safety behavior continuing to grip the financial system.

7.3 Evidence 3: Stock Market Polarization (Stock Market Puzzle)

Large-cap stocks tend to outperform small-cap stocks during flight-to-safety episodes, according to cross-country evidence (Baele et al. 2019). This sheds light on the 2019 puzzle of the divergence between the real economy and equity price indices. The results of this subsection are consistent with this phenomenon.

India's Sensex and Nifty, consisting of 30 and 50 of the largest firms, respectively, are widely followed benchmark indices. Despite a severe economic slowdown in 2019, the two indices delivered total returns of 15 percent and 12 percent, respectively, leading many to question why.

A prominent magazine, Business Today, even ran a cover story on December 15, 2019, titled "The Great Stock Market Mystery: Why the Sensex is on fire even as the economy hurtles downhill?"[25]

Figure 16 illustrates the performance of small, mid, and large-cap firms during 2018-19. The dynamics of the Indian stock market align with flight-to-safety episodes seen in other countries, with large-cap stocks performing strongly while mid and small-cap stocks lag behind. Since the end of March 2018, the Sensex's 30 firms' returns have increased by about 25 percent, while small-cap firms' returns have dropped by over 20 percent, and even mid-cap firms saw a decline of around 10 percent during this period. Figure 16 shows that polarization began in Q2 2018 and accelerated around both the IL&FS and DHFL defaults. Even in 2019, nearly 80 percent of firms listed on the Bombay Stock Exchange (BSE) experienced negative returns.

Excess aggregate liquidity can exacerbate polarization in asset markets. Cheap liquidity provided by the central bank needs to be allocated to available assets, which, in a

[25]Rashmi Pratap. 2019. The Great Stock Market Mystery: Why the Sensex Is on Fire Even as the Economy Hurtles Downhill. Business Today. https://www.businesstoday.in/magazine/cover-story/the-great-stock-market-mystery/story/390959.html

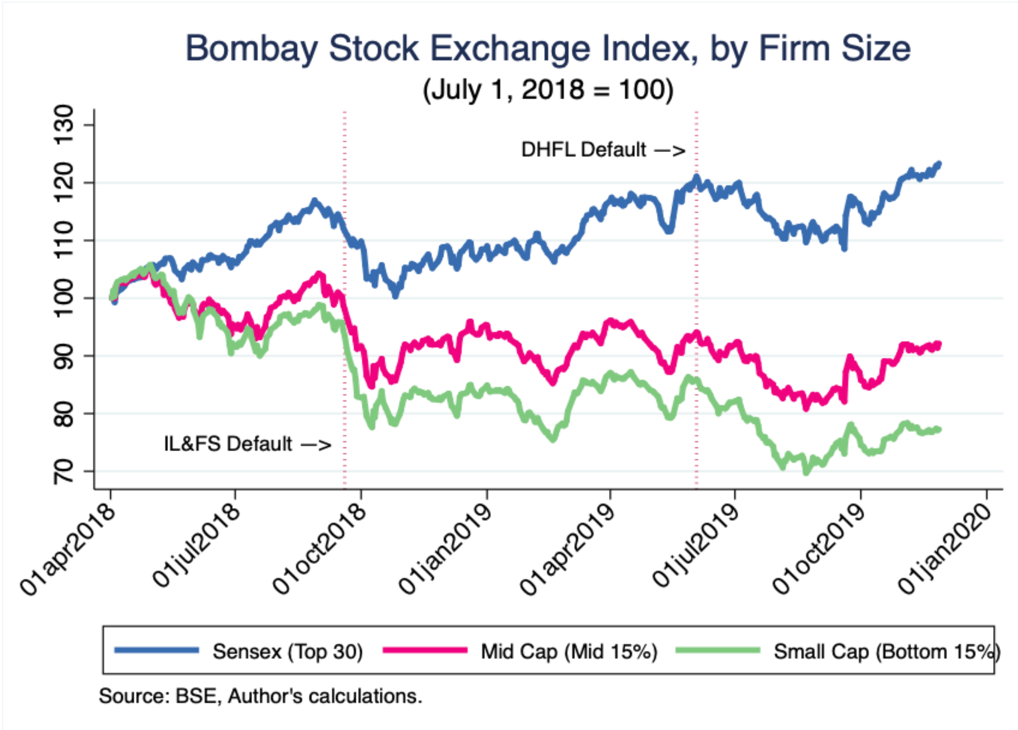


Figure 16: BSE Stock Market Index by Firm Size

polarized environment, leads to an increase in the relative demand for safer assets, further polarizing asset prices between safe and less-safe assets (Agarwal 2022).

It's worth noting that the polarization phenomenon in Indian asset markets cannot be attributed solely to NBFC shocks. Rather, these shocks have accelerated a broader trend that has been ongoing since at least 2014. For example, between 2014 and 2019, the share of the top 10 firms in market capitalization increased from about 14 percent to 23 percent.[26] This suggests that the economic environment over the past few years has favored larger, more established firms relative to their smaller counterparts.

7.4 Evidence 4: Yield Curve Movements

Economists have long viewed a decrease in the slope of the yield curve, or term spread, as a reliable predictor of impending recessions (Estrella and Trubin 2006). This phenomenon is often attributed to investors' anticipation of economic weakness and more monetary

[26]Financial Express. 2019. Markets 2019: Nearly 80% Listed Companies on BSE Slipped in Red. December 31. https://www.financialexpress.com/market/markets-2019-nearly-80-listed-companies-on-bse-slipped-in-red/1808064/

policy stimulus, leading to lower short-term rates (Adrian, Crump, and Moench 2013; Favara et al. 2016). During times of high uncertainty and risk, such as during the global financial crisis, government bonds can act as an insurance policy, driving investors to hold bonds even as the term premium approaches zero or becomes negative (Cohen, Hördahl, and Xia 2018).

Figure 17 uses data from secondary markets to plot the term spread in India, measured as the difference in yields between the 10-year G-Sec and the 1-year G-Sec. The term spread flattened significantly immediately following the defaults of IL&FS and DHFL, declining by about 25 bps and 50 bps, respectively. This suggests a temporary surge in demand for G-Secs after the defaults. However, the decline was short-lived as market concerns about fiscal slippage increased.

The behavior of the term spread is consistent with the pattern observed in other credit spreads.

Fiscal concerns are a strong driving force for longer-maturity G-Secs demand, despite having limited default risk—due to the sizable interest rate risk associated with them and their implications for bank profitability. Banks can only classify a certain quantity of G-Secs as held-to-maturity (HTM), shielding them from any valuation changes, and currently, they can only classify around half of their G-Sec holdings as HTM. For the rest, they must book losses when the value of the bonds falls, or when secondary market yields rise. (Acharya 2018b) provides a further discussion on this issue in the Indian context.

G-Secs make up approximately 20 percent of total banking sector assets, and are a vital source of profits for banks, contributing over one-fourth of total profits during certain periods. However, their contribution to profits is volatile because of sizable duration risk, whereby the average maturity of G-Secs held by banks is quite high, leading to large valuation changes in the non-held-to-maturity holdings of G-Secs. Therefore, in an environment where bank profits are already under significant pressure, banks require substantial compensation, in the form of risk premium, to hold additional quantities of long-maturity G-Secs.

In addition, Figure 17 demonstrates that the introduction of external benchmarking, which required banks to link their floating rate loans to the RBI policy rate starting from October 1, 2019, had a significant impact on the slope of the yield curve. This was likely driven by the fact that the external benchmarking requirements introduced additional interest rate risk for the banks for their existing loan exposures. This in turn reduced

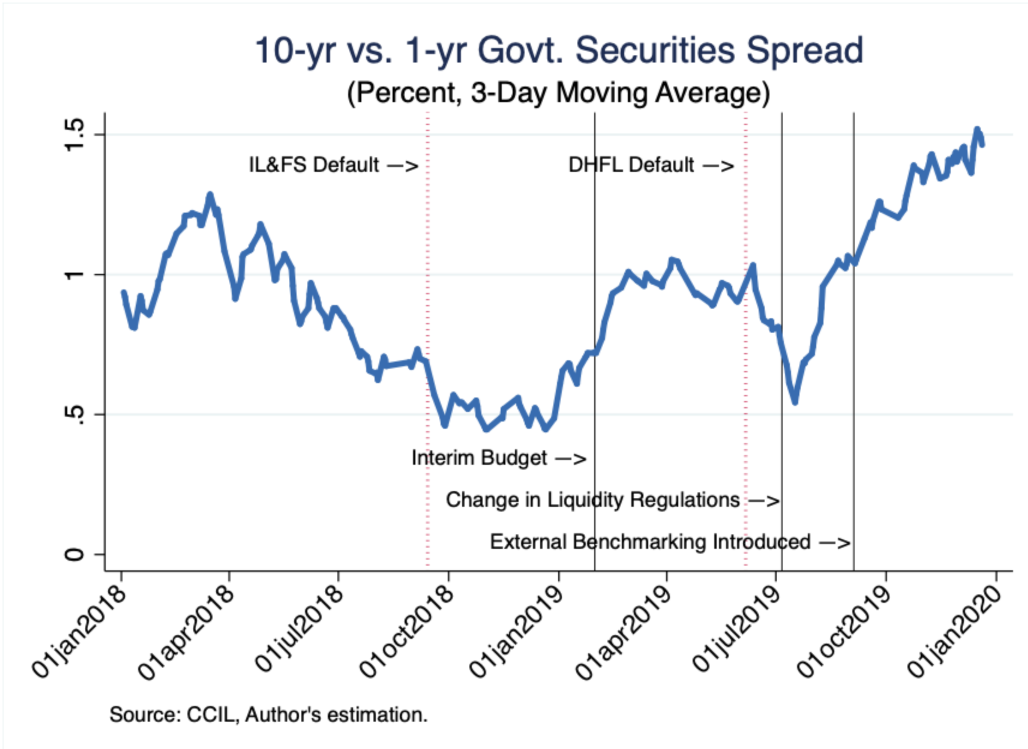


Figure 17: Slope of the Yield Curve: 10-yr vs. 1-yr GSec Spread

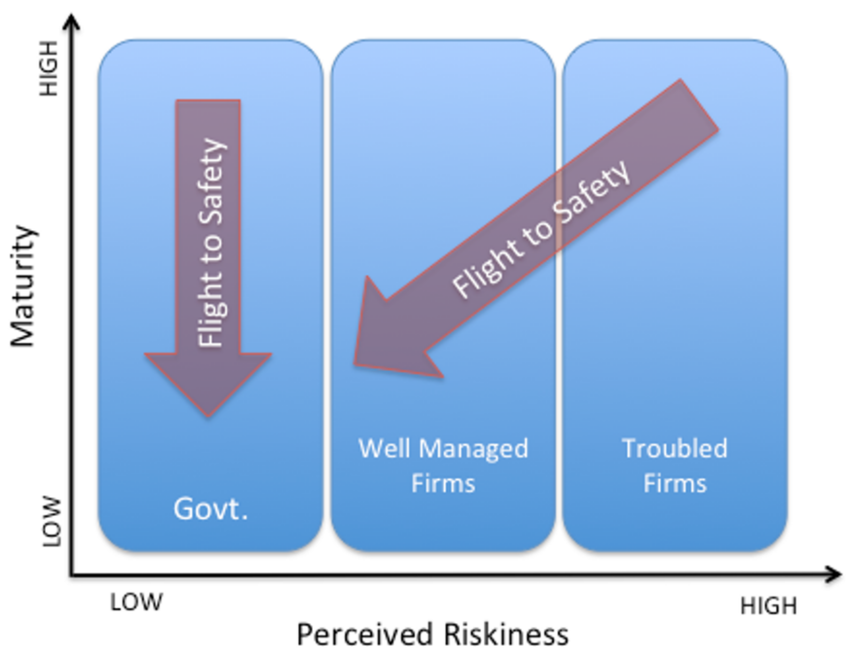


Figure 18: Illustrative Depiction of Flight to Safety Dynamics

the banks' appetite to absorb additional interest rate risk, increasing the risk premium associated with duration risk. As a result, long-term yields may have moved up. In a way, this was akin to a "reverse-crowding-out effect," with government borrowing costs increasing because of the exposure of banks to the commercial sector.

Thus, at that juncture, the flight-to-safety dynamics pushed investors away from both (1) credit risk, and (2) interest rate/duration risk (Figure 18). The combined implication of this was unusually strong demand for shorter-term securities issued by either the government or a few AAA-rated corporates. One fundamentally strong government entity that supplied unlimited quantities of such securities was the RBI through its liquidity window. As seen in the next section, demand by banks for such liquidity instruments shot up.

8 A Run on the Shadow Banking System

8.1 Overview of Mutual Funds in India

Mutual funds played a central role in financial intermediation in India, mobilizing funds from net savers and channeling them to net borrowers, including nonbanks, banks, governments, and corporates (Figure 11). As one of the main net suppliers of funds to the financial system, they were crucial in nonbank credit creation, with NBFCs relying heavily on mutual funds for funding (RBI 2018).

As of the end of August 2018 (just before the IL&FS default), mutual funds had total assets under management (AUM) of Rs 25 trillion (or about 15 percent of GDP). Half of these resources were with mutual fund schemes investing in debt instruments, such as debt funds or money market funds, while 35 percent were with schemes investing in equities, such as equity funds or ETFs.[27][28]

According to the Association of Mutual Funds in India (AMFI) data, debt funds and money market funds typically raised over 90 percent of their funding from institutional investors, such as corporates, banks, and high-net-worth individuals. On the other hand, about half of all investors in equity funds were retail investors, such as regular house-

[27] The term "money market mutual funds" is used here to refer to both "liquid funds" and "money market funds".

[28] For further details on the industry, please refer to statistics provided by the Association of Mutual Funds in India.

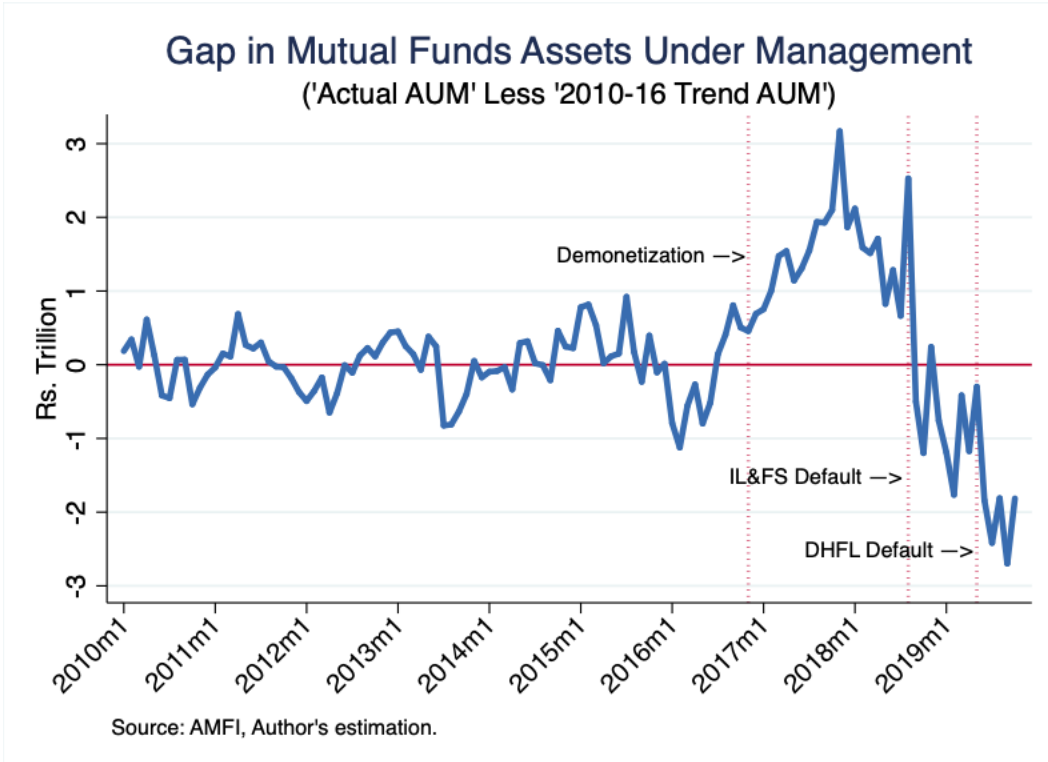


Figure 19: Gap in Mutual Funds AUM

holds. This distinction matters, as international experience had demonstrated that investments from institutional investors were likely to be relatively less "sticky" and thus more prone to outflows in periods of stress.

8.2 Exposure of Mutual Funds to Nonbank Financial Corporations before IL&FS

Immediately after demonetization in November 2016, mutual funds experienced large net inflows as liquidity in the formal financial system surged. According to a simple estimation that compares assets under management in mutual funds relative to the trend observed between 2010 and 2016, mutual funds received excess inflows of nearly Rs 3 trillion between the end of 2016 and mid-2017 (Figure 19).

During this period, mutual funds' exposure to the NBFC sector also significantly increased. Although the share of debt/money market funds as a share of the total industry remained roughly stable, the composition of their assets shifted considerably toward funding NBFCs and corporates during 2017-18. Securities and Exchange Board of India data show that mutual fund holdings of spread products, such as commercial paper, certificates of deposit, and corporate debt, as a share of total debt assets under management increased from about 10 percent to 25 percent between September 2017 and March 2018.

Thus, just before the IL&FS default, the mutual fund industry was one of the main suppliers of credit to NBFCs, with significantly increased exposure to the NBFC sector.

8.3 The Impact of the IL&FS Default

According to the Securities and Exchange Board of India, "the total exposure of Mutual Fund schemes to the IL&FS group was only Rs 5,200 crore including debt issued by SPVs of IL&FS) as on 31st August 2018 that is, around 0.35% of the debt AUM (assets under management) of the Mutual Fund industry." This exposure amounted to Rs 0.05 trillion or 0.025 percent of GDP.

However, despite this small exposure, the default by IL&FS on its debt obligations led to major stress and a run on mutual funds in September 2018. The default created significant volatility in debt and money market instruments issued by NBFCs/HFCs, which in turn created redemption pressure on mutual fund schemes that were potentially exposed to the NBFC sector.

Within a month, by the end of September 2018, the assets under management of open-ended debt-oriented schemes declined by about 20 percent. The majority of the outflows occurred in liquid/money-market schemes, where assets under management declined by 35 percent within one month (Figure 19). Overall, the outflows from mutual funds were nearly Rs 3 trillion (or 1.5 percent of GDP) in one month, 60 times the exposure of mutual funds to IL&FS.

8.4 Why the IL&FS Default Led to A System-Wide Run: A Crisis of Confidence

After the default, the sector was gripped by fear dynamics. This was similar to the run on mutual funds during the global financial crisis (Gorton and Metrick 2012; Kacperczyk and Schnabl 2010), where a small credit event can cause widespread fear and uncertainty.

Two factors in the Indian context may have contributed to the mutual fund panic. Firstly, mutual funds used varying valuation practices when faced with the downgrade of IL&FS debt securities, resulting in different haircuts being applied. Secondly, the timing of applying these haircuts varied, leading to investor uncertainty about true exposure to IL&FS debt.

This delay and variation in applying haircuts created a first-mover advantage, similar to that seen in a classic bank run. Those who redeemed their funds first would escape the eventual haircut on IL&FS instruments, while those left behind would suffer a larger impact of the haircut and be forced to redeem their funds at a lower net asset value.

Investors were incentivized to panic and withdraw funds from debt-oriented mutual funds. In March 2019, the Securities and Exchange Board of India discussed the impact of IL&FS debt valuation practices by mutual funds. The Board stated that "such practice(s) may also have resulted in a first mover advantage with certain investors taking advantage of the gap between the credit event and the date of taking the haircut, by redeeming at a higher NAV."[29]

To restore the health of the mutual fund sector following the run, the Securities and Exchange Board of India took action, requiring segregated portfolios for debt and money market instruments. In June 2019, new investment norms for liquid and debt mutual funds were also released. These norms mandate that liquid mutual funds must invest at least 20 percent of their corpus in liquid assets such as cash, government securities, treasury bills, and repos on government securities.[30]

Despite these measures, risk uncertainty remained high in the second half of 2019, with credit spreads not returning to pre-IL&FS levels. This uncertainty was exacerbated by a series of credit events from large corporates and financial institutions, deterring investors from the mutual fund industry.[31] The default of DHFL was one such major credit event.

8.5 The Impact of the DHFL Default

The restored calm in the mutual fund industry was short-lived as the default of DHFL in June 2019 sent another shockwave. Several mutual funds that were exposed to DHFL saw their net asset values impacted. The collective exposure of mutual funds to DHFL was

[29] See https://www.sebi.gov.in/sebi_data/meetingfiles/mar-2019/1553497521494_1.pdf

[30] Other norms include sectoral limits on liquid funds' investments and mark-to-market valuation of all debt and money market investments. Further liquid and overnight schemes have been prohibited from investing in short-term deposits, debt and money market instruments with structured obligations, or credit enhancements.

[31] In several of these episodes, holders of debt were forced to restructure the maturity of their bond holdings, but the eventual write-downs on these exposures were not immediately clear.

similar to that of IL&FS before their respective defaults. As of the end of April 2019, mutual funds had a collective exposure of Rs 5,200 crore (or Rs 0.05 trillion or 0.025 percent of GDP). Moreover, it was later discovered that 56 percent of this exposure was concentrated in schemes held by two mutual funds.[32]

The DHFL default caused a similar shock to the mutual fund industry as the IL&FS case. Within a month, by the end of June 2019, assets under management of open-ended debt-oriented schemes declined by about 15 percent. Liquid/money-market schemes also saw a decline of 25 percent within a month (Figure 19).

The total outflows from mutual funds were nearly Rs 1.7 trillion (or 1 percent of GDP) in a month, which is about 35 times the exposure of mutual funds to DHFL. The second major shock widened the gap in assets under management of mutual funds compared to the pre-2017 trend. By the end of 2019, the mutual fund industry should have been bigger by roughly Rs 2 trillion (or 10 percent), or by Rs 4 trillion (or 20 percent) if one takes into account the positive inflows from demonetization.

8.6 The Collapse of Commercial Paper

India's commercial paper market was restricted to short-term, unsecured promissory notes with maturity up to one year, and only those with a minimum credit rating of A3 are eligible for issuance as per RBI rules.[33] This market serves as a money market instrument for highly rated corporates, NBFCs, and other financial institutions to diversify their sources of short-term borrowing.

At the time of the IL&FS default in mid-September 2018, the total outstanding commercial paper was approximately Rs 6.4 trillion (or 3 percent of GDP), out of which NBFCs had issued around Rs 1 trillion.

The IL&FS default had a severe impact on the commercial paper market in India. In just three months, between mid-September and the end of December 2018, the amount of commercial paper outstanding decreased by about 22 percent. This decline caused the market to contract from Rs 6.4 trillion to Rs 5 trillion (Figure 20). The impact was even more severe for commercial paper issued by NBFCs, which declined by over 70 percent

[32] See https://ecomictimes.indiatimes.com/markets/stocks/news/these-two-fund-houses-alone-have-56-exposure-to-dhfl-debt/articleshow/69700830.cms?from=mdr

[33] See RBI's directions on commercial paper for more details: https://rbidocs.rbi.org.in/rdocs/notification/PDFs/NT43D0D6575DBD184C22B71E859294DA1969.PDF

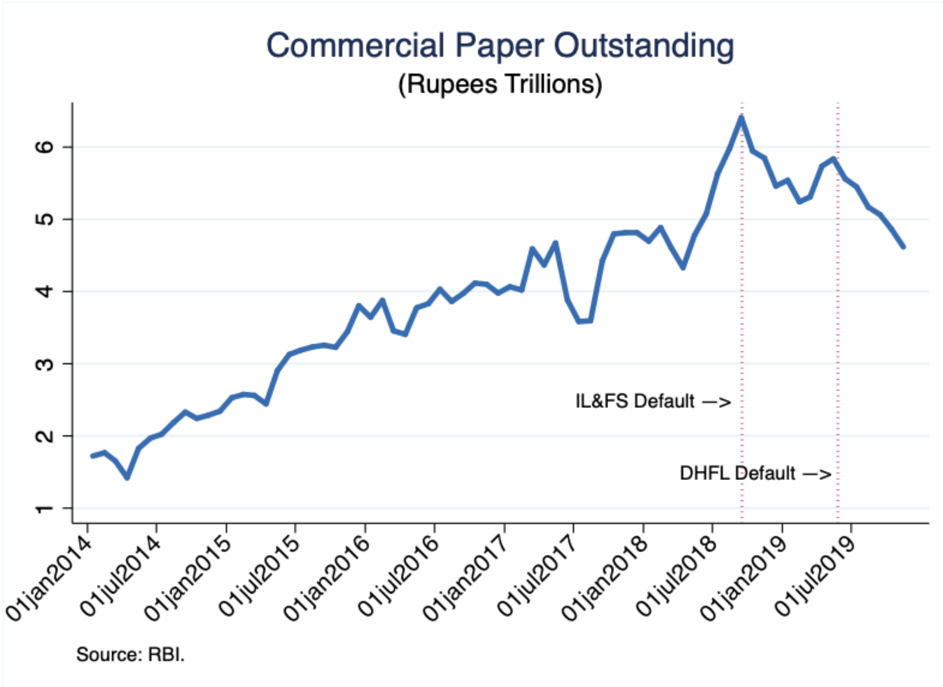


Figure 20: Commercial Paper Outstanding

in just two months.[34]

The commercial paper market had begun to recover by Q1 of 2019. However, the default of DHFL was another major blow. Within three months of the DHFL default, commercial paper outstanding had contracted by roughly 18 percent, or Rs 1 trillion.

The contraction of the commercial paper market led to a loss of access to cheaper short-term funds for NBFCs and some corporates. Mutual funds and other investors became wary of unsecured lending, even to highly rated institutions. This created a two-sided run, with corporates and investors running on mutual funds, who in turn ran on debt instruments issued by NBFCs and some corporates.[35]

These dynamics forced the NBFC sector to abruptly transition from its former business model of borrowing short-term in wholesale funding markets to lend long-term. Instead, apart from a few highly regarded institutions, many NBFCs continued to face difficulty

[34]See RBI's financial stability report for June 2019. Additional coverage of the issue can be found in market analysis at https://www.financialexpress.com/industry/banking-finance/commercial-paper-issuance-by-nbfcs-fall-66-pct-in-august-as-cost-of-funds-rises/1703619/

[35]In addition, as per RBI data, banks subscribing to about 20 percent of commercial paper issued, reduced their exposure to commercial paper, with only about 16 percent participation in the market by March 2019. This led the collective participation of mutual funds to increase from about 69 percent to 74 percent over the same period.

accessing short-term debt markets. This liquidity crunch in the sector was compounded by some rating downgrades over the past quarters. NBFCs were compelled to find longer-term sources of financing and increasingly relied on banks to step in.

RBI's efforts to address the liquidity crunch may have increased the bank-non-bank linkage as many measures to relax liquidity pressures focused on encouraging on-lending and co-lending by banks to non-banks (which is discussed in more detail below).

8.7 Why the IL&FS and DHFL Shocks Led to a Decline in Lending from NBFCs

Based on an analysis of audio recordings of investor earnings calls and related material in the public domain, four broad themes emerge on why the IL&FS and DHFL shocks led to a decline in lending from NBFCs:

- PRECAUTIONARY SAVING AND LIQUIDITY HOARDING: NBFCs adopted a precautionary savings mode and paid higher costs to secure ample liquidity. Banks hesitated to lend liquidity to the NBFC sector due to a lack of confidence. Only a handful of NBFCs/HFCs with excellent governance, high capital adequacy ratios, and strong parental support were able to access funding easily. The rest of the sector remained in need of liquidity. This resulted in NBFCs preserving liquidity, which meant that their target cash balances rose as a share of total assets, leading to less fresh lending to the real economy.

- SHIFT IN BORROWING MIX TOWARD LONGER-TERM LIABILITIES: Second, NBFCs aimed to shift their borrowing mix from short-term debt to long-term liabilities and reduce leverage. This aimed to lower refinancing risks in a cautious wholesale funding market. NBFCs worried about rolling over large amounts of short-term debt when market sentiment could change rapidly. As a result, they cut back on commercial paper borrowings and increased long-term debt, primarily from banks. However, not all NBFCs managed to fully replace their short-term liabilities with long-term ones due to tight funding conditions. Consequently, NBFC balance sheets didn't grow enough—or even shrank—compared to pre-IL&FS shock trends. This slower balance sheet growth impacted the amount of fresh lending by NBFCs.

- PRIORITIZE LOAN HEALTH OVER GROWTH: Many investors expressed concerns about asset quality, particularly in real estate. NBFC management aimed to maintain the performance of existing loans to prevent them from becoming NPAs. Several NBFC leaders prioritized preserving the health of their current loan book rather than focusing on balance sheet growth and new lending. This approach was mainly driven by NBFCs needing to reassure anxious investors that the issues causing the IL&FS and DHFL defaults were absent from their companies, confirming their fundamental strength.

- DIVERSIFY PORTFOLIO TOWARD RETAIL, AWAY FROM REAL ESTATE: Amid concerns about the real estate sector and the perceived strength of retail loans, many NBFCs—including those specializing in real estate lending—began avoiding real estate and increasing their exposure to retail. This segment had relatively low asset quality concerns based on NPA data. The IL&FS and DHFL experiences showed that large exposures to single borrowers could quickly jeopardize financial institutions. Consequently, NBFCs aimed to reduce large exposures to individual borrowers.

In summary, these four factors led to severely constrained fresh lending following the IL&FS and DHFL shock. This dynamic can be viewed through the lens of asymmetric information theory. In the NBFC context, heightened uncertainty about solvency may have led to adverse selection issues in the market (Akerlof 1978). Consequently, NBFCs felt compelled to send a credible, costly signal to showcase their strength (Spence 1978). They focused on improving their loan book and addressing asset-liability mismatches, sacrificing fresh lending in the process (Figure 21).

8.8 Overall Impact

The IL&FS and DHFL defaults triggered a major risk reassessment. Uncertainty surrounding mutual funds' exposure to these entities and the collective exposure to the NBFC sector resulted in significant redemption pressure on the mutual fund industry. Many mutual funds faced severe liquidity challenges, forcing them to de-lever existing holdings, cut exposure to NBFCs, and reduce corporate debt issuance demand.

These developments impacted the NBFC sector and the broader economy. By October 2019, mutual funds' exposure to NBFCs had dropped about 30% since July 2018 (CARE Ratings 2019), making it harder for NBFCs to roll over debt and finance the real sector. The decline in mutual fund funding for NBFCs extended beyond commercial paper, with

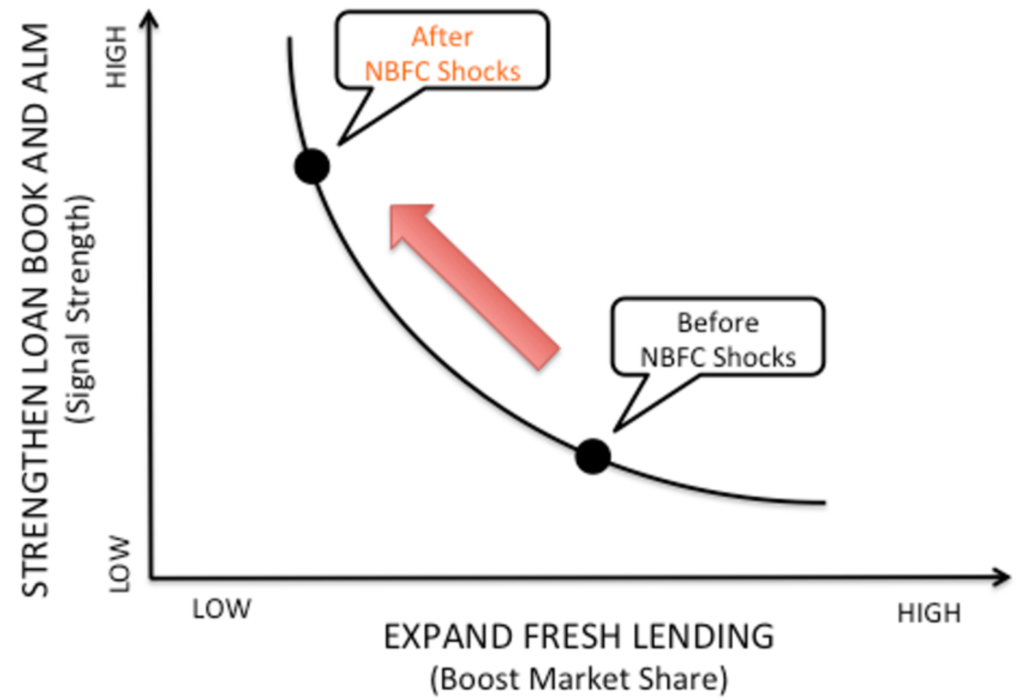


Figure 21: The Tradeoff between Loan Health vs. Fresh Lending

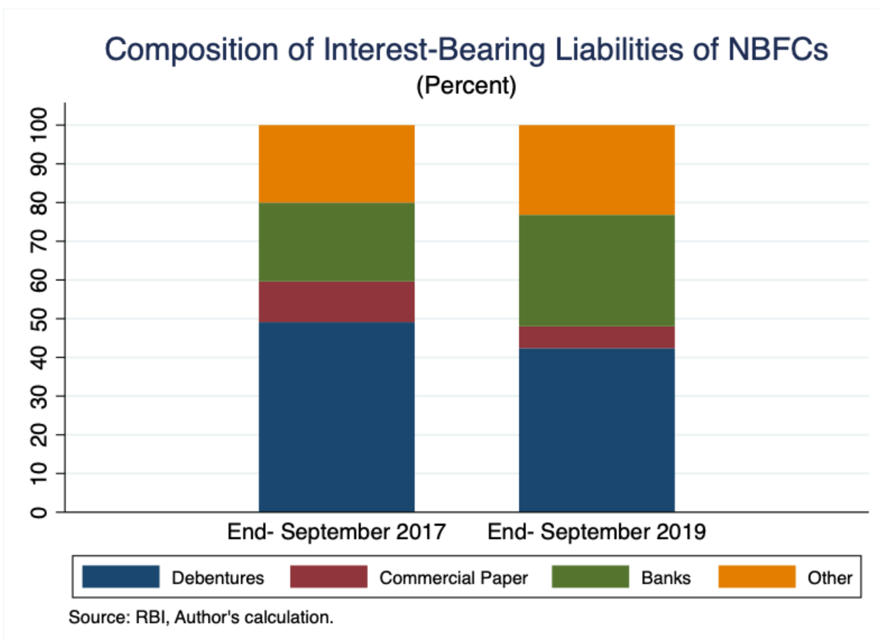


Figure 22: Composition of Interest-Bearing Liabilities of NBFCs

debenture holdings also decreasing significantly. Between September 2017 and September 2019, wholesale debt financing as a share of NBFCs' interest-bearing liabilities fell from about 60% to 48% (Figure 22). This decline included a roughly 7 percentage point drop in debentures and a 5 percentage point drop in commercial paper, with commercial paper reliance nearly halved over this period.

The following section explores the consequences of the NBFC troubles and how these issues spilled over to traditional banking, leading to liquidity hoarding among banks.

9 Spillover of Stress to Commercial Banks and Liquidity Hoarding

9.1 Funding Structure of Banks: Public vs. Private Banks

Indian banks have predominantly followed a traditional model. They raise funds from depositors and market borrowings, then use these funds to lend to firms, households, and financial institutions or to purchase investment securities. Recently, lending to financial institutions, particularly NBFCs and HFCs, increased as a share of total banking assets.

As of March 2019, on the asset side, around 63 percent of banks' interest-earning assets consisted of loans and advances, while 28 percent were investments (mostly government securities). Meanwhile, deposits accounted for approximately 88 percent of interest-bearing liabilities, with market borrowings making up the remaining 12 percent.[36]

These overall numbers, however, conceal significant variation within the banking system—particularly between public and private banks in terms of funding structures.

First, private banks depend more on market borrowing. In March 2019, market borrowing accounted for 17 percent of private banks' interest-bearing liabilities, compared to 8 percent for public banks. Second, private banks have relatively less access to retail depositors than public banks. In March 2019, retail deposits made up 33 percent of interest-bearing liabilities for private banks and 60 percent for public banks (Figure 23).

These features imply that only 1/3 of private bank funding is "sticky" (retail deposits), while they must actively compete to raise funds from wholesale funding markets, money markets, and large institutional depositors. This reliance on non-retail funding also means

[36] About 60 percent of deposits were term deposits, while the remaining 40 percent were current and savings account deposits.

that private banks are relatively more exposed to funding risk—either when wholesale or money markets are disrupted or when concerns arise about their own health (e.g., due to asset quality or governance issues). Funding risk is especially relevant for banks that have aggressively increased lending and for newer or weaker banks struggling to grow their retail depositor bases.

9.2 Dispersion in Credit-Deposit Ratios

Between 2013-18, private banks maintained strong annual deposit growth of 10-15 percent, while public banks' deposit growth fell from about 15 percent in 2014 to near zero since then. This divergence reflected the new reality as of March 2019, with public banks having easy access to depositor funding but constrained lending, and private banks seeking to lend more aggressively but without easy access to depositor funding.

After the IL&FS default disrupted wholesale and money markets, private banks were further incentivized to compete for deposits to secure a stable funding base.

Consequently, dispersion in credit-deposit (C-D) ratios of banks in the system increased. Many private banks have lending opportunities but struggle to compete for funds (high credit-deposit ratios), while numerous public banks have lending constraints but access to ample funding (low credit-deposit ratios). Over time, credit-deposit ratios have become more dispersed, with a significant increase for private banks and a decline for public banks, especially after 2015. In fact, the credit-deposit ratio for private banks as a group has remained at or above the 90th percentile level, suggesting that the larger private banks have the highest credit-deposit ratios (Figure 24).

The rise in credit-deposit ratios for private banks since 2013 has been associated with substituting investments with loan advances and greater reliance on market borrowing. Conversely, public banks have gradually increased their investment holdings relative to loan advances.

9.3 Shrinkage Interbank Market and Increased Reliance on Market Borrowing

Simultaneously, the interbank market in India continued to shrink, with banks preferring to utilize their resources for loans or investment products (Figure 25). This was partly due to the introduction of new liquidity regulation (the liquidity coverage ratio (LCR))

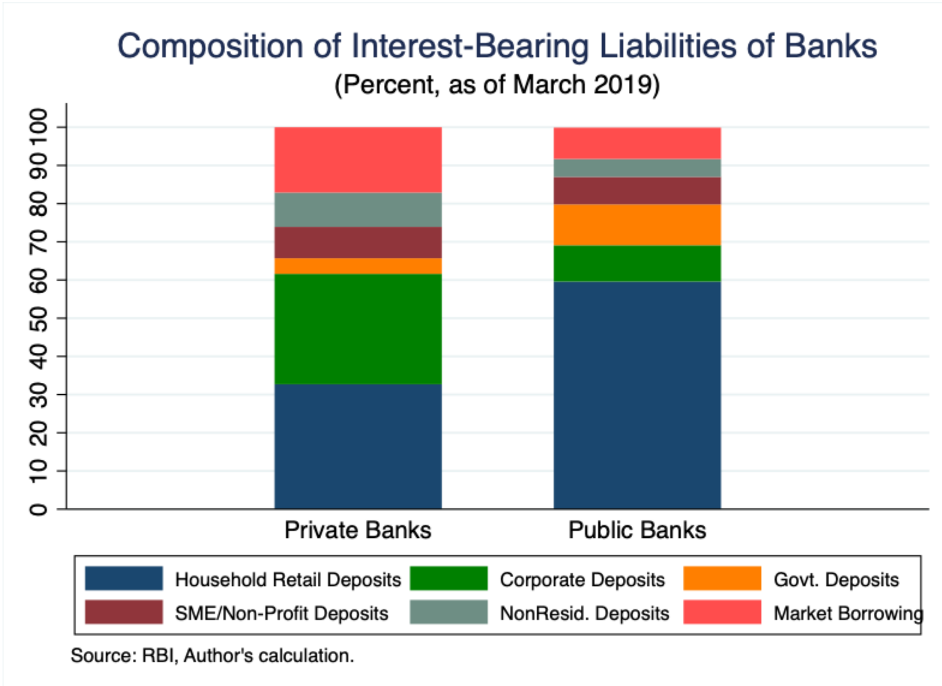


Figure 23: Composition of Interest-Bearing Liabilities of Banks

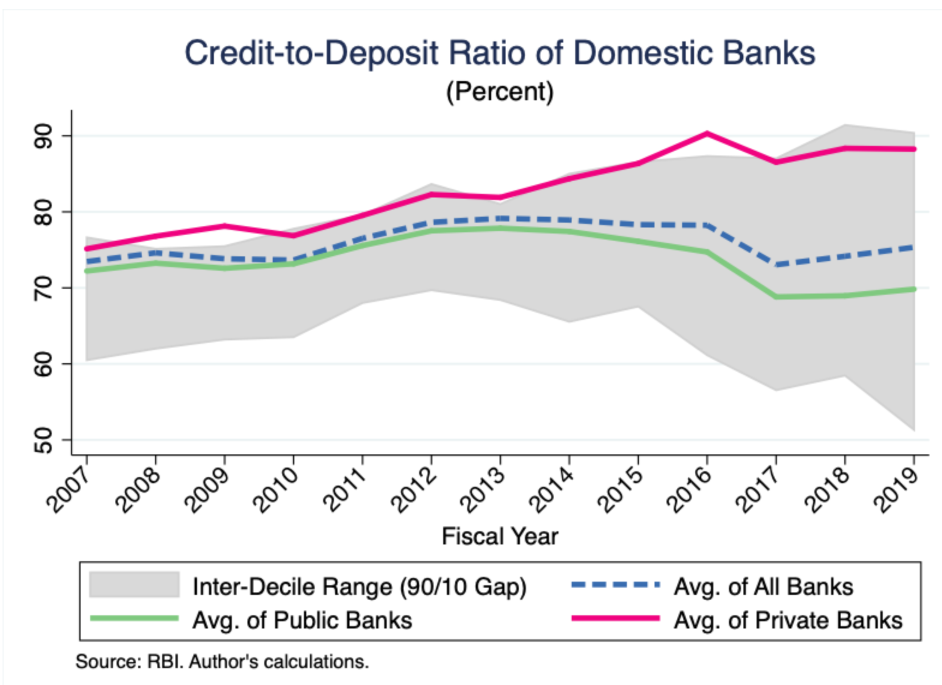


Figure 24: Credit-to-Deposit Ratio of Domestic Banks

and, more recently, high uncertainty in the interbank markets. The shrinking interbank markets compelled banks with high financing needs to increasingly rely on market borrowing to fund their operations. In this context, both public and private banks have been actively borrowing in the interbank market.

Greater reliance on market borrowing can be seen by examining cross-linkages in the Indian financial system (Figure 26). Mutual funds and insurance companies were the major fund providers to the system, while NBFCs, HFCs, and SCBs were the major receivers of funds. However, experiences varied within the banking system: private banks were net receivers relative to the entire financial sector, while public banks were net fund providers. Private banks' dependence on the rest of the financial system is similar to that of NBFCs/HFCs, demonstrating their high non-deposit funding needs.

After the IL&FS and DHFL shocks, the divergence in the financial network became more pronounced. The net receivables of mutual funds and insurance companies from the financial sector grew at 12.5 percent (YoY) and 17 percent (YoY), respectively, as of the end of September 2019. Over the same period, public banks' net receivables declined by 12.4 percent. On the other hand, private bank net payables to the financial system grew 20.8 percent. For NBFCs and HFCs, net payables grew 10.6 percent and 5.5 percent, respectively, primarily due to increased borrowings by public sector NBFCs and large HFCs.

9.4 Widened Differentiation in Banking Sector

Fears of shadow banking trouble spreading from NBFCs to the broader financial system increased in the second quarter of 2019. April 2019's quarterly results revealed ongoing issues with stressed assets and provided more clarity on bank exposures to NBFCs and the troubled real estate sector. Markets scrutinized bank lending to NBFCs and focused on banks exposed to stressed groups like DHFL, IL&FS, and Reliance Housing. Later in April, the RBI directed banks to disclose loans outstanding to IL&FS and the provisions required against this exposure, sharpening the focus on the linkages between banks and NBFCs. Consequently, bank stock performance diverged as the market differentiated between supposedly healthier banks and the rest (Figure 27).

The DHFL defaults, as well as Altico's default and Punjab and Maharashtra Cooperative Bank's troubles (exposed to the defaulting real estate firm Housing Development and Infrastructure Limited), forced a major re-assessment of risks in the system. In the

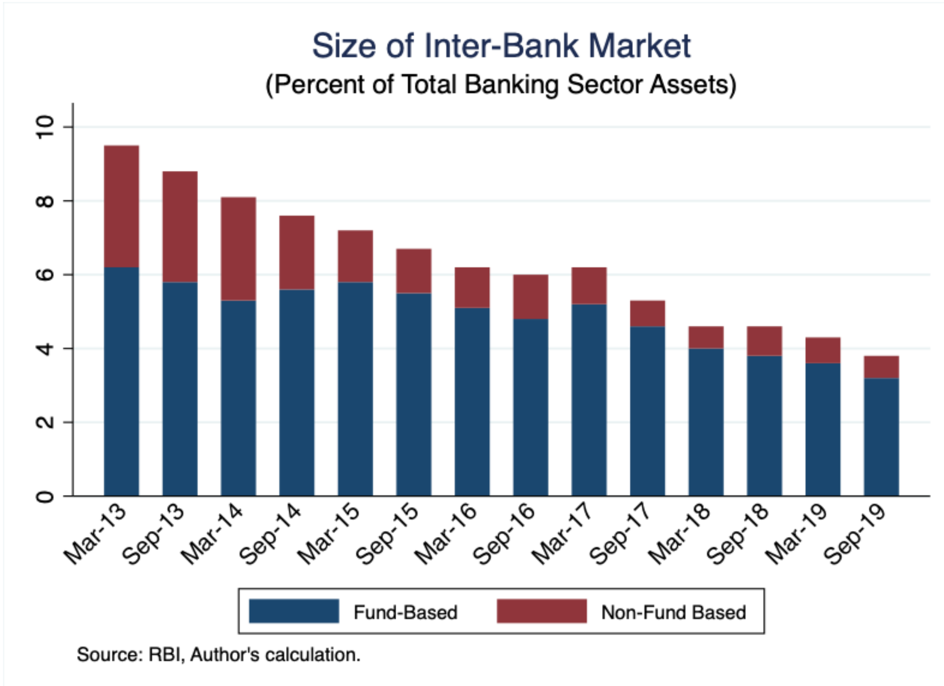


Figure 25: Size of Inter-Bank Market

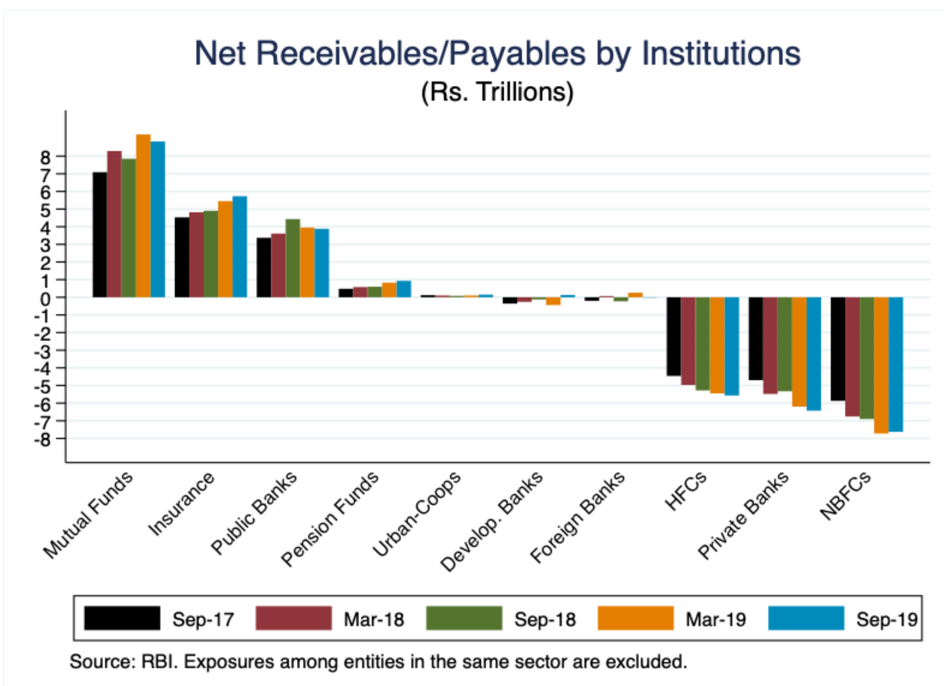


Figure 26: Net Receivables/Payables by Financial Institutions

aftermath, financial markets were gripped by high uncertainty and flight-to-safety behavior, amplifying differentiation within banks that had started after the end of March 2019 (Figure 27). This increased scrutiny of asset quality and governance concerns in banks.

9.5 Rise and Fall of the Certificates of Deposit Market

Before the IL&FS default, the CD market in India had been gradually shrinking. However, after the default, the banking system came to depend more heavily on the CD market for short-term funding, with mutual funds providing much of the short-term funds to banks in this market. The size of the market grew significantly between October 2018 and March 2019, with CDs outstanding increasing from Rs 1.5 trillion to Rs 2.7 trillion—an 80 percent increase (Figure 28).

However, once Q4 results began revealing weaknesses in bank balance sheets in April 2019, the CD market contracted quickly. This contraction accelerated after DHFL's default. By the end of 2019, CD market growth had almost completely reversed, with CDs outstanding standing at Rs 1.6 trillion in December 2019.

This collapse was symptomatic of the greater problems commercial banks were having in accessing short-term funding. Critically, the collapse triggered major competition for deposits by commercial banks to ensure access to a stable funding base. Unlike the commercial paper market, the issuance of CDs faces no minimum ratings requirement. All banks, independent of their credit ratings, are permitted to issue CDs, and some banks with high funding needs relied sizably on the CD market for short-term borrowing. Banks without large retail deposit bases (and those not among the highest-rated banks) were particularly hurt by the loss of access to CD financing. This triggered fierce competition in the deposit market, with some banks aggressively focusing on deposit mobilization, especially by targeting large depositors (i.e., bulk deposits) to secure a more stable funding base. This increased their term deposit rates and, owing to competitive forces in the deposit market, other banks were compelled to raise their deposit rates.

9.6 Competition for Deposits & Clogging of Monetary Policy Transmission

After the IL&FS and DHFL defaults, banks faced increasing difficulty raising short-term funding from market borrowing. To secure access to stable funding bases, banks aimed at

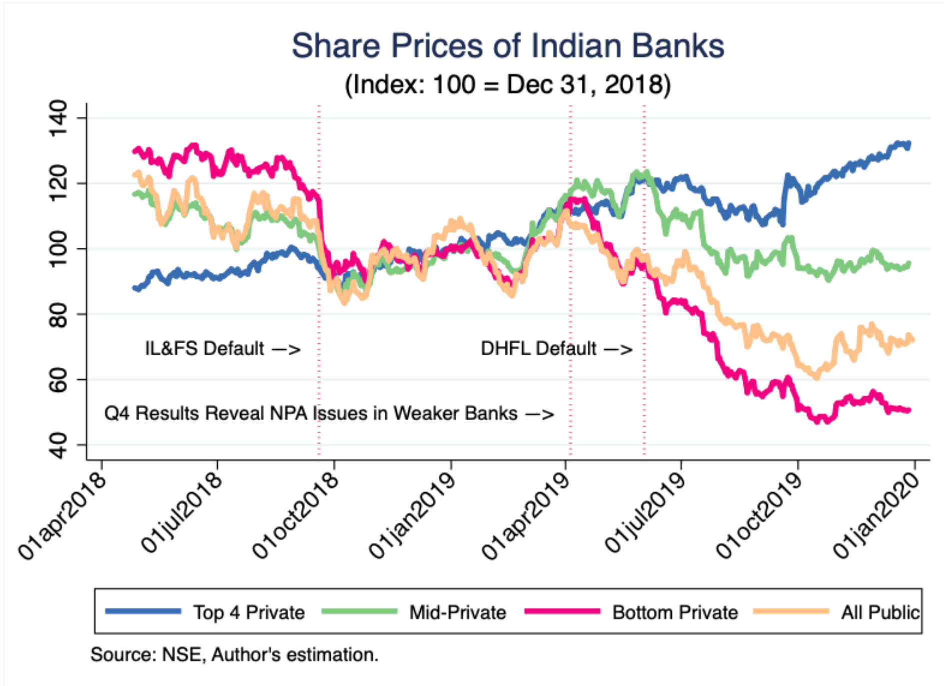


Figure 27: Share Prices of Indian Banks

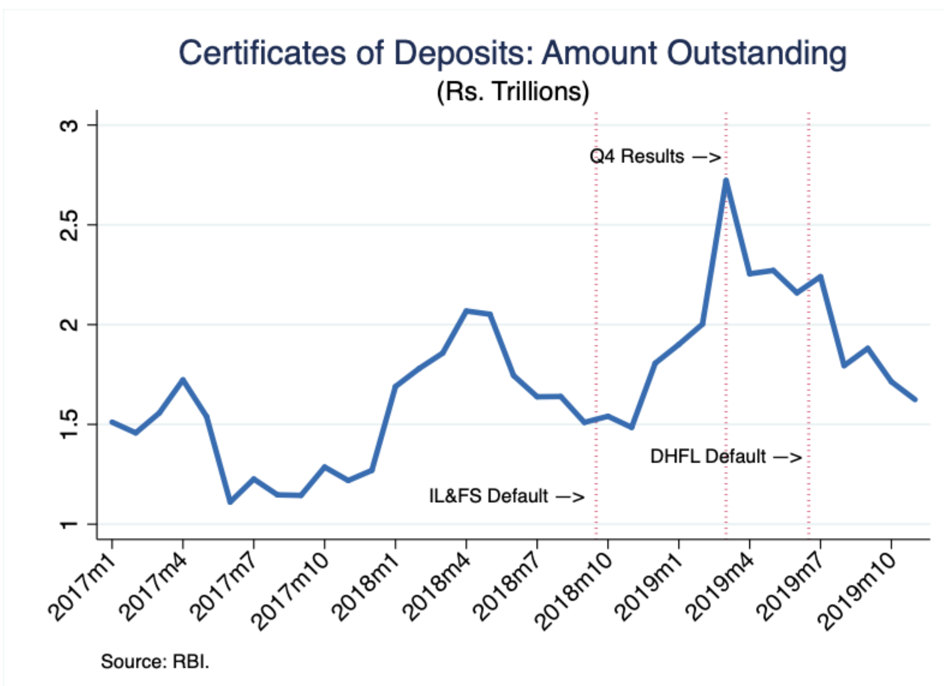


Figure 28: Certificates of Deposits (CD): Amount Outstanding

expanding their depositor base. Private banks took the lead by raising their term deposit rates (relative to prevailing market rates). Due to stiff competition from private banks, public banks were compelled to follow suit by raising their own deposit rates. Initially, the spread in term deposit rates between private and public banks widened, but it gradually narrowed again (Figure 29).

Overall, term deposit growth in private banks accelerated, reaching about 30 percent annual growth by March 2019. Over the fiscal year, private banks attracted almost 80 percent of new term deposits in the system. Meanwhile, growth in term deposits remained near zero for public banks, suggesting that their term deposit rate policy was targeted to ensure no shrinkage in their depositor bases. The public banks may be acting as price takers with respect to the term rates set by private banks and, in turn, responding to choose their own term deposit rates consistent with zero growth in their depositor bases.

As a result, the spread between term deposit rates and repo rates spiked significantly—both after the IL&FS default and further after the DHFL default (Figure 29). This led to clogging of the monetary policy transmission channel, with reduced pass-through from the policy repo rate to both deposit rates and lending rates. However, this is primarily due to uncertainty in banks' access to liquidity.

The dynamics in the spread between deposit rates and repo rates over the past five years can be broken into five phases. First, before demonetization, the spread had stabilized at about 1 percent. Second, immediately after demonetization with surplus liquidity flowing into the banking system, the spread quickly declined to about 0.5 percent. Third, with the recognition of problems in public banks post-asset quality review and the announcement of a plan to recap them in the second half of 2017, term deposit rates diverged between public and private banks. Until June 2017, term deposit rates in public and private banks had tracked each other very closely, but over the next year, a gap of about 0.25 percent emerged between them, with public banks facing constraints in growing their balance sheet. Fourth, the IL&FS default in September 2018 changed the dynamics drastically, with the spread between term deposit rates and the repo rate of all banks spiking by roughly 1 percent within 7 months. Fifth, the spread of all banks spiked about a further 0.5 percent after the DHFL default in May 2019.

Thus, even though the RBI cut its policy rates by about 1.35 percentage points since the IL&FS default, key deposit and lending rates have not fallen by much, due to the ongoing and major liquidity crunch affecting the system. Therefore, owing to liquidity shortages and uncertainty, the effectiveness of monetary policy has declined on a per-unit basis—as each basis point cut in policy rates has had less impact on the key borrowing-lending rates faced by borrowers and lenders.

9.7 Liquidity Hoarding and Lending Collapse

The IL&FS default and the DHFL-triggered scrutiny of bank balance sheets caused significant liquidity hoarding by banks. These factors likely contributed to the collapse of commercial bank lending in 2019's second half. The DHFL default highlighted contagion risks in the banking system.

We can assess the impact on banks' liquidity hoarding by looking at the funds parked in RBI's liquidity adjustment facility (LAF) in Figure 30. The LAF is RBI's main tool for injecting and absorbing liquidity through repo or reverse repo transactions.

Post-demonetization in November 2016, the RBI absorbed substantial excess liquidity. Banks then deployed this liquidity to the private sector and NBFCs/HFCs by 2017's end. While the IL&FS shock temporarily increased liquidity hoarding, it didn't cause persistent hoarding.

In contrast, the DHFL default triggered a significant shift in banks' liquidity strategies. By 2019's end, banks parked excess liquidity of about Rs 3 trillion (2% of their assets) in the LAF, reaching Rs 4 trillion in January 2020's first week. Notably, this excess liquidity equaled 40% of banks' fresh lending in FY2018-19, greatly impacting the economy.

The RBI financial stability report (RBI 2019a) suggested some banks were hoarding liquidity due to precautionary motives against potential drawdown from large credit lines to nonbank financial intermediaries (Ivashina and Scharfstein 2010).

Overall, investor behavior in markets reflected flight-to-safety dynamics and high uncertainty. Access to liquidity remained uncertain. During such times, precautionary saving is common, and evidence pointed to significant liquidity hoarding in the banking system.

The next section discusses the broader economic impact of these developments.

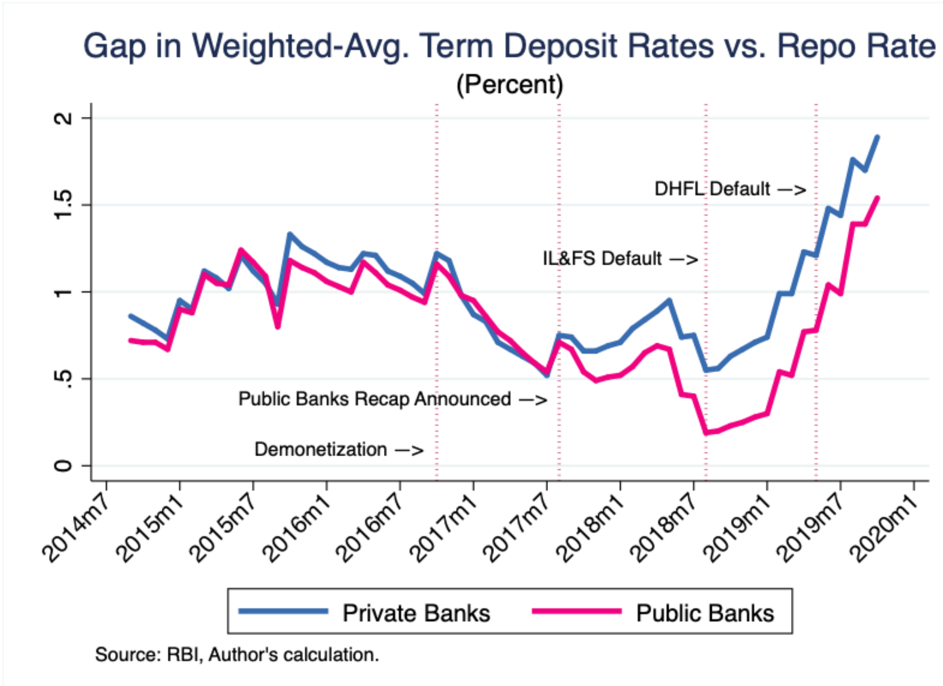


Figure 29: Gap in Term Deposit Rates vs. Repo Rate

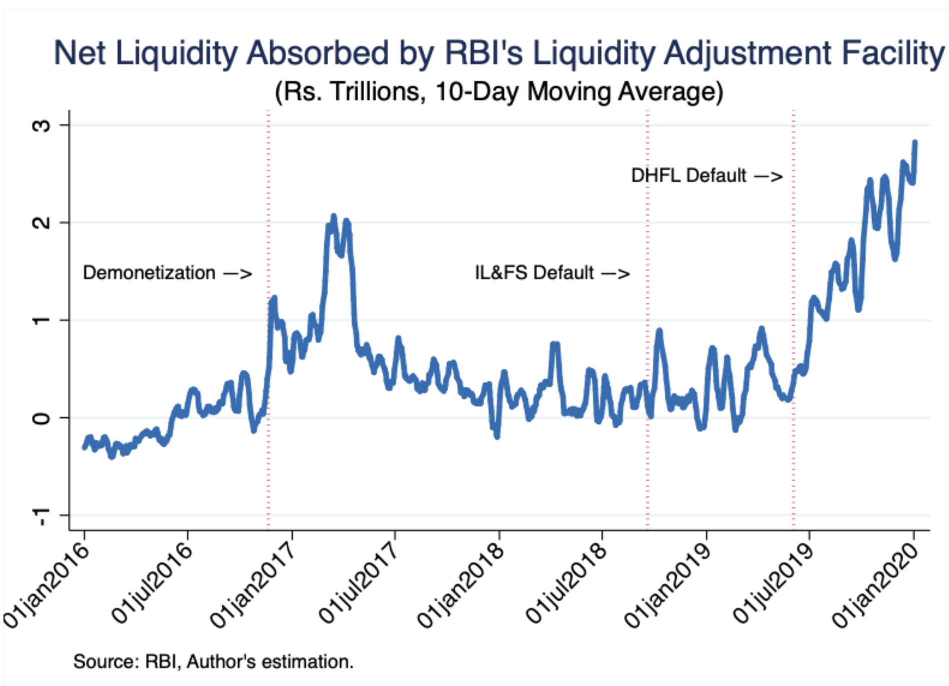


Figure 30: Net Liquidity Absorbed by RBI

10 Broader Economy-Wide Impact

10.1 A Large Deficit in the Flow of Credit to the Real Economy

Determining the right amount of credit for an economy is tough. Ideally, we'd quantify the credit justified by economic fundamentals. The gap between actual credit and this amount would indicate "excessive" or "deficit" credit. However, understanding credit demand and supply factors in an economy often requires some judgment. Researchers and authorities use a statistical approach to estimate the credit gap, avoiding some complexities (see (Lang and Welz 2017) for details).

A common statistical measure is the credit-to-GDP gap, which compares the total credit-to-GDP ratio to its long-term trend. The RBI uses this gap for its countercyclical capital buffer requirements under Basel III.[37]

The BIS has estimated the credit-to-GDP gap since September 2016 for 44 countries, including India (Figure 31). Since 2014, India has seen a growing credit deficit, reaching about -8% of GDP in 2019. This negative gap suggests a severe constraint on credit flow to the real economy, highlighting the importance of financial factors in India's economic slowdown.

A key question is why the IL&FS shock led to reduced credit supply. The next subsection addresses this.

10.2 Demand vs. Supply of Credit

The decline in non-banking financial companies' (NBFCs) lending in 2018 and 2019 raises a crucial question: Was the reduced credit flow to the economy a result of inadequate financial system supply or insufficient demand from eligible borrowers? Disentangling

[37] The countercyclical capital buffer (CCyB) is an additional capital layer of typically up to 2.5 percent of risk-weighted assets under the Basel III framework, which can be released so that banks may absorb growing losses during a prolonged downturn while maintaining the flow of credit to the economy. Many jurisdictions that have implemented the countercyclical capital buffer under the Basel III framework use the Basel gap as one input (but not necessarily the only input) in guiding the operation of the countercyclical capital buffer. In India, the RBI's countercyclical capital buffer framework envisages the credit-to-GDP gap as the main indicator, which is used in conjunction with other supplementary indicators, such as the credit-deposit ratio for a moving period of three years (given its correlation with the credit-to-GDP gap and GNPA growth), industrial outlook assessment index (due to its correlation with GNPA growth), and interest coverage ratio (due to its correlation with the credit-to-GDP gap) (based on RBI 2015). In April 2018, based on the review and empirical testing of countercyclical capital buffer indicators, the RBI decided that it is not necessary to activate countercyclical capital buffer at that point in time (RBI 2018).

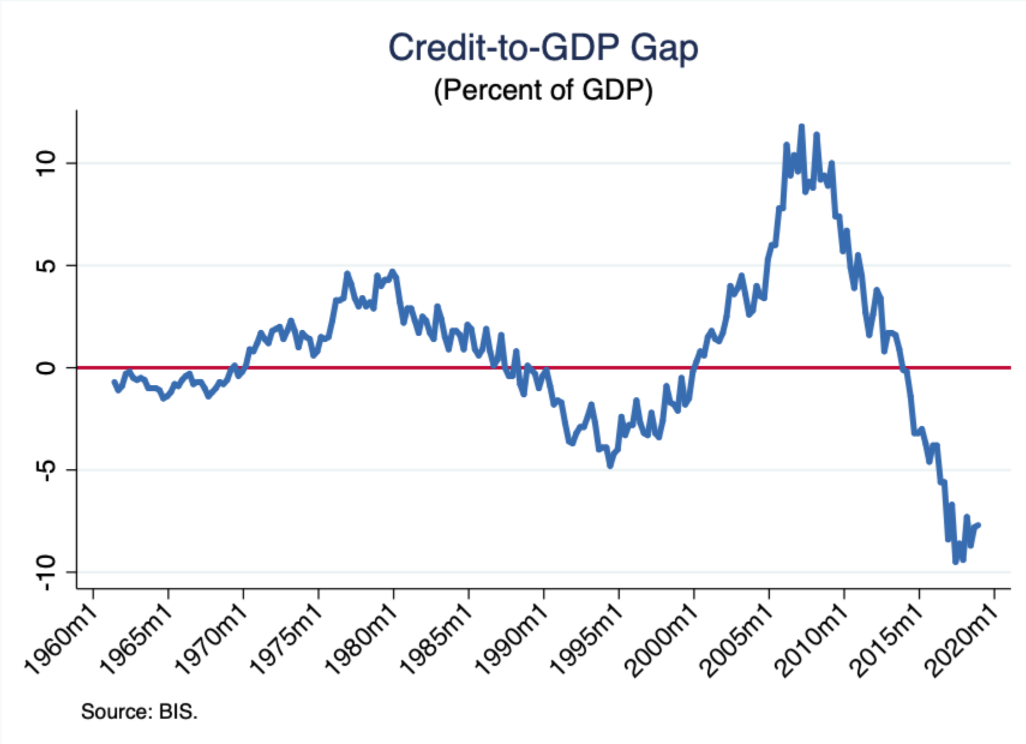


Figure 31: Credit-to-GDP Gap

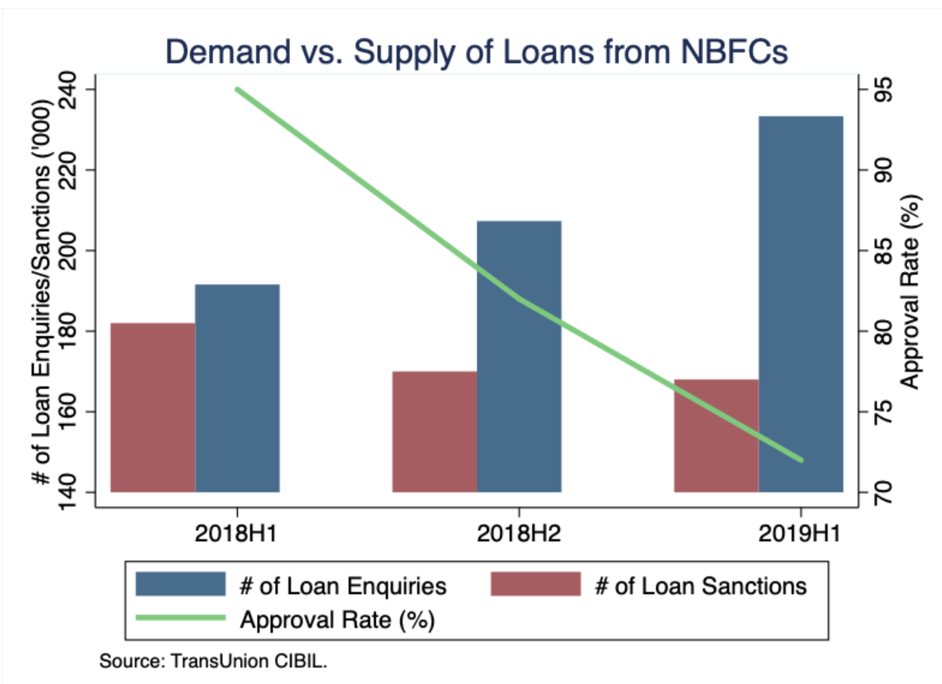


Figure 32: Demand vs. Supply of Loans from NBFCs

general equilibrium effects in the credit market is a formidable challenge, but examining whether healthy borrowers who merit credit were being denied access can provide insights.

Loan-by-loan data from credit-reporting agency TransUnion CIBIL can illuminate this issue. Specifically, they gather information on loan inquiries (when borrowers formally initiate loan requests at financial institutions) and loan sanctions (if institutions ultimately approve these inquiries). Figure 32 presents data exclusive to NBFCs.

The micro-data indicates that loan demand had steadily risen even after IL&FS's collapse, increasing from approximately 190,000 inquiries in the first half of 2018 to about 230,000 in the first half of 2019 (a 22% growth). Conversely, loan sanctions dropped from over 180,000 to just below 170,000 (an 8% contraction) during the same period. Consequently, NBFCs' loan approval rate plummeted within a year, from about 95% to 70%.

Despite robust credit demand, NBFCs significantly curtailed their credit supply, resulting in a sharp decline in loan approvals. This is likely attributable to the precautionary savings and adverse selection dynamics that emerged in the NBFC sector following the IL&FS default.

Faced with tighter funding conditions and increased scrutiny of their fundamentals, NBFCs may have felt compelled to: (1) reduce new credit volume and (2) tighten lending standards to fortify their loan books and limit the rise of non-performing assets. These combined effects could account for the post-IL&FS slump in fresh lending from NBFCs—highlighting the primary role of shrinking credit supply.

10.3 Severe Impact on Micro, Small and Medium-Sized Enterprises

Micro, small, and medium enterprises (MSMEs) form a cornerstone of India's economy, contributing almost 30% of GDP. The Development Commissioner for MSMEs reports they employ around 111 million people and account for nearly half of total exports. Following the disruptions from GST implementation and demonetization, and with multiple public banks leaving the PCA framework, lending to the MSME sector was expected to surge in 2018 and 2019. However, the sector suffered a severe credit crunch.

Lending to MSMEs plummeted after the IL&FS default in September 2018 and further after the DHFL default in June 2019. To observe this, one must analyze lending data to MSMEs across various sectors (private banks, public banks, NBFCs, others), which TransUnion CIBIL data enables (Figure 33). Prior to the IL&FS default, both NBFCs and private banks rapidly expanded MSME lending, partly filling the void left by public banks restricted by the prompt corrective action framework. By September 2018, private banks and NBFCs more than compensated for the reduced credit flow from public banks. However, MSME credit growth sharply decelerated following the IL&FS default. The initial slowdown was due to decreased credit growth from NBFCs, while the second phase—post-DHFL default—involved deceleration from all financial institutions, including private banks.

Furthermore, restricted funding access caused MSME liquidity issues to escalate into insolvency problems. TransUnion CIBIL's on-balance sheet credit exposure data (Figure 34) reveals that MSME defaults soared from about 8.5% to around 12% within two quarters in 2019 after the IL&FS collapse. In contrast, large firms—those with credit exposure exceeding INR 100 crore (approximately $14 million)—did not experience a significant NPA increase post-IL&FS collapse. This is partly because the insolvency process was clearing the historical backlog of large-firm NPAs, counterbalancing the rise in new NPAs among large firms. This differs starkly from the post-asset quality review in 2015, when large firms were the primary NPA drivers.

The MSME sector's credit contraction was a serious concern. The rise in liquidity hoarding in 2019 indicated ongoing credit flow constraints. Moreover, the decline in average risk weights of bank assets suggested that lenders were shifting their loan book composition from unrated or lower-rated corporates towards top-rated corporates and the retail sector. Consequently, both the credit volume decline and credit composition shift intensified the MSME credit crunch.[38] This likely had a significant impact on the broader economy, considering the sector's importance.

10.4 Second-Round Effects as Illiquidity Turns into Insolvency

With limited working capital and an increasing number of stalled projects, immediately prior to the pandemic, the concern was that liquidity issues had escalated into insolvency problems for otherwise healthy MSMEs and corporates. As payments were delayed and projects remained on hold, the impact spread through the supply chain, affecting various sectors. These were the "second-round effects" of the initial shocks to the NBFC sectors.

[38] Notably, various attempts to revive lending to the MSME sector were not effective, including a "loan mela" (fair) across 250 districts during the festive season in October 2019, in which public banks were called in to lend to MSMEs and retail borrowers.

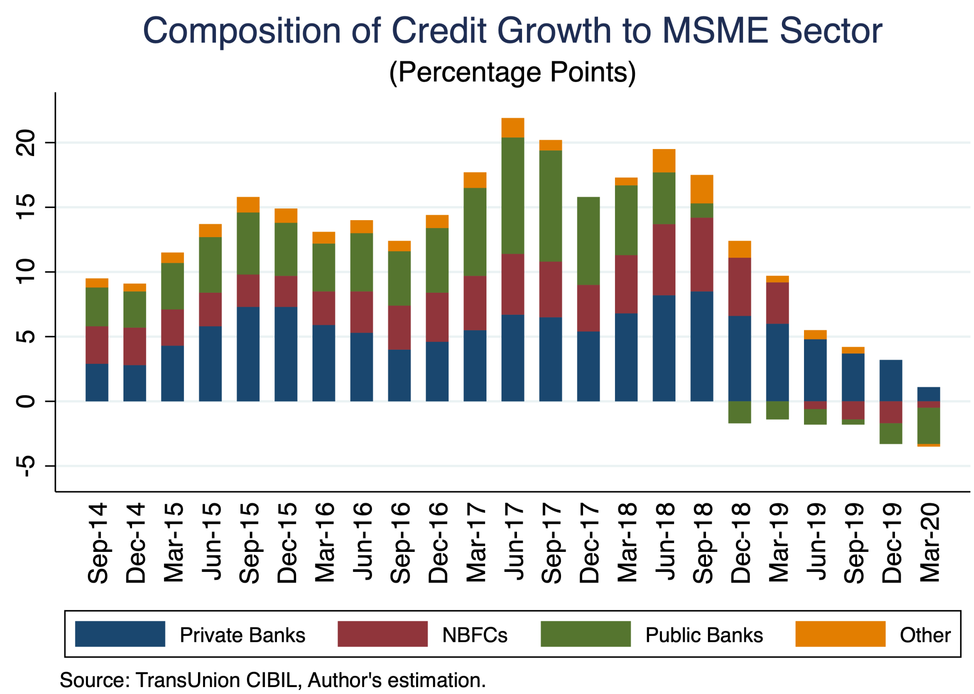


Figure 33: Composition of Credit Growth to MSME Sector

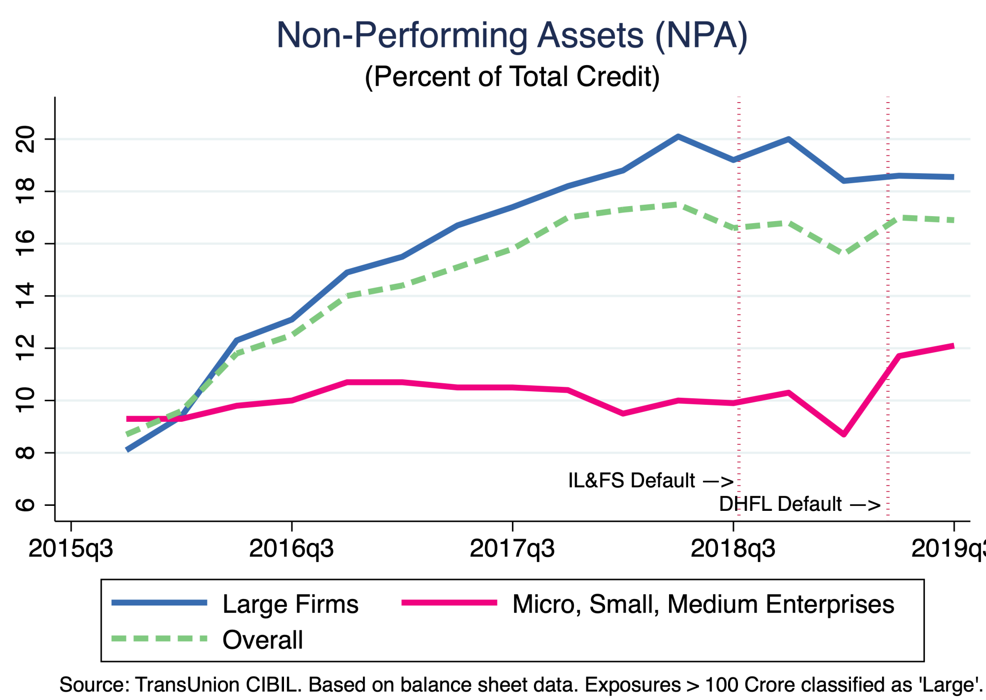


Figure 34: Non-Performing Assets

One way to assess the severity of these second-round effects is by examining the migration in corporate ratings. CRISIL, a credit rating agency, calculates a "debt-weighted ratio" representing the value of debt upgraded relative to the value of debt downgraded. A ratio below one signifies more value-weighted downgrades compared to upgrades. Figure 35 displays the 12-month moving average of the ratio. Before the IL&FS crisis, the corporate credit outlook was improving, with the ratio exceeding 2. However, the trend reversed sharply after the IL&FS default, dropping to around 0.25 by March 2020, indicating four times as many value-weighted downgrades compared to upgrades.

This shift may have reflected both a deteriorating credit outlook and increased vigilance from credit rating agencies after the IL&FS default caught them off guard. On December 26, 2019, the Securities and Exchange Board of India fined two leading rating agencies for failing to exercise "proper skill, care, and due diligence" in assigning credit ratings for IL&FS debt. Some agencies maintained the highest possible AAA rating for IL&FS until its default, even though its subsidiary had defaulted a few months earlier.

Additionally, potential laxity and oversight lapses by credit rating agencies contributed to market uncertainty, as investors questioned the health of banks, NBFCs, and corporates, despite their high credit ratings. As a result, dispersion had increased for credit spreads of debt instruments issued by equally rated financial institutions.

Other factors driving uncertainty and worsening credit outlook at that time included ongoing issues in some cooperative banks (with deposit restrictions introduced in at least two urban cooperatives), concerns about rising defaults in social-scheme loans (such as Mudra loans), and increased risks in retail loan segments, which had grown significantly in previous quarters.

10.5 GDP Impact

In this section, we examine the synchronised deceleration in sectoral credit flow and GDP growth, providing another perspective on the influence of financial factors on India's growth deceleration. Figure 36 illustrates the sector-wise contributions to real GDP growth.

A comparison of sectoral growth in 2018, just prior to the IL&FS shock, with subsequent performance offers some insights. Real GDP growth took a steep fall from 8.9% in Q4 FY2017-18 to a mere 2.9% in Q4 FY2019-20. Simultaneously, contributions to GDP growth from the manufacturing and construction sectors sharply declined from 3.2% to -

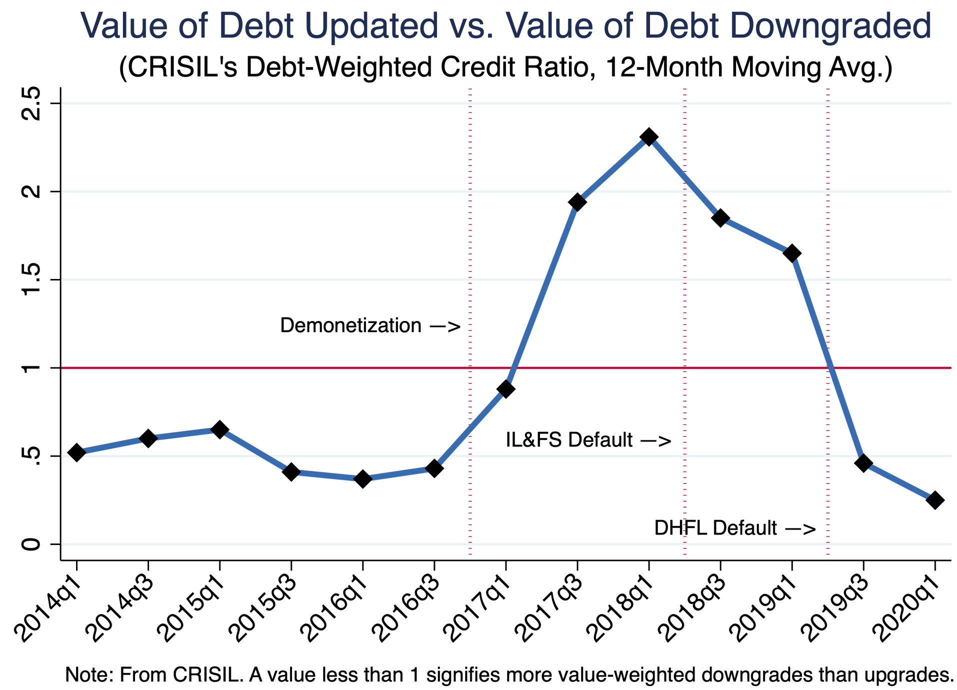


Figure 35: Value of Debt Updated vs. Downgraded

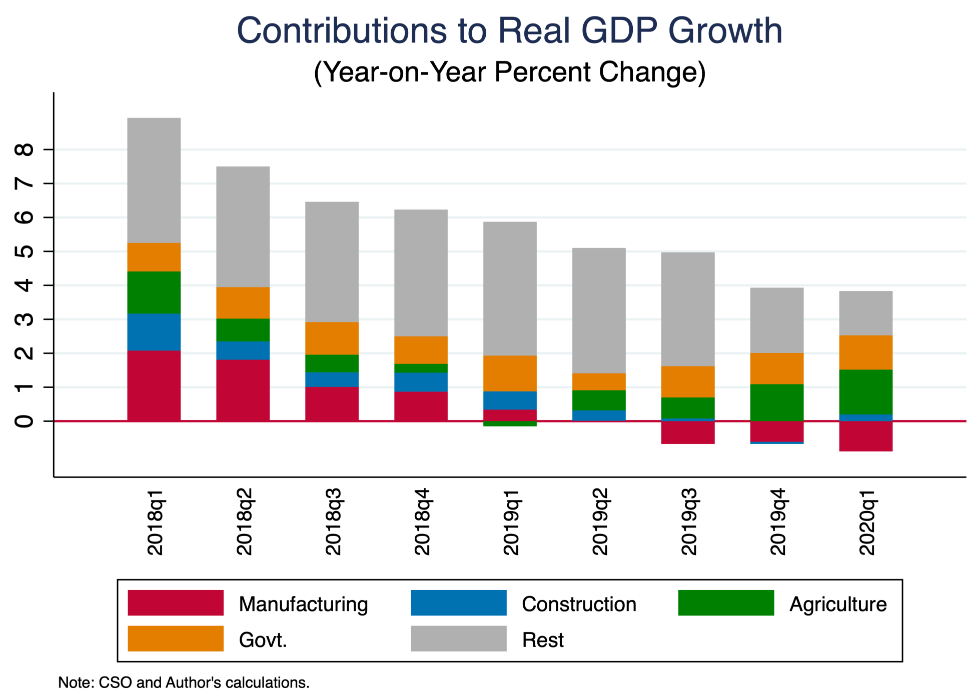


Figure 36: Contraction in Manufacturing & Construction during 2019 and 2020

0.7%. These sectors thus significantly contributed to the pre-pandemic GDP deceleration, partially offset by a robust agricultural recovery.

The analysis implies that financial factors likely catalysed the economic slowdown, with credit-sensitive sectors like manufacturing and construction enduring the most severe disruptions to economic activity.

Part IV

Policy Actions and Resilience Building

This section discusses the policy responses before the pandemic (2018 and 2019), events in the financial system during the acute phase of the pandemic (2020 to 2022), and the increased resilience in the Indian financial system that enabled them to avoid the problems facing western banks in the first half of 2023.

11 Policy Response Before the Pandemic (2018 and 2019)

The policy response before the pandemic can be categorized under liquidity operations, monetary policy, financial policy, and fiscal policy. These are discussed below, and Tables 2 & 3 provide a list of key events and policy responses in chronological order.

11.1 Liquidity Operations

The RBI's liquidity policy in India followed a conventional lender-of-last-resort approach, focusing on injecting aggregate liquidity into the system and encouraging banks to channel excess liquidity to the NBFC sector. Measures taken include significant open market purchases, sizable net purchases of foreign currency, and various initiatives to encourage banks to channel excess liquidity to the NBFC sector.

At the onset of the financial crisis in the United States, (Stephen G Cecchetti 2007) highlighted the limitations of central banks in distributing funds to the areas that need them the most. Central banks can provide liquidity to primary dealers, but they cannot ensure that these reserves are then lent out to the banks that need them.

Date	Event
	2018 Q1
14-Feb-18	Punjab National Bank (PNB) reports fraudulent and unauthorized transactions in of its branches amounting to $1.77 billion
16-Feb-18	RBI's issues statement on PNB, notifying that it has undertaken a supervisory assessment of control system in PNB
20-Feb-18	RBI constitutes an Expert Committee to assess misclassification and frauds in banks, and measures needed to prevent it
15-Mar-18	Government-owned NBFCs advised by RBI to submit periodic returns
	2018 Q2
June 2018	IL&FS group's subsidiary delay repayments of inter-corporate deposits and unable to service some debt obligations
	2018 Q3
July 2018	IL&FS subsidiaries are downgraded below investment grade by rating agencies, leading to funding pressures for the group
4-Sep-18	Revealed that IL&FS group and its subsidiary defaults on short-term bank loans of ₹1,000 crore and ₹500 crore respectively
Sep 18	IL&FS group and subsidiaries default on a series of payments
21-Sep-18	Commercial paper and mutual funds affected by fears of widespread default by IL&FS; Stock market crashes
23-Sep-18	Joint statement issued by the RBI and SEBI stating that are closely monitoring situation and are ready to take action, if necessary
	2018 Q4
1-Oct-18	GoI moves application before NCLT against IL&FS Board; Govt. appoints new independent Board for orderly resolution of IL&FS
4-Oct-18	New Board takes charge of IL&FS group with aim of achieving orderly and transparent resolution of the group
2-Nov-18	To ease funding problems of NBFCs, RBI permits banks to provide partial credit enhancement to bonds issued by some NBFCs
29-Nov-18	To improve systemic liquidity, RBI informs banks regarding the applicability of NSFR with effect from April 1, 2020
	2019 Q1
1-Jan-19	RBI allows a one-time restructuring of existing loans to the MSMEs to relief funding stress in the sector
22-Feb-19	To improve flow of credit to well-rated NBFCs risk weights of bank exposure to NBFCs were harmonized by the RBI
Early-Feb 19	Rating agencies downgrade DHFL instruments; MD/CEO resigns
	2019 Q2
16-May-19	NBFCs with asset size of more than ₹50 billion were advised to appoint a chief risk officer (CRO) by the RBI
6-Jun-19	RBI introduces a minimum leverage ratio of 4 percent for systemic banks, and 3.5 percent for other banks, effective Oct 1, 2019
4-Jun-19	DHFL delays interest payments; Net asset values (NAV) of several mutual/debt funds exposed to DHFL impacted
7-Jun-19	RBI releases Prudential Framework for Resolution of Stressed Assets
10-Jun-19	Urban cooperative banks (UCBs) having liquidity stress permitted to sell securities from Held-to-Maturity (HTM) portfolio
27-Jun-19	To boost investor confidence in mutual funds, SEBI introduces new investment norms for liquid and debt mutual funds

Sources and Notes: RBI Press Releases, RBI Annual Reports, Union Budget, and various sources. Red cells denote events related to IL&FS; Blue cells denote events related to DHFL; Purple cells denote events related to PMC Bank, Altico Capital, and Yes Bank; Green cells refer to select actions taken by the GoI/RBI.

Table 2: Timeline of Key Events (2018 and 2019)

(Table Continued)

Date	Event
	2019 Q3
7-Jul-19	PNB reveals a second major borrowing fraud involving worth $0.55 billion
July-Aug 19	DHFL defaults on a series of payments; enters talks with creditors and bondholders to restructure its debt
15-Jul-19	DHFL reports huge loss in regulatory filing and reveals defaults; Triggers a selloff of financial stocks on fear of DHFL collapse
5-Jul-19	The Union Budget announces recap of public sector banks by ₹0.7 trillion; gives RBI given further authority to regulate NBFCs
5-Jul-19	To ease liquidity, the GoI introduced a partial credit guarantee to PSBs for purchase of high-rated pooled assets from NBFCs
5-Jul-19	RBI announces additional liquidity facility to banks for purchase of assets from and/or onlending to NBFCs/HFCs
5-Jul-19	MoF announces additional tax deduction of up to Rs. 1.5 lakh for interest paid on affordable housing loans
30-Jul-19	To ease funding, RBI relaxes end-use stipulations under External Commercial Borrowings Framework for Corporates and NBFCs
Sep 19	DHFL resolution stalled with creditors and bondholders unable to reach agreement
12-Aug-19	Altico Capital, an NBFC focused on real estate lending, defaults on external commercial borrowing
13-Aug-19	GoI transfers enhances regulation of HFCs and transfers the duties to RBI; HFCs henceforth treated as a category of NBFCs
13-Aug-19	To boost credit to needy segment of borrowers reliant on NBFCs, RBI classifies bank on-lending to NBFCs as priority sector lending
18-Aug-19	MEA removes requirement for creation of a Debenture Redemption Reserve of outstanding debentures to reduce cost of capital
20-Aug-19	NCLT petitioned to initiate insolvency proceedings against real estate firm HDIL for failure to repay ₹522.3 crore
23-Aug-19	To boost credit support for the purchase of houses, MoF announces liquidity support of Rs. 20,000 crore to HFCs from the NHB
Mid Sep 19	Hidden exposures of Punjab & Maharashtra Cooperative (PMC) Bank to HDIL revealed; Few large depositors begin withdrawals
24-Sep-19	RBI placed the PMC Bank under Directions to protect funds and prevent erosion; Deposit withdrawal limit of ₹1,000 introduced
	2019 Q4
1-Oct-19	To improve transmission of lower policy rates to lending rates, RBI requires banks to link floating rate loans to external benchmark
Early Oct 19	RBI enhances withdrawal limit for depositors of PMC Bank to ₹25,000, and later to ₹40,000
7-Oct-19	Banks learn that entire exposure to real estate firm HDIL has to be provisioned as it was implicated in a fraud case with PMC Bank
1-Nov-19	To absorb large liquidity surpluses in system, RBI announces longer term reverse repo auctions
1-Nov-19	RBI reorganises its regulation and supervision departments with a view to having a holistic approach to supervision and regulation
4-Nov-19	RBI enhances the Liquidity Risk Management Framework for NBFCs to strenghten liquidity risk management in NBFCs
5-Nov-19	RBI enhances withdrawal limit for depositors of PMC Bank to ₹50,000
6-Nov-19	Cabinet approves a ₹25,000 crore fund to provide priority debt financing for completion of stalled affordable housing projects
15-Nov-19	GoI introduces special interim framework for insolvency resolution of financial service providers under the IBC
19-Nov-19	RBI finds that Yes Bank under-reported bad loans of ₹3,277 crore in FY2019
20-Nov-19	RBI supersedes the Board of Directors of DHFL and appoints Administrator to expedite resolution under the IBC and contain risks
29-Nov-19	DHFL becomes first financial company to be referred to the NCLT under IBC
19-Dec-19	To lower long-term yields, RBI announces special open market operation purchase and sale of GoI Securities ("Operation Twist")

Sources and Notes: RBI Press Releases, RBI Annual Reports, Union Budget, and various sources. Red cells denote events related to IL&FS; Blue cells denote events related to DHFL; Purple cells denote events related to PMC Bank, Altico Capital, and Yes Bank; Green cells refer to select actions taken by the GoI/RBI.

Table 3: Timeline of Key Events (2018 and 2019) continued

In India, the RBI's liquidity policy followed the conventional lender-of-last-resort approach without expanding the scope of lender-of-last-resort operations (as described by Stephen G Cecchetti 2007). Since the IL&FS default, the RBI's liquidity operations can be classified under two broad approaches: (1) inject aggregate liquidity into the system, and (2) in turn encourage banks to channel the "excess" aggregate liquidity to the NBFC sector. Actions under these two approaches are discussed below.

Injecting Aggregate Liquidity into the System The RBI uses the liquidity adjustment facility (LAF) to manage system liquidity in the banking system. If the banking system is a net borrower from the LAF, the RBI considers system liquidity to be in deficit (meaning system demand for borrowed reserves is positive). Conversely, if the banking system is a net lender to the RBI, the system liquidity is considered to be in surplus (meaning system demand for borrowed reserves is negative) (RBI 2019b).

Following the IL&FS shock, system liquidity turned negative in September 2018, indicating a deficit in the banking system. However, by June 2019, the RBI successfully managed to turn the system liquidity into a surplus. This was achieved through significant open market purchases initiated immediately after September 2018 and sizable net purchases of foreign currency from authorized dealers. These measures helped to gradually bring system liquidity into positive territory, alleviating the financial stress caused by the IL&FS crisis.

Encouraging Banks to Channel Liquidity to the NBFC Sector The RBI and the Government of India implemented a series of measures to encourage banks to channel excess liquidity to the NBFC sector. These measures were:

- November 2, 2018: RBI allowed banks to provide partial credit enhancement to bonds issued by systemically important non-deposit taking NBFCs/HFCs.
- February 22, 2019: RBI reduced/harmonized risk weights of bank exposure to NBFCs, improving credit flow to well-rated NBFCs.
- July 5, 2019: Union Budget announced a partial credit guarantee for public sector banks to purchase high-rated pooled assets worth Rs 1 lakh crore from NBFCs.
- July 30, 2019: RBI liberalized the external commercial borrowings framework, enabling NBFCs to raise funds for on-lending and repayment of rupee loans.

- August 13, 2019: RBI allowed bank lending to NBFCs for on-lending to agriculture, micro and small enterprises, and housing to be classified as priority sector lending, up to specified limits.

Additionally, on August 18, 2019, the Ministry of Economic Affairs removed the redemption reserve requirement for debenture issuance by NBFCs/HFCs, reducing their cost of capital. These measures aimed to provide financial support to the NBFC sector and alleviate the challenges faced during the IL&FS crisis.

11.2 Monetary Policy Actions

The RBI implemented three broad monetary policy actions in response to the slowdown: interest rate cuts, measures to improve policy rate transmission, and the "operation twist."

1. INTEREST RATE CUTS: The RBI began cutting rates in February 2019, reducing the policy repo rate by 135 bps (Figure 37). However, in December 2019, they paused the cuts due to rising food price inflation and reduced policy rate transmission, keeping the repo rate at 5.15 percent while maintaining an accommodative stance.

2. MEASURES TO IMPROVE THE TRANSMISSION OF POLICY RATES: In September 2019, the RBI mandated that banks link all new floating rate loans to MSMEs and retail loans (for buying homes, vehicles, and personal consumption) to an external interest rate benchmark from October 1, 2019. This aimed to improve policy rate transmission to lending rates, which had weakened since the end of 2018.

3. OPERATION TWIST: In December 2019, the RBI introduced "operation twist" transactions, involving simultaneous purchases of long-maturity G-Secs and sales of short-maturity G-Secs. This aimed to reduce the slope of the yield curve and enhance policy rate transmission beyond short-term market rates. By mid-January 2020, the RBI had conducted three such transactions, each with a target transaction amount of Rs 10,000 crore.

11.3 Macro-Financial Policy

Six broad actions were taken to address the financial issues:

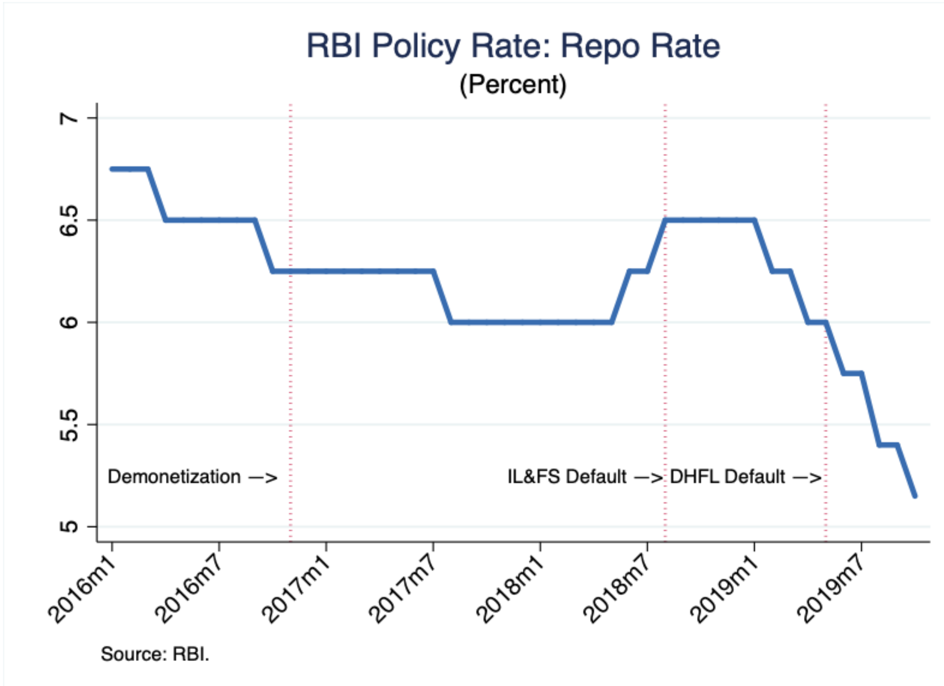


Figure 37: Central Bank Policy Rate

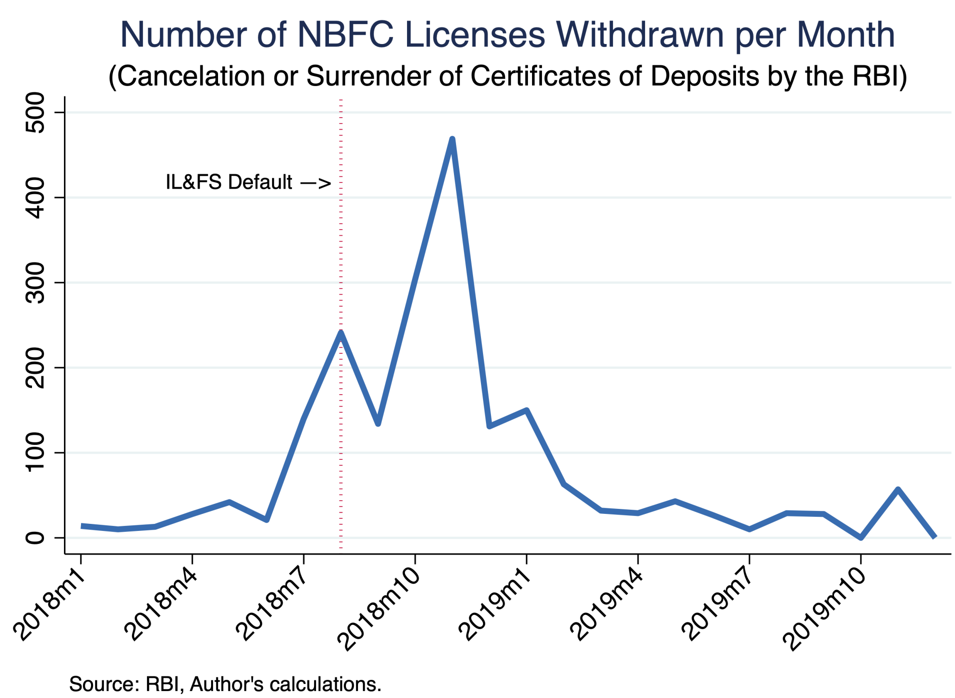


Figure 38: Number of NBFC Licenses Withdrawn

1. CLEAN UP OF NBFC SECTOR: In 2018, over 10,000 NBFCs operate in India. To address the issues in the Non-Banking Financial Company (NBFC) sector, the Reserve Bank of India (RBI) withdrew the license of nearly 2,000 small NBFCs between 2018-19. This involved either canceling the Certificate of Registration of these NBFCs or having them surrender the certificates to the RBI (Figure 38).

2. REGULATORY FORBEARANCE TO THE MSME SECTOR: To provide relief to the Micro, Small, and Medium Enterprises (MSME) sector, the RBI, in January 2019, allowed a one-time restructuring of existing loans to MSMEs with exposures up to Rs 25 crore as of January 1, 2019. Under this scheme, restructured loans would not lead to an asset classification downgrade, which typically requires banks to set aside 15 percent of the outstanding amount as provisions. Instead, lenders were required to set aside 5 percent of the outstanding loan amount as additional provisions while continuing to classify the loan as "standard" (performing).

3. STRENGTHENING REGULATION/SUPERVISION: The RBI took steps to strengthen regulation and supervision. On June 7, 2019, it revised the prudential framework for the resolution of stressed assets, aligning provisioning norms between banks and NBFCs and giving lenders 30 days to review a borrower's account before labeling it as a Non-Performing Asset (NPA) in case of default. The revised framework replaced the previous circular, which required lenders to start resolution even if there was a default of one day. On August 13, 2019, the regulation of Housing Finance Companies (HFCs) was transferred to the RBI by the Government of India, and HFCs were treated as a category of NBFCs, harmonizing regulation in the shadow banking sector. On November 1, 2019, the RBI announced the reorganization of its regulation and supervision departments to have a holistic approach to supervision and regulation.

4. EXPANDING THE INSOLVENCY PROCESS: On November 15, 2019, the Government of India introduced a special interim framework for insolvency resolution of financial service providers under the Insolvency and Bankruptcy Code, laying the path for expedited resolution of Dewan Housing Finance Corporation Limited (DHFL). This new framework aimed to improve the insolvency resolution process for financial service providers, ensuring more efficient outcomes.

5. MERGERS OF PUBLIC BANKS: On August 30, 2019, the Ministry of Finance announced mergers that would consolidate 10 public banks into 4 entities. This plan aimed to create larger, more efficient banks that can better serve the credit needs of the Indian economy:

    (a) Oriental Bank of Commerce and United Bank of India would be merged into Punjab National Bank, creating India's second-largest public bank.

    (b) Canara Bank and Syndicate Bank would be merged, forming the fourth-largest public bank.

    (c) Union Bank of India, Andhra Bank, and Corporation Bank would be merged, resulting in the fifth-largest public bank.

    (d) Indian Bank and Allahabad Bank would be merged, creating India's seventh-largest public bank.

6. EXPANDED SUPPORT FROM ALL-INDIA FINANCIAL INSTITUTIONS: All-India Financial Institutions (AIFIs) are government-guided development finance institutions that play a crucial role in the Indian economy. They assist in allocating resources between savers and borrowers and provide various oversight functions. The four main AIFIs are: (a) EXIM Bank - which focuses on promoting cross-border trade and investment, (b) NABARD - which focuses on the agriculture sector, (c) SIDBI - which focuses on MSMEs, and (d) National Housing Board - which focuses on promoting housing finance. As of March 2019, AIFIs' combined balance sheet stood at Rs 8.3 trillion (or about 4% of GDP). Over FY2018-19, their balance sheets expanded significantly, growing 19% year on year. Beyond their core functions, AIFIs have been involved in different schemes to support the struggling MSME and NBFC/HFC sectors. In particular:

    (a) On November 2, 2018, the Government of India announced an interest subvention scheme for MSMEs. This scheme provided a 2% interest subvention for all GST-registered MSMEs on fresh lending or incremental loans. SIDBI was designated as the nodal agency to channel the interest subvention to various lending institutions.

    (b) On August 13, 2019, the Ministry of Finance announced liquidity support of Rs 0.2 trillion to HFCs from the National Housing Board. This move aimed to address liquidity concerns in the housing finance sector, which had been negatively impacted by the IL&FS crisis and the subsequent credit crunch in the NBFC sector.

11.4 Fiscal Policy

Several targeted fiscal measures were taken.

On July 5, 2019, the Ministry of Finance announced additional tax deductions of up to Rs 1.5 lakh for interest paid on affordable housing loans. This move aimed to encourage home buyers and support the housing sector by making housing loans more attractive.

On November 6, 2019, the cabinet approved the establishment of an Alternative Investment Fund (AIF) worth Rs 0.25 trillion (Rs 25,000 crore) to provide relief to developers with unfinished real estate projects and ensure the delivery of homes to buyers. The fund's primary purpose was to provide priority debt financing for the completion of stalled affordable housing projects, addressing the challenges faced by developers and homebuyers due to delays in project completion.

On December 31, 2019, the Ministry of Finance unveiled a national infrastructure plan worth Rs 1 trillion to be implemented over the next five years. A key aim of the plan was to front-load some of the already-identified investment projects, accelerating infrastructure development and boosting economic growth. The ambitious plan targeted various sectors, including energy, transportation, agriculture, and urban infrastructure, aiming to enhance overall connectivity and development across the country.

12 Policy Response During the Pandemic (2020-22)

The COVID-19 pandemic significantly disrupted the macro-financial dynamics set in motion by the defaults of IL&FS and DHFL. While the pandemic brought with it major disruptions, including strict lockdowns initially that halted the economy, the Reserve Bank of India (RBI) and the government stepped in with unprecedented liquidity support and fiscal measures (RBI 2023a).

This section provides a brief overview of the key developments during COVID-19 and their consequences before we turn to the challenges ahead in the following section.

12.1 Key Developments during the Pandemic

The COVID-19 pandemic has significantly impacted the Indian financial system, leading the authorities to implement various measures to mitigate its effects. These measures, presented in chronological order, include:

1. YES BANK CRISIS RESOLUTION (MARCH 2020): In response to YES Bank's crisis due to a sharp increase in bad loans, the RBI intervened on March 13, 2020. The central bank approved a reconstruction plan involving an equity infusion from a consortium of eight banks and financial institutions led by the State Bank of India. As a result, a total of Rs 10,000 crore was infused into the bank, and the moratorium was lifted on March 18, 2020. The crisis highlighted the need for better governance and risk management in India's banking sector.

2. LOAN REPAYMENT MORATORIUM (MARCH 2020 – AUGUST 2020): The RBI initially announced a three-month moratorium on loan repayments in March 2020, which was extended to six months in August 2020. This relief measure provided borrowers facing financial difficulties due to the pandemic with additional time to repay their loans, easing their financial burden during this challenging period.

3. INTEREST RATE REDUCTION (MARCH – MAY 2020): The RBI implemented a series of interest rate reductions to stimulate economic growth and encourage banks to lend more. Between March and May 2020, the central bank reduced the repo rate by 115 basis points, ultimately bringing it down to 4%. The reverse repo rate was also reduced by 155 basis points, from 4.90% to 3.35%. The reverse repo rate is the rate at which banks lend money to the RBI, and the reduction in the rate made it less attractive for banks to park their excess funds with the central bank and incentivized them to lend more to borrowers.

4. ENHANCED LIQUIDITY SUPPORT TO BANKS & NONBANKS (APRIL – JULY 2020): The RBI launched various measures to ensure banks and nonbanks had sufficient liquidity to meet the economy's credit needs.

   (a) *TLTRO*: In March 2020, the RBI introduced Targeted Long-Term Repo Operations (TLTRO) to inject liquidity into the financial system and ensure credit flow to specific sectors, particularly NBFCs and MSMEs. Under TLTRO, the

RBI conducted auctions of targeted term repos for up to Rs 1 trillion. Through this window, banks could access three-year funding from the RBI at a floating rate linked to the policy repo rate to invest in investment-grade securities. (Later in October 2020 this scheme evolved into the "On Tap TLTRO" and in February 2021 the RBI allowed banks to provide funds to NBFCs under the On Tap TLTRO Scheme).

(b) *TLTRO 2.0*: In April 2020, the RBI launched TLTRO 2.0, providing an additional Rs 0.5 trillion specifically for NBFCs, microfinance institutions (MFIs), and smaller financial institutions. Banks had utilized the TLTRO 1.0 funds for investing in high-rate corporate securities. This left out the small- and mid-sized NBFCs and MFIs, which were facing liquidity challenges. Under the TLTRO 2.0 window, banks could access three-year funding from the RBI to invest in investment-grade securities of NBFCs, with at least 50% invested in smaller NBFCs and MFIs.

(c) *SLF-MF*: In April 2020, the RBI also introduced a special liquidity facility for mutual funds (SLF-MF) of up to Rs 0.5 trillion, which lasted until May 2020. This facility aimed to ease liquidity pressures on mutual funds during the pandemic.

(d) *SAF*: In July 2020, the government launched a Special Liquidity Scheme worth Rs 0.3 trillion to help Non-Banking Financial Companies (NBFCs) and Housing Finance Companies (HFCs) overcome their liquidity problems. Under this scheme, a Special Purpose Vehicle (SPV) managed by the State Bank of India (a government-owned bank) bought short-term debt from NBFCs/HFCs using funds from a Stressed Asset Fund (SAF). The SAF issued special securities backed by the Government of India and sold to the RBI only. The Department of Financial Services at the Ministry of Finance oversaw the scheme. This scheme was different from the Partial Credit Guarantee Scheme, which required multiple deals between public sector banks and NBFCs, forced NBFCs to sell their current assets, and used funds from public sector banks. Instead, this scheme offered a single platform for the SPV and the NBFCs without affecting their current assets. The scheme also enabled the NBFCs to get better ratings for their bonds.

5. EMERGENCY CREDIT LINE GUARANTEE SCHEME (ECLGS) (MAY 2020): The government introduced the ECLGS in May 2020 to provide collateral-free loans to micro, small, and medium enterprises (MSMEs) and other eligible businesses impacted by the pandemic. Offering a 100% government guarantee on loans, the scheme incentivized banks to lend to businesses during the crisis.

6. RBI'S RESTRUCTURING FRAMEWORK FOR STRESSED ASSETS (AUGUST 2020): In August 2020, the RBI introduced a one-time restructuring framework for stressed assets. This measure allowed banks and financial institutions to restructure loans for borrowers affected by the pandemic, preventing a surge in non-performing assets (NPAs) in the banking system and providing borrowers with relief.

7. LAKSHMI VILAS BANK FAILURE (NOVEMBER 2020 – DECEMBER 2020): In November 2020, the RBI placed Lakshmi Vilas Bank (a private bank) under moratorium due to its weak financial position, capping deposit withdrawals at Rs 25,000. The bank was later merged with DBS Bank India on November 27, 2020. This move aimed to protect the interests of depositors and maintain financial stability.[39]

8. SUSPENSION & REACTIVATION OF THE IBC (2020-2021): India's Insolvency and Bankruptcy Code (IBC), which came into force in 2016, aims to resolve the cases of distressed debtors in a time-bound and creditor-driven manner. The framework has been hailed as a landmark reform that aims to facilitate the recovery of billions of dollars of bad loans. However, the framework has also faced some challenges, such as delays, litigation, lack of capacity, operational glitches and regulatory uncertainty. The COVID-19 pandemic added to the woes of the framework, as it forced the government to suspend it for nine months to protect the businesses from insolvency. The suspension was lifted in March 2021, and also introduced a new prepackaged process for small and medium enterprises (Pre-Packaged Insolvency Resolution Process or PIRP), which allows them to negotiate a resolution plan with their creditors before approaching the tribunal. The government plans to extend this process to larger firms as well.

9. CREATION OF A BAD BANK (FEBRUARY 2021): In February 2021, the National Asset

[39] Prior to this, on April 5, 2019, the board of Lakshmi Vilas Bank approved a merger with the country's second-largest housing finance company, Indiabulls Housing Finance. However, the plan was discarded after the RBI refused to give approval.

Reconstruction Company Limited (NARCL) was announced, which is 51 percent owned by public banks. It was established as a 'bad bank' to help dispose of the stressed assets of commercial banks. The NARCL would purchase NPAs with 15 percent of the sum paid in cash and 85 percent in tradable securities. The government will guarantee Rs 306 billion against these securities, valid for 5 years.

10. BANK PRIVATIZATION (AUGUST 2021): In August 2021, the government announced plans to privatize two public sector banks. This initiative aimed to improve the banking sector's efficiency and reduce the government's financial burden. In the Union Budget 2021-22, the government identified two public sector banks for privatization and initiated the process of selling its stake in IDBI Bank to strategic investors.

11. ADDRESSING REGULATORY ARBITRAGE (OCTOBER 2022): The Reserve Bank of India (RBI) introduced a scale-based regulatory framework for NBFCs. The regulatory structure for NBFCs comprises of four layers based on their size, activity, and perceived riskiness. The scale-based framework encompasses different facets of regulation of NBFCs covering capital requirements, governance standards, prudential regulation, and others. This framework aims to further reduce potential regulatory arbitrage between banks and NBFCs and became effective in October 2022.

12. PMC BANK CRISIS RESOLUTION (2019 – 2022): The Punjab and Maharashtra Cooperative (PMC) Bank crisis came to light in September 2019 when the RBI placed the bank under regulatory restrictions due to severe financial irregularities. Investigations revealed that PMC Bank had a significant exposure to the financially troubled Housing Development and Infrastructure Limited (HDIL) group, with over 70% of its loan book concentrated on this single borrower. The bank's management had hidden this exposure by creating thousands of fictitious accounts to conceal non-performing assets. The crisis raised questions about the governance, risk management, and regulatory supervision of cooperative banks in India. In response, the RBI announced measures to strengthen the regulatory framework for urban cooperative banks (UCBs), including revised exposure norms, governance reforms, and increased reporting requirements. In June 2021, the RBI granted approval to an NBFC, to set up a small finance bank that would acquire the assets and liabilities of PMC Bank. This was completed in January 2022.

13. A New Development Bank (2021-2023): The National Bank for Financing Infrastructure and Development (NaBFID) was established by an Act of Parliament in 2021 with the primary objective of addressing gaps in long-term non-recourse finance for infrastructure development in India. The DFI has a dual focus on both developmental and financial objectives and aims to boost the country's economy by strengthening the development of bonds and derivatives markets. In December 2022, NaBFID disbursed its first loan of Rs 520 crore for a National Highway project, and its loan pipeline stands at Rs 50,000 crore (or about 2.5% of GDP). The bank is expected to disburse Rs 15,000 crore in the first quarter of 2023.

Overall, during the COVID-19 pandemic, various developments unfolded in the financial system. The RBI implemented a range of measures such as cutting interest rates, providing targeted liquidity support to specific sectors, and implementing loan moratoriums to help borrowers navigate the crisis. Meanwhile, the government introduced several fiscal packages to support businesses and individuals affected by the pandemic. The period also saw a number of bank resolutions, regulatory changes, and the introduction of new government-guided institutions.

13 Financial Health Restored?

Reflecting on the past ten years, we can see a concerted policy effort to repair balance sheets, a process that unfolded in three significant stages. The journey began with the asset quality review in 2015, progressed with a comprehensive crisis response in 2018 and 2019, and culminated with the implementation of a pandemic playbook from 2020 to 2023. The critical question that emerges is: did these policies ultimately succeed in rejuvenating the health of the financial system?

As of mid-2023, the answer leans towards the affirmative. After years of diligent efforts, these policies eventually succeeded in reviving the financial system by enhancing asset quality and strengthening capital and liquidity positions. Still, it's important to balance these gains against the cost of the economic activity that was sacrificed during the nearly decade-long credit crunch, even though quantifying this cost poses challenges. Moreover, it is important to recognize that some favorable external factors, such as the global interest rate decline prompted by the pandemic, also contributed to the mending of balance sheets.

The financial sector policies of the past decade have produced two significant positive outcomes. First, the policy response to the pandemic, implemented from 2020 to 2023, successfully staved off a financial meltdown. This was achieved through a blend of accommodative monetary policy, emergency liquidity, guarantees, fiscal measures, and regulatory easing. Authorities deserve credit for a broad range of initiatives such as loan repayment moratoria, credit guarantee schemes for MSMEs, and emergency liquidity measures, which fortified the financial sector and facilitated its repair.

Second, a decade of active repair, coupled with a shift towards prudent lending policies after the Indian Financial Criss of 2018-20 and accommodative policies during the pandemic, steered numerous banks and non-banks back to profitability and stronger balance sheets.[40] This happened due to at least five factors:

1. CORPORATE DELEVERAGING: Envision a corporation as a mountaineer, burdened by a heavy backpack of debt, striving to reach the peak of financial success. What if this mountaineer could shed some weight, making the ascent less strenuous and more efficient? Since 2018, Indian corporations have been systematically unburdening themselves of debt, a process known as deleveraging. This shedding of debt has been propelled by a confluence of factors. Some firms have liquidated assets, channeling the proceeds towards debt repayment. Others have prioritized settling existing loans over acquiring new ones. In certain instances, insolvency resolutions under the NCLT processes have facilitated debt reduction. This deleveraging trend was already underway pre-pandemic, but the health crisis accelerated the process.

[40] Over the past few years, Indian banks have cut down their bad loans and increased their capital, making them more robust against economic stress. The rate of bad loans in relation to total loans for Indian banks has been decreasing since it hit 10.8% in September 2018. This ratio dropped from 7.3% in March 2021 to 5.8% in March 2022 and further to 4.4% by the end of 2022. Also, banks have been setting aside more money for bad loans, reaching 71.5% coverage by September of that year.

The health of banks, measured by their Capital to Risk Weighted Assets Ratio (CRAR) and Common Equity Tier 1 (CET1) ratio, stood at around 16% and 13% by the end of 2022. These figures are above the minimum regulatory requirements of 9% and 5.5%, respectively. In comparison to their U.S. counterparts, Indian banks have less risk associated with changes in interest rates.

The NBFC sector also showed a strong recovery after the pandemic, with the quality of assets continually improving. The rate of bad loans in this sector (excluding core investment companies) dropped from 6.9% in June 2021 to 5.1% by September 2022. Although some stress remains in specific NBFC groups, the sector's capital position stayed robust, with a CRAR of 27.4% as of end-September 2022.

New regulations starting from October 1, 2022, require all NBFCs to collect the full overdue amount to upgrade a bad loan. The classification of bad loans will now start from the exact overdue date, unlike the previous practice of starting 90 days from the end of the month in which the loan became overdue. These regulatory changes may affect the sector's near-term assessment of asset quality.

2. PANDEMIC POLICIES & LOWER INTEREST RATES: During the pandemic, the RBI implemented several policy measures that had a positive impact. These measures included reducing interest rates, providing liquidity support, implementing regulatory forbearance, and granting a moratorium on loan repayments. These actions effectively alleviated liquidity pressures, lowered borrowing costs, and offered relief to borrowers in distress. These policies also helped deleveraging efforts. The reduction in interest rates by the RBI contributed to a decrease in borrowing costs for both businesses and consumers, making it easier to manage debt payments. Additionally, the decrease in the reverse repo rate encouraged banks to allocate more funds to productive sectors of the economy, ultimately enhancing the flow of credit.

3. LIMITED FRESH LENDING & DECLINE OF BAD DEBTS: Banks witnessed a decrease in their non-performing asset (NPA) ratio and an increase in their capital ratio. Meanwhile, listed firms demonstrated a decline in leverage, and delinquency rates decreased across various sectors and borrower types. These advancements can be attributed to the recovery of the corporate sector, as mentioned earlier, with financial institutions prioritizing balance sheet repair over fresh lending. Additionally, efforts to address existing bad debts gradually, without accumulating significant new ones, have contributed to this positive trend. Furthermore, the unexpected surge in metal and commodity prices following the Russian invasion of Ukraine inadvertently provided support to certain infrastructure, metal, and energy sector corporates, who were sizable contributors to the bad debts problem.

4. TEMPORARY SHIFT AWAY FROM INFRASTRUCTURE FINANCING: In recent years, there has been a noticeable shift in infrastructure financing, with the government assuming a more prominent role. This change has allowed banks and nonbank financial institutions to reduce their exposure to the sector. The establishment of NaBFID in 2021 exemplifies the government's increasing involvement in infrastructure financing and its recognition of the need for specialized financial institutions to support infrastructure development. This initiative signifies a return to the Development Finance Institution (DFI) model, which was previously abandoned in the early 2000s. NaBFID's primary objective is to provide long-term financing for infrastructure projects in India, aiming to foster economic growth and development. Additionally, the creation of NARCL in 2021, a 'bad bank' with a majority stake

held by public banks, demonstrates the government's willingness to use the public balance sheet more freely to address losses arising from failed past project lending.[41]

5. STRENGTHENED SUPERVISION: The RBI's new supervisory approach integrates the supervisory processes for commercial banks, NBFCs, and urban cooperative banks. The RBI now focuses more on risk, supervises continuously, and strengthens both on-site and off-site surveillance. New regulatory frameworks for NBFCs and co-operative banks, issued in October 2021 and July 2022 respectively, have also been implemented to improve governance and risk management.

While the Indian financial sector has made significant strides, it continues to navigate a turbulent global environment and some domestic headwinds in 2023. With global inflation driving interest rates up and pandemic-related support coming to an end at home, new challenges emerged. Complicating matters further, the global banking system experienced turmoil in 2023, with bank failures affecting both the United States and Europe.

Notably, even though substantial regulatory changes such as the new scale-based framework have been implemented, some important financial reforms (such as bank privatization) have moved slower.[42] Some of this delay stems from the understandable need to pivot between crises during the pandemic's onset. Still, some vulnerabilities revealed by the failures of IL&FS, DHFL, and Yes Bank are yet to be fully addressed.

As India charts its course post-pandemic, it is crucial to maintain focus on financial reforms. We will delve deeper into these reform priorities in Part V.

[41] For instance, in 2023, NARCL acquired its first stressed asset, a loan extended by IDBI and other lenders to an infrastructure development company, Jaypee Infratech.

[42] In the 2021 budget speech, the government announced intentions to privatize two state-run banks as a part of their disinvestment plan. Niti Aayog, in response, proposed two such banks for privatization to the disinvestment department in April 2021. However, by mid-2023, no final decision has been taken. The government also drafted the Banking Laws Amendment Bill in 2021 but it has not been introduced in Parliament yet. The bill aims to amend the Banking Companies Acts of 1970 and 1980 and make necessary changes to the Banking Regulation Act of 1949, with the goal of streamlining the privatization process of state-run banks. Media reports from mid-2023 suggest that the government is considering the formation of a panel to prepare a new list of public sector banks that could be potential candidates for privatization.

14 A Calm Amidst Global Storms (2023)

14.1 Bank Failures in the US & Europe

March 2023 marked a tumultuous period for the global banking system, with a wave of bank failures sweeping across the US and Europe. The epicenter of this financial earthquake was the collapse of Silicon Valley Bank (SVB), a titan in tech industry lending, on March 10. SVB found itself in the throes of a classic bank run as customers, fearing losses from its holding of long-dated securities, withdrew their deposits en masse. Despite the US government's Federal Deposit Insurance Corporation (FDIC) stepping in to take control, the damage was irreversible.

The fall of SVB sent shockwaves through the markets, leading investors to question the solvency and liquidity of other banks with similar profiles. The tremors reached Signature Bank, another US regional bank, which was shut down by the FDIC on March 13, after failing to meet its obligations to creditors and depositors. Signature Bank's downfall was precipitated by its heavy investment in long-dated securities, which lost value due to delayed interest rate increases.

The crisis then crossed the Atlantic to Europe, where Credit Suisse, one of the continent's largest and most influential banks, grappled with a liquidity crunch. Struggling for years to restore its profitability and reputation after a series of scandals and losses, Credit Suisse's share price plummeted to a record low on March 15, as it failed to secure sufficient capital from markets or shareholders.

In response to this dire situation, the Swiss central bank and financial regulator intervened, brokering a takeover deal between Credit Suisse and its rival UBS. Announced on March 16, the deal saw UBS acquiring Credit Suisse's core businesses and assets, while a 'bad bank' was left to wind down the remaining liabilities. This drastic measure was seen as a last-ditch effort to stave off a systemic collapse of the European banking system.

These bank failures in the US and Europe laid bare the vulnerability of many financial institutions to interest rate risk, as they had taken substantial positions in long-dated securities that depreciated due to delayed interest rate hikes. The crisis also unveiled the fragility of some banks' balance sheets and liquidity positions, which had relied on short-term funding sources and risky assets to inflate their profits.

The crisis has sparked a debate about the adequacy of global banking regulation and supervision, as well as the effectiveness of crisis management and resolution mechanisms.

The aftermath of SVB's collapse echoed worldwide, leading investors to contemplate the possibility of a similar collapse in their own countries.

14.2 Is the Indian Financial System Insulated?

In the wake of these global banking failures, the question arises: is the Indian financial system exposed to similar risks? Despite having grappled with crises like IL&FS, DHFL, and YES Bank, various factors suggest that India is unlikely to experience a collapse of this nature at present.

The primary reason for SVB's collapse was an asset-liability mismatch in the wake of rapidly rising interest rates, triggered by persistently high inflation and geopolitical events like the Russian invasion of Ukraine. However, most Indian banks are better insulated against such risks due to stringent regulatory norms and a diversified loan portfolio.

Indian banks are required to invest a portion of their deposits in bonds, predominantly government securities, to meet the mandatory Statutory Liquidity Ratio (SLR). The Reserve Bank of India (RBI) has also put in place enhanced held-to-maturity (HTM) limits to insulate SLR from mark-to-market losses.

Unlike SVB, which was heavily concentrated in Silicon Valley and largely funded start-ups and technology companies, most Indian banks have a geographically and industrially diverse deposit base.

Moreover, unlike SVB, which predominantly had bulk deposits, Indian banks' deposits are granular, with retail deposits contributing nearly 60% of total deposits.

The resilience of the Indian financial system can also be attributed to the proactive decade-long repair and restructuring of the system—in part driven by RBI's efforts to strengthen financial supervision. This initiative, which also targeted asset-liability mismatches following the IL&FS and DHFL defaults, fortified Indian banks and non-banks, preparing them to weather the global banking storm triggered by SVB's default.

Additionally, the recent restructuring or merger of vulnerable banks, like YES Bank, helped effectively removed potential weak links. This further strengthened the system against significant risks.

In summary, while the collapse of SVB underscores the inherent risks associated with banking, the Indian financial system appears to be relatively well shielded from SVB-like shocks in the near term. Yet, banks or nonbanks could still face unexpected risks from areas of their balance sheets previously considered safer.

Part V

Challenges & Opportunities

As the Indian economy exits the acute phase of the pandemic, several structural challenges remain (which may remain hidden until the next crisis hits). At the same time, the authorities are confronted by a difficult global environment with high global inflation, still-rising interest rates, and major stress in the global banking system after the failures of Silicon Valley Bank and Credit Suisse in March 2023. On the domestic front, economic growth appears to be slowing down as per national accounts data from early 2023.

Against this backdrop, this section discusses the challenges ahead for the Indian financial system and outlines the necessary steps to ensure its long-term stability and resilience. This requires addressing three macro-financial structural challenges: (1) India's Great Funding Imbalance, (2) India's Financial Deepening Hurdle, and (3) India's Macro-Finance Trilemma.[43] In addition, a comprehensive approach to financial sector reform must include measures to enhance regulatory oversight, strengthen the balance sheets of financial institutions, improve risk management practices, and foster transparency and accountability. By addressing these fundamental vulnerabilities, India can build a more robust financial system capable of weathering future crises and supporting sustainable economic growth.

15 Challenge #1: India's Great Funding Imbalance

Indian banks predominantly adhere to a traditional model, gathering funds from depositors and market borrowings to lend or invest. However, public and private banks in India exhibit stark differences in their funding sources. Private banks rely more on market borrowing, making them more susceptible to funding risks, while public banks benefit from a higher proportion of retail deposits.

In the 2010s, the banking landscape shifted as several public banks faced lending constraints under the RBI's Prompt Corrective Action (PCA) framework, while private banks aggressively pursued deposit growth. However, the defaults of two major non-bank fi-

[43]Note that a discussion of these three challenges also features as a Comment in the India Policy Forum 2022 (Agarwal Forthcoming).

nancial institutions (IL&FS and DHFL) in 2018 and 2019 disrupted wholesale and money markets, heightening competition for deposits and destabilizing funding for non-bank financial institutions.

The "Great Funding Imbalance" in India's financial system stems from public sector banks and a few large private banks enjoying access to affordable depositor funding, while the rest of the system faces funding scarcity despite vast lending opportunities in the Indian economy. This results in higher borrowing costs for many Indian households and businesses, particularly those outside Tier 1 cities or big business houses.

We can see the greater reliance of private banks on market borrowing by examining the cross-linkages in the Indian financial system (Figure 26). In inter-sectoral exposure, mutual funds and insurance companies were the major fund providers to the system, while NBFCs and HFCs were the major receivers of funds. However, experience varied within the banking system: private banks were net receivers relative to the entire financial sector, and public banks were net providers. As Figure 26 demonstrates, the private banks' dependence on the rest of the financial system is like that of the NBFCs and HFCs— highlighting their high non-deposit funding needs.

India's Great Funding Imbalance was muted during the COVID crisis—mainly due to the RBI's massive injections of aggregate liquidity. In the first 18 months of the pandemic alone (Feb 2020 to Sept. 2021), the RBI implemented liquidity measures worth 8.7% of the GDP. Even afterward, the RBI has kept the financial system flush with surplus liquidity, even though the acute phase of the pandemic is over. However, persistently high inflation may put greater pressure on the RBI to withdraw liquidity. Once the wave of aggregate liquidity recedes, the funding imbalance will become prominent again. This is especially concerning as many much-needed reforms in the financial system could not be prioritized due to the pandemic and remain unaddressed.

Any privatization efforts or reorganization of the Indian financial system is an opportunity to address the Great Funding Imbalance. A significant risk is that India's retail deposit base becomes concentrated in the hands of a few large private banks. That scenario will lead to a persistence of the Imbalance, just under a different guise. Such an outcome is likely to hinder India's growth significantly. Instead, ensuring better access to stable and cheap funding for medium-sized banks, NBFCs, and HFCs will potentially support convergence in incomes across states, rural and urban areas, and families. This may require some well-managed non-banks to become deposit takers. It will also require careful attention to the ex-post distribution of deposits in the banking system after the privatization of public banks.

To summarize, the concrete implication of challenge #1 is to situate the reorganization of the financial sector (including privatization efforts) amidst a broader strategy to address India's Great Funding Imbalance. This could include the following steps:

- Design a path for well-managed non-bank financial institutions to convert into deposit-taking institutions.
- Consider mergers between strong and well-managed non-bank financial institutions and medium-sized (public and private) banks.
- Support the development of the wholesale funding market—including by reducing asymmetric information through frequent and transparent asset quality reviews. This will reduce the funding advantages of public banks, in turn helping address the underlying problems that lead to the need for privatization in the first place.

16 Challenge #2: India's Financial Deepening Hurdle

The Financial Deepening Hurdle for India is the critical need to increase access to financial services across the country, including credit and insurance. One way to measure this challenge is through the credit-to-GDP ratio, which represents the amount of credit provided by banks relative to the size of the economy.

Bank credit-to-GDP ratios remain very low in poorer states—and are up to three times lower than those in richer states (see Figure 39). For instance, the bank credit-to-GDP ratio in Bihar and Uttar Pradesh, two of the country's most populous states, is much lower than the national average. Bihar and Uttar Pradesh (where about 1 in 4 Indians live) have credit-to-GDP ratios between 25-30%, compared to the national average of over 55%. Many people in these states have limited access to credit, which can impede their ability to start businesses, invest in education or healthcare, and build wealth.

The dispersion in the credit-to-GDP ratio can have significant consequences for the overall growth and development of the country. When some regions have limited access to credit, it can lead to a less efficient allocation of resources, hampering economic growth and exacerbating regional disparities.

In recent decades, the government of India has taken steps to address the financial deepening hurdle. For instance, the Pradhan Mantri Jan Dhan Yojana, a national financial inclusion program launched in 2014, aims to provide every household with access to basic financial services. And, as Figure 39 shows, there has been a modest increase in the credit ratios among the poorer states during the 2010s.

Yet, since the 1970s, India's primary financial deepening tool has been Priority Sector Lending (PSL). Under this policy, banks must lend 40% of their total credit to agriculture, small-scale industries, and other marginalized sectors.

Banks that fall short of meeting the required percentage of lending to priority sectors can make up for the deficit in one of three ways. They either (i) purchase Priority Sector Lending Certificates (PSLCs) from other banks, or (ii) invest in Rural Infrastructure Development Fund (RIDF) deposits, or (iii) lend funds to non-bank institutions for "on-lending" to priority sectors. Private banks tend to be more active in buying PSLCs and in on-lending to non-banks to meet their priority lending targets—as public banks are more active in priority sectors due to their historical and social role. Thus, the burden of this policy de facto falls much more on the public sector banks than the private banks.

The priority sector lending policy has several shortcomings. For instance, the policy incentivizes banks to lend to specific sectors and areas, regardless of their creditworthiness. Also, the policy leads to a crowding-out effect, as banks divert funds from profitable sectors to meet their priority sector lending targets. This results in reduced profitability and competitiveness of banks, ultimately harming the economy. Lastly, it has increased financial stability risks as it has deepened interlinkages between banks and non-banks due to on-lending activities.

Overall, it will be important to assess how the reorganization of the financial sector interacts with the distortive effects of priority sector lending and related policies. Further, priority sector lending is a type of "push policy" as it pushes finance first and waits for growth to happen. Instead, there is a need for greater emphasis on "pull policies" that encourage the development of a pipeline of high-quality projects in all areas of the economy and improves financial literacy (RBI 2020; RBI 2021b). Without attention to such complementary policies, the privatization efforts may not yield the desired benefits and could even heighten the systemic interlinkages in the system.

To summarize, the concrete implication of challenge #2 is to ensure that India's financial sector reform is part of a comprehensive strategy to overcome India's Financial

Deepening Hurdle. This could include the following steps:

- Assess the effectiveness and distortions of the priority sector lending and related policies.
- Place greater emphasis on "pull policies" to develop a strong pipeline of projects in neglected areas (e.g., through cash-flow-based lending and leveraging digital financial services).
- When choosing a pool of buyers, pay attention to the lending functions of public banks and their niches (e.g., geographies, sectors, etc.).

17 Challenge #3: India's Growth Strategy Trilemma

The Growth Strategy Trilemma poses a complex challenge for governments seeking to balance economic growth, financial stability, and nurturing national champions. Pursuing any two of these objectives necessarily comes at the cost of partially sacrificing the third, thus making it a trilemma. I refer to this as the Growth Strategy Trilemma (see Figure 40), which is based on Agarwal (2023).

The Safe Champions strategy focuses on financial stability and reliable national players, sacrificing high economic growth. In India, the Tata and Bajaj Groups exemplify this strategy, maintaining long-term sustainability and dominating industries like steel and automobile production.

The Bold Champions strategy prioritizes aggressive growth and market-driven national champions at the expense of stability. The 2018 Infrastructure Leasing & Financial Services (IL&FS) crisis and other infrastructure lending episodes serve as examples of this strategy.

Fair-market capitalism emphasizes financial stability and economic growth without picking winners, instead promoting free entry. However, governments may avoid this strategy due to growth anxiety, fear of instability, or electoral cycles.

India's financial sector reform faces the trilemma in at least four ways.

First, India has set in motion a large-scale plan to revamp its transport infrastructure with a projected expenditure of $1.7 trillion, equivalent to 8% of its GDP, within the next half-decade. As part of this initiative to enhance connectivity within ports, coal, steel,

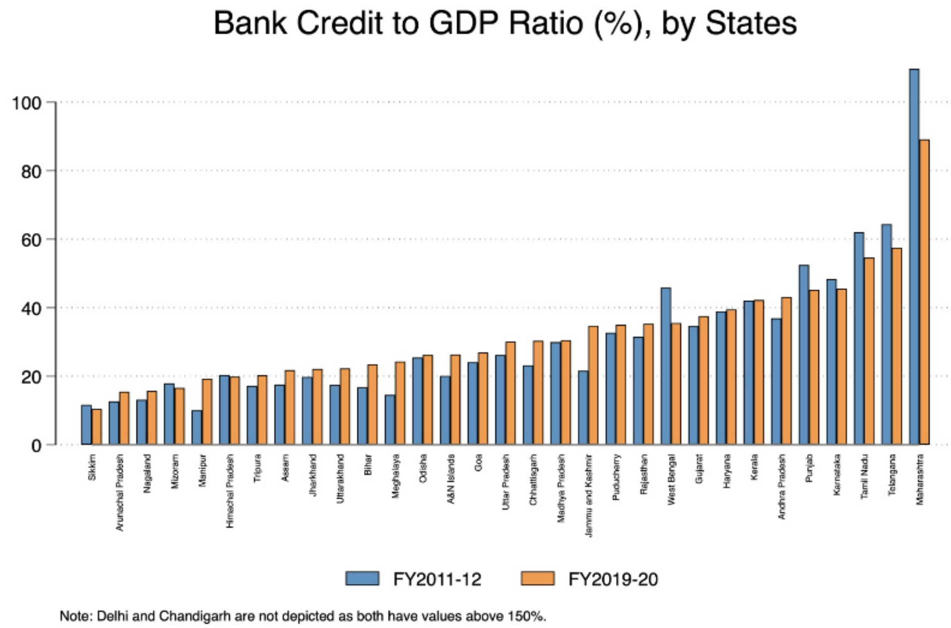


Figure 39: Bank Credit to GDP Ratio across States

Figure 40: Growth Strategy Trilemma (based on Agarwal, 2023)

fertilizer, and food grain sectors, the government has designated 100 critical transport infrastructure projects for augmented investments. During the Budget speech for 2023-24, delivered on February 1, the Finance Minister stated these projects would be prioritized with a proposed investment of Rs 75,000 crore, inclusive of Rs 15,000 crore from private entities. As of 2023, capital expenditure on roads and railways accounts for about 11% of the central government's capital spending, a fourfold increase from ten years ago. Despite the necessity of such infrastructure advancement to address significant growth bottlenecks in the country, any nation undergoing such swift capital spending growth could face governance challenges. In this context, it would be prudent for the authorities to exercise judicious support, avoiding any over-emphasis on 'national champions'. Lessons from emerging markets have repeatedly shown that, under particular situations, large infrastructure conglomerates could encounter complexities including cronyism, politically-guided lending, inefficient project allocation, related party dealings, or substantial debt accumulation—all of which ultimately hurt the taxpayers and economic growth.

Second, the creation of the NaBFID in 2021 marks a renewed focus on development banks. India's history of challenges in long-term infrastructure finance, as seen through the collapse of development finance institutions (DFIs) in the 1990s, public sector banks in the 2000s, and shadow banks like IL&FS in the 2010s, underscores the need for robust oversight in infrastructure lending. Financial institutions in this sector have often faced setbacks, leading to fiscal expenses. Addressing governance and structural concerns in lending is essential to ensure that the new development bank does not become a national champion that is subject to capital misallocation and fiscal costs in the long run.

Third, if the privatization of public sector banks is mishandled, it could unfairly favor established champions, leading to anti-competitive results and further cementing 'too-big-to-fail' financial institutions. It's also crucial to guarantee that prospective owners are incentivized to extend their lending to underbanked areas or non-traditional sectors such as rural India or Tier 2 and 3 cities. Additionally, selecting winners during the privatization process could foster a monopolistic environment, thereby solidifying the supremacy of incumbent players in the financial system. This could inhibit the entry of new participants, curb competition, and obstruct innovation and growth. Moreover, centralizing deposits and power within a few large banks could worsen the macro-fiscal nexus, as these banks become more deeply involved with the government and pose a larger risk to fiscal stability during a crisis. All in all, policymakers must evaluate the implications of privatization initiatives and advocate for a more inclusive and robust financial system.

Fourth, the corporate sector may favor national champions, supporting 'too-big-to-fail' firms active across diverse sectors. The centralization of economic activity in the hands of a few potent firms can result in capital market aberrations due to elements such as market power, asymmetric information, systemic risk, moral hazard, decreased competition, barriers to entry, and ineffective resource allocation. Large firms can secure favorable financial terms, overshadow smaller businesses, and create entry barriers, thereby promoting moral hazard and systemic risks. This may lead to asset mispricing, diminished innovation, and an overall decrease in productivity and economic growth. To counteract these distortions, policymakers can encourage competition, consider dismantling select large business conglomerates, improve financing opportunities for smaller businesses, and confront systemic risks tied to dominant firms.

To summarize, the concrete implication of challenge #3 is to pay careful attention to India's Growth Strategy Trilemma when designing the financial sector reforms, competition policies, and infrastructure plans. This could include the following steps:

- Establish strong oversight and address governance, lending standards, and risk-sharing issues in long-term infrastructure financing—whether projects are budget financed or development bank financed.

- Mitigate fiscal vulnerability by spreading the risks associated with infrastructure projects and fostering the development of the corporate bond market. Alongside suitable protective measures, think about allowing a greater degree of foreign ownership as this could improve transparency and enforce accountability.

- In the privatization process, consider the ex-post market concentration in deposits and implications of 'too big to fail' when determining the potential buyers. Facilitate free market entry through simplified licensing and standardized regulations.

18 A Unique Opportunity: India's Digital Revolution

India has firmly established itself as a global leader in digital payments, largely due to its homegrown platform, Unified Payments Interface (UPI). As a joint initiative between the National Payments Corporation of India (NPCI), the Reserve Bank of India (RBI), and the

Indian Banks Association (IBA), UPI enables instant, frictionless money transfers between bank accounts and merchants using virtual payment addresses or QR codes.

Launched in 2016, UPI aligns with India's vision to create a digital public infrastructure promoting innovation, financial inclusion, and ease of living. The UPI platform has over 100 million monthly active users in India who use it for diverse transactions, from purchasing a modest cup of tea to paying taxes and bills. In FY 2021–22, the value of transactions crossed $1 trillion. As of March 2023, there were about 400 banks available on the platform with a monthly volume of 8.6 billion transactions. Additionally, UPI has facilitated the integration of third-party apps like WhatsApp, Google Pay, and PhonePe, which provide users with supplementary features and services.

UPI's impact on India's economy and society is significant; it has streamlined payment processes, increased transparency and accountability, and welcomed more individuals into the formal financial system. Moreover, the platform has allowed the government to deliver welfare benefits and subsidies directly to recipients' bank accounts, effectively eliminating corruption and leakages.

Despite UPI's resounding success in digital payments, it has so far made limited progress in financial deepening in the form of access to credit. This is partly because UPI focuses on payment transactions, not credit services, and does not capture users' creditworthiness or repayment histories. Regulatory and operational constraints also impede innovation and competition within the credit market. For instance, UPI does not support peer-to-peer lending platforms or permit non-bank entities like fintechs or NBFCs to issue credit cards or overdraft facilities. Furthermore, UPI faces some challenges such as interoperability issues and infrastructure bottlenecks that impact its efficiency. See RBI (2021c) and RBI (2022b) for further discussion.

To build on the success of UPI and promote further financial expansion, various initiatives could be considered:

- Develop a credit scoring mechanism based on UPI transactions, enabling users to establish credit histories and access formal financial services from banks and NBFCs.

- Permit non-banking entities to issue credit cards or provide overdraft facilities via the UPI platform, subject to them meeting appropriate capital and prudential regulations. This could enhance the accessibility and utilization of credit on UPI. (In April 2023, RBI suggested the expansion of the UPI digital payment system's reach by enabling credit offerings via pre-approved bank lines.)

- Facilitate sandbox experiments that permit peer-to-peer lending platforms within the UPI network, with suitable regulations and protective data measures.

19 Orchestrating Reforms

India's financial sector, standing at a pivotal juncture, holds the promise to drive long-term growth and promote inclusion. Realizing this potential requires a robust reform plan, one that addresses present challenges while capitalizing on emerging opportunities.

In conceptualizing this reform agenda, I have identified ten critical elements. When orchestrated together, these reforms could create a harmonious, resilient, and inclusive financial system—a foundation for sustainable, long-term growth that reaps benefits for the economy and society at large.

While Annexes I and II provide a deeper, more technical dissection of these ten elements, I present here a high-level overview using a metaphor. The ten elements can be grouped into three categories, akin to conducting a successful orchestra performance: Rhythm (Financial Stability), Harmony (Financial Sector Performance), and Melody (Financial Development and Access).

Steady Rhythm in Financial Stability. As in a symphony, a consistent rhythm is crucial. It sets the pace, binding disparate instruments together. In the financial realm, this rhythm signifies the stability imperative to keep the system on track and prevent disruptions. It encompasses the enhancement of regulation and supervision, systemic risk and asset quality management, improvement of the framework for handling bad loans, bankruptcy, and resolution, and the fortification of the toolkit for emergency liquidity assistance.

Harmony in Financial Sector Performance. Each instrument in an orchestra contributes to the overall harmony of the performance, producing a balanced ensemble. Likewise, the performance of different financial institutions in a competitive financial landscape is crucial, assuring system efficiency and profitability. This element covers the improvement of asset quality and infrastructure financing, the reform of public sector banks, and the restructuring of the financial sector.

Accessible Melody in Financial Sector Development. An orchestra aims to create an engaging melody that resonates with a broad audience. Similarly, financial sector development and inclusion represent the score that engages the wider society, particularly the underserved segments. This sphere covers financial sector deepening, the improvement of monetary policy transmission, and the support of real estate transactions.

I invite the readers to read Annex I and II to learn more about each of these elements.

In this orchestral analogy, the government assumes the role of the insightful conductor, coordinating the reform agenda elements to ensure harmonious, coherent outcomes. The government also charts the vision and trajectory for the financial sector, ensuring it aligns with the national objectives and aspirations.

Final Thoughts

With over 1.4 billion inhabitants, India represents about one-sixth of the world's population. India's financial system holds the key to its progress, impacting both the domestic and global economies as India claims a bigger share of the world output.

As the COVID-19 pandemic was about to strike, India was already wrestling with one of its most pronounced economic downturns. By March 2020, as the last quarter of the 2019-20 fiscal year wrapped up, GDP growth had tumbled to a mere 2.9 percent, significantly lower than the 7 percent decade average. For the first time in over a decade, aggregate investment—which forms a quarter of GDP—underwent continuous contraction, shrinking by over 4% across three back-to-back quarters. This paper contends that the Indian Financial Crisis of 2018-20 was the primary driver of this slowdown, underscoring the critical role of the financial system in India's growth story.

Even with the current balance sheet improvements, a well-functioning financial system remains critical for saving mobilization, resource allocation enhancement, and risk diversification—all integral to India's growth path.

Thus, the relevance of financial reforms in India's economic narrative is undeniable. Yet, these reforms sometimes take a backseat in policy discussions, potentially due to the general public's limited interaction with financial policies. This paper aspires to bridge this gap and foster wider participation in these pivotal debates.

The field abounds with intriguing and vital questions that remain unanswered. These explorations will greatly benefit from the engagement of a diverse community of scholars, policymakers, and the broader public. My hope is that this paper will serve as a guide for future work in this field and an analytical record of India's experience with two unprecedented shocks—the Indian Financial Crisis of 2018-20 and the COVID pandemic of 2020-23.

References

Acharya, Viral V (2017). "Monetary Transmission in India: Why Is It Important and Why Hasn't It Worked Well?" In: *Reserve Bank of India Bulletin* 71.12, pp. 7–16.

— (2018a). "Prompt Corrective Action: An Essential Element of Financial Stability Framework". In: *Current Statistics* 67.1.

— (2018b). "Understanding and Managing Interest Rate Risk at Banks". In: *Macroeconomics and Finance in Emerging Market Economies* 11.2, pp. 218–231.

Acharya, Viral V and Raghuram G Rajan (2020). "Indian banks: A time to reform". In: *University of Chicago Booth School of Business Working Paper*.

Adrian, Tobias, Richard K Crump, and Emanuel Moench (2013). "Pricing the Term Structure with Linear Regressions". In: *Journal of Financial Economics* 110.1, pp. 110–138.

Agarwal, Ruchir (2022). "The Fear Economy: A Theory of Output, Interest, and Safe Assets". In: *IMF Working Papers* 2022.175.

— (2023). "Industrial Policy and the Growth Strategy Trilemma". In: *IMF Finance & Development, March*.

— (Forthcoming). "Comment". In: *India Policy Forum*.

Akerlof, G A (1978). "The Market For 'Lemons': Quality Uncertainty and the Market Mechanism". In: *Uncertainty in Economics*. Cambridge, MA: Academic Press.

Baele, Lieven et al. (2019). "Flights to Safety". In: *The Review of Financial Studies* 33.2, pp. 689–746.

Benmelech, Efraim (2012). "An Empirical Analysis of the Fed's Term Auction Facility". In: *Cato Papers on Public Policy, Volume 2: 2012-2013*. Cato Institute, pp. 57–91.

Bernanke, Ben S and Mark Gertler (1995). "Inside the Black Box: The Credit Channel of Monetary Policy Transmission". In: *Journal of Economic perspectives* 9.4, pp. 27–48.

Caballero, Ricardo J, Takeo Hoshi, and Anil K Kashyap (2008). "Zombie Lending and Depressed Restructuring in Japan". In: *American Economic Review* 98.5, pp. 1943–77.

Caballero, Ricardo J and Arvind Krishnamurthy (2008). "Collective Risk Management In a Flight to Quality Episode". In: *The Journal of Finance* 63.5, pp. 2195–2230.

Cecchetti, Stephen G (2007). *The Art of Crisis Management: Auctions and Swaps*. VOXEU.

Cecchetti, Stephen Giovanni and Piti Disyatat (2010). *Central Bank Tools and Liquidity Shortages*. Federal Reserve Bank of New York.

Chari, Anusha, Lakshita Jain, and Nirupama Kulkarni (2019). "The Origins of India's NPA Crisis". Working Paper No. 2019-04.

Cohen, Benjamin H, Peter Hördahl, and Fan Dora Xia (Sept. 2018). "Term Premia: Models and Some Stylised Facts". In: *BIS Quarterly Review*.

Estrella, Arturo and Mary Trubin (2006). "The yield curve as a leading indicator: Some practical issues". In: *Current issues in Economics and Finance* 12.5.

Favara, Giovanni et al. (2016). *Recession risk and the excess bond premium*. Working Paper 2016-04-08. Board of Governors of the Federal Reserve System (US).

FSB (2012). *Strengthening the Oversight and Regulation of Shadow Banking: Progress Report to G20 Ministers and Governors*.

GOI (Jan. 2020). *Economic Survey of India, 2019–20*. New Delhi: Ministry of Finance Department of Economic Affairs.

Goodhart, Charles (2017). "Balancing lender of last resort assistance with avoidance of moral hazard". In: *Monetary Policy, Financial Crises, and the Macroeconomy*. Cham: Springer, pp. 19–26.

Goodhart, Charles and Dirk Schoenmaker (1995). "Should the functions of monetary policy and banking supervision be separated?" In: *Oxford Economic papers*, pp. 539–560.

Gorton, Gary and Andrew Metrick (2012). "Securitized Banking and the Run on Repo". In: *Journal of Financial Economics* 104.3, pp. 425–451.

Gupta, Poonam and Arvind Panagariya (Forthcoming). "Privatization of Public Sector Banks in India: Why, How and How Far". In: *India Policy Forum*.

Hakkio, Craig S and William R Keeton (2009). "Financial Stress: What Is It, How Can It Be Measured, and Why Does It Matter?" In: *Economic Review* 94.2, pp. 5–50.

IMF (2017). *India: 2017 Financial System Stability Assessment*. Washington, DC: International Monetary Fund.

— (2018). *2018 World Economic Outlook, October 2018*. Washington, DC: International Monetary Fund.

— (2021). *India: 2021 Article IV Consultation Staff Report*. Washington, DC: International Monetary Fund.

— (2022). *India: 2022 Article IV Consultation Staff Report*. Washington, DC: International Monetary Fund.

— (2023). *Global Financial Stability Report: Nonbank Financial Intermediaries: Vulnerabilities amid Tighter Financial Conditions*. Washington, DC: International Monetary Fund.

Ivashina, Victoria and David Scharfstein (2010). "Bank Lending during the Financial Crisis of 2008". In: *Journal of Financial Economics* 97.3, pp. 319–338.

Kacperczyk, Marcin and Philipp Schnabl (2010). “When Safe Proved Risky: Commercial Paper during the Financial Crisis of 2007–2009”. In: *Journal of Economic Perspectives* 24.1, pp. 29–50.

Kearns, Jonathan, Philip Lowe, et al. (2008). “Policy Discussion | RDP 2008-06: Promoting Liquidity: Why and How?” In: *Reserve Bank of Australia Research Discussion Papers* October.

Krishnamurthy, Arvind and Annette Vissing-Jorgensen (2012). “The Aggregate Demand for Treasury Debt”. In: *Journal of Political Economy* 120.2, pp. 233–267.

Kulkarni, Nirupama et al. (2019). *Unearthing Zombies*. Working Paper.

Lang, J. H. and P. Welz (2017). *Measuring Credit Gaps for Macroprudential Policy*. Special Feature B. European Central Bank.

Mathur, KBL (2003). “Development financial institutions at the crossroads”. In: *Economic and Political Weekly*, pp. 799–808.

Narasimham Committee I (1992). *Narasimham Committee Report on the Financial System (Narasimham Committee I)*.

Narasimham Committee II (1998). *Narasimham Committee Report on the Banking sector Reforms (Narasimham Committee II)*.

Nayak Committee (2014). *Report of The Committee to Review Governance of Boards of Banks in India*.

Peek, Joe and Eric S Rosengren (2005). “Unnatural Selection: Perverse Incentives and the Misallocation of Credit in Japan”. In: *American Economic Review* 95.4, pp. 1144–1166.

Ray, Partha (2015). “Rise and fall of industrial finance in India”. In: *Economic and Political Weekly*, pp. 61–68.

RBI (2017). *2017 Report on Trend and Progress in Banking in India*. Mumbai, India.

— (2018). *Financial Stability Report December 2018*. Mumbai, India.

— (2019a). *Financial Stability Report December 2019*. Mumbai, India.

— (2019b). *Financial Stability Report June 2019*. Mumbai, India.

— (2019c). *Report of the Expert Committee to Review the Extant Economic Capital Framework of the Reserve Bank of India*.

— (2020). *National Strategy for Financial Inclusion (NSFI): 2019-2024*. Mumbai, India.

— (2021a). *Financial Stability Report December 2021*. Mumbai, India.

— (2021b). *National Strategy for Financial Education: 2020-2025*. Mumbai, India.

RBI (2021c). *Report of the Working Group on Digital Lending including Lending through Online Platforms and Mobile Apps*. Mumbai, India.
— (2022a). *Annual Report of the RBI for the Year 2021-22*. Mumbai, India.
— (2022b). *Benchmarking India's Payment Systems*. Mumbai, India.
— (2022c). *Financial Stability Report December 2022*. Mumbai, India.
— (2023a). *Business Continuity Management during Pandemic*. Mumbai, India.
— (2023b). *Discussion Paper on Introduction of Expected Credit Loss Framework for Provisioning by Banks*. Mumbai, India.
Sen, Pronab (Sept. 2018). *What Ails the Indian Banking Sector?* Ideas for India.
Singh, Charan and Jagvinder Brar (2016). *Stressed Assets and Banking in India*. IIM Bangalore Research Paper 507. Bangalore.
Spence, Michael (1978). "Job Market Signaling". In: *Uncertainty in Economics*. Cambridge, MA: Academic Press.
Subramanian, Arvind and Josh Felman (2019). *India's Great Slowdown: What Happened? What's the Way Out?* 370. Cambridge, MA: CID Faculty Working Paper.
Willardson, Niel and LuAnne Pederson (2010). "Federal Reserve Liquidity Programs: An Update". In: *The Region* June, pp. 14–25.

Annex I: A Blueprint for Financial Sector Reform

This annex proposes a financial sector reform agenda. A healthy financial system is essential for growth. Further, the diagnostics presented in this paper suggest that the credit channel was a key part of the story behind the severe economic slowdown during the Indian Financial Crisis of 2018-20. In this context, it is vital to ensure that future illiquidity problems facing the private sector do not turn into a major insolvency problem—as otherwise healthy firms/households end up being forced to default.[44]

The proposed financial sector reform agenda consists of ten key elements, each aimed at addressing specific challenges faced by the Indian financial system. These elements are based on the three challenges and various supervisory/regulatory challenges discussed earlier. The reform agenda is designed to enhance regulation and supervision, systemic risk management, asset quality, addressing problem loans and bankruptcy, public sector banks, restructuring of the financial sector, financial deepening, strengthening emergency liquidity framework, monetary policy transmission, and strengthening the real estate sector. Each element contributes to a robust financial sector that supports India's growth and development objectives. Some ideas have been proposed in various forms by previous committees, regulators, and policymakers such as Narasimham Committee I (1992), Narasimham Committee II (1998), Nayak Committee (2014), Acharya and Rajan (2020), and Gupta and Panagariya (Forthcoming), and the IMF (2017; 2021; 2022).

The ten elements and specific proposals under each are as follows:

1. STRENGTHEN REGULATION & SUPERVISION: The first critical aspect of the financial sector reform agenda revolves around enhancing regulation and supervision.

    (a) *Continue harmonizing regulations across the financial sector, building on the new scale-based framework*. In October 2021, the RBI introduced a scale-based regulatory approach for Non-Banking Financial Companies (NBFCs), categorizing them into four tiers: base, middle, upper, and top. This classification is

[44] In periods of financial stress the distinction between illiquidity and insolvency often blurs. In stress situations since banks generally face liquidity problems when solvency is in question (Goodhart and Schoenmaker 1995). Thus, if an individual bank will seek liquidity assistance from the central bank, it is likely means that it cannot easily meet its liquidity needs in interbank or wholesale funding markets. This could be because liquidity in the financial markets has frozen or because there are some doubts about the specific institution's solvency in the mind of market participant. In practice, during episodes of financial stress distinguishing between the two becomes even harder. Thus, mindful of this blurred distinction, actions to support the financial system should avail of various tools available at the monetary authorities' disposal to mitigate some of these concerns while still standing ready to provide the necessary assistance.

predicated on the firms' size, complexity, and interconnectedness. Those occupying the upper tier, including the largest ten NBFCs by asset size and others identified through the RBI's scoring method, are mandated to maintain a CET-1 capital of at least 9 percent and a total capital of at least 15 percent of their risk-weighted assets. They are also subject to large exposure limits in accordance with the newly established Large Exposures Framework (LEF). This novel, scale-based regulatory system could play a pivotal role in NBFC oversight. With tightening capital requirements and credit concentration limits for each tier, an opportunity arises to foster closer regulatory alignment between banks and NBFCs. It will be important to continuously evolve this framework through refinement and updates to guidelines to ensure robust NBFC oversight. In addition, the significant ongoing efforts to fortify supervision of banks, small finance banks, cooperatives, and digital lending must persist.

(b) *Combat fraud and enhance supervisory oversight*. Authorities can take action to increase transparency and improve oversight of financial institutions' health and liquidity, which will help promote prudent risk management and deter harmful practices such as frauds, asset-stripping, and related-party transactions. An assessment of bank group-wise fraud cases over the last three years indicates that while private sector banks reported greater number of frauds, public sector banks contributed much more to the fraud amounts involved. In 2019-20 alone the total amounts involved in bank fraud cases was close to 1% of GDP—nearly all of it arising from wrongdoing in the loan portfolio (RBI 2021a; RBI 2022c; RBI 2022a). In line with RBI's announced goals, it will be important to strengthen supervisory resources and powers for effective risk-based supervision and fraud risk management.

(c) *Raising capital and liquidity buffers and enforcing concentration limits.* Boosting capital buffers might be an effective strategy to strengthen the financial sector's resilience in the face of escalating interest rates. Moreover, there's potential to tighten and rigorously enforce group exposure limits at the level of individual banks and the system as a whole. This could decrease the risk concentration linked with key business conglomerates. NBFCs could also be fortified against negative liquidity shocks by enhancing the regulation and oversight of liquidity risk exposures, with regulatory interventions aimed at reducing dependence on short-term borrowing and mitigating asset-liability duration discrepancies. Besides the Capital Risk Adequacy Ratio (CRAR), the upper layer NBFCs will also be subjected to leverage requirements to assure their growth is backed by sufficient capital, among other factors. A more explicit directive on this stipulation is anticipated from the RBI. Prescribing an appropriate ceiling for leverage for these entities will be important.

2. MANAGING SYSTEMIC RISK: The second essential element of the financial sector reform agenda pertains to systemic risk management.

   (a) *Asset quality reviews.* The RBI could conduct regular asset quality reviews of both the NBFC and banking sectors, with a focus on the largest 50 NBFCs. This could potentially rationalize unviable institutions, reduce uncertainty, and maintain confidence in the market. Stress tests based on various downside scenarios could further bolster confidence. A fiscal backstop may be necessary to make the exercise credible and contain potential spillovers. The backstop would earmark fiscal resources that could be drawn upon in case of identified capital shortfalls that cannot be met within a given deadline. The exercise could also mitigate credit risk concerns about any systemic liquidity operations the RBI may engage in. While resource-intensive, the benefits of reducing uncertainty may outweigh the costs, especially if the system is adequately capitalized beforehand. For NBFCs outside the top 50, more detailed information and disclosures are required, particularly for those not designated as systemically important. Additionally, ensuring strong asset quality in small finance banks and cooperative banks can enhance confidence in the financial system more broadly.

   (b) *Broaden criteria for 'systemic importance' and provide direct emergency liquidity assistance to non-banks.* Building on the new supervisory framework, authorities could widen the criteria for determining systemically important non-banking financial companies (NBFCs) and banks, and regularly reassess their classifications. This could help decrease uncertainty about which institutions can access emergency liquidity during stressful periods, while also encouraging more proactive regulatory supervision. Moreover, there is scope to strengthen RBI's lender of last resort policies to enable direct emergency liquidity assistance to non-banks rather than indirectly providing liquidity through banks.

(c) *Reduce sovereign-banking nexus*. Encouraging banks to gradually decrease their exposure to the public sector could be achieved by reducing the regulatory incentives to hold government securities. This approach might help weaken sovereign-bank linkages and support credit supply to the private sector.

(d) *Reduce banking-NBFC interlinkages*. It could be beneficial to tighten the limits on bank exposure to NBFCs. This could prevent individual shocks from having a widespread effect on the entire financial system. Additionally, there's a need for a holistic assessment of all current RBI regulations and liquidity facilities like the 'On Tap TLTRO', which encourage on-lending from banks to nonbanks and consequently increase systemic risks through further interconnectedness. A similar exercise should be conducted for the exposures of Development Finance Institutions (DFIs) to the rest of the financial sector.

3. IMPROVING ASSET QUALITY & INFRASTRUCTURE/PROJECT FINANCING: The third component of the financial sector reform agenda could concentrate on enhancing asset quality and project/infrastructure finance. Hindered by factors such as political interference, weak governance, and inadequate capital, Indian banks and NBFCs have in the past accumulated a significant amount of non-performing assets (NPAs), particularly in the infrastructure sectors. To address these issues, the following policy priorities might be considered:

   (a) *Enhanced underwriting standards*. Strengthen underwriting standards by continually promoting prudent practices at banks and NBFCs, particularly given the sharp increase in unsecured retail credit. Authorities could explore calibrating loan-to-value ratios or introducing debt-service-to-income limits to curb the issuance of new variable-rate loans.

   (b) *Implement dynamic and forward-looking loan loss provisioning*. Indian banks currently recognize credit losses only when impairment is evident. This can lead to late and insufficient provisioning, hurting capital adequacy. A better way is to adopt India-specific IFRS accounting standards for banks, which require estimating and providing for expected credit losses (ECL) at all times, based on past, present and future information. This is more proactive and timely than the current approach, and can help banks build a cushion of provisions for bad times. The RBI is actively considering this and has proposed a framework for adopting the ECL approach for provisioning by banks in 2023, which would match provisioning norms with economic reality and credit risk RBI (2023b).

(c) *Better funding models for infrastructure/project finance*. Authorities should explore better funding structures for infrastructure projects, such as increasing the share of owner investments and promoting loan sales to long-term investors. This could decrease project leverage and risk, minimize concentration hazards, and lower the chances of systemic issues caused by the collapse of a major project. Additionally, it can free up resources for new loans and diversify funding sources for the infrastructure industry. This is a vital issue to tackle, as infrastructure lending has repeatedly and significantly burdened fiscal and financial stability (for example, through development finance institutions in the 1990s, public banks in the 2000s, and NBFCs in the 2010s).

(d) *Alternate sources for long-term infrastructure/project finance*. There is scope to develop alternative sources for long-term infrastructure/project finance, including deepening the corporate bond market, encouraging infrastructure investment trusts and real estate investment trusts, and attracting foreign capital. This will also help diversify the risk by reducing the concentration of large exposures in a few financial institutions.

4. ENHANCING FRAMEWORK FOR BAD LOANS, BANKRUPTCY, & RESOLUTION: The fourth component of the reform agenda could focus on improving frameworks related to bad loans, bankruptcy, and resolution. Key measures to consider include:

(a) *A more efficient, flexible, and transparent insolvency & bankruptcy framework*. India's 2016 insolvency and bankruptcy code (IBC) aims to resolve the cases of distressed debtors in a time-bound and creditor-driven manner. The framework is undergoing some amendments and reforms based on the feedback and suggestions of various stakeholders and judicial authorities. Some of the proposed changes include allowing creditors to withdraw or modify their resolution plans after approval, clarifying the jurisdiction of the tribunal over personal guarantors, empowering the professional to assign or transfer any debt to third parties, and providing a special dispensation for financial entities as resolution applicants. It will be important to ensure proper implementation of the changes to the framework more efficient, flexible and transparent.

(b) *Encourage out-of-court restructuring.* Authorities could consider introducing fast-track pre-insolvency resolution mechanisms that enable stressed firms and their creditors to negotiate a restructuring plan outside the court. This would help preserve the value of the firm, reduce the costs and time involved in litigation, and avoid overburdening the judicial system. If no agreement is reached within a specified period, the case would be referred to the National Company Law Tribunal (NCLT) for insolvency proceedings under the Insolvency and Bankruptcy Code (IBC).

(c) *Effective implementation of the "bad bank."* The bad bank, National Asset Reconstruction Company Limited (NARCL) started operations in October 2021 as an entity formed to take over and dispose of the identified stressed assets from commercial banks. The success of the bad bank depends on timely implementation. While the NARCL is expected to purchase a significant portion of distressed assets, strong coordination and clarification of valuation approaches for fully provisioned NPAs are crucial. Supporting the liquidity of NARCL-issued securities could also facilitate implementation.

(d) *Enhancing the resolution and crisis management framework.* The Financial Resolution and Deposit Insurance (FRDI) Bill aims to strengthen India's crisis management framework. It was introduced in the Lok Sabha in August 2017 and subsequently referred to a Joint Committee of Parliament. However, the Bill was withdrawn from Parliament in August 2018. It is now under examination and reconsideration. Reintroducing the Bill should be considered to enhance the resolution and crisis management framework (IMF 2017).

5. REFORMING PUBLIC SECTOR BANKS: The fifth element of India's financial sector reform agenda centers on the public sector banks, with four key suggestions to enhance their effectiveness and stability:

   (a) *Privatization strategy should avoid creating a 'too big to fail' problem in private banks.* Authorities should weigh the implications of market concentration in deposits and 'too big to fail' concerns when selecting potential buyers for privatization.

   (b) *Privatization strategy should include complementary actions to mitigate any real effects on underbanked regions.* It is important to consider the incentives of the financial system to lend to underbanked regions or non-traditional areas like rural India or Tier 2 and 3 cities. Altogether, preventing a winner-takes-all scenario and fostering a more inclusive and resilient financial system may require a careful examination of privatization efforts' consequences and complementary policy actions.

(c) *Operational independence for bank board & management*. A long-standing proposal from various banking reform committees is to grant operational independence to boards and management. One potential approach entails the establishment of a holding company structure for government stakes, permitting professional and diverse board appointments for each bank. This way, the government can maintain a healthy distance from the day-to-day management of these institutions. Alternatively, the government could consider reducing its stake in a greater number of public sector banks below 50% in line with their privatization strategy, which would free them from various administrative and legislative constraints that affect their governance and performance. This would also help attract more private capital and enhance market discipline for public sector banks.

(d) *Reduce the role of the Ministry of Finance in the public banks*. Reducing Ministry of Finance intervention could enhance public bank autonomy, possibly through reforming the Department of Financial Services (DFS). The DFS supervises public banks, public insurance companies, and financial institutions in India on behalf of the Ministry of Finance. A reform of the DFS could delegate more authority to bank managers and boards, while curbing the use of these banks for non-economic objectives. This would demonstrate a sincere effort to promote operational efficiency in public banks and achieve better economic outcomes.

6. RESTRUCTURING THE FINANCIAL SECTOR: The sixth component of the financial sector reform agenda could aim to restructure the sector for increased competition and efficiency. To achieve this, the following policy priorities could be considered:

(a) *Adopt continuous licensing for banks*. A system of continuous licensing (or 'on-tap' licensing) could stimulate the banking sector by permitting the entry of high-performing entities. This approach could allow strong micro-credit institutions to evolve into small finance banks and enable high-achieving small finance banks to graduate to universal bank status. This strategy would encourage a more competitive and diverse banking environment.

(b) *Champion the inclusion of innovative non-bank actors*. Actively supporting the participation of non-bank entities, particularly in the realm of capital markets and emerging lending fields such as FinTech, could expand upon the existing triumphs in digital payments. This would foster innovation and diversification within the financial sector, offering consumers and businesses more choices and opportunities.

(c) *Pave the way for well-managed non-bank financial institutions to become deposit-taking entities*. This measure could counter the risk of India's retail deposit base concentrating in a few large private banks, ensuring broader access to stable and affordable funding for medium-sized banks, NBFCs, and HFCs, while promoting income convergence across states, rural and urban areas, and different income groups. The creation of a regulatory pathway for well-managed non-banks to become deposit-taking institutions would help achieve a more balanced distribution of deposits within the banking system.

(d) *Explore strategic mergers*. Assessing the feasibility of mergers between robust and well-managed non-bank financial institutions and small-to-medium-sized banks could lead to a more efficient and competitive financial sector. Careful selection of merger partners could result in synergies that enhance operational efficiency, risk management, and the overall health of the financial system. Additionally, these mergers could promote financial inclusion by reaching underbanked segments of the population.

7. DEEPENING THE FINANCIAL SECTOR: The seventh component of India's financial sector reform strategy could concentrate on expanding the sector's reach and capacity, thereby bolstering its ability to underpin economic growth. The following key policy initiatives are worth considering:

   (a) *Reassess Priority Sector Lending policies*. Currently, Priority Sector Lending policies have several drawbacks, such as encouraging lending to designated sectors regardless of their viability and crowding out lending to more productive areas. As a result, banks' profitability and competitiveness are hampered, negatively affecting the economy. Furthermore, these policies increase financial stability risks due to stronger interlinkages between banks and non-banks. A comprehensive reassessment of these policies and their impact on the financial sector is essential, which could pave the way for a gradual phase out of these policies and replacing them with more focused and transparent approaches.

(b) *Implement 'pull policies' to enhance access to credit in underserved regions*. Authorities could leverage digital financial services, such as Unified Payment Interface (UPI), Aadhaar Enabled Payment Services (AePS), and digital wallets, to increase financial inclusion by lowering the barriers to entry and reducing the operational costs for financial service providers in remote areas. There is scope to also promote financial literacy and education programs to empower individuals and businesses in these regions to make informed financial decisions, and create awareness and demand for credit products. Lastly, authorities could strengthen regulatory frameworks to foster competition and innovation in the financial sector, and encourage new market entrants and fintech solutions that can offer tailored and affordable credit solutions to rural areas and Tier 2 and 3 cities. By employing such strategies, we can deepen the financial sector and stimulate economic growth in underserved regions.

(c) *Improve cash-flow-based lending and the credit registry data*. Financial institutions should consider adopting cash-flow-based lending in conjunction with, or as an alternative to, traditional asset-based lending. This approach emphasizes borrowers' ability to generate cash from their operations and repay debts, rather than solely focusing on collateral value. It provides a more comprehensive and realistic assessment of creditworthiness, particularly during economic fluctuations. For larger borrowers, banks could establish loan covenants tied to liquidity and leverage ratios, with specific thresholds that prompt actions, such as increasing collateralization, adjusting loan amounts, or imposing stricter repayment conditions. For smaller borrowers, banks can utilize digital data sources like GST invoices, utility payment records, UPI and e-commerce transactions to analyze cash-flow patterns and credit behavior. This information can also facilitate the use of alternative credit scoring models and fintech solutions.

(d) *Transparent incentives for social objectives to both public and private banks*. Governments should transparently reward financial institutions that contribute to well-defined narrow social objectives, such as maintaining branches in underserved areas. These incentives should be available to all banks, irrespective of ownership (public or private), and based on transparent, measurable criteria. This creates a level playing field and fosters healthy competition among both private and public sector banks, ultimately leading to a more balanced and effective financial ecosystem. This approach also reduces the asymmetric burden on public banks to serve policy objectives at the expense of their profitability and efficiency, allowing them to focus on core business activities.

8. STRENGTHEN TOOLKIT FOR EMERGENCY LIQUIDITY ASSISTANCE: To handle future liquidity shortages in India's financial system, the RBI may need to expand its emergency lending tools. Just adding more reserves (through open market operations) might not work well during tough times, as financial institutions might lack enough good collateral or may not have direct access to central bank liquidity windows. In these stressed episodes, to restore trust in the financial system and improve funding, the RBI may need to make its emergency lending tools more user-friendly and help a wider range of struggling credit markets and borrowers. In particular, the RBI could strengthen its liquidity toolkit to manage a broad range of stress situations. Expanding their cash tools might have risks like credit risk, moral hazard, and political risks. Still, the RBI could consider three ways to provide liquidity support building on their experience during the Indian Financial Crisis of 2018-20 and the COVID-19 pandemic (also discussed in greater detail in the next annex): (1) primary liquidity funding to support banks, (2) contingent liquidity funding to support banks, and (3) liquidity for commercial paper/money markets to support the shadow banking system:

   (a) *Primary liquidity funding to support banks.* The RBI can examine the pros and cons of directly providing term funding to banks to reduce tensions in the term funding market. In this context, a relevant case study is the Term Auction Facility (TAF) introduced by the Federal Reserve in December 2007. In the U.S., interbank funding markets came under severe pressure at the start of the financial crisis in 2007. Amid widespread concerns about the condition of many financial institutions, investors became reluctant to lend, especially at longer-term maturities. At the same time, since the interbank market was gripped by fear and negative perceptions about a broad range of institutions, banks became reluctant to borrow directly from the Fed for fear that this would be perceived as a signal of their poor financial condition. This fear of stigma further seized of funding. To address these funding pressures the Fed established the TAF. Incorporating the lessons from such liquidity facilities and others created worldwide (including in India as discussed in the main text) during the COVID-19 pandemic could be useful.[45]

(b) *Contingent liquidity funding to support banks.* Secondly, the RBI could consider providing contingent liquidity funding to support banks by temporarily relaxing the current limits on how much a bank can borrow from its standing facilities. This move would help ease concerns about refinancing or rollover risk, and encourage banks to extend term loans instead of holding onto liquidity with the RBI. To be effective, such a liquidity facility should have no ambiguity of access, with uniform access for all financial institutions regardless of their condition and systemic importance. This approach would create a lower bound on funding concerns and ensure that intervention reaches the banks most in need. Furthermore, this liquidity facility could create a catalytic effect without the liquidity actually being drawn upon, as demonstrated by some facilities introduced by the Fed after 2008 that were never utilized but had a confidence effect. The key goal of such liquidity operations would be to create a virtuous cycle that relies on the private sector to re-establish liquidity in the funding markets.[46]

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[45]Of the numerous programs created by the Fed in response to the crisis, the TAF is considered one of the most successful (Willardson and Pederson (2010)). Under the program, the Fed allowed any eligible bank to bid for a loan (of up to 3 months) at an interest rate determined in an auction process. This meant that the pricing of funds from this facility was market-based, and not priced above market-based terms—making this is a primary source of funding for banks as opposed to a contingent source of funds. All the loans extended under the TAF were fully collateralized. Both the size of the auction and the pool of eligible collateral were expanded as the crisis entered the more severe phase after the collapse of Lehman Brothers (Benmelech 2012).

[46]If the judgment is to not inject direct term funding to banks, facilities that stand ready to provide contingent liquidity to support banks could help. It would create a lower bound on funding concerns in the system—that is currently being faced by some banks—and would ensure that the intervention would reach those banks most in need. However, for such a liquidity facility to be effective it will be important to not have ambiguity of access to the facility. For instance, allowing uniform access for all financial institutions, irrespective of their condition and systemic importance is more likely to alleviate fears about counterparty risks (Stephen Giovanni Cecchetti and Disyatat 2010). Thus, such a facility could create a catalytic effect without the liquidity actually being drawn upon. For instance, some of the facilities introduced by the Fed after 2008 were never utilized (e.g. the Money Market Investor Funding Facility) but could have had a confidence effect. A key goal of such liquidity operations would be to create a virtuous cycle that relies on

(c) *Liquidity support for the shadow banking system*. Regarding liquidity support for the shadow banking system—such as NBFCs, HFCs, Mutual Funds—the RBI should evaluate the pros and cons of direct liquidity to term funding markets like the commercial paper (CP) market, certificate of deposit (CD) market, and other money market instruments. The Fed's Commercial Paper Funding Facility (CPFF) during the 2008 financial crisis could be a relevant case study. Like in India during 2018 and 2019, the US commercial paper market was under considerable strain after September 2008. The CPFF provided financing to a special-purpose vehicle that purchased 3-month commercial paper directly from issuers to ensure the flow of credit to the real economy that relied on the CP market for short-term funding. The program automatically wound down as the market conditions stabilized by charging a fixed spread over a three-month market rate, making it attractive when markets were dysfunctional in the short-term, but unattractive when normal activity was restored.[47] In a similar vein, the Reserve Bank of India's experience with the Stressed Asset Fund (SAF)—which facilitated a special liquidity scheme for NBFCs during the pandemic—provides valuable insights for future design of such facilities.

9. IMPROVING MONETARY POLICY TRANSMISSION: Efforts are underway to improve monetary policy transmission—the machinery that connects the central bank to the real economy. During the Indian Financial Crisis (IFC) of 2018-20, banks were competing for deposits, causing monetary policy transmission to be subdued. The lending rates were not decreasing as much as the repo rates due to the competition for deposits. With a collapse in wholesale funding markets and stress in the interbank markets, banks became anxious to secure a stable funding base. This prompted them to engage in precautionary hoarding of liquidity and compete heavily for deposits, leading to higher term deposit rates. There was also a deceleration in total

the private sector to re-establish liquidity in the funding markets.

[47]The Fed's Commercial Paper Funding Facility (CPFF) ran between October 2008 and February 2010. Like in India during 2019-20, the CP market was under considerable strain after September 2008. The CPFF provided financing to a special-purpose vehicle, which in turn used the funds to purchase 3-month commercial paper directly from issuers. This essentially meant that the Fed was stepping in to temporarily substitute the space vacated by the troubled money market mutual funds sector in buying CPs and ensuring short-term funding to the real economy. Note the CPFF was designed in a way to ensure that the program automatically winds down as the market conditions stabilize. This was accomplished by charging a fixed spread over a three-month market rate, making the liquidity facility attractive when the markets were dysfunctional in the short-term, but unattractive when the normal activity was restored.

deposit growth of the banking system due to concerns about some banks, high small savings deposit rates offered by the government, and some households preferring to invest in the relatively strong stock market directly or through equity mutual funds. Based on lessons from the IFC, and developments during COVID-19, there is scope to continue improving the transmission of monetary policy. The following policies could be considered:

(a) *Align the interest rates of government-backed small savings with deposit rates prevailing in the market*. To save for the long term, Indian households have two paths to choose from: bank fixed deposits and government-backed small savings schemes. However, the rates of government-backed schemes are not linked to the deposit rates prevailing in the market, creating distortion in the deposit market. Higher rates in small savings schemes attract households to invest in them instead of depositing in banks, making it harder for banks to attract deposits for financing the real economy. This also reduces discipline on government spending. Authorities could better link the National Small Savings Fund (NSSF) rates to the market-based bank deposit rates. The NSSF rates are fixed quarterly by the government based on a formula that takes into account the yields of government securities. However, this formula has room for improvement as the NSSF rates are often higher than the prevailing market rates. This would reduce the interest rate differential between the government-backed small savings schemes and bank deposits. Aligning these rates would create a level playing field for deposit-taking institutions and improve monetary policy transmission.

(b) *Align variable rate loans more closely with external benchmarks*. This would create a smoother and faster transmission of monetary policy through the banking system. Banks could then use interest rate derivatives to hedge their risks and manage liquidity. Last year, about half of the outstanding loans were linked to external benchmarks, while the rest were still linked to internal benchmarks like the marginal cost of lending rate (MCLR), which are less transparent and hinder transmission. The RBI has offered banks the option to choose from four external benchmarks including the RBI repo rate or T-bill yields.

(c) *Greater mark-to-market of treasury positions.* There is scope to push financial institutions to mark-to-market their treasury positions more consistently, steering them clear of the treacherous realm of gambling on government bonds with depositors' cash (as we saw recently in the case of SVB Bank and other banks in the US). It's like saying, "Stop placing one-sided bets on government bonds on the generosity of regulators." This move will nudge financial institutions toward better interest rate risk management.

(d) *Deepen the wholesale funding market*. There is scope to bolster the wholesale funding market (commercial paper, certificates of deposit, etc.) by improving the disclosure and supervision of financial institutions' health and liquidity. This would help reduce the risk of stress in the deposit market during uncertain times, like during the 2018-20 financial crisis. A deeper and more transparent wholesale funding market would enhance the efficiency and stability of the financial system.

10. SUPPORTING REAL ESTATE TRANSACTIONS: To support real estate transactions, there are several measures that the authorities could consider.

    (a) *Eliminate double taxation on real estate transactions*. First, there's room to eliminate double-taxation on real estate transactions when the transaction value is below the 'fair market' value or the 'circle rate.' Circle rates are the government-set prices below which a property cannot be registered, and they vary by state, city, and neighborhood. Currently, if a property is sold below the circle rate, double taxation applies to both the buyer and the seller on the difference. This double taxation is a significant deterrent to real estate transactions. There's potential to remove this double taxation entirely to stimulate the real estate market. Moreover, there is scope to relax other tax burdens related to real estate to revive the industry. For example, removing the requirement for builders to pay taxes on unsold properties older than two years, or expanding the abolishment of the tax on deemed rent from multiple properties beyond only two properties as announced in the 2019 interim budget. Reducing the tax burden on transactions and relaxing other tax-related provisions could help stimulate the real estate market and promote growth in the industry.[48]

[48] Circle rates are the minimum prices set by the government for a property to be registered and vary by states, cities, and neighborhoods. If a property is sold below the circle rate, both the buyer and seller are

(b) *Structural reforms in the real estate sector*. In the medium run, structural improvements to the real estate sector are needed to ensure sustained demand and reduce imbalances. This could include reforms to the regulatory environment, land acquisition policies, and improving transparency and efficiency in the sector. Reducing the time and costs associated with obtaining permits and approvals, addressing issues related to land acquisition, and improving access to financing for both developers and homebuyers could all contribute to a more efficient and stable real estate market. Additionally, increasing transparency and reducing corruption in the sector could improve investor confidence and reduce risks for financial institutions with exposure to the sector. Such structural improvements could also help address the issue of excess supply in certain segments/geographies of the real estate market, and create a more balanced and sustainable real estate market in the medium run.

(c) *Targeted use of the Real Estate Sector Fund.* The limited resources of the real estate sector fund should be targeted to the most distressed projects that have systemic exposure to the financial system. This will require a transparent and timely process to ensure that the fund is used efficiently and effectively. Additionally, it may be necessary to consider increasing the size of the fund to better address the scale of the stressed assets in the sector. Any expansion of the fund, however, should be done in a fiscally responsible manner, while prioritizing transparency, accountability, and effective targeting of resources. Ultimately, a targeted approach to the real estate sector fund can help restore confidence and provide a boost to the overall health of the financial system.

By implementing these key elements of the financial sector reform agenda, India can strengthen its financial system and pave the way for long-term inclusive growth.

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taxed on the differential amount. In a real estate transaction, the buyer covers the stamp duty and registration charges (roughly 4% to 10% across states), and the seller pays a 20% capital gains tax for properties held over three years. Taxation is based on the higher of either the transaction value or the circle rate. The double taxation issue is exacerbated during market slumps when many transaction values drop below circle rates. To address this issue, the 2018 budget exempted the double taxation on the gap as long as the difference between the transaction value and the circle rate is below 5%. The 2018 exemption aimed to alleviate difficulties in real estate transactions, yet circle rate and real market value discrepancies increased due to market downturns in 2018 and 2019, indicating room for further improvement. Considering the adverse impact during real estate downturns and inefficiencies in determining circle rates accurately, a removal of double taxation could boost real estate transactions.

Annex II: Central Bank as Firefighter

The Bagehot Dictum is a cornerstone of modern central banking that demands bold action during times of crisis. Coined by 19th-century economist Walter Bagehot, this principle holds that the lender of last resort should provide liquidity to solvent banks facing temporary liquidity shortages at a penalty rate.

But while the dictum provides a clear principle for central banks, the devil is in the details. are still important unanswered questions about how to implement this dictum in practice. How much liquidity? What collateral? How to avoid moral hazard? These are just a few of the challenges that central banks must grapple with as they strive to balance the need for stability with the risk of enabling reckless behavior.

To discuss emergency liquidity, including during the Indian Financial Crisis of 2018-20, let's start by defining three types of liquidity: central bank liquidity, market liquidity, and funding liquidity. Central bank liquidity refers to deposits of financial institutions at the central bank, synonymous with reserves. Market liquidity is the ability to buy and sell assets in reasonably large quantities without significantly affecting their price. Funding liquidity describes the ability of an individual or institution to raise cash, either via asset sales or by borrowing.[49] Market and funding liquidity are closely linked.

A shortage of central bank liquidity can occur when institutions find themselves short of reserve balances they want to hold, either due to inadequacies in aggregate supply or problems with distribution within the system. Systemic funding and market liquidity shortages typically arise when confidence evaporates, or coordination failures among market participants lead to a breakdown of key financial markets.

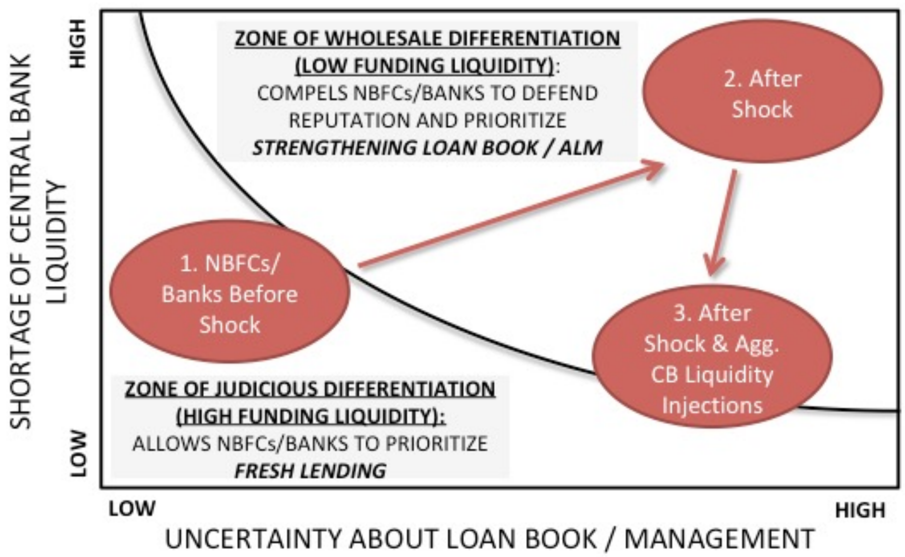
Based on the evidence, there appeared to be liquidity shortages in both central bank liquidity and systemic funding/market liquidity during the Indian Financial Crisis of 2018-20. High interbank spreads and the interbank market contraction suggested that despite surplus aggregate system-wide liquidity, the distribution of reserves was not reaching some segments of the banking system. The collapse of the commercial paper market, contraction of the certificate of deposits market, run on money market mutual funds, and high credit spreads all pointed to systemic funding/market liquidity shortages.

Adverse selection problems may have played a role in both types of liquidity shortages. To ease funding liquidity, both greater aggregate central bank liquidity and reduced

[49] This is based on the terminology of (Stephen Giovanni Cecchetti and Disyatat 2010).

uncertainty about the viability of financial institutions were needed to ensure that the aggregate liquidity flowed to all parts of the system.

In the case of the Indian financial system, before the IL&FS/DHFL defaults, there was no shortage in central bank liquidity and financial institutions faced low uncertainty about their fundamentals. However, after the defaults, a shortage in central bank liquidity emerged and uncertainty about the fundamentals of financial institutions spiked. This moved the financial system into a ’zone of wholesale differentiation,’ where market participants were only willing to lend to a select group of reputable institutions while avoiding others (see figure).



In the context of the Indian Financial Crisis of 2018-20, the Reserve Bank of India (RBI) implemented measures to address liquidity challenges. The central bank created surplus liquidity to mitigate high uncertainty stemming from bank-NBFC linkages, real estate exposure, and potential second-round effects from rising defaults. However, the distribution of aggregate central bank liquidity was uneven, causing some banks to struggle in accessing funding markets. Consequently, borrowing costs for institutions with strong reputations dropped to historic lows, while others remained desperate for funding.

As the Global Financial Crisis of 2007-09 demonstrated, constraints might arise in the use of both open market operations and traditional standing facilities. To address these issues, central banks had to expand the scope of the lender-of-last-resort (LOLR) tools in terms of both accessibility and structure when systemic liquidity shortages emerged.

During the Indian Financial Crisis of 2018-20, to unclog the financial circulatory system and get blood flowing where it was needed, the RBI could have explored the possibility of expanding its lender-of-last-resort (LOLR) tools.

At that time, urgent attention was needed to understand why interbank spreads remained elevated compared to pre-IL&FS levels and why wholesale funding markets, such as the commercial paper and certificate of deposits (CD) markets, continued to remain frozen. Restoring normalcy in these markets appeared essential to revive private sector credit intermediation in the system.

Rethinking the LOLR Toolkit

Going forward, the RBI could examine the pros and cons of three types of liquidity measures and drawing on lessons from recent experiences of other central banks during COVID-19: (1) primary liquidity funding to support banks, (2) contingent liquidity funding to support banks, and (3) liquidity support for commercial paper/money markets that would support the shadow banking system (i.e., NBFCs/HFCs/Mutual Funds).

1. Direct Term Funding to Banks

In order to effectively assess primary liquidity funding as a means to support banks, the RBI can investigate the advantages and disadvantages of directly providing term funding to banks, aiming to ease tensions in the term funding market. A particularly relevant case study in this regard is the Term Auction Facility (TAF) introduced by the Federal Reserve in December 2007.

Interbank markets are crucial for maintaining liquidity within the banking system, as they enable banks to meet their short-term funding needs and maintain reserve requirements. During crises, however, these markets can become paralyzed by fear and negative perceptions about the solvency of various institutions.

At the onset of the Global Financial Crisis of 2007-09, the US interbank funding markets experienced significant strain. Widespread concerns about the financial health of numerous institutions led investors to become hesitant to lend, particularly for longer-term maturities.

In this tense atmosphere, banks were unwilling to borrow directly from the Fed, as doing so could be seen as a sign of their poor financial condition. This fear of stigma further exacerbated the funding freeze, making it even more difficult for banks to access liquidity. Stigma arises in such situations because borrowing from the central bank's discount window may signal to the market that a bank is facing financial difficulties, potentially leading to a loss of confidence and further exacerbating liquidity issues.

To address these funding pressures, the Fed established the TAF, which is considered one of the more successful programs created by the Fed in response to the crisis.[50] The TAF enabled any eligible bank to bid for a loan (up to 3 months) at an interest rate determined through an auction process. This system ensured that the pricing of funds from this facility was market-based and not priced above market-based terms, making it a primary source of funding for banks rather than a contingent source. The loans extended under the TAF were fully collateralized, providing a layer of security for the Fed. As the crisis worsened after the collapse of Lehman Brothers, both the auction size and the pool of eligible collateral were expanded, offering greater support to the banking system.[51]

By examining the suitability of TAF and similar programs to India's local context, and drawing lessons from their own experience of 2018-20, the RBI can gain insights into the effectiveness of primary liquidity funding as a means of supporting banks during times of financial stress. This exploration can also deepen understanding of the underlying economic mechanisms in India, such as the evolving role of interbank markets, the psychology and behavior of Indian market participants during crises, and ways to mitigate the stigma associated with borrowing from central banks during times of crisis.

2. Contingent Liquidity Funding

Secondly, regarding contingent liquidity funding to support banks, the Reserve Bank of India (RBI) could investigate methods of assuring the market of access to liquidity directly from its liquidity window on a contingent basis at above market-based terms—while ensuring unambiguous access. For instance, the RBI could weigh the advantages and disadvantages of temporarily easing the current borrowing limits from its standing facilities, while also working to reduce the stigma associated with utilizing these facilities.

In the absence of direct funding, this measure could alleviate banks' concerns about refinancing or rollover risk, making them more inclined to extend term loans instead of

[50]See (Willardson and Pederson 2010).
[51]See Benmelech (2012).

hoarding liquidity with the RBI, as is currently the case. If the decision is not to inject direct term funding into banks, this approach of providing contingent liquidity could be beneficial. Establishing a lower bound on funding concerns within the system—currently faced by some banks—it would ensure that the intervention reaches those most in need. However, for such a liquidity facility to be effective, it is crucial to eliminate ambiguity concerning access to the facility.

For example, allowing uniform access for all financial institutions, regardless of their condition and systemic importance, is more likely to alleviate fears about counterparty risks.[52] Consequently, such a facility could create a catalytic effect even if the liquidity is not drawn upon. Some of the facilities introduced by the Federal Reserve after 2008, such as the Money Market Investor Funding Facility, were never utilized but may have had a confidence effect.

A primary objective of such liquidity operations would be to create a virtuous cycle that relies on the private sector to re-establish liquidity in the funding markets. By understanding the underlying financial mechanisms and the potential impact on the stability of the system, the RBI can make informed decisions about how to support banks during times of financial stress.

3. Liquidity Support Beyond Banks

Thirdly, with regard to providing liquidity support for commercial paper/money markets aimed at easing liquidity shortages in the shadow banking system (i.e., NBFCs, HFCs, or Mutual Funds), the Reserve Bank of India (RBI) could assess the advantages and disadvantages of alleviating strains in wholesale debt markets by supplying direct liquidity to term funding markets, specifically the commercial paper (CP) market, certificate of deposit (CD) market, and other money market instruments.

A relevant case study for this approach is the Federal Reserve's Commercial Paper Funding Facility (CPFF), which operated between October 2008 and February 2010. Similar to the situation in India today, the CP market experienced considerable strain following September 2008. The CPFF offered financing to a special-purpose vehicle, which in turn used these funds to purchase 3-month commercial paper directly from issuers. This essentially meant that the Federal Reserve stepped in to temporarily replace the troubled

[52] See Stephen Giovanni Cecchetti and Disyatat (2010)

money market mutual funds sector in buying CPs, ensuring the flow of credit to the real economy that relied on the CP market for short-term funding.

It is important to note that the CPFF was designed to wind down automatically as market conditions stabilized. This was achieved by charging a fixed spread over a three-month market rate, rendering the liquidity facility attractive during periods of market dysfunction but unattractive once normal activity resumed.

By examining the pros and cons of this approach, the RBI can better understand the potential effects of providing direct liquidity support to targeted term funding markets. This analysis would help address the liquidity challenges faced by the shadow banking system during periods of financial stress, ensuring stability and continuity in the flow of credit to the real economy (IMF 2023).

Managing the Risks of LOLR

While we have discussed the potential benefits of three types of emergency liquidity operations that the RBI could explore, it's crucial to acknowledge that these operations also carry risks.

First, the RBI would be exposed to credit risks, as institutions in need of a loan of last resort will typically have exhausted their high-quality assets, which they could have either sold in the interbank market or pledged at existing central bank facilities.[53] This risk can be mitigated, though not fully eliminated, by carefully choosing eligible collateral and applying appropriate haircuts to these assets. Striking a balance between providing adequate liquidity support to the troubled areas of the system and mitigating credit risk for the RBI is essential. For example, the TAF initially had more restricted eligible collateral, but the Fed had to expand the pool as the financial crisis worsened.

Second, a potential issue with lender-of-last-resort (LOLR) operations is the creation of moral hazard. This refers to the risks associated with providing financial assistance, as it can lead to a lack of proper risk management. Solvency, or the ability of an institution to meet its long-term financial obligations, is often difficult to define, and it depends on central bank policy decisions, including whether to provide LOLR assistance.[54] Central banks face a tradeoff: providing LOLR assistance might lead to losses and moral hazard,

[53] See the Jalan Committee Report (RBI 2019c).

[54] Goodhart (2017) discusses moral hazard risks associated with LOLR assistance and presents a range of ideas to balance LOLR assistance while avoiding moral hazard.

but refusing to do so could cause widespread panic. Addressing systemic liquidity shortages can create expectations of similar support during future crises, which could weaken incentives to strengthen risk management and financial buffers. However, these concerns must be balanced against the high costs of low growth and slow economic recoveries that typically follow financial crises. Some research has suggested that providing liquidity support during systemic stress episodes can improve social welfare overall (Caballero and Krishnamurthy 2008; Kearns, Lowe, et al. 2008).

Moral hazard concerns might tempt authorities to follow a Darwinian "survival of the fittest" philosophy, not expanding their role as lender-of-last-resort in hopes that the system will consolidate, allowing well-governed/managed institutions to increase their market share. However, this strategy may prove very costly and painful for society at large. For instance, the 2018 IMF World Economic Outlook examines the lasting effects of banking crises on the broader economy in a sample of 180 countries (IMF 2018). The study finds that countries experiencing a banking shock during the global financial crisis of 2007-09 faced more severe long-term consequences, with persistently low growth even a decade later and associated impacts on socioeconomic outcomes such as fertility rates. Moreover, they find that "specific quasi-fiscal measures to support the financial sector, including bank guarantees and capital injections, helped temper post-crisis output losses."

In the Indian context, pushing for rapid disorderly consolidation in the financial system risks losing lending relationships and local knowledge, leaving large market segments without access to credit. A more reasonable approach might be to combine systemic liquidity provision (if and when needed) with separate actions to mitigate moral hazard, including better regulation, strengthened supervision, higher capital levels, and steps to improve transparency in financial markets.

Even though there is a strong case for proactive emergency liquidity support, authorities might decide that moral hazard, legal, or political constraints prevent broadening the scope of lender-of-last-resort (LOLR) operations at this time. Studying these liquidity options can still be beneficial, as it can help the RBI improve its crisis management framework and better prepare for future crises.

Additionally, enhancing the solvency of NBFCs and banks before stress episodes can reduce concerns about lending to insolvent institutions, thereby encouraging the expansion of lender-of-last-resort (LOLR) operations to address systemic liquidity shortages.

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